



**Management Audit of  
Connecticut Natural Gas Corporation  
AVANGRID  
REDACTED & PUBLIC**

Prepared for  
The State of Connecticut Public Utilities Regulatory Authority

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## Preface

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## 1. EXECUTIVE SUMMARY

### Objective and Scope

The objective of RCG/SCG LLC's review included (1) an investigation and assessment of the Company's business processes, procedures, and policies relating to the management operations and system of internal controls in place and (2) an identification of areas of the Company that might require further investigation.

The scope of RCG/SCG LLC's management audit included eight focus areas:

- Executive Management,
- System Operations,
- Finance,
- Human Resources,
- Customer Service,
- External Relations,
- Support Services, and
- Special Topics.

During the course of RCG/SCG LLC's management audit, 105 interviews were conducted and 715 data requests were reviewed. The team conducted 8 field observation site visits, which included tours of the Company's LNG facilities in Rocky Hill, some field site visits to observe crews working in the field, a tour of the CNG's service center and warehouse facility in East Hartford, and its call Center. RCG/SCG LLC interviewed AVANGRID, Avangrid Networks, UIL Gas Networks, and CNG senior management as well as a representative of the Company's unions.

All audit work papers, interview notes and data responses relied upon in this report are available upon request from PURA.

### Overall Assessment

#### *Executive Management*

The Connecticut Natural Gas Corporation is generally well managed. There are several areas within CNG/UIL gas networks where management needs to focus its attention to improve the overall performance. At the time of the management audit RCG/SCG LLC observed a number of common functions where there was significant disruption of normal operations brought about by the integration efforts. This disruption is expected due to the proximity of the audit time frame and that the AVANGRID purchase was completed in December of 2015.

### *Internal Audit*

The Internal Audit department is positioned correctly at the AVANGRID level to provide independent assessments of CNG processes and accounting practices to the AVANGRID board of directors.

### *Strategic Planning*

Due to the recent UIL Holdings sale to Iberdrola USA, now AVANGRID, management's focus is on integration, as such strategic planning at CNG is in the formative stages. Currently, AVANGRID is applying core performance metrics to CNG, causing strategy to become transactional. Strategic level planning initiatives have yet to be identified.

### *O&M Budgeting*

CNG employs O&M budgeting practices consistent with those used by many utility companies and the company is generally effective with financial controls – as evidenced by the small O&M budget variances for CNG. However, there are opportunities to improve the budgeting process so that it serves to “justify” the spending levels and support performance management and process improvement.

### *Capital Budgeting*

CNG employs capital budget development processes consistent with those of many utility companies. However, oversight of the capital budgeting process by the center for project excellence provides a higher level of scrutiny to capital budget development and approvals.

### *System Operations*

System Operations, as defined by the Authority's originating RFP for this Management Audit, Includes the following functions:

- Requirements Forecasting
- Gas Supply
- System Planning and Design
- System Reliability, Construction, Operation and Maintenance

The last bullet combines system reliability, Construction, Operations and Maintenance. As CNG O&M group combines construction, maintenance, and operations. There is a Construction group to manage capital work performed by contractors, but it functions as the project management and quality assurance effort for contractors, which is covered in Planning and Engineering.

*Requirements Forecasting*

The requirements forecasting function is collaboratively performed by multiple areas within the UIL business units, CNG and SCG. The Rates and Regulatory department appropriately develops a forecast to meet the requirements of the financial and regulatory functions. RCG/SCG LLC believes a more formal review by rates and regulatory (along with a consensus executive approval by all involved functions) of the CES forecast prepared by sales and marketing, could refine the CES impact on the forecast.

*Gas Supply*

The Gas Supply function appropriately manages commodity, pipeline transportation and storage to meet both long term needs and short term operations. RCG/SCG LLC believes the company needs to focus on succession planning and documentation of its processes due to the risks inherent in a small organization performing a critical function.

*System Planning and Design*

UIL Gas Design and Delivery and CNG distribution planning and engineering appear to be organized appropriately with the right resources. RCG/SCG LLC believes the company needs to focus on standardization of materials and equipment across distribution companies, and the project estimating process.

*Reliability, Construction, Operations and Maintenance*

CNG's distribution construction and maintenance operation is reasonably well managed and extremely responsive to leak calls. CNG meets its leak response metrics due to the top down directive on leak response. While there is no formal work management system, as of this writing, they are more consistent in their productivity than SCG. Their response to dig ins is immediate with an all hands approach. In part this is due to management's decision to outsource the majority of large construction projects, using a separate group to manage contractors.

*Finance*

CNG's financial support comes from the UIL Holdings shared service organization under the vice president and controller. While the support and the personnel involved are good, the current organization is still in transition following the December 2015 acquisition of UIL Holdings including CNG and needs to be finalized and communicated.

*Treasury*

CNG exhibits adequate financial strength as evidenced by their strong balance sheets, access to financing, and solid credit ratings. Both, however, have expanded capital spending significantly over the past few years to fund new business and accelerate the replacement of cast iron and bare steel mains. These larger capital requirements will result in growing capital needs and additional rate relief in the future for CNG.

#### *Tax*

The Connecticut Natural Gas Tax function is well managed and effective and consistent with the needs of the utility. This has resulted in a culture of providing continuous improvement, and accurate and timely filings with a reasonably trained staff.

#### *Human Resources*

The HR team follows industry standard policies and practices and develops specific programs to address the strategic and tactical needs of the business. Its use of HR specialists at CNG is consistent with HR best practices. Contract services are used consistently with industry practices. The majority of the work completed by the HR organization is at the level of best practices. There is no HR leadership dedicated to UIL, but the Senior Director position is expected to be filled in the next several months.

#### *Compensation Policies, Practices and Programs*

Compensation strategies, policies, practices and programs for AVANGRID's gas executives, salaried, and hourly employees are consistent with standard industry practices. AVANGRID handles these practices with impartiality, expertise, and a high level of integrity. The total rewards organization and the independent outside compensation consultants have designed and appropriately monitor all the compensation components. However, the target level of variable compensation for non officer salaried employees is lower than industry practice.

#### *Employee Benefits Including Pension Plan, 401K, and OPEBs*

AVANGRID Total Rewards (Compensation and Benefits responsibility) organization is centralized under the AVANGRID Chief HR Officer. The Director of Total Rewards is directly responsible for the compensation and benefit strategies at Avangrid Networks. The execution of the benefits strategy is the responsibility of the Director of Benefits.

AVANGRID's employee benefit offerings for health, welfare, and retirement plans are consistent with industry practices and competitive with the marketplace to attract and retain current and future talent. Negotiations with the union locals have been completed to bring the benefit plan into alignment and reduce the overall cost of providing benefits into the future.

*Succession Planning, Leadership Identification, Employee Development and Evaluation*

RCG/SCG LLC believes the AVANGRID Succession Planning, Leadership Identification, and Employee Development process is consistent with industry best practices. However, implementation at AVANGRID has not been completed below the executive level. As a result of the retirement and resignations associated with the recent merger, AVANGRID is finding it necessary to seek external candidates to fill key senior level position, such as the Director of HR in CT.

*Training*

Employee training was coordinated, developed, and/or delivered effectively. However, the training paper recordkeeping process needs to be updated to an electronic process consistent with industry practices.

*Labor and Employee Relations*

Labor and Employee Relations is staffed with experienced professionals who handle their responsibilities effectively while maintaining a good working relationship with the two major bargaining units (three labor contracts) covering the union employees of CNG. However, AVANGRID does not have a long term strategy to combine the labor unions.

*Workforce Planning and Staffing*

AVANGRID takes a proactive approach to manpower planning by analyzing their workforce and anticipating their current and future staffing needs, taking into account leadership needs, skills gaps, and diversity goals. Their practice utilizes a comprehensive assessment of future needs, such as detailed turn over analysis, early identification of high potential employees, identifying future talent needs, and either developing those talents internally or specifically targeting hiring to address the need. However, their planning does not have a link to any work management activities.

*EEO/AA*

At AVANGRID, Equal Employment Opportunity (EEO) compliance and Affirmative Action (AA) planning is accomplished in conjunction with corporate compliance activities associated with the Code of Conduct. AVANGRID complies with the letter of the law regarding ethics, EEO compliance, and AA planning. Senior management is notified by e mail on the annual performance of the AA Plan. While no diversity or inclusion programs are currently implemented at AVANGRID, they have said they are working on re instituting a focus on diversity and inclusion in 2017.

*Employee Safety*

CNG's employee safety performance has not met AVANGRID's management expectations and goals for the last five years. However, executive and management's stated business priorities, reinforced by the safety metrics established for management, demonstrated that improving employee safety performance is no longer a concern.

*Payroll Practices*

AVANGRID's payroll practices are consistent with industry standards. The process has few manual steps and is not very labor intensive. The time and attendance system was replaced two years ago with Workforce software that has the capability to handle all the payroll rules associated with the labor union contract. This change has improved the process and reduced the number of overtime payment errors associated with labor contract interpretation by the employees.

The payroll processing practices are consistent with utility processes with limited field force access to computers. Although AVANGRID is rolling out mobile devices and associated applications it does not have any plans to upgrade to the mobile Workforce software application. This will continue the practice of field force time being entered by office personnel.

*Customer Service*

CNG responds efficiently to customer requests, issues accurate and timely bills, receives payments, and administers low income programs through multiple channels in a professional, cost effective manner.

*Call Center Operations*

CNG handles customer requests through their call center infrastructure in a professional, cost effective manner, and should continue to expand leading edge, self service options for their customers desiring to handle their requests in this fashion.

*Credit & Collections and Low Income Programs*

CNG's credit and collections group is well staffed and managed, demonstrating progress over recent years in reducing write offs while working within the state regulations in place for families in hardship enduring a difficult Connecticut economy.

*Billing Practices*

RCG/SCG LLC concluded that the CNG billing processes are using leading practices that result in timely and accurate billing and remittance processing while also continuing to seek ways to improve the operation by leveraging external service partners.

*Meter Reading and AMR*

CNG's meter reading is completed on a timely basis with highly accurate readings in a cost effective manner, and continues to improve the operation whenever possible.

*Service Theft*

CNG does an effective job in pursuing and prosecuting service theft incidents identified through field personnel but continues to rely on reactive techniques for discovery and hasn't effectively used customer messaging for deterrence.

*Customer Complaints and Inquiry Handling*

CNG does an effective job tracking and resolving customer complaints and inquiries.

*Customer Satisfaction and Customer Experience*

CNG has multiple customer survey instruments in place to provide customer feedback, but they provide little actionable feedback that can be used in plan and invest in customer satisfaction improvement initiatives.

*External Relations*

CNG demonstrates effective management of timely message development, administration, and distribution both externally and to employees.

*Support Services*

RCG/SCG LLC found that the AVANGRID's Support Services organizations generally provides support services in an appropriate manner consistent with utility practices, manages functions through policies and procedures, ensures knowledgeable management and personnel are assigned, and develops and implements plans coordinated with Company goals and needs.

*Risk Management*

AVANGRID and Avangrid Networks (or Networks) is doing a very credible job to facilitate the oversight of risk management within CNG. Senior executives are actively involved in risk management through risk committees, detailed procedures are in place to drive the steps to manage and mitigate risks, and metrics are in place to monitor performance in key risk areas.

One component our team identified as critical to gas system safety risk mitigation is the geospatial information system (GIS) system for CNG. Especially given the extensive construction investments in new and replaced pipeline over the next ten years, accurately capturing system attributes is critically important. We recommend implementing the upgrades to CNG's GIS system.

#### *Legal*

The legal department is generally well managed and serves CNG properly with a large portion of their activities outsourced. But it could be further strengthen with expansion of their written procedures, enhanced goal setting, and the use of a periodic audit of outside counsel's guideline adherence.

#### *Facilities Management*

Based on our review of the facilities management guiding documentation, goals, objectives, and performance measurement, RCG/SCG LLC believes that AVANGRID manages its facilities adequately.

#### *Fleet Management*

Based on our review of the Fleet operations' stated strategy, goals, objectives, and performance measurement, RCG/SCG LLC believes that AVANGRID, for the most part, appropriately manages its transportation services and effectively addresses the CNG's fleet needs. The management of inventory and maintenance records, however, needs improvement.

#### *Document Management*

RCG/SCG LLC has found that the AVANGRID's Document Management practices are consistent with their current Policy. However, the current Policy and practices are not in alignment with AVANGRID's centralized governance approach.

#### *Materials Management*

Overall, AVANGRID's Material Management organization (Purchasing and Logistics) effectively and efficiently manages its purchasing process. Logistics effectively stores and moves materials and supplies to meet the current and future emergency, maintenance, and capital needs of gas operations and the contractors supporting the gas system expansion effort. The key opportunity for improvement and cost reduction is in the standardization of stock codes and material standards across CNG and SCG and the automation of stock out tracking and reporting. Additionally, since neither CNG nor SCG utilizes Bar Coding and/or RFID to identify

and track its materials, RCG/SCG LLC believes a study of this technology should be undertaken to determine if it can be cost beneficial to be adopted.

*Information Technology*

AVANGRID's I/T is organized appropriately and consistent with its strategy. I/T has access to senior leadership to ensure I/T solutions are consistent with corporate strategies and the strategic needs are receiving appropriate priority of resources. However, the CNG I/T user community's I/T expectations and current I/T needs are different than those expressed by the I/T organization and has resulted in a level of dissatisfaction in the delivery of I/T services.

*Security*

AVANGRID's Security is organized appropriately and consistent with its strategy. It has access to senior leadership to ensure Security solutions are consistent with corporate strategies and the strategic needs are receiving appropriate priority of resources. Leading I/T cyber security measures have been implemented to protect against unauthorized access to sensitive information and/or systems. Periodic internal and external audits are performed to confirm the adequacy of the cyber security and physical security measures. Removal of physical access for terminated employees is an improvement opportunity.

*Special Topics*

*Affiliate Transactions & Cost Allocation*

The company uses an appropriate cost allocation process that emphasizes direct charging and includes a cost allocation where direct charging is impractical. Based on our review of affiliate transactions, including cost allocation, RCG/SCG LLC believes that UIL Holdings Corporation, AVANGRID, Inc., and other affiliates properly charge for services provided to CNG. Nevertheless, we believe that enhancements to the current cost allocation mechanism should be considered that may offer a more accurate allocation of certain costs.

*Hurdle Rate and CIAC*

New business and gas expansion programs are generally well managed. Economic analysis models and the assignment of non firm margin funds to support the programs are also appropriately applied. However, difficulties in estimation of customer gas usage and construction costs create program challenges.

*Treatment of New Customers for System Expansion Programs*

The policies implemented by CNG in selecting the service rates for new customers under the system expansion program are appropriate. We believe clarity should be provided for

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company employees and through Salesforce system enhancements to adequately capture the various scenarios under which a customer may change their service requirements.

### *Conclusions and Recommendations*

Specific conclusions and recommendations for each of the focus areas follow:

#### *Chapter 3 – Executive Management*

##### *3.1 Organization and Planning*

**Conclusion 3.1.1:** *RCG/SCG LLC believes that CNG has a reasonable system to track the 2010 audit recommendations contained in the audit firm's 2010 report and has adequately addressed these recommendations where appropriate and still applicable.*

##### *3.2 Governance and Organization Structure*

**Conclusion 3.2.1:** *RCG/SCG LLC believes that CNG has a reasonable system to track the 2010 audit recommendations contained in the audit firm's 2010 report and has adequately addressed these recommendations where appropriate and still applicable.*

**Conclusion 3.2.2:** *RCG/SCG LLC believes governance model is poorly defined and along with its organization it is still in transition and easily misunderstood. In general, while the Grants of Authority clarify decision making, the post merger environment is lacking clear direction, communications, and ownership of elements and lacks a consolidated, written Transition Plan Manual. RCG/SCG LLC also believes that the potential consolidation of CNG with its sister company SCG would provide efficiencies and be in the interest of rate payers.*

**Conclusion 3.2.3:** *RCG/SCG LLC believes that while limited to operational and new business area, the High Level Priorities are appropriate, well thought out, and result in improved operations, growth of their gas business, and improved customer service.*

**Recommendation 3.2.1:** *RCG/SCG LLC recommends that a written Transition Manual be developed clearly defining the new organization structure, roles and responsibilities, systems and processes, and outlining the procedures to be implemented.*

**Recommendation 3.2.2:** *RCG/SCG LLC recommends that the charter of the AVANGRID Management Committee and the Iberdrola, S.A. duties of its Operating Committee be reviewed, clarified, and communicated as part of a training program to ensure that there is no conflict with autonomous governance model of UIL Holdings and to eliminate any current misconceptions throughout the Connecticut utilities' organizations.*

**Recommendation 3.2.3:** *RCG/SCG LLC recommends that a potential consolidation of CNG and SCG be reexamined (with a timeline, including, a detailed cost benefit analysis, the*

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*definition and method to overcome any union or other impediments, organizational modifications, and other planning & implementation elements) and re introduced to PURA.*

### **3.3 Internal Auditing**

**Conclusion 3.3.1:** *RCG/SCG LLC found that the Company adequately addressed the 2010 recommendations regarding the consideration of audit subjects that had been not reviewed in the past five years.*

**Conclusion 3.3.2:** *RCG/SCG LLC found that CNG does not have a separate internal audit group. Internal audit was provided through UIL, now it is provided through AVANGRID. The reporting lines of AVANGRID's Internal Audit Function are appropriate.*

**Conclusion 3.3.3:** *RCG/SCG LLC found that the IA is well organized and adequately staffed with qualified auditors and management.*

**Conclusion 3.3.4:** *RCG/SCG LLC found that the original UIL internal auditing group needs technical auditors to support in technical audits, they enlist the appropriate consulting services or individuals from appropriate AVANGRID function.*

**Conclusion 3.3.5:** *RCG/SCG LLC found that individuals in IA are qualified and participate in continuing professional education.*

**Conclusion 3.3.6:** *RCG/SCG LLC found that the audit planning process is appropriately risk based and audits are identified and prioritized based upon input from across the organization.*

**Conclusion 3.3.7:** *RCG/SCG LLC found that the audit execution and follow up processes are rigorous, well defined, and appropriate.*

**Conclusion 3.3.8:** *RCG/SCG LLC found that the internal audits, performed from 2011 through 2015, demonstrated that the Company's internal audit program ensures independent verification of the accuracy of accounting information and provides objective evaluation (and improvement) of the accounting and operational practices of the Company. However, a full audit of Gas procurement was last done in 2011. UIL has performed two audits of the "Gas Conversion Estimation Process" the first in 2013 and the second just completed in February 2016, but the estimation process remains flawed.*

**Conclusion 3.3.9:** *RCG/SCG LLC found that the group monitors and compares itself to industry best practices. It participates in regular peer reviews and adheres to the Institute of Internal Auditors Standards and the Code of Ethics.*

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**Conclusion 3.3.10:** *RCG/SCG LLC found that the Company has a sound process for tracking open audit recommendations and control deficiencies.*

**Recommendation 3.3.1:** *RCG/SCG LLC recommends that steps be taken to ensure that the IA needs related to CNG are met going forward, as IA's responsibility expands to cover all AVANGRID business units.*

**Recommendation 3.3.2:** *RCG/SCG LLC recommends that IA evaluate the proper frequency of performing a full audit of gas procurement.*

**Recommendation 3.3.3:** *RCG/SCG LLC recommends that IA continue to actively review annually the "gas conversion estimation process." In addition, review the use of the CES non-funded account for reasonableness.*

### 3.4 Strategic Planning

**Conclusion 3.4.1:** *RCG/SCG LLC found that the recent corporate strategic planning is in its infancy, and for the immediate future, the strategic effort appears to be focused on system and performance metric management and identifying best practices. The 2016 Operational Business Plan is the likely surrogate with some refocusing of its priorities.*

**Conclusion 3.4.2:** *RCG/SCG LLC found that CNG through UIL and AVANGRID appear to be focused on best practices across all the related gas business units; therefore, the effort is more tactical than visionary.*

**Conclusion 3.4.3:** *RCG/SCG LLC found that outside of the established CES program, there is not a current strategy to develop other competitive new markets that could better utilize the existing gas distribution system.*

**Conclusion 3.4.4:** *RCG/SCG LLC found that management needs to continue its efforts to broadcast the objectives below the UIL management level. The CNG mission is reasonably clear; both executive and senior management understand the mission and general objectives, but there are areas within CNG where the message is not receiving the full support necessary to convey its importance.*

### 3.5 O&M Budget Process

**Conclusion 3.5.1:** *RCG/SCG LLC found that O&M budget development is consistent with the practices employed by many utility companies and supports financial control. Further, CNG is effective in controlling costs to budget as indicated by small budget variances.*

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**Conclusion 3.5.2:** *RCG/SCG LLC found that O&M budget development can be enhanced to better support performance management and better provide justification for the proposed spending levels.*

**Recommendation 3.5.1:** *RCG/SCG LLC recommends that CNG enhance the O&M budgeting process to incorporate activity based management principles, including the budgeting of work volume and developing target unit costs. Target unit costs should consider unit cost performance across AVANGRID companies, if not across other gas companies where such data is available. Variance reports should present variances in work volumes and in unit cost performance, along with appropriate variance explanation.*

### *3.6 Capital Budget Process*

**Conclusion 3.6.1:** *RCG/SCG LLC found that when viewed on a program or project category basis, CNG has been able to manage its capital spend relatively close to budget.*

**Conclusion 3.6.2:** *RCG/SCG LLC found that CNG has experienced variations in capital spending as compared to estimates at the project level. These variations are associated with poor estimation (discussed here) and likely issues associated with work execution (discussed further in the System Operations section of the report).*

**Conclusion 3.6.3:** *RCG/SCG LLC found that aside from project level estimating challenges, the overall capital budgeting processes and controls are very good.*

**Conclusion 3.6.4:** *RCG/SCG LLC determined that there are opportunities to improve the use of unit cost management in gas construction projects to support capital budget development and performance management.*

**Recommendation 3.6.1:** *RCG/SCG LLC recommends that CNG continue to provide targeted focus to monitoring its construction estimating accuracy, identify root causes of variation, improve estimating practices using the various tools identified in this Conclusion, and further monitor project execution practices to determine whether project cost overruns are impacted by these practices.*

**Recommendation 3.6.2:** *RCG/SCG LLC recommends that CNG use work volumes and unit cost information to support capital budget development, variance reporting based on work volume variances and unit cost variances, and for performance management. Further, unit cost targets for budgeting should be used consistently for similar type work and in similar conditions across Avangrid Networks gas distribution companies – that is, considering best performers in target setting.*

*Chapter 4 – System Operations*

*4.1 Requirements Forecasting*

**Conclusion 4.1.1:** *No recommendations in the Company's prior audit apply to the Forecasting Department.*

**Conclusion 4.1.2:** *RCG/SCG LLC determined that the Rates and Regulatory Department uses an appropriate process to develop a forecast to meet the requirements of the financial and regulatory organizations for its present customers. There is a collaborative relationship with the Gas Supply function for the development of the peak day forecast.*

**Conclusion 4.1.3:** *RCG/SCG LLC reviewed the Company's methodology to forecast the expected effects of the Comprehensive Energy Strategy (CES) within Sections 10.2 and 10.3 of this report. However, the linkage between Sales and Marketing and Rates and Regulatory should be strengthened to draw on the forecasters' strengths and insights.*

**Conclusion 4.1.4:** *RCG/SCG LLC is concerned that there is no formal, integrated approval process for the forecast, which includes significant inputs from both Rates and Regulatory (existing) and Sales and Marketing (CES).*

**Conclusion 4.1.5:** *RCG/SCG LLC determined that Rates and Regulatory reviews forecast accuracy (forecast to weather normalized sales), and RCG/SCG LLC reviewed the pattern of variance and considers that the forecast is reasonable based on existing constraints and meets the needs of the Company's financial and regulatory organizations.*

**Conclusion 4.1.6:** *RCG/SCG LLC has determined that the function of forecasting is executed similarly at both CNG and SCG except as needed to meet some minor disparate regulatory situations.*

**Recommendation 4.1.1:** *RCG/SCG LLC recommends, because of its expertise and existing responsibility for the existing customer forecast, the Company should assign Rates and Regulatory the responsibility to review the CES forecast prepared by Sales and Marketing. Additionally, the combined forecast should be reviewed at the executive level before it is formally issued. This change will ensure the input of Sales and Marketing is tightly coordinated with the existing customer forecast and the resulting forecast meets the needs of the Company.*

#### *4.2 Gas Supply*

**Conclusion 4.2.1:** *RCG/SCG LLC has determined that the Gas Supply Department has not met the requirement to maintain an inventory of skills of its Gas Supply Department, a key recommendation from the prior CNG audit.*

**Conclusion 4.2.2:** *RCG/SCG LLC has determined that the Gas Supply Department has reasonably defined supply portfolio principles, goals and objectives to ensure continuity of supply.*

**Conclusion 4.2.3:** *RCG/SCG LLC has determined that the Gas Supply Department uses appropriate processes to obtain transportation capacity to meet long term needs.*

**Conclusion 4.2.4:** *RCG/SCG LLC has determined that the Gas Supply Department has defined process for managing its transportation capacity.*

**Conclusion 4.2.5:** *RCG/SCG LLC has determined that the Gas Supply Department has a defined process for developing and obtaining commodity at a reasonable cost.*

**Conclusion 4.2.6:** *RCG/SCG LLC considers the risk management function for Gas Supply reasonable with the exception of the location of credit approval. While there is some concern that the negotiation and approval of contracts resides within the purview of the Senior Director of Energy Supply, the volume of reporting, independent calculation and review by Accounts Payable and specifically the PGA process is reassuring when coupled with the volume of Internal Auditing process activity and PURA's lack of adverse findings.*

**Conclusion 4.2.7:** *RCG/SCG LLC found that Gas Supply does not have specific, documented emergency plans for contingencies.*

**Conclusion 4.2.8:** *RCG/SCG LLC found, based on the above, that it considers the Company's actions towards reducing LAUFG reasonable but suggests that the Company should review its methodology to confirm it is up to date, paying specific attention to unbilled volumes.*

**Conclusion 4.2.9:** *RCG/SCG LLC has determined that the Purchased Gas Adjustment (PGA) process is reasonable.*

**Conclusion 4.2.10:** *RCG/SCG LLC has concluded that Gas Supply is relying excessively on experience and knowledge rather than documenting important processes and procedures.*

**Conclusion 4.2.11:** *RCG/SCG LLC has determined that opportunities exist to more effectively use the planning assets and experience in Gas Supply.*

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**Conclusion 4.2.12:** *RCG/SCG LLC has determined that the Gas Supply process is executed similarly at both CNG and SCG except as needed to meet the different pipeline access situations between the companies.*

**Recommendation 4.2.1:** *RCG/SCG LLC recommends Gas Supply update its critical skills review, succession planning and training plans on a regular basis due to small size of the Gas Supply group and the specific expertise required for day to day operations and dealing with the regulatory environment.*

**Recommendation 4.2.2:** *RCG/SCG LLC recommends Gas Supply execute a rigorous, detailed process to determine which processes and procedures should be documented and which related information should be tracked. Gas Supply is responsible for a significant portion of the Company's costs and areas such as off system sales and capacity release, the interruptible process and emergency planning are either not documented or out of date. These processes have significant potential impacts on customers.*

**Recommendation 4.2.3:** *RCG/SCG LLC recommends Gas Supply execute a rigorous, detailed process to determine the capabilities of its various models, how inputs (including variances and scenarios) are structured, whether forward looking studies should be performed, how the results are catalogued and retained, and consider whether the functions of some models can be performed within other existing model(s). Gas Supply should consider engaging an internal or external consultant to perform this review, which would also consider training recommendations. Gas Supply relies on the experience and knowledge and expertise of its small staff to perform this work, which may place the Company at risk due to employee turnover or other unplanned situations.*

**Recommendation 4.2.4:** *RCG/SCG LLC recommends the Company update its LAUF methodology and determine the appropriate time period to estimate and report LAUF with due regard to the variability of unbilled sales.*

#### 4.3 System Planning & Design

**Conclusion 4.3.1:** *RCG/SCG LLC found that CNG management has implemented the recommendations for Gas System Planning and Engineering listed in the 2010 Management Audit, but could do more in the area of benchmarking.*

**Conclusion 4.3.2:** *RCG/SCG LLC found that CNG's infrastructure planning and engineering functions are appropriately staffed and aligned to support system planning and engineering.*

**Conclusion 4.3.3:** *RCG/SCG LLC found that the combination CNG and SCG with UIL Corporate Gas Design and Delivery prepare reasonable system forecasts for peak degree day heating using the Stoner Model to evaluate the integrity of the gas distribution systems.*

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**Conclusion 4.3.4:** *RCG/SCG LLC found that both CNG and SCG with UIL incorporate distribution problem areas in the system planning process.*

**Conclusion 4.3.5:** *RCG/SCG LLC found no significant issues with CNG design operating pressures being maintained across a range of temperatures and demand requirements.*

**Conclusion 4.3.6:** *RCG/SCG LLC concluded that both CNG and SCG need to improve theirs estimating practices to minimize the final number and dollar value of projects falling outside the plus/minus 10% range and increase the number of projects estimated correctly.*

**Conclusion 4.3.7:** *RCG/SCG LLC concluded that another reason for overruns is the difficulty with soil conditions and contractor oversight on change orders or additions to work scope.*

**Conclusion 4.3.8:** *RCG/SCG LLC concluded CNG and SCG are not taking full advantage of UIL's well conceived "Project Management Guide" Manual.*

**Conclusion 4.3.9:** *RCG/SCG LLC concluded CNG and SCG through the Gas Construction function not consistently assigning a project manager early in the plan–design–build process who can shepherd a project through the review process and provide critical oversight during design and construction.*

**Conclusion 4.3.10:** *RCG/SCG LLC concluded CNG's and SCG's LNG operations and capital betterment program are reasonable and well thought out for the size of each company. Further given the plants' usage over the last five years, expansion of capacity is not necessary.*

**Conclusion 4.3.11:** *RCG/SCG LLC concluded that both CNG and SCG need to standardize across the companies all material, equipment, and procedures for designing and building their distribution systems.*

**Recommendation 4.3.1:** *RCG/SCG LLC recommends that CNG formalize the Planning and Scheduling of Gas Construction and Maintenance, to permit better control over the crew work day.*

**Recommendation 4.3.2:** *RCG/SCG LLC recommends that CNG revisit the cost of contractor dig ins and ensure that they include all the costs associated with their crew's efforts to restore the system and not adversely impact the cost of planned maintenance or capital work the crews were performing. CNG should consider some form of disincentive to promote contractor's awareness of facilities in and around their work sites.*

**Recommendation 4.3.3:** *RCG/SCG LLC recommends that CNG immediately adopt placing the estimated man hours on all work orders to help set expectations for both crews and management performance to minimize cost overruns resulting from inappropriate crew configurations.*

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**Recommendation 4.3.4:** *RCG/SCG LLC recommends that CNG and SCG develop a common strategy and methodology for annually re evaluating service center satellite locations in light of the aggressive expansion program. Focus of the methodology should be on minimizing both crew windshield and leak response times.*

**Recommendation 4.3.5:** *RCG/SCG LLC recommends that CNG and SCG develop a common methodology for capturing specifics of soil conditions and obstacles found by both contractors and company crews. In addition, both companies should capture municipal requirements traffic control and post dig in street and landscaping restoration. We understand that CNG is using GIS and SCG is using digital mapping, but the form of the information should be the same regardless of the mapping storage medium.*

**Recommendation 4.3.6:** *RCG/SCG LLC recommends that both CNG and SCG participate in non AVANGRID benchmarking studies every three years.*

**Recommendation 4.3.7:** *RCG/SCG LLC recommends that CNG and SCG continue their vigilant watch for low pressure areas on their respective distribution systems.*

**Recommendation 4.3.8:** *RCG/SCG LLC recommends that AVANGRID UIL Gas Engineering redesign both SAP's Pay IDs and engineering design tools to better reflect the true cost of construction projects.*

**Recommendation 4.3.9:** *RCG/SCG LLC recommends that CNG and SCG require direct input for municipal induced cost elements before approving design estimates.*

**Recommendation 4.3.10:** *RCG/SCG LLC recommends that CNG both adopt and adapt the entire UIL Project Planning Manual and Project Management Office approach for all large projects.*

**Recommendation 4.3.11:** *RCG/SCG LLC recommends that CNG and SCG both, through Corporate Gas Design and Delivery, assign a Project Manager to large projects at the beginning of planning phase. Further, as part of the project approval process, institute two levels of management challenge to ensure alternate solutions have been considered and all costs are properly represented.*

**Recommendation 4.3.12:** *RCG/SCG LLC recommends the engineering and construction work to complete the standardization between CNG and SCG within the next two years.*

#### *4.4 Reliability, Construction, Maintenance, and Operations*

**Conclusion 4.4.1:** *RCG/SCG LLC found that CNG management has implemented the recommendations for System Operations and Maintenance listed in the 2010 Management Audit.*

**Conclusion 4.4.2:** *RCG/SCG LLC concluded that the centralization and use of a focused contractor allows Leak Management to produce consistent results. However, contractor dig ins are all too frequent.*

**Conclusion 4.4.3:** *RCG/SCG LLC found that CNG has done an excellent job of providing galvanic protection for its metal distribution mains.*

**Conclusion 4.4.4:** *RCG/SCG LLC concluded that field crew Planning and Scheduling activity is a manual process with no formal expectations for time to perform the work. The morning flow is very streamlined and conducted under the watchful eye of management.*

**Conclusion 4.4.5:** *RCG/SCG LLC concluded that CNG crew short cycle work orders are inconsistent with those of other utility companies; orders don't include man hour estimates to complete projects.*

**Conclusion 4.4.6:** *RCG/SCG LLC concluded that CNG crew management in the field appears to be reasonably well managed.*

**Conclusion 4.4.7:** *RCG/SCG LLC concluded that the CNG Service Center is reasonably well situated to minimize crew windshield time for the territory covered. This may change with the gas expansion program and may require new locations, satellite locations, or at a minimum redeployment of crews.*

**Conclusion 4.4.8:** *RCG/SCG LLC concluded that CNG is outsourcing the majority of construction work and a number of other functions that could impact its system's knowledge base. CNG has a fully functional GIS that could form the basis for an asset management system.*

**Conclusion 4.4.9:** *RCG/SCG LLC found that CNG is working with the Rocky Hill Fire Department in developing a fire fighter training center.*

**Recommendation 4.4.1:** *RCG/SCG LLC recommends that the company formalize the Planning and Scheduling function by publishing a two week look ahead at work orders ready to be executed. Publish a one week ahead schedule, by supervisor, for work one week out. Issue work orders, ready to work, for the current week on Monday to each crew. Daily reviewed progress against schedule and document delays caused by leak calls, dig ins, and road blocks or other delays to work order completion.*

**Recommendation 4.4.2:** *RCG/SCG LLC recommends that the company include the total labor hours planned for the specific job on the work order. Have supervisors review work orders and challenge any overages. Have changes crew composition or size approved by manager.*

**Recommendation 4.4.3:** *RCG/SCG LLC recommends that SCG and CNG develop a common strategy and methodology for annually re evaluating service center satellite locations in light of the aggressive expansion program. Focus of the methodology should be on minimizing both crew windshield and leak response times.*

**Recommendation 4.4.4:** *RCG/SCG LLC recommends that CNG and SCG develop a common methodology for capturing specifics of soil conditions and obstacles found by both contractors and company crews. In addition, both companies should capture municipal requirements traffic control and post dig in street and landscaping restoration. We understand that CNG is using GIS and SCG is using digital mapping, but the form of the information should be the same regardless of the mapping storage medium.*

**Recommendation 4.4.5:** *RCG/SCG LLC recommends that the company accelerate the investments in GIS for SCG. As a first step, confirm the new data model or adapt from the existing CNG data model so it is clear what kind of asset attributes are important to capture. Develop other means for capturing the data that will ultimately be required for the SCG GIS system when implemented. Given the aggressive construction programs over the next five to ten years, we believe accelerating investments in GIS, including the planned upgrades to GIS for CNG, is in the best interests of CNG and SCG customers.*

## *Chapter 5 – Finance*

### *5.1 Finance Organization*

**Conclusion 5.1.1:** *RCG/SCG LLC believes that CNG has a reasonable system to track the 2010 external audit recommendations contained in the Overland Consulting July 2010 final report related to the financial functions, and has adequately addressed these recommendations where appropriate and still applicable. In addition, the Internal Audit recommendations are tracked, managed, and responded to appropriately.*

**Conclusion 5.1.2:** *RCG/SCG LLC believes that CNG is served well by the Shared Services Controller's financial operations organization; however, given the transition to its new post merger organization, specific areas of responsibility and ownership for functional components need to be finalized from the top of the organization and communicated throughout the company.*

**Conclusion 5.1.3:** *RCG/SCG LLC found that the financial functional area personnel participate in a reasonable level of training and have annual individual performance assessments to maintain an appropriate and strong level of talent; however turnover, workforce aging, and a current shortage of personnel is a challenge as it would be for any company.*

**Conclusion 5.1.4:** *RCG/SCG LLC found that the policies and procedures that are in place are used and useful but benchmarking or best practice programs are currently limited. In*

*addition, RCG/SCG LLC found that the Main SAP system used by the financial shared services organization is not the upgraded version used by AVANGRID and has a number of disadvantages. RCG/SCG LLC believes that upgrading to the newer version is necessary and should be planned as soon as possible.*

**Recommendation 5.1.1:** *RCG/SCG LLC recommends that consideration be given to expand the current Internal Audit activity within UIL established during the earlier audit of CNG's sister company, SCG, to include the Shared Services Controller function.*

**Recommendation 5.1.2:** *RCG/SCG LLC recommends for the benefit of all stakeholders that, beginning at the AVANGRID level, the financial group's ultimate organization, and functional roles and titles be finalized and communicated.*

**Recommendation 5.1.3:** *RCG/SCG LLC recommends that steps be taken by the Shared Services UIL Controllers organization to fill any positions that are still needed and reauthorized once the transitioned organization is finalized and to consider establishing a mentoring process to capitalize on the experience levels that exist.*

**Recommendation 5.1.4:** *RCG/SCG LLC recommends that a detailed needs analysis be performed regarding upgrading to the SAP System currently being used by AVANGRID, to ensure this particular upgrade and timing are justified; a cost benefit analysis performed, and if warranted, coupled with a formal implementation plan.*

**Recommendation 5.1.5:** *RCG/SCG LLC recommends that a Benchmarking and Best Practices program be designed and implemented for the entire UIL Shared Services financial functional area.*

## *5.2 Treasury, Corporate Finance, and Capital Structure*

**Conclusion 5.2.1:** *RCG/SCG LLC found that the management process and systems used within the firm's Treasury function is reasonable yielding effective results even with an unclear organizational alignment.*

**Conclusion 5.2.2:** *RCG/SCG LLC found that while the full write off of the Customer Rate Credits in 2015 skewed the numbers, CNG's corporate finance function and its financial statistics are reasonable and in some cases better than the norms in its industry.*

**Conclusion 5.2.3:** *RCG/SCG LLC found CNG has and plans to maintain an appropriate capital structure to optimize the cost of capital for ratepayers while still preserving adequate financial strength and ready access to additional capital as needed. However, rate relief will have to be approved over the next few years to fund the companies' growing capital spending programs.*

**Conclusion 5.2.4:** *RCG/SCG LLC found that CNG has and maintains appropriate credit ratings that enable them to access additional capital at reasonable rates and terms. The Connecticut Public Utilities Regulatory Authority (PURA) has been supportive of CNG by supporting an equity component that is higher than industry average.*

**Conclusion 5.2.5:** *RCG/SCG LLC found that because AVANGRID, Inc. is still 81.5 percent owned by Iberdrola S.A. of Spain, its credit rating is still influenced significantly by the credit rating and outlook of Iberdrola.*

**Recommendation 5.2.1:** *RCG/SCG LLC recommends the current UIL Holdings Treasury & Cash Management Process be reviewed and revised as needed and expanded to include the Virtual Money pool, the AVANGRID Credit Facility, and the bi lateral Loan Agreement procedures.*

### 5.3 Accounting

**Conclusion 5.3.1:** *RCG/SCG LLC found that the while not benchmarked or having a Best Practice Review, accounting systems, processes, and staffing in support of CNG's accounting, tax, and reporting needs are effective, yielding reasonable results for the time being but, as concluded earlier, manual process and International requirements will require a system upgrade. Further the Accounts Payable area is well managed but does not have a Priority Vendor program in place.*

**Recommendation 5.3.1:** *RCG/SCG LLC recommends that consideration be given to performing a CNG Best Practices and Benchmarking effort, perhaps by the Strategy Team, focused on the Shared Services Accounting function.*

**Recommendation 5.3.2:** *RCG/SCG LLC recommends that a Priority Vendor program be established within CNG and its sister SCG to increase the number of vendors capable of working within guidelines developed regarding Vendor Automation requirements.*

### 5.4 Tax

**Conclusion 5.4.1:** *RCG/SCG LLC found that the Tax Department supporting CNG operates efficiently, takes steps to continuously add value and improve; it has adequate and trained staff has generally performed well without either tax filing issues or negative Audit Results.*

**Conclusion 5.4.2:** *RCG/SCG LLC found the process used to ensure accurate and timely submission of tax returns was reasonable and effective.*

**Conclusion 5.4.3:** *RCG/SCG LLC found that the training of the Tax staff was adequate to ensure that the skills and awareness of current and pending tax regulation changes.*

## *Chapter 6 – Human Resources*

### *6.1 Payroll Practices*

**Conclusion 6.1.1:** *RCG/SCG LLC found that the HR organization thinks, plans, and acts strategically and is organized to meet to support these efforts. However, implementation of HR policies and programs are impacted by the lack of HR leadership focused on AVANGRID and CNG.*

**Conclusion 6.1.2:** *RCG/SCG LLC found that the HR team is strategic, expert, passionate, and committed. They employ industry standard HR practices and procedures. In spite of the lack of local leadership and a strong emphasis on labor relations at the HR Specialist level, they provide creative, legal, and good results.*

**Recommendation 6.1.1:** *RCG/SCG LLC recommends that the UIL HR leadership position be filled as soon as practicable and a set of HR directed operational objectives be targeted for completion within the first 90 days.*

**Recommendation 6.1.2:** *RCG/SCG LLC recommends that the HR Balanced Scorecard contain a Diversity/Inclusion metric.*

### *6.2 Compensation Policies, Practices and Programs*

**Conclusion 6.2.1:** *RCG/SCG LLC concluded that AVANGRID HR Rewards function and CNG met the intent of the 2010 CNG Management Audit recommendation.*

**Conclusion 6.2.2:** *RCG/SCG LLC found that AVANGRID's compensation strategy, policies, components, and procedures are consistent with industry experience and practice.*

**Conclusion 6.2.3:** *RCG/SCG LLC found the utility is effectively using benchmarking for its total compensation for executives, supervisors, professional, and hourly workers.*

**Conclusion 6.2.4:** *RCG/SCG LLC found AVANGRID's compensation practices to be mostly consistent with good business and utility practices with the exception of the short term incentive target levels for non officer salaried employees.*

**Conclusion 6.2.5** *RCG/SCG LLC found HR's management and control of the performance evaluation is consistent with industry practices.*

**Recommendation 6.2.1:** *RCG/SCG LLC recommends that the short term incentive (variable compensation) component target of the total cash compensation for all non officer salaried employees be increased consistent with benchmark variable compensation data and with maintaining a competitive range of total cash compensation.*

#### *6.3 Employee Benefits Including Pension Plan, 401K, and OPEBs*

**Conclusion 6.3.1:** *RCG/SCG LLC found AVANGRID's benefits packages for current employees of CNG and the associated pension/OPEB/401k practices are in line with those of other Connecticut utilities and industry practices.*

**Conclusion 6.3.2:** *RCG/SCG LLC found that AVANGRID has been proactive in seeking opportunities to reduce the overall cost of their benefit offerings and the cost impact of the Pension, 401k, and OPEB Plans serving CNG employees.*

#### *6.4 Succession Planning, Leadership Identification, Employee Development and Evaluation*

**Conclusion 6.4.1:** *RCG/SCG LLC concluded that UIL and CNG met the intent of the 2010 CNG Management Audit recommendation.*

**Conclusion 6.4.2:** *RCG/SCG LLC found AVANGRID has a well defined formal succession planning process (Talent Cycle) that integrates talent identification and employee development. The approach is consistent with best practices. The process includes the identification of key positions, of high potential employees and the associated development process to address the "brain drain" associated with baby boomer retirements. However, RCG/SCG LLC found succession planning and associated development planning and implementation has not been communicated and therefore very few management employees are aware of the succession plan for their position.*

**Recommendation 6.4.1:** *RCG/SCG LLC recommends that AVANGRID complete the Talent Cycle process as planned for year 2017, update it annually thereafter, and communicate to the management organization that the process has been complete and succession candidates have been identified for key positions.*

#### *6.5 Training*

**Conclusion 6.5.1:** *RCG/SCG LLC concluded that the enterprise training is developed and conducted using industry practice techniques.*

**Conclusion 6.5.2:** *RCG/SCG LLC found the Compliance training is completed annually. The paper based recordkeeping of completed operations compliance training, however, is inconsistent with leading industry practices.*

**Recommendation 6.5.1:** RCG/SCG LLC recommends that the compliance training completion records for training completed by CNG be entered into the centralized recordkeeping system immediately following such training.

#### *6.6 Labor and Employee Relations*

**Conclusion 6.6.1:** *RCG/SCG LLC concluded that CNG's Labor Relations and management have met the intent of the 2010 CNG Management Audit recommendation.*

**Conclusion 6.6.2:** *RCG/SCG LLC determined that the AVANGRID labor relations organization is appropriately staffed with experienced professionals, provides a dedicated labor professional to handle the CNG's three labor contracts, and has completed work stoppage planning.*

**Conclusion 6.6.3:** *RCG/SCG LLC determined that the labor agreements do not contain barriers to increased productivity, increased work flexibility, and increased use of contractors.*

**Conclusion 6.6.4:** *RCG/SCG LLC determined that the number of labor relations contracts and local unions is not consistent with companies the size of CNG and may pose a future barrier to management's potential effort to consolidate the operations of CNG and SCG.*

**Conclusion 6.6.5:** *RCG/SCG LLC found that all filling of vacancies are reviewed and approved by HR to determine the need for a replacement and the most effective way to meet the need.*

**Recommendation 6.6.1:** *RCG/SCG LLC recommends that the AVANGRID develop a long term strategy to consolidate the union employees of CNG and SCG into one labor union and contract.*

#### *6.7 Workforce Planning & Staffing*

**Conclusion 6.7.1:** *RCG/SCG LLC found that AVANGRID's Human Resources Strategic Workforce Plan and the associated processes to be comprehensive and consistent with the employment environment utilities are currently encountering.*

**Conclusion 6.7.2:** *RCG/SCG LLC found that AVANGRID's staffing budget process is focused on current headcount and future turnover and does not integrate with any work management or project management forecasts and/or programs.*

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**Recommendation 6.7.1:** *RCG/SCG LLC recommends that CNG integrate their work management and project management staffing requirements and forecasts formally into the staffing budgeting process.*

#### 6.8 EEO/AA

**Conclusion 6.8.1:** *RCG/SCG LLC found that AVANGRID's EEO/AA policies and procedures comply with the letter of the law. However, it is lacking any programs directed at Diversity or Inclusion which is necessary to reach to best practices.*

**Recommendation 6.8.1:** *RCG/SCG LLC recommends that AVANGRID develop a Diversity and Inclusion program consistent with Best in Class Companies that reaches well beyond compliance and addresses any cultural barriers to full inclusion in employment for all qualified candidates and employees. Such Program must include an annual formal presentation to the senior leaders of AVANGRID and a report back to all employees.*

#### 6.9 Employee Safety

**Conclusion 6.9.1:** *RCG/SCG LLC concluded that the AVANGRID has the strategies, policies, and procedures in place and consistent with industry practices; the roles and responsibilities are clearly delineated; and the safety personnel are executing their responsibilities. However, in some of the functional areas at CNG, operational management is not executing their responsibilities effectively as reflected in the safety results.*

**Conclusion 6.9.2:** *RCG/SCG LLC concluded that improving employee safety performance is no longer a concern of AVANGRID's gas executive team and CNG.*

**Recommendation 6.9.1:** *RCG/SCG LLC recommends that AVANGRID HR Safety Team Goal include a metric tied to improving safety performance at CNG. Such a metric target should be safety performance at a level that is at least in the 2<sup>nd</sup> Quartile of AGA Gas Company benchmarking companies.*

**Recommendation 6.9.2:** *RCG/SCG LLC recommends that CNG's executive and management scorecards used in their performance appraisal system and variable compensation include a metric tied to improving safety performance at CNG. Such metric target should be safety performance at a level that is in at least the 2<sup>nd</sup> Quartile of AGA Gas Company benchmarking companies.*

### *6.10 Payroll Practices*

**Conclusion 6.10.1:** *RCG/SCG LLC found the time and attendance collection and processing practices are consistent with those of utilities having similar penetration of computers in their field operations. The time and attendance process has few manual steps.*

**Conclusion 6.10.2:** *RCG/SCG LLC found that supervisory review and approval process is working well and has kept the payroll errors to a minimum.*

**Conclusion 6.10.3:** *RCG/SCG LLC determined that payroll processing of time data requires a minimum amount of data checking and correction.*

**Conclusion 6.10.4:** *RCG/SCG LLC found the use of payroll direct deposits is high for an organization that does not require all employees to use it. However, the printing of payroll advice summaries for union employees enrolled in direct deposit is inconsistent with industry practices.*

## *Chapter 7 – Customer Service*

### *7.0 Customer Service*

**Conclusion 7.0.1:** *RCG/SCG LLC concluded that CNG has met the intent of the 2010 management audit recommendations. Four recommendations were made in the Customer Service Operations area of the audit.*

### *7.1 Call Center*

**Conclusion 7.1.1:** *RCS/SCG LLC has identified how CNG addressed the 2010 audit recommendations regarding the call center in the beginning of the Customer Service chapter above.*

**Conclusion 7.1.2:** *RCS/SCG LLC found that CNG's Call Center effectively handles customer calls and continues to investigate and apply leading practices to improve service.*

**Conclusion 7.1.3:** *RCS/SCG LLC has concluded that CNG has put in place reliable technology to provide customers with self service options for many of their requests, helping to offload voice calls to agents in order for customers to handle their requests via self service options.*

**Recommendation 7.1.1:** *RCG/SCG LLC recommends analysis be conducted to evaluate consolidation of call centers, perhaps initially in a virtual manner across gas and/or electric companies in Connecticut or across Avangrid Networks companies and then evaluate physical*

*consolidation of centers across the Avangrid Networks business, insure the ring fence of commitment remains. Potential benefits include economies of scale across staffing models, deeper competencies across major business functions, and better leverage of strategic technologies. As part of the analysis, customer feedback on service functions they might have an interest in that aren't currently available with smaller, individual company budgets, should be identified along with a pro forma financial model of the economic differences in distributed, virtually consolidated, and physically consolidated (multiple centers for back up and overflow). Challenges to consolidation will continue to involve multiple unions and other corporate issues that will need to be addressed.*

**Recommendation 7.1.2:** *RCG/SCG LLC recommends enhancements to existing technology platforms and delivery of additional functions will enhance the customer experience with the utility, improve service delivery, offload calls to self service, and lower overall costs for customer support. Recommendations include improving the corporate web site to provide more personalized information and enable functions on the web site and/or mobile platform for service requests including self service move in/move out, appointment scheduling, payment arrangements, and payment extensions. Through ongoing customer dialogue, identification of what's important to customers should be carried out and how they want to be informed of, potentially proactively, areas such as alerts or notifications that a bill is due or past due, the ability to make a payment on a mobile device, or awareness of field work in a customer's neighborhood that will impact their service.*

## *7.2 Credit & Collections and Low Income Programs*

**Conclusion 7.2.1:** *RCG/SCG LLC did not find any recommendations for Credit & Collections/ Low Income programs resulting from the 2010 CNG Company audit.*

**Conclusion 7.2.2:** *RCG/SCG LLC concluded that the CNG Credit & Collections team has reduced write offs in recent years while working in a challenging regulatory and economic environment, but it's difficult to project how performance will be going forward.*

**Conclusion 7.2.3:** *RCG/SCG LLC concluded that Low Income programs are administered properly by CNG but contribute to the difficulty in experiencing a higher collections success rate.*

**Conclusion 7.2.4:** *RCG/SCG LLC concluded that accounts receivable for CNG's non hardship customers have grown longer and larger in recent years than might have been anticipated.*

**Recommendation 7.2.1:** *RCG/SCG LLC recommends that CNG should continue to pursue the identified collection improvement initiatives as well as benchmark other gas and non energy consumer based industries to refine best practices in the activities of notifying customers,*

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*analyzing which customers to pursue, and reducing write offs. CNG needs to maintain focus on non hardship financial customers to reverse the trend of longer accounts receivables for this segment.*

**Recommendation 7.2.2:** *RCG/SCG LLC recommends, without regulatory change to Connecticut's low income programs, CNG evaluate and conduct a thorough analysis to identify initiatives and evaluate the cost/benefits of various proactive and innovative programs to lessen the financial burden on the utility and its ratepayers by reducing expected losses from uncollectible expenses of hardship customers and/or reducing extended accounts receivables. Some of these programs might include:*

- *Means testing for medical hardship;*
- *Leveraging digital channels, especially with low income customers, as many don't have home phones any more, with proactive alerts that might include SMS/text notifications for balance due, minimum balance due, apply for an extension, balance past due, shut off notifications rather than paper (opt in that can be gained through waiving fees at some earlier point);*
- *Reviewing deposit program, especially for students, to include a parental or guardian guarantor after determining how many students from financially stable families have their accounts end up delinquent and/or written off;*
- *Conducting analytics to better understand customer situations to identify early warning signals that might indicate that something more definitive should be done by the utility earlier;*
- *Conduct an ongoing analysis to review those customer accounts that have been in hardship status for more than one year to better understand how long they've participated, success rates, and total outstanding balance averages for this group;*
- *Modifying the regulatory reimbursement levels for the utility and potentially float with fuel charges or price of natural gas to change the levels of reimbursement; and*
- *Conducting analyses of customer profiles that are in financial hardship status evaluating their home (age, vintage of furnace and/or water heater, size, usage of gas vs. other similar homes), income levels, etc. and develop a program to retro fit a certain number of homes per year to reduce their wasted energy usage and lower the home's future bills.*

### 7.3 Billing Practices

**Conclusion 7.3.1:** *RCG/SCG LLC concluded that CNG has completed the recommendation from the 2010 audit related to billing by migrating the customer billing system to SAP enterprise platform. The recommendation was from section 18 1 Information Technology – “Iberdrola should begin the process of replacing CNG’s Customer One billing system with an SAP based system which the New York utilities are already using or demonstrate that such a change is not beneficial.”*

**Conclusion 7.3.2:** *RCG/SCG LLC concluded that billing generation is done in a timely and accurate manner.*

**Recommendation 7.3.1:** *RCG/SCG LLC recommends redesigning the bill, including sister company’s bills with the appropriate variety of individual company logos, to personalize messaging to customers whether they receive paper or eBills. Additionally, enhancing the eBill, potentially an interactive bill delivered via email or SMS, and offering a different experience may drive more customers to higher adoption rates. Recently, eBill adoption has stagnated and even reversed. Customers constantly seek new information and innovative vehicles for reviewing information and satisfying requests. Messaging on the bills can drive eBill adoption, other utility programs, safety, seasonal or storm planning, etc. Additionally, where possible, offering electronic payments for customers who don’t adopt eBills will help drive more electronic payments for customers. Currently, only eBill subscribed customers are able to make recurring payments electronically. Online and/or regular payments have proven to reduce delinquent payments for some customers.*

**Recommendation 7.3.2:** *RCG/SCG LLC recommends evaluating a consolidation of the billing clerks across gas and/or electric companies to gain economies of scale.*

### 7.4 Meter Reading and AMR

**Conclusion 7.4.1:** *There was no 2010 audit recommendation made for the meter reading area.*

**Conclusion 7.4.2:** *RCG/SCG LLC concluded that the meter reading function accurately reads the vast majority of meters each month in a timely and accurate manner.*

RCG/SCG LLC has no recommendations for the meter reading operation.

### 7.5 Service Theft

**Conclusion 7.5.1:** *RCG/SCG LLC did not find any recommendations for Service Theft resulting from the 2010 audit.*

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**Conclusion 7.5.2:** *RCG/SCG LLC concluded that CNG has a reasonable process and adequately staffed function within Credit & Collections for pursuing and stopping identified service theft.*

**Conclusion 7.5.3:** *RCG/SCG LLC concluded that many of CNG's practices for identifying service theft are traditional and reactive in nature, highly dependent on field employees in the course of their field activities to come across, evidence of theft. As AMI/AMR meters in place have now limited the amount of time Company employees are exposed to the meters, alternative and complementary methods for identification may make the process more effective and deliver better results.*

**Recommendation 7.5.1:** *RCG/SCG LLC recommends CNG develop a program to coordinate with local media and regularly publicize through social media, billing messages, the corporate website and other forums stories about gas service theft to serve as a deterrent due to the chances of being caught, legal consequences, and safety issues. In parallel messages, it is important to make potential customers aware of assistance programs that may be available to them if having trouble paying their bill.*

**Recommendation 7.5.2:** *RCG/SCG LLC recommends preemptive research and sophisticated analytics be developed and used to identify potential theft that is unidentified by field personnel.*

**Recommendation 7.5.3:** *RCG/SCG LLC recommends CNG put in place more thorough tracking of not only activities but also the results of service theft investigations, including final outcomes, revenues lost, and re captured.*

## 7.6 Customer Complaint and Inquiry Handling

**Conclusion 7.6.1:** *RCG/SCG LLC found one recommendation from the 2010 Audit that has yet to be addressed, the institution of a gas marketer Complaint Log.*

**Conclusion 7.6.2:** *RCG/SCG LLC concluded that CNG handles customer complaints and inquiries in a manner consistent with leading industry practices.*

**Recommendation 7.6.1:** *RCG/SCG LLC recommends that CNG continue to drive down complaint sources across the corporation through root cause analysis. Additionally, there is no common tracking/follow up system that is used by the company across the immediate Complaint team that others can view, such as call center supervisors. RCG/SCG LLC recommends deploying a complaints management system that creates follow up actions, reports progress, and notifies owners of pending actions to be taken.*

### *7.7 Customer Satisfaction and Customer Experience*

**Conclusion 7.7.1:** *RCG/SCG LLC concluded that CNG has contradictory satisfaction research that is also inadequate for identifying what customers want in areas identified for improvement since there is an insufficient level of details on findings to prescribe what and how to change.*

**Conclusion 7.7.2:** *RCG/SCG LLC concluded that CNG does not have effective instruments in place to track customer satisfaction on an ongoing basis versus once a year, preventing them from discerning trends or reactions to events or intentional changes in service offerings or delivered.*

**Conclusion 7.7.3:** *While RCG/SCG LLC was not aware of any major emergencies in recent years. CNG appears well positioned to communicate effectively both internally and externally during any such event.*

**Conclusion 7.7.4:** *RCG/SCG LLC found that CNG coordinates across functions in speaking with the public in the areas of public events, corporate activities, energy conservation, and safety.*

**Recommendation 7.7.1:** *RCG/SCG LLC recommends that CNG conduct deeper research to gain customer insight into where their customer base gets information about Company programs and status. Additionally, this insight should offer deeper understanding to how and where customers would like to satisfy requests such as starting service, paying bills, and reviewing consumption. As enhancements are made to existing processes in the call center or self service channels, it's important to gauge regular and ongoing feedback from customers to discern how changes were received and if adjustments are necessary.*

**Recommendation 7.7.2:** *RCG/SCG LLC recommends that for the annual customer satisfaction surveys conducted, more dialogue and detail analysis be added in order to better understand why customers feel more or less satisfied with specific offerings, interactions, and messages. Without more detailed clarity, it will be difficult to improve specific and overall satisfaction levels or understand what moves the needle up or down.*

### *7.8 Customer Self Service Technologies*

**Conclusion 7.8.1:** *RCG/SCG LLC has concluded that CNG is well positioned for continuing to expand their self service technologies to improve their customers' experience and hold expenses in check.*

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**Recommendation 7.8.1:** *RCG/SCG LLC recommends that a focused study/analysis be undertaken to put in place a detailed plan for prioritization, digital design, the case for change and deployment of self service technologies based on customer preferences, economic impact, strategic fit, and least risk/easiest to do to determine prioritization.*

*Chapter 8 – External Relations*

*8.1 External Relations*

**Conclusion 8.1.1:** *RCG/SCG LLC concluded that CNG has met the intent of the 2010 management audit recommendations. Five recommendations were made in the Marketing and sales area of the audit.*

**Conclusion 8.1.2:** *RCG/SCG LLC found the groups comprising the External Affairs function (Sales & Marketing, Regulatory Affairs, Governmental Relations, Corporate Communications, and C&LM) for the Company work in close conjunction with each other and other customer facing organizations preparing focused and effective messages, developing forward thinking messaging and promotions strategies, and delivering them through diverse mediums.*

**Conclusion 8.1.3:** *RCG/SCG LLC found sales and marketing efforts around CES are outstanding and continue to influence results in the Company's gas territory and across the state through regulatory and legislative influence.*

**Conclusion 8.1.4:** *RCG/SCG LLC has concluded that even though many of the External Affairs' organizations are focused across Avangrid Network companies, little negative impact will be experienced by local customers and in fact, by leveraging deeper subject matter expertise across a larger group, such as corporate communications, the customer experience will be better and communications more effective.*

**Recommendation 8.1.1:** *RCG/SCG LLC recommends that the Company expand efforts to leverage more digital channels in the future. This includes more personalized messaging for Sales & Marketing to residential prospects or customers. It also includes expanding social media to increase the number of followers from hundreds to multiple thousands. This will provide more consistent and timelier communications to those customers choosing to follow, as this population continues to grow. This will also contribute to the improved awareness of what CNG and Avangrid Networks are doing in the community, and of conservation programs offered, and should contribute to overall customer satisfaction. This will require further analysis on how to and when to promote these channels in order to heighten adoption rates.*

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*Chapter 9 – Support Services*

*9.1 Risk Management*

**Conclusion 9.1.1:** *RCG/SCG LLC concluded that the Risk Management group is organized to provide senior management attention to Risk Management.*

**Conclusion 9.1.2** *RCG/SCG LLC concluded that the Risk Management group has established extensive policies and procedures to support Risk Management for the AVANGRID companies. Further, the company has an excellent process for measuring and monitoring risk.*

**Conclusion 9.1.3:** *RCG/SCG LLC concluded that Risk Management is doing a good job in efforts to “embed” itself within the business units to help them manage risks.*

**Conclusion 9.1.4:** *RCG/SCG LLC found that the AVANGRID Business Continuity Planning (BCP) has adequate policies, procedures, and processes. These policies and procedures are implemented and followed by the Companies.*

**Recommendation 9.11:** *RCG/SCG LLC recommends that CNG provide more detailed risk mitigation steps and assignments in its risk register tracking mechanism, consistent with company policy.*

*9.2 Legal*

**Conclusion 9.2.1:** *RCG/SCG LLC found that, based on a review of the limited number of departmental policies and procedures, the legal process, and their outside counsel retention and billing guidelines, CNG’s legal affairs are managed reasonably. But additional policies and procedures appear to be necessary to ensure the fundamental legal, ethical, and company supportable requirements are followed.*

**Conclusion 9.2.2:** *RCG/SCG LLC found that while clear goals were available in the past that were measurable and part of the balanced scorecard, they were not always challenging and often based on essentially doing their routine job and resulting in positive but easily achievable stretch targets even with a shortage of staff. In addition, as a result of the merger of UIL Holdings Corporation and Iberdrola USA (Now AVANGRID), the 2016 goals, objectives, and performance metrics still remain under development.*

**Conclusion 9.2.3:** *RCG/SCG LLC found that with the significant amount of legal outsourcing, the need to control outside firms is critical and the Legal department uses reasonable systems, guidelines, contracts, and oversight to effectively manage the outsourced services and control costs.*

**Recommendation 9.2.1:** *RCG/SCG LLC recommends that the Legal Department conduct a comprehensive needs analysis to determine the need and appropriate wording for a*

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*comprehensive set of written procedures and policies, serving as a ready reference, reflecting today's requirements and providing clear legal, ethical, and company supported direction to the entire UIL organization and ensuring appropriate consistency throughout AVANGRID itself.*

**Recommendation 9.2.2:** *RCG/SCG LLC recommends that the Legal Department work to develop a set of performance metrics with executive buy in to trend and measure using a SMART (specific, measurable, achievable, relevant, and time based) methodology. These metrics can feed into the Balanced Scorecard program, which will encourage continual performance improvement, progress reviews, and management reporting.*

**Recommendation 9.2.3:** *RCG/SCG LLC recommends that in light of the Legal Department's dependency on outside legal counsel and its reliance on the Retention and Billing Guidelines for Outside Counsel, consideration be given to having an audit of the actual application of the Guidelines by at least two currently contracted firms.*

#### *General Services*

#### *9.3 Facilities Management*

**Conclusion 9.3.1:** *RCG/SCG LLC concluded that AVANGRID Facilities function has met the intent of the 2010 CNG Management Audit recommendations.*

**Conclusion 9.3.2:** *RCG/SCG LLC found that the AVANGRID Facility organization is well qualified and appropriately organized to meet AVANGRID's facilities management needs.*

**Conclusion 9.3.3:** *RCG/SCG LLC found that the AVANGRID Facility Management organization has adequate departmental policies and procedures, goals, objectives, and space planning guidelines, and regular internal client feedback to meet the facilities management needs of the CNG.*

**Conclusion 9.3.4:** *RCG/SCG LLC found that AVANGRID has taken steps to reduce substantially its environmental impact at its facilities.*

#### *9.4 Fleet*

**Conclusion 9.4.1:** *RCG/SCG LLC concluded that the AVANGRID Fleet function is not addressing the intent of two of three of the 2010 CNG Management Audit recommendations.*

**Conclusion 9.4.2:** *RCG/SCG LLC found that the Fleet operations have adequate policies and procedures. However, adherence to these procedures in the area of accounting control and data maintenance is lacking.*

**Conclusion 9.4.3:** *RCG/SCG LLC found that Fleet is appropriately organized and logically located to meet CNG's requirements. However, Fleet does not use any workload driven staffing analysis.*

**Conclusion 9.4.4:** *RCG/SCG LLC found that the Fleet has adequate departmental goals and objectives. However, cost per fleet unit and vehicle utilization additionally needs to be tracked and reported out to management.*

**Recommendation 9.4.1:** *RCG/SCG LLC recommends that Fleet implement the AVANGRID staffing analysis process that calculates staffing requirement based on project work volumes.*

**Recommendation 9.4.2:** *RCG/SCG LLC recommends that Fleet add to their metrics a cost per unit measure and vehicle utilization measure.*

## *9.5 Document Management*

**Conclusion 9.5.1:** *RCG/SCG LLC concluded that Records Management's policies and procedures are adequate.*

**Conclusion 9.5.2** *RCG/SCG LLC concluded that Records Management policies and procedures are inconsistent with the AVANGRID centralized governance approach, and do not address electronic record creation and electronic conversion of paper records.*

**Recommendation 9.5.1:** *RCG/SCG LLC recommends that AVANGRID develop a policy to govern the maintenance of electronic documents and the electronic scanning of critical paper documents not housed in fire retardant waterproof storage within the AVANGRID facilities.*

## *9.6 Materials Management*

**Conclusion 9.6.1:** *RCG/SCG LLC concluded that the AVANGRID's Logistics Supply Chain (Stores) has addresses the intent of the one 2010 CNG Management Audit recommendations.*

**Conclusion 9.6.2:** *RCG/SCG LLC found that the AVANGRID has adequate policies and procedures for its procurement and materials processes. However, several IT opportunities have yet to be addressed.*

**Conclusion 9.6.3:** *RCG/SCG LLC found that the AVANGRID Materials Management has appropriate department planning and uses appropriate means to monitor success in meeting the needs of CNG and performing beyond industry performance. However, there was little evidence of commitment to move beyond industry level performance.*

**Conclusion 9.6.4:** *RCG/SCG LLC found that materials management warehouse facilities and space utilization are within expected norms.*

**Recommendation 9.6.1:** *RCG/SCG LLC recommends that AVANGRID standardizing the gas material stock codes for similar materials and move to one stock code list for all gas materials.*

**Recommendation 9.6.2:** *RCG/SCG LLC recommends that AVANGRID automate the stock out tracking of gas materials.*

**Recommendation 9.6.3:** *RCG/SCG LLC recommends that AVANGRID re assess the cost benefit of implementing either Bar Coding or RFID material tracking for all gas materials.*

**Recommendation 9.6.4:** *RCG/SCG LLC recommends that AVANGRID take the recommended next steps to move its Purchasing function's maturity, specifically with regard to risk identification and communication, towards the best in class maturity level.*

## 9.7 Information Technology

**Conclusion 9.7.1:** *RCG/SCG LLC concluded that the AVANGRID I/T organization's policies, systems and procedures are consistent with industry practices and address the appropriate aspects of the business's I/T.*

**Conclusion 9.7.2:** *RCG/SCG LLC concluded that I/T has in place operational KPIs and project management tracking consistent with industry practices. However, they do not periodically survey the satisfaction of their end users.*

**Conclusion 9.7.3:** *RCG/SCG LLC concluded that the newly implemented AVANGRID I/T organizational structure is consistent with industry best practices and should improve I/T's ability to address project management needs associated with the long term projects while continuing to service the short term needs of current end users. However, the role of the I/T Business Relationship Manager for CNG needs to be better defined and his reporting location changed to better meet the needs of the gas businesses.*

**Conclusion 9.7.4:** *RCG/SCG LLC concluded that the AVANGRID's I/T technology and major systems in place and under development/roll out should be effective in addressing the*

*strategic needs of CNG. However, the post roll out support from the user's perspective has been limited and affects the full utilization of the applications.*

**Conclusion 9.7.5:** *RCG/SCG LLC concluded that the CNG has access to I/T project funding and support.*

**Conclusion 9.7.6:** *RCG/SCG LLC concluded that CNG use of mobile devices is inconsistent with industry practices and AVANGRID's Mobile Device Rule.*

**Recommendation 9.7.1:** *RCG/SCG LLC recommends that AVANGRID's I/T organization perform a periodic (bi annual) end user satisfaction survey.*

**Recommendation 9.7.2:** *RCG/SCG LLC recommends that the role of the I/T Business Relationship Manager for CNG be better defined and that his reporting location be changed to meet the I/T needs of the gas businesses.*

**Recommendation 9.7.3:** *RCG/SCG LLC recommends that each software system implemented at CNG have a designated super user to support the day to day utilization of the systems including the production of Crystal reports against the systems' database.*

**Recommendation 9.7.4:** *RCG/SCG LLC recommends CNG adopt the AVANGRID Mobile Device Rule.*

## 9.8 Security

**Conclusion 9.8.1:** *RCG/SCG LLC concluded that AVANGRID's Security function has met the intent of the 2010 CNG Management Audit recommendations.*

**Conclusion 9.8.2:** *RCG/SCG LLC concluded that AVANGRID Security function has adequate departmental policies and procedures. These policies and procedures address the appropriate aspects of security, including extensive information on cyber security, physical security, and fire safety.*

**Conclusion 9.8.3:** *RCG/SCG LLC concluded that the physical Avangrid Security function is well planned and executed at CNG. However, the timely termination of access control for terminated employees' needs improvement.*

**Recommendation 9.8.1:** *RCG/SCG LLC recommends Avangrid Security compare the HR list of terminated employees/contractors regularly against the active access control listing to ensure the terminated employees/contractors do not have access control.*

*Chapter 10 – Special Topics*

*10.1 Special Topic – Affiliate Transactions & Cost Allocation*

**Conclusion 10.1.1:** *RCG/SCG LLC concluded that the Company has an adequate cost allocation system and policies and procedures for affiliate transactions.*

**Conclusion 10.1.2:** *RCG/SCG LLC concluded that the Company's cost allocation methodology is appropriate for assigning shared services costs from UIL Holdings Corporation to the operating utilities.*

**Conclusion 10.1.3:** *RCG/SCG LLC concluded that CNG does not have unregulated operations. Accordingly, there is no concern that ratepayers are unduly subsidizing an unregulated subsidiary.*

**Conclusion 10.1.4:** *RCG/SCG LLC concluded that CNG has employee codes of conduct that oblige employees to adhere to company affiliate transaction and cost allocation policies.*

**Conclusion 10.1.5:** *RCG/SCG LLC found that Internal Audit periodically reviews adherence to UIL Holdings Corporation Cost Accounting Methodology Manual.*

**Conclusion 10.1.6:** *RCG/SCG LLC concluded that the Company applies reasonable costs for services.*

**Recommendation 10.1.1:** *RCG/SCG LLC recommends that the internal audit group schedule an audit every two years to review the cost allocation manual and process and other affiliate transactions to ensure (1) that actual practice does comply with the governing documentation and (2) that the documentation does indeed cover all current activity. In addition, the biennial internal audit should determine whether CNG has developed new cost allocation bases for certain shared service functions that are more accurate than the Massachusetts formula.*

**Recommendation 10.1.2:** *RCG/SCG LLC recommends that the Company continue to participate in additional industry studies or develop their own peer group analysis of shared services costs to ensure appropriate levels of service costs.*

**Recommendation 10.1.3:** *RCG/SCG LLC recommends CNG consider, where practical, other cost allocation bases besides the Massachusetts Formula<sup>1</sup> to distribute certain costs more effectively.*

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<sup>1</sup> <https://www.agaweb.org/knowledgecenter/natural-gas-101/natural-gas-glossary/m>

### *10.2 Special Topic – Hurdle Rate and CIAC*

**Conclusion 10.2.1:** *RCG/SCG LLC concluded that CNG efforts to forecast new customer growth are reasonable considering the conditions of market prices for oil and natural gas.*

**Conclusion 10.2.2:** *RCG/SCG LLC concluded that the tool used by CNG to evaluate economic feasibility of new business projects (the Hurdle Rate Model) is reasonable and it is applied appropriately.*

**Conclusion 10.2.3:** *RCG/SCG LLC concluded that the application of the Non Firm Margin (NFM) program to encourage oil to gas conversion by CNG is appropriate including the selection process undertaken by the companies.*

**Conclusion 10.2.4:** *RCG/SCG LLC believes that economic feasibility analyses for new business projects should be considered with caution due to estimating accuracy issues associated with customer gas usage and construction costs. As a consequence, there are risks that certain projects would have been rejected if estimates were more accurately reflected in the models.*

**Recommendation 10.2.1:** *RCG/SCG LLC recommends that, as suggested by Concentric Energy Advisors, CNG continue to pursue root cause analyses to determine reasons for missing estimates both on the customer gas usage side and on construction cost estimates. On the latter, recommendations were provided in the Capital Budgeting Processes section of this report. Regarding the estimation of customer gas usage, we recommend the consideration of using a professional econometrician, perhaps a professor at a local college, to explore other models and algorithms to better predict customer gas usage. While the focus would be on the residential side, perhaps additional modeling can be done as well on the C&I side.*

### *10.3 Special Topic – Treatment of New Customers for CES Programs*

**Conclusion 10.3.1:** *RCG/SCG LLC concluded that the CNG company policies and procedures to select the appropriate rate schedules for gas expansion customers and classifying those customers for meeting ten year gas conversion goals are mostly appropriate, but we recommend clarity and change of policy in a few instances.*

**Recommendation 10.3.1:** *RCG/SCG LLC recommends that CNG provide clarity on the application of standard versus SE rates to new customers as part of the system expansion program. The “eleven scenarios” do not adequately capture all of the nuances of customer changes in service requirements. Clarity on these rules would minimize errors in application of these rates.*

*With regard to the changes in customer service requirements, “organic growth” should not be a consideration in applying an SE rate when the customer or premise is not already on an SE rate.*

*With regard to classifying customers as system expansion customers, we believe rules should be followed similar to the decision framework used for determining applicable rate schedules, and that an inactive meter beyond one year is not a distinction of importance. As well, customers that experience increases in load beyond 150 Mcf per year should not be counted as system expansion customers.*

*To assist with the clarity of policies, the following steps should be taken:*

- *Salesforce CRM should be configured to follow the company policies including the nuances described in this report. Questions should be posed in the application to trigger the proper treatment.*
- *Rate schedules should be modified to include adequate descriptions to fit these rules regarding when an SE rate would apply (and when it would not apply).*
- *The policies described in this report should be periodically reviewed by Internal Audit to assess compliance.*

## 2. INTRODUCTION

### Background

The State of Connecticut Public Utilities Regulatory Authority (PURA) retained River Consulting Group, Inc. and Raymond G Saleeby, LLC (RCG/SCG LLC) to perform a diagnostic management audit of Connecticut Natural Gas Corporation (“CNG” or “Company”).

CNG, established in 1848, is a wholly owned subsidiary of UIL and now Iberdrola under the name AVANGRID Inc. serves customers as a regulated natural gas distribution company. CNG delivers natural gas to 155,000 customers in 23 towns in central Connecticut. CNG has annual revenues of approximately \$307 million in 2015 and \$855 million in total assets.

AVANGRID Inc. (NYSE: AGR) is a diversified energy and utility company with more than \$30 billion in assets and operations in 25 states. The company operates regulated utilities and electricity generation through two primary lines of business.

- AVANGRID Networks includes eight electric and natural gas utilities, serving 3.1 million customers in New York and New England.
- AVANGRID Renewables operates 6.3 gigawatts of electricity capacity, primarily through wind power, in states across the United States. AVANGRID employs 7,000 people.

AVANGRID Inc. was formed by a merger between Iberdrola USA and UIL Holdings Corporation in 2015. IBERDROLA S.A. (Madrid: IBE), a worldwide leader in the energy industry, owns 81.5% of AVANGRID Inc.

### Objective and Scope

The objective of RCG/SCG LLC’s review included (1) an in depth investigation and assessment of the Company’s business processes, procedures, and policies for management operations and system of internal controls in place and (2) an identification of areas of the Company that might require further investigation.

The scope of RCG/SCG LLC’s management audit included eight focus areas:

- Executive Management,
- System Operations,
- Finance,
- Human Resources,
- Customer Service,
- External Relations,
- Support Service, and
- Special Topics.

During the course of RCG/SCG LLC management audit, 105 interviews were conducted and 715 data requests were reviewed. The team conducted eight field observation site visits, which included tours of the Company's LNG facilities in Rocky Hill, some field site visits to observe crews working in the field, a tour of the CNG's service center and warehouse facility in East Hartford. RCG/SCG LLC interviewed AVANGRID, UIL and CNG senior management as well as a representative of the Company's unions.

## **Approach**

RCG/SCG LLC's management audit methodology allowed the Company the opportunity to explain their processes fully while providing to the auditors the means to observe, question, and otherwise interact with key personnel to ensure complete understanding of the business practices. For each of the eight focus areas, RCG/SCG LLC prepared initial data requests to examine the documentation produced from the business and by which the business operates. RCG/SCG LLC also scheduled interviews, provided interview guides, for key personnel to obtain information concerning (1) the communication/integration of corporate policy and activity, (2) departmental activity, (3) clarification of responses received through data requests, and (4) additional issues/questions generated through previous data requests and other interviews.

The data request/response process and interview scheduling was an iterative process based on the need for clarification to understand process and practice fully and for information concerning emerging potential issues.

Well into the data gathering activity of the project, but still overlapping it, the auditors began analysis of the information, including determining the efficacy and efficiency of operations as well as the possible effect of any potentially ineffective or inefficient activity. This report provides the results of that analysis along with recommendations to correct or alter any activities in order to move closer toward ideal performance.

## **Report Organization**

The report is organized by focus area as noted under Scope (above). Within each focus area chapter, sections concerning major elements (groups, departments, initiatives, projects, etc.) are delineated. Each chapter is discussed, normally providing Objectives and Scope, Overall Assessment (in All Caps and Bold print), Evaluation Criteria, Conclusions (in which Analysis is found), and Recommendations. If a chapter has multiple sectional topics, the conclusions, analysis and recommendations will be provided by section. The report includes an appendix defining Acronyms.

RCG/SCG LLC included the Special Topics identified in the RFP for this project integrated into the focus areas of this report where applicable. The following list identifies those special topics by chapter in which their analysis appears.

Chapter 3 – Executive Management

- Interest Area 5 – Improve cost estimation
- Interest Area 6 – Potential Synergies
- Special Topic 7 – AVANGRID impact on CNG financial position
- Special Topic 12 – O&M Budget Process
- Special Topic 17 – Cost Control Functions (Budget Process)
- Special Topic 19 – Capital Budget Process

Chapter 4 – System Operations

- Interest Area 1 – Capacity Arrangements
- Interest Area 2 – Off system & Capacity optimizations
- Interest Area 4 – LNG
- Interest Area 5 – Improve cost estimation
- Special Topic 2 – Gas Commodity Procurement
- Special Topic 3 – Pipeline capacity Agreements
- Special Topic 4 – CT Comprehensive Energy Strategy (as it impacts Gas Forecasting & Supply)
- Special Topic 8 – Gas Supply Function
- Special Topic 13 – Construction Management Function
- Special Topic 15 – Lost & Unaccounted for Gas (also identified as Special Topic 5)
- Special Topic 17 – Cost Control Functions (Project Estimation and Management)

Chapter 5 – Finance

- Special Topic 5 – Treasury Function
- Special Topic 6 – Capital Structure
- Special Topic 7 – AVANGRID Impact on CNG Financials
- Special Topic 11 – Internal Audit Practices
- Special Topic 17 – Cost Control Functions

Chapter 6 – Human Resources

- Special Topic 16 – Payroll Practices
- Special Topic 20 – Pension Plan Comparisons
- Special Topic 21 – Post Retirement Benefits
- Special Topic 22 – 401K Savings Plan

Chapter 7 – Customer Service

Special Topic 14 – Billing Practices

Special Topic 18 – Receivables Collection Process

Special Topic 24 – Costs & Sales Forecasting Techniques

Chapter 9 – Support Services

Special Topic 10 – Inventory Control Function

Chapter 10 – Special Topics

Special Topic 1 – Affiliate Transactions

Special Topic 9 – Cost Allocation Process

Special Topic 23 – Hurdle Rate

Special Topic 24 – Cost & Sales Forecasting Techniques

Special Topic 25 – Costs & Sales Large Variances

Special Topic 26 – CIAC

**SPECIAL TOPIC (Add in) Treatment of New Customers for System Expansion**

**Programs**

### **3. EXECUTIVE MANAGEMENT**

#### **Objectives and Scope**

The Executive Management audit area includes a review of AVANGRID and CNG's Parent (UIL) Board of Directors, officers, organization structure, strategic and corporate planning, corporate communications and control, administration, and regulatory compliance. In addition, it captures RCG/SCG LLC's review of the O&M and Capital budgeting process. Internal Auditing and the Parent Company impact on the financials & potential synergies.

The Company leadership including the Boards of Directors has a fiduciary responsibility to ensure the utility's overall direction, strategies and overall policies are both appropriate and contributing to health of the business. In addition, along with the CEO, it is the Board's responsibility to develop and maintain a system of Governance, anticipate and respond to problems and opportunities.

RCG/SCG LLC believes that an effective executive management and governance approach should have:

- An experienced and knowledgeable Board of Directors (BOD) with appropriate committees to provide effective oversight and direction that benefit Connecticut gas customers and at least one board member who has specific knowledge of the history and environment that Connecticut utilities operate within;
- An executive management structure with the right people focusing on the needs of Connecticut customers, and with a willingness to make hard decisions;
- Leadership that sets high standards for themselves, their organization and its people, and creates and communicates its vision;
- An executive team that assesses performance and develops and mentors those that will follow;
- A management team and strategic planning process properly focused on delivering the best service possible at a reasonable cost to Connecticut customers;
- A set of strategic plans and objectives grounded in delivering safe and reliable services at competitive prices to Connecticut customers;
- An effective corporate management process with strong oversight methods for addressing operational, legal, and regulatory issues coupled with formal performance reporting;

- A clear and defined budgeting process with a formal timetable and criteria;
- Clearly articulated budgets reflecting the O&M needs of the gas distribution systems, generally expressed in formal programs (repair, cathodic protection, gas leak survey, etc.) with effective estimating and regular executive visibility and control of O&M budgets;
- Formal capital committee oversight with regular evaluation of the rate of spending and budget adjustments for unforeseen events; and
- A system planning process tied to capital budgets as well as expected new business growth predicted by load forecasting.

## **Overall Assessment**

**THE CONNECTICUT NATURAL GAS COMPANY IS GENERALLY WELL MANAGED. THERE ARE SEVERAL AREAS WITHIN CNG/UIL GAS NETWORKS WHERE MANAGEMENT NEEDS TO FOCUS ITS ATTENTION TO IMPROVE THE OVERALL PERFORMANCE. AT THE TIME OF THE MANAGEMENT AUDIT RCG/SCG-LLC OBSERVED A NUMBER OF COMMON FUNCTIONS WHERE THERE WAS SIGNIFICANT DISRUPTION OF NORMAL OPERATIONS BROUGHT ABOUT BY THE INTEGRATION EFFORTS. THIS DISRUPTION IS EXPECTED DUE TO THE PROXIMITY OF THE AUDIT TIME FRAME AND THAT THE AVANGRID PURCHASE WAS COMPLETED IN DECEMBER OF 2015.**

## **Evaluation Criteria**

RCG/SCG LLC applied the following evaluation criteria to the executive management review. For uniformity, the capital and operations and maintenance (O&M) budgeting material is presented in the last sections of this chapter.

- To what extend did the Company implement its last audit recommendations?
- Are governance, organizational structure, missions, and relationships within The Company appropriate as they relate to the business model?
- Are organizational responsibilities for planning priorities and budgeting allocations reasonable and appropriate?
- Are the Board of Directors and executive and senior management appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the Company? Does the parent BOD devote adequate time to the business of the Company?
- Does Company management use appropriate measurable goals, metrics, key

performance indicators, etc. to achieve the corporate mission and objectives, and the performance improvement process at successive levels of management?

- Does management's performance comply with procedures and practices related to the scope of this audit (i.e., internal controls, internal audit function, and the Sarbanes Oxley Act) and are performance and compliance accurately reported?
- Are management performance and compensation programs in alignment with the corporate mission, objectives, and goals at all organizational levels?
- Does the Company appropriately and accurately factor its financial position and the level of its rates into the budgeting process?
- What is the Company's approach to competitive issues for new markets; i.e., what new markets are being considered by the Company, how would the costs for entry into those markets be funded, and would the Company's entry into those markets serve to help or hinder competition in those new markets?
- Is the corporate strategy documented? Is it forward thinking – visionary?
- Are the planning assumptions defined? Do they consider multiple scenarios – potential best, most likely, or worst scenarios for the future?
- Is the mission clear? Understood and embraced by employees?
- Are the values defined? Do employees understand what these values mean and what behaviors they should cultivate to be consistent with these values?
- Have the major strategic priorities been defined? Do the strategic priorities address such areas as fiscal viability and profitability, public trust, customer service, process improvements, organizational change, economic development for the region, environment, and initiatives to sustain continuous improvement and learning within the workforce?
- Are the plans updated to reflect changes, accomplishments, and lessons learned?
- What are the roles of the executive and senior management in the O&M budgeting process? What processes are used by the Board to oversee O&M budgets? What is the level of budget detail the Board sees and what are their responsibilities with regard to the budgets?
- What are the budgeting guidelines, practices, and procedures, including “zero-based” and other alternative methods?
- Is budgeting formally linked to strategic initiatives?

- Is there clear and independent oversight of O&M budgets all the way up to and including the BOD?
- Is there a formal process for handling emergency spending and integrating results into existing O&M budgets?
- What is the construction/capital priority setting process?
- How does the capital budgeting process function in the Company (including project authorization, project appropriation, increase/decrease of authorization/appropriation, capital budget status reporting, validation in advance of appropriation, funding controls, and other elements of the capital budgeting process)?
- How does management oversee and control capital budgeting (including the methodologies used to control and manage program and project capital costs in the near and long term; the annual process for reviewing and determining whether total capital planned expenditures are adequate; cost control systems and processes from both a top down and bottom up perspective; controls to ensure that increases and decreases to the construction budget/expenditures are justified and appropriately approved)?

### *3.1 Organization and Planning*

#### **Objective & Scope**

Since the last audit in 2008, Iberdrola USA and UIL Holdings Corporation announced the closing of the merger between their companies in December 2015. The merger created a diversified energy and utility company with \$30 billion in assets and operations in 25 states. The company operates under the name AVANGRID, Inc., and it trades on the New York Stock exchange under the symbol AGR. AVANGRID has two primary business segments<sup>2</sup>:

- Avangrid Networks combines the resources and expertise of eight electric and natural gas utilities with an \$8.3 billion rate base serving 3.1 million customers in New York and New England. CNG, through UIL Group and UIL Holdings, reports into this organization.
- Avangrid Renewables operates 6.3 GW of generation capacity, primarily through 53 wind farms in 18 states which makes AVANGRID Renewables the country's second largest producer of wind energy.

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<sup>2</sup> AVANGRID 2016 Investor Day Presentation and [www.avangrid.com/](http://www.avangrid.com/)

This merger could result in numerous positive changes for CNG and the other utilities that are part of Avangrid Networks.

Transitioning to a new management structure and processes, following the merger, will for any company require communication, clear direction, and a sound plan that takes into account the need to operate the utility business in a sound, safe, and cost effective manner and unimpeded by the organizational and governance modifications that would assuredly occur.

## **Evaluation Criteria**

RCG/SCG LLC applied the following evaluation criteria to the organization and planning review.

- To what extend did the Company implement its last audit recommendations?
- Are governance, organizational structure, missions, and relationships within The Company appropriate as they relate to the business model?
- Are organizational responsibilities for planning priorities and budgeting allocations reasonable and appropriate?

## **Conclusions**

**Conclusion 3.1.1:** *RCG/SCG LLC believes that CNG has a reasonable system to track the 2010 audit recommendations contained in the audit firm's 2010 report and has adequately addressed these recommendations where appropriate and still applicable.*

## **Analysis**

RCG/SCG LLC examined the 2010 CNG management audit recommendations made by Overland Consulting Company. A total of 50 recommendations were tabulated, some of which were to be addressed at the Parent level. RCG/SCG LLC reviewed the system and process used to manage their response to the recommendations that had been developed.

There were 50 recommendations shown in the Overland Consulting Management Audit<sup>3</sup> of CNG:

- CNG agreed with 34 of the recommendations,
- They disagreed with 6 recommendations,
- They partially agreed to 3 recommendations, and
- The remaining two were no longer applicable due to the acquisition by UIL.

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<sup>3</sup> Response to Data Request GEN012 Attachment 1

We reviewed each recommendation along with the rationale for disagreement or the plan to implement the recommended corrective actions. We also reviewed interim stages and the as completed explanation.

For each of the recommendations acted upon, the ownership and planned action was reasonable. The implementations of the corrective actions were done on a timely basis with status reports often done quarterly and only one recommendation remained ongoing until the first quarter of 2016. Each of the recommendations that were acted upon was reported on until completed. We found that the recommendations and CNG actions were both aligned and resulted in appropriate solutions.

### *3.2 Governance and Organization Structure*

#### **Conclusions**

**Conclusion 3.2.1:** *RCG/SCG LLC believes governance model is poorly defined and along with its organization it is still in transition and easily misunderstood. In general, while the Grants of Authority clarify decision making, the post merger environment is lacking clear direction, communications, and ownership of elements and lacks a consolidated, written Transition Plan Manual. RCG/SCG LLC also believes that the potential consolidation of CNG with its sister company SCG would provide efficiencies and be in the interest of rate payers.*

#### **Analysis**

RCG/SCG LLC collected data covering mission of the organization and reviewed all organizational changes made within CNG, its Shared Service organization within UIL and AVANGRID. In addition, we conducted interviews throughout the CNG organization and sought detailed organizational charts of all structural elements showing the current relationships, names, and titles and reporting chain in all Shared Service Groups working in any way with CNG.

In addition, RCG/SCG LLC reviewed the detailed governance structure including the UIL Holdings' Grants of Authority<sup>4</sup>, the AVANGRID Management Committee and its charter<sup>5</sup>, the Iberdrola SA Operating Committee along with its charter<sup>6</sup>.

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<sup>4</sup> Response to Data Request GEN017 Attachment 1 Grants of Authority

<sup>5</sup> Response to Data Request GEN017 Attachment 2 provides the Charter for the AVANGRID Management Committee

<sup>6</sup> Response to Data Request GEN017 Supplement Attachment 1 INTERNAL RULES ON COMPOSITION AND DUTIES OF THE OPERATING COMMITTEE

The Governance model has established the CNG Board and the UIL Holdings Board as having the sole managerial and supervision responsibility for CNG and its sister company SCG. A UIL President and CEO was appointed by the UIL Board and authorized to control all business affairs within the context of a UIL Grants of Authority. Generally, it's said that final decisions related to management and operations of CNG are made by UIL or the executives at CNG. However, the charter of the AVANGRID Management Committee makes this less than clear.

AVANGRID has worked to ensure that subsidiary companies (UI, SCG and CNG) are reasonably coordinated and to help identify and disseminate intercompany best practices. The AVANGRID Management Committee was established in May of 2016 to provide technical, informational and management support to the AVANGRID CEO and an informative and coordinating role for the activities of the subsidiary Companies including CNG now referred to as within the AVANGRID Group. While this committee is said to be a non executive function committee, its charter makes this unclear to RCG/SCG LLC and CNG management. For example,<sup>7</sup> the committee is to provide support to the CEO of AVANGRID in the supervision of the AVANGRID Group to review and recommend to the Board action including purchases of goods and services greater than \$1 million, consulting services of any amount (excluding ordinary course of business such as lawyers for litigation), intercompany contracts and arrangements, top management appointments, and annual budgets.

In addition, Iberdrola S.A. has a corporate governance system which is sustained by three main pillars<sup>8</sup>:

- *Iberdrola, S.A., a holding company, the main function of which is to act as an entity owning the equity stakes in the country sub holding companies,*
- *The country sub holding companies, which group together the equity stakes and the energy heads of business companies acting in the different territories, and*
- *The head of business companies.*

In this system, AVANGRID is the U.S. country sub holding company, with strengthened autonomy as an SEC registered public company trading under NYSE rules, including independent board members, a fully qualified audit committee, and public reporting and disclosure. Avangrid Networks is the AVANGRID head of the business subsidiary for the U.S. network companies (i.e., gas and electric delivery utilities) having autonomy, including independent board members, a majority of independent members meeting SEC qualifications

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<sup>7</sup> Response to Data Request GEN017 Attachment 2 provides the Charter for the AVANGRID Management Committee

<sup>8</sup> Response to Data Request GEN017 Supplement Attachment 1 INTERNAL RULES ON COMPOSITION AND DUTIES OF THE OPERATING COMMITTEE

for its audit committee, and meeting SEC Sarbanes Oxley reporting and disclosure standards. UIL Holdings Corporation, the Avangrid Networks subsidiary for the Connecticut and Massachusetts network companies, also is said to have autonomy for local decision making and a board comprised of the U.S. network executives, including the Connecticut and Massachusetts President and CEO. As stated previously, UIL Holdings is intended to have the authority and responsibility for the day to day operations of the Connecticut and Massachusetts utilities, including The United Illuminating Company, SCG, and CNG.

Like AVANGRID's Management Committee, Iberdrola, S.A. has a non executive Operating Committee that provides technical information and management support to the Iberdrola Group Chairman and chief executive officer for the strategic organization and coordination of the Iberdrola Group. This committee is said not to have any executive responsibilities. Like the Management Committee, this Iberdrola Operations Committee was established to ensure the coordination of its subsidiary companies, including UIL Holdings and CNG and SCG, and to identify and disseminate best practices within the AVANGRID Group. This Operating Committee is said to only establish methodologies, analysis systems, procedures for the supervision of decisions, and monitoring instruments at the Iberdrola Group level. To the extent the Operating Committee is an Iberdrola non executive body and the management and governance of CNG is done at the CNG level as well as at the UIL Holdings level – its parent company—the Iberdrola Operating Committee does not discuss CNG's strategic, management or business matters regarding those companies and exclusively receives aggregate information for some aspects such as, among other things, the procurement volume of purchases in the whole Group.

However, we again found the duties of the operating committee may conflict with autonomous governance model of UIL Holdings. The duties are spelled out in corporate documents<sup>9</sup>:

*1. It is a core duty of the Operating Committee to provide technical, informational, and management support with respect to the supervision and monitoring and strategic planning duties of the businesses that the Board of Directors of the Company must define for the Group as a whole and that its chairman & chief executive officer must promote and implement together with the chief operating officer and the rest of the management team, thus permitting the development of the Group's Business Model, based on the coexistence of a decentralized structure of decision making processes and the global integration of the businesses.*

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<sup>9</sup> Response to Data Request GEN017 Supplement Attachment 1 INTERNAL RULES ON COMPOSITION AND DUTIES OF THE OPERATING COMMITTEE

*2. In this regard, the Operating Committee shall establish methodologies, analysis systems, procedures for the supervision of decisions, and monitoring instruments at the Group level, in the interest and for the benefit of all the companies thereof, with due respect at all times for the scope of the day to day management and effective administration within the power of the corporate governance and management decision making bodies of each of the business sub holding companies.*

*3. In order to perform its duties, the Operating Committee shall promote the establishment of internal rules (regarding investments and divestments, purchases, corporate services, etc.) that shall serve as instruments of coordination for the benefit and in the interest of all the Group companies, thereby facilitating the supervision and monitoring of decision making in order to ensure compliance with the management strategies and guidelines established by the Board of Directors of the Company, as the controlling company within the Group.*

The Grants of Authority documentation however provided more clarity. It detailed the general structure of the delegation of authority for clearly identified matters and expenditures for UIL Holdings and its subsidiaries. It covers Business Strategy, Purchase Decisions, Contractual Agreements, Union Contracts, Litigation and Insurance Settlements, Bank Credit, Loans and Extensions of Credit, Vendor Payments, Asset Sales, and numerous other items. We found this documentation to provide a reasonable level of management authority and control.

Finally, a firm organizational structure diagram covering the names, organizational relationships, names, and titles and reporting chain for all Shared Service Groups working in any way CNG was not available despite repeated requests until after the conclusion of our data collection and interviewing efforts. Shared Services provides back office support for CNG and its sister company SCG. This includes:

- Human Resources,
- Safety,
- Facilities,
- Environmental,
- Legal,
- Purchasing,
- Information Technology,
- Corporate Finance/Treasury/Tax, and
- Fleet/Logistics.

In addition, numerous published titles within shared services did not reflect the actual responsibilities of the people who currently have that title. It was clear the transition to the merged organization has not been completed and transition planning generally remains a work in progress despite the time that has elapsed. A written Transition Plan should have been developed in the very early stages of the acquisition of the UIL Holdings.

In addition, it appears that only union issues and relationships prevent even a potential of merging SCG with CNG. However, In March 2011, as part of a settlement with OCC to resolve the appeals of the 2008 rate cases for SCG and CNG, the parties proposed the combination of SCG and CNG for regulatory purposes. In PURA's review of that settlement agreement, PURA disallowed the combination as proposed, indicating that a complete 16 43 application would be required. Subsequent to that decision, UIL has done further investigation into the possible combination of the two companies, but no decision has been made whether to combine the companies. No timeline has been developed to reexamine the potential consolidation.

The potential consolidation of CNG with its sister company SCG would benefit rate payer for the following reasons:

- Resources could be more readily shared across the two gas companies,
- Any inconsistencies created by the different union contracts could be resolved, potentially to the benefit of the customer and employee, and
- Common material and equipment identification could lead to lower per unit purchasing prices, benefiting the customer.

The remaining Gas Operations, Customer & Business Services, and Business Services and Control organizations are covered in their related chapters in this report.

### **Priorities**

**Conclusion 3.2.2:** *RCG/SCG LLC believes that while limited to operational and new business area, the High Level Priorities are appropriate, well thought out, and result in improved operations, growth of their gas business, and improved customer service.*

### **Analysis**

The UIL Holdings' Mission for its four utility companies (UI, SCG, CNG and Berkshire Gas) is "We create value as a premier provider of utility and energy related services" and its Vision is "We are a trusted industry leader."

In addition, UIL Holdings has established Long term Strategic Objectives.

- Shareholders

- Top Quartile Total Shareholder Return
- Sustained Dividend Increases with Payout Ratio @ 65%
- Maintain Investment Grade Rating
- Customers
  - First Quartile Northeast Electric Reliability
  - First Quartile Natural Gas Infrastructure Integrity & Safety
  - First Quartile Customer Satisfaction
- Employees
  - Accident Free Workplace
  - One Company Culture
  - Engage Diverse Workforce

Given the UIL Holdings Mission, Vision, and Strategic Objectives, the Connecticut Gas Mission Strategic Objectives were designed to be supportive<sup>10</sup>:

- Mission for the Connecticut Gas Companies including CNG
  - To provide safe, reliable and high quality services to our customers and value to our shareholders.
- Strategic Objectives
  - Achieve best in class infrastructure integrity and safety.
  - Expand the opportunity CT homes and businesses to access natural gas.
  - Increase shareowner value, maintain investment grade credit rating.
  - Enhance Public Education Awareness.
  - Improve the capability of the CT Gas Companies to meet customer needs and expectations.

In this context, executive management has defined a number of High Level Priorities for its Connecticut gas utilities.<sup>11</sup> RCG/SCG LLC reviewed these high level priorities and evaluated the rationale and the goals and objectives of the Priority projects. The actual management of the projects is covered in their relevant sections of the Management Audit report. The High Level Priorities were limited to gas operations and growth. They include:

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<sup>10</sup> CT & MA Operations Gas 2016 Operational Business Plan, Feb. 2016

<sup>11</sup> Management Audit Kickoff Presentation May 2016 and 2016 Operational Business Plan

- Gas Safety to address past high profile incidents: Action is being taken to improve pipeline safety and address the root causes of high profile incidents and PURA fines. The targets include:
  - 3rd Party damage,
  - Leak response,
  - Leak Surveying,
  - Leak management,
  - Emergency response,
  - Fugitive methane,
  - Technology Assessment, and
  - Emergency preparedness.
- Operational Enhancements;
  - Mobile Work Management including effective scheduling & dispatch;
    - One common platform and increased technology usage
    - Modernize aging software infrastructure
    - Increased productivity and cost reduction
- Customer Experience;
  - Deliver an insight based, relevant customer experience to their customers
  - Expand the Voice of the Customer
  - Develop a state of the art Website
  - Improve channel analytics
- Gas Growth;
  - Establish and work to achieve CES Gas Growth goals
  - Aggressive projected growth in annual customer count
  - Significant Natural Gas Infrastructure Expansion Plan
- Capital Plan, Major Capital Projects;
  - \$424.2 million Major Capital Projects Plan
  - In 2016, new business will account for \$39.1 million, Gas Replacements \$89.4 million, and Gas, LNG \$31.2 million.

These are well thought out and reasonable priorities and cascade off the admirable strategies set by UIL Holdings. If their targets are met, CNG will be in a better position to continue to support the Gas needs for its current and future customers. It is clear from all our audit interviews that CNG and its sister gas company in Connecticut, SCG, are generally

devoting resources that the high level priorities require. There remains opportunities to fine tune a number of these areas. This fine tuning is covered in the remainder of this document.

### **Recommendations**

**Recommendation 3.2.1:** *RCG/SCG LLC recommends that a written Transition Manual be developed clearly defining the new organization structure, roles and responsibilities, systems and processes, and outlining the procedures to be implemented.*

**Recommendation 3.2.2:** *RCG/SCG LLC recommends that the charter of the AVANGRID Management Committee and the Iberdrola, S.A. duties of its Operating Committee be reviewed, clarified, and communicated as part of a training program to ensure that there is no conflict with autonomous governance model of UIL Holdings and to eliminate any current misconceptions throughout the Connecticut utilities' organizations.*

**Recommendation 3.2.3:** *RCG/SCG LLC recommends that a potential consolidation of CNG and SCG be reexamined (with a timeline, including, a detailed cost benefit analysis, the definition and method to overcome any union or other impediments, organizational modifications, and other planning & implementation elements) and re introduced to PURA.*

### **3.3 Internal Auditing**

#### **Objectives and Scope**

There were no requested formal evaluation criteria for the Internal Audit function. However, the Institute of Internal Auditors defines internal auditing as “an independent, objective assurance and consulting activity designed to add value and improve an organization’s operations.” Auditing helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

#### **Overall Assessment**

**THE INTERNAL AUDIT DEPARTMENT IS POSITIONED CORRECTLY AT THE AVANGRID LEVEL TO PROVIDE INDEPENDENT ASSESSMENTS OF CNG PROCESSES AND ACCOUNTING PRACTICES TO THE AVANGRID BOARD OF DIRECTORS.**

Pre Iberdrola UIL merger, Internal Audit (IA) reported to the UIL board of directors and now reports to the AVANGRID board of directors. It is professionally staffed with individuals who meet the requirements of IA auditors. The Director and both of the Managers are well qualified to perform the necessary functions. One manager has since been promoted to the

Director level to manage all AVANGRID IA for Internal Controls and Financial Reporting. During our review the IA function went from 10 individuals, including one administrator, to 22, via consolidation, in recognition that they will now be responsible for auditing all AVANGRID business units.

The audit planning process is appropriately risk based, and audits are identified and prioritized based upon input from across the organization which is reviewed annually and the master list of audit areas are kept in the Audit Universe Excel spread sheet<sup>12</sup>. This data base is used to identify the coming year's planned audits and is based on a formal numeric risk assessment value.

IA now reports results to the AVANGRID Board of Directors' (ABOD) Audit Committee which is what RCG/SCG LLC would expect. They provide an oral report to the Audit Committee. The oral report instituted back in 2012. IA's Senior Director delivers the report which is supplemented by a pre BOD meeting with the board's committee members, IA's directors, and managers to discuss in detail the areas where the ABOD members may have questions.

CNG does not have a separate internal audit function. Internal audit was provided through UIL, now AVANGRID. The internal audit reporting lines are appropriate with the AVANGRID's new head of Internal Controls and Financial Reporting/Director Financial Controls, who in turn reports to Vice President and reporting functionally to the ABOD Audit Committee<sup>13</sup>. These reporting lines help ensure IA has the autonomy, authority and support it needs to accomplish its assignments throughout the organization.

The group monitors and compares itself to the audit industry best practices. It participates in peer reviews and adheres to the Institute of Internal Auditors Standards and the Code of Ethics.

## **Evaluation Criteria**

RCG/SCG LLC's evaluation of the UIL/AVANGRID internal audit function focused on the Internal Auditing's (IA) organizational structure and reporting lines, responsibilities, experience and training, audit planning, audit execution and follow up, and best practices. Therefore, our criteria for IA are as follows:

- Is the internal auditing function appropriately positioned to allow complete objectively?
- Does internal auditing report results to the board of directors?

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<sup>12</sup> Rossi Interview 060616, Belfonti Interview 060616 & 071116, and Response to Data Request IA009 Attachment 1, Audit Universe Database

<sup>13</sup> Belfonti Interview 071116

- Does internal auditing have a risk based method for determining what needs to be reviewed?
- Does internal auditing maintain an annual plan of future audit activities?
- Is the internal auditing team qualified to perform the required audit analysis?
- Is there a formal process for auditors and IA management to maintain and expand their training?

### **Conclusions**

**Conclusion 3.3.1:** *RCG/SCG LLC found that the Company adequately addressed, with a single exception, the 2010 recommendations relating to the Internal Audit function and the Audit Committee. The single exception, which may no longer be critical, involves DPUC SOX Compliance deficiency notification.*

### **Analysis**

The 2010 Management Audit included the following recommendations<sup>14</sup>:

*5 4: Iberdrola USA should amend its Audit Committee Charter to formalize its intention to always have at least one designated “financial expert” (as defined by the Sarbanes Oxley Act) on the committee.*

*Company Response: Complete. The UIL Audit Committee charter requires that there be a financial expert on the Committee and they currently have a financial expert on the Committee.*

*7 3 The Audit Committee of the Board of Directors of Iberdrola USA should be routinely kept apprised of all outstanding internal audit recommendations and their ultimate resolution.*

*Company Response: Complete. Any significant work performed by the Internal Audit Department will be documented in a formal audit report. Any outstanding issues will be followed up by the Internal Audit staff. The final audit report distribution includes the BOD audit committee members. Internal audit recommendations are expected to be completed within 90 days. A status report of management’s actions on audit recommendations are reported to the BOD audit committee members each quarter.*

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<sup>14</sup> Response to Data Request GEN012 Attachment 1

*7 4 The status of outstanding, unremediated deficiencies of internal controls should be routinely reported to the Audit Committee of the Board Directors of Iberdrola USA, and the recurrence of deficiencies should be disclosed to this committee.*

*Company response: Complete. All significant deficiencies are considered high priority for remediation. It is UIL's objective to remediate all significant deficiencies before the end of the calendar year. All deficiencies and the actions taken by management to remediate those deficiencies are reported to the BOD audit committee members.*

*7 5 CNG should notify the DPUC in writing if and when company management decides to deviate from compliance with Sarbanes Oxley requirements and also when CNG's key business cycles are no longer considered material to Iberdrola USA, thus implying that they would not be subject to management's assessment of internal controls.*

*Company Response: Complete. While they disagreed that the Company should provide unsolicited notification to the DPUC, they agree to comply with SOX. SOX is currently in compliance*

RCG/SCG LLC generally feels that with CNG responses to these 2010 Audit recommendations related to the Internal Audit function are reasonable and have been appropriately addressed with one exception; the recommendation that the DPUC be notified regarding SOX compliance deficiencies. Given their SOX compliance and their current process, we do not believe that unsolicited notification of deficiency to the DPUC is critical.

**Conclusion 3.3.2:** *RCG/SCG LLC found that CNG does not have a separate internal audit group. Internal audit was provided through UIL, now it is provided through AVANGRID. The reporting lines of AVANGRID's Internal Audit Function are appropriate.*

### **Analysis**

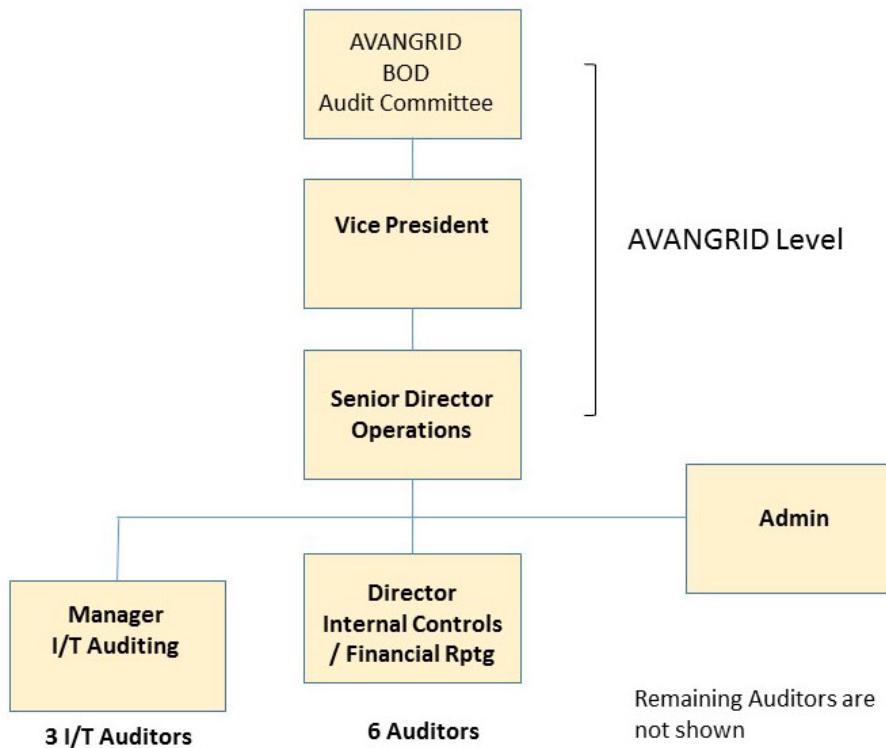
RCG/SCG LLC found that the Internal Audits reporting is a shared services function. The IA lines are appropriate with the Senior Director of Internal Audit reporting functionally to AVANGRID's new head of Internal Controls and Financial Reporting/Director Financial Controls Audit Committee of the ABOD. These reporting lines help ensure IA has the independence, authority, and support it needs to accomplish its mission throughout the organization. IA's

approach to auditing is very much a team effort and enlists support from the functions under study.<sup>15</sup>

**Conclusion 3.3.3:** *RCG/SCG LLC found that the IA is well organized and adequately staffed with qualified auditors and management.*

### Analysis

The IAD group is organized as follows.



**Exhibit 1 - IA Organization**

IA is responsible for the following:

- Planned Audits,
- Sarbanes Oxley Section 404 Audit Coverage,
- Investigations/Special Projects, and
- Consult on existing or proposed systems, projects, plans, policies, and procedures of the Company.

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<sup>15</sup> Belfonti interview 060616

The group supports several strategic initiatives, including the continued implementation of the SAP accounting system phased rollout to ensure controls are in place and SOX Section 404 testing. When the new director joined UIL a little over five years ago there were over 600 SOX controls which had to be audited. With the installation of SAP that number has been reduced to 229 controls, due to the automation of financial processes.

Of the six non I/T auditors performing audits three of them are assigned to gas auditing.<sup>16</sup>

**Conclusion 3.3.4:** *RCG/SCG LLC found that the original UIL internal auditing group needs technical auditors to support in technical audits, they enlist the appropriate consulting services or individuals from appropriate AVANGRID function.*

#### **Analysis**

IA makes use of a small group of consultants to augment their staff to support in technical areas, where those resources are not found in IA. Occasions IA also uses AVANGRID technical resources as appropriate, particularly in I/T.<sup>17</sup> This use of external support is due in part to the major releases of SAP and other programs.

**Conclusion 3.3.5:** *RCG/SCG LLC found that individuals in IA are qualified and participate in continuing professional education.*

#### **Analysis**

The group is well organized and adequately staffed. Individuals are qualified and participate in continuing professional education.

In addition to holding undergraduate degrees, most of the original nine professionals within the internal audit group have advanced professional designations. IA management has between 5 to 21 years of UIL audit experience. Several have work at major accounting firms or other industries in an audit capacity. All of the professional staff are members of the Institute of Internal Audits (IIA).<sup>18</sup>

Each member of the audit staff, including managers, has a goal associated with his or her personal and professional development. Training is planned each year based on the individual auditor's need and skill level. Professional certifications require minimum of 40

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<sup>16</sup> Interview with Belfonti 060616

<sup>17</sup> Interview with Wyslick 060616

<sup>18</sup> Interviews with Rossi, Belfonti, and Wyslick 060616

training hours. For example, CIAs (Certified Internal Auditors) must complete and report 80 hours of Continuing Professional Education credits every two years.<sup>19</sup>

IA personnel attend seminars and conferences that cover a variety of subject matter related to the internal audit profession. Professional associations, such as the Institute of Internal Auditors (IIA) and the Information Systems Audit and Control Associations (ISACA), generally sponsor the seminars and conferences attended. Below is a listing of the training programs by year, starting in 2013.

2013 Training:

- American Gas Association/Edison Electric Institute Utility Auditor Training
- SAP Project System Overview
- Storm Training – Wires Down and Defensive Driving
- UIL Risk Management Training
- Current Accounting and Reporting Developments
- SAP Fraud Webcast
- 2013 COSO Framework Update
- Association of Certified Fraud Examiners Annual Conference & Exhibition
- Fraud's Hidden Costs to You and Your Organization
- SAP Finance Overview
- SAP Reporting
- SAP Bank Accounting
- Business Continuity Management
- Excel Speed Tips
- Audit Evidence & Professional Judgment: How to Effectively Use Critical Thinking
- SAP Consolidations Reporting
- Storm Training – Municipal Liaison Guidelines
- FEMA Incident Command Training
- Content Server Basic Training & Projects Analysis
- Finance Interrogatory Process for Rate Cases
- FASB/IASB Proposed Lease Accounting Changes
- Quality Assessment Reviews: Adding Value to Your Organization
- NERC Compliance – General Awareness Training

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<sup>19</sup> Interview with Belfonti 060616

2014 Training:

- Storm Training – Wires Down and Defensive Driving
- Cybersecurity: Changes in NERC CIP Compliance for Gas and Power Utilities
- High Impact Excel: Vlookup Edition
- Fraud Bribery and Corruption: A Tale of 2 Cases
- Achieving Professional Excellence by Raising the Bar
- Cyber Insecurity – How Safe can the Company Assets Be?
- Keeping the Risk Universe Current
- Your Role in Sustaining a Culture That Deters Fraud
- COSO 2013 Part I – Control Environment & Risk Assessment Components
- Overview & Update on Accounting for Rate Regulated Activities
- Outage Management and the Data Revolution
- COSO 2013 Part II – Control Activities, Information and Communication, Monitoring Activities
- COSO 2013 Part III –Transition and Other Considerations
- Individual Leadership: Managing Your Time as if it was Your Money
- IT Auditing Principles for Internal Auditors
- Managing Audits as Projects
- Power & Utilities Technical Update
- Audit Analytics for the SAP Vendor Masterfile
- Cyber Security Evolution – What Boards are Talking About
- ACL – Auditing & the SAP Environment
- COSO 2013 – The Implications to IT Controls

2015 Training:

- NERC Compliance Training
- Continuous Monitoring over SAP Configurable Controls
- Conducting a SharePoint Audit & Resolving Challenges
- SAP Configurable Controls over G/L Entries
- Current Accounting and Reporting Developments – PwC webcast
- All about Analytics – Turn Enterprise Data into Your Biggest Asset Against Risk
- Economic and Risk Outlook Campaign
- SAP Cybersecurity – Protecting SAP from Vulnerabilities, Threats, and Attacks
- How to Maximize Your Strategic Thinking for the Audit World
- The New International Professional Practices Framework
- Center for Governance Quarterly Webcast

- American Gas Association Chief Audit Executives Conference & Training
- Hot Topics in Lease Accounting
- Navigating the FASB's New Consolidation Standard
- Establishing Effective SAP Controls in Your Organization
- American Gas Association/Edison Electric Institute Utility Auditor Training
- American Gas Association/Edison Electric Institute Utility Accounting Training
- FERC Accounting & Reporting
- Misplaced Trust: Investigating Vendor Fraud
- Build a Value Driven GRC Roadmap
- UIL IT Security Awareness Training

2016 Training:

The current year training plan includes training on new internal audit software, new internal controls software, International Financial Reporting Standards (IFRS), and training on the new revenue recognition standard. Staff and management will be attending American Gas Association utility auditor training as well as the Chief Audit Executive Conference. NERC compliance and Fraud training are also planned.<sup>20</sup> Included in the above list of programs are those associated with the electric business only, however, the listing is very broad and comprehensive.

Augmenting the existing IA staff is a small number of external consultants used to evaluate specialized or technical areas.

Sourcing for the full time auditors is from both internal posting and externally through recruiters.

With respect to SAP training, UIL brought in a trainer to train the folks responsible for SAP and its oversight at a savings of 50% over off site training.<sup>21</sup>

**Conclusion 3.3.6:** *RCG/SCG LLC found that the audit planning process is appropriately risk based and audits are identified and prioritized based upon input from across the organization.*

Analysis

The development of the annual Audit Plan is among the most critical activities that IA management performs. The Audit Plan is developed to provide a thorough and effective planning process to ensure that a meaningful and challenging plan is designed to provide

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<sup>20</sup> Response to Data Request IA002 Attachment 1 Training Programs from 2013-2016

<sup>21</sup> Interview with Belfonti 060616

Company management with timely and useful feedback on the Company's operations and control environment.

IA prepares a planning calendar annually working from the Audit Universe database (AUD). The IA management team will:

- Review historical audits,
- Meet with executives (VPs and above), IA management views this process as a partnership with AVANGRID management,
- Identify the frequency of the required audits,
- Assess the potential risk, weighted for fraud, safety, or danger to the public,
  - Rank all audits' risk from 0 to 5, five being highest risk,
  - Focus on higher risk areas first,
  - Determine if and when the last audit was done, and
  - Executive Management areas of concern.
- Criteria for audit selection,
  - Annual audit vs. special purpose audits three to five percent annually for special purpose audits, and
  - SOX compliance audits are the largest driver, 25% of the \$1.5M.<sup>22</sup>

IA management pays close attention to adherence to budget and schedule. Past trends indicate:

- Internally performed audits always finish on budget, and
- External audits, \$3M total annual, tend to overrun by about \$20,000<sup>23</sup>.

The percentage of IA's work that is gas related is estimated between 25% and 30%.<sup>24</sup> This level may include some indirect processes found in electric as well as gas. In a review of the audits contained in the AUD, RCG/SCG LLC found that only 6% of the items were directly attributed to the natural gas business, while electric had 10% and I/T had 27%. The remaining 57% were corporate related<sup>25</sup>. That said, many of these corporate areas directly impact the gas business processes.

IA expense is allocated to the two gas companies as follows; SCG 14% and CNG 17%. The cost allocation model is audited every two years (completed 2016 review for 2014 and

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<sup>22</sup> Interview with Rossi 060616

<sup>23</sup> Interview with Rossi 060616

<sup>24</sup> Interview with Rossi 060616

<sup>25</sup> Response to Data Request IA009 Audit Universe Database

2015). However, Accounting does one every 6 months—therefore they seldom, if at any time, find issues with how the allocation is determined.<sup>26</sup>

**Conclusion 3.3.7:** *RCG/SCG LLC found that the audit execution and follow up processes are rigorous, well defined, and appropriate.*

Currently, the audit structure is determined by the Senior Director, who sets the; audit scope, risk level, requirements, and audit program.

The auditors plan the audit, if new, and execute the audit according to the plan. Typical audits can range from 150 hours for small audits to 400 hours for large or regulatory compliance audits. Audits examine areas including; compliance with company rules and processes, and regulatory compliance. As an example, new business cost estimation will evaluate the overall customer acquisition from marketing to installation.

Findings, conclusions, and recommendations, if required, are developed based on examination, judgment, discussion, and company process requirements, rules, and regulatory compliance requirements. Conclusions are generally considered audit issues while observations are considered minor. Recommendations are action items which require management attention to address.<sup>27</sup>

The review process is rigorous, first there is a peer review done to ensure the quality of the audit work and results. Next the Senior Director reviews all reports leaving the IA department. This is critical as the senior Director has a clear understanding of how to explain the issues and the level of information required to support the explanation to the BOD. Currently, IA uses a long report format, but AVANGRID's approach is to say it in one page, which is likely where IA reports will end up.<sup>28</sup>

**Conclusion 3.3.8:** *RCG/SCG LLC found that the internal audits, performed from 2011 through 2015, demonstrated that the Company's internal audit program ensures independent verification of the accuracy of accounting information and provides objective evaluation (and improvement) of the accounting and operational practices of the Company. However, a full audit of Gas procurement was last done in 2011. UIL has performed two audits of the "Gas Conversion Estimation Process" the first in 2013 and the second just completed in February 2016, but the estimation process remains flawed.*

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<sup>26</sup> Interviews with Rossi 060616 & Belfonti 060616

<sup>27</sup> Interview with Belfonti 060616

<sup>28</sup> Interview with Rossi 060616

### Analysis

In the following Exhibit the internal audits performed from 2011 through 2015<sup>29</sup>, demonstrates that the Company's internal audit program ensures independent verification of the accuracy of accounting information and provides objective evaluation (and improvement) of the accounting and operational practices of the Company.

YEAR	AUDIT AREA/TITLE	COMPLETION DATE
2011	Electronic Funds Transfer (UIL Holdings Corp. wide audit)	Apr-12
	Gas Procurement	Nov-11
	Gas SCADA Cybersecurity	Nov-11
	Physical Security	Dec-11
	SAP Phase 1 (Back Office Migration)	Nov-11
2012	Cost Accounting Methodology Manual (UIL Holdings Corp. wide audit)	Jan-16
	Purchased Gas Adjustment	May-13
	Request for Proposal & Bid Deviations (UIL Holdings Corp. wide audit)	Jun-12
	SAP Phase II Deployment (Customer Information System)	May-12
2013	Collections Charge-off Process (UIL Holdings Corp. wide audit)	Dec-13
	Escheat Process audit (UIL Holdings Corp. wide audit)	Feb-13
	Environmental-Hazardous Materials (UIL Holdings Corp. wide audit)	Feb-14
	Gas Conversion Estimation Process	May-13
	Safety Monitoring (UIL Holdings Corp. wide audit)	Apr-13
	Scrap Process & Procedures (UIL Holdings Corp. wide audit)	Sep-13
	Ten Year Plan Cast Iron Bare Steel Replacement	Mar-14
2014	Cost Accounting Methodology Manual (UIL Holdings Corp. wide audit)	Mar-15
	Material Issuance Process (UIL Holdings Corp. wide audit)	Sep-14
	Rate Implementation & Rate Changes (UIL Holdings Corp. wide audit)	Dec-14
	Ten Year Plan LNG Plant Modernization	Jan-15
2015	Contractors and Consultants (UIL Holdings Corp. wide audit)	Jun-15
	Fleet Management (UIL Holdings Corp. wide audit)	Sep-15
	Gas Conversion Estimation Process	Feb-16
	Gas Storage & Inventory	Feb-16
	Ten Year Plan Gas Expansion Project	Mar-16
	Unbilled Revenue Process (UIL Holdings Corp. wide audit)	Jul-15

### **Exhibit 2 - IA Audits Performed from 2011-2015**

The RCG/SCG LLC team is using several of these audits to better understand the processes and progress made by CNG.

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<sup>29</sup> Response to Data Request IA005

The AVANGRID tracks open audit recommendations. IA's guidance on closing identified issues is 90 days. The one exception to this is I/T systems, which by their very nature can take longer to complete.<sup>30</sup>

As shown in the above Exhibit, a full audit of gas procurement was last done in 2011. IA management gave the following reasons for this:

- IA indirectly reviews gas supply and purchasing through SOX and the required controls annually,
- Reviews the bi annual supply and demand,
- Reviews CEI new capacity contracts, and
- Both AVANGRID accounting and PURA review monthly invoices for gas procurement.<sup>31</sup>

There are two areas that concern RCG/SCG LLC. First is gas procurement, the largest expense area in the natural gas business with the potential of the greatest financial risk. Gas procurement has not received a full audit since 2011. RCG/SCG LLC is concerned that the incremental reviews performed since then may leave some level of exposure. Second, AVANGRID has performed two audits of the "Gas Conversion Estimation Process" the first in 2013 and the second just completed in February 2016, but the process remains flawed. Based on work found in the Section 4 – System Operations of the audit, the process used to estimate gas conversion and main replacements is suspect.

**Conclusion 3.3.9:** *RCG/SCG LLC found that the group monitors and compares itself to industry best practices. It participates in regular peer reviews and adheres to the Institute of Internal Auditors Standards and the Code of Ethics.*

#### Analysis

The Institute of Internal Auditors (IIA) requires an independent quality assurance review every five years to evaluate compliance to standards. The report is issued to the Audit Committee. The last audit was completed in March 2013<sup>32</sup>.

**Conclusion 3.3.10:** *RCG/SCG LLC found that the Company has a sound process for tracking open audit recommendations and control deficiencies.*

#### Analysis

AVANGRID tracks open audit recommendations and provided RCG/SCG LL a copy of their current control deficiencies status for 2016. The status report included the audit finding

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<sup>30</sup> Interview with Belfonti 060616

<sup>31</sup> Interview with Rossi 060616

<sup>32</sup> Response to Data Request IA012 Attachment 1

and description and the management action completion date. The following Exhibit provides the open audit recommendations for UIL.

The deficiency and the action required to correct the problem are described along with the current status and additional actions by IA. In this case the deficiency is open.

RCG/SCG LLC believes IA has a sound process for tracking open items. As stated earlier, IA promotes completing these open items within 90 days.

Control Deficiency No.	Co.	Business Process	Process Objective	Risks Which Threaten the Process Objective	Description of Current Control	Description of Control Deficiency	Preliminary Observations/Recommendations" or Better Practice" Control	Description of Improved Controls Implemented/ Status Update  Note: remediation testing is performed for periods after the new or remediated control implementation date.	Status (Closed, Open, TBD)	IT Support Needed (Yes/No)
G-2	SCG, CNG, BGC, UI	Entering and approving employee time.	To ensure that all time is reported accurately, authorized and is coded to valid accounts.	Time reported may not be accurate or is unapproved. Employees may be paid for time not worked or earned.	All UIL employees are required to enter their hours worked into Workforce Time/Labor Management on a weekly basis. All time sheets, except for crew are approved electronically in the Workforce/Labor Management system by the employee's supervisor prior to the payroll being processed. Crew time sheets are manually signed by a supervisor before the time is entered into WorkForce by a time keeper. For employees without immediate access to a computer, timesheets are forwarded to assigned timekeepers who enter the information into the system. In the event the supervisor is unavailable to approve time for direct reports, it is approved by the next-level manager or UIL Payroll (part of the required payroll processing). If a supervisor was not able to approve the timesheet, Payroll will send an email to them requesting their approval and the supervisor must review the employee's time to ensure accuracy and reply with their approval via email.	During the Round 1 timesheet approval testing, we noted certain employees' timesheets were not approved. For employees who did not submit their timesheet to their supervisor in a timely manner, or are not approved by their supervisor, there were multiple instances when a manual email from Payroll was sent instructing the employee to have their supervisor manually approve their timesheet, sign, and reply with their approval via email or by printing and sending a copy of the approved timesheet to Payroll. However, the employees never replied with their approval via email or by printing and sending a copy of the approved timesheet to Payroll as required.	Payroll should work with the employees and applicable departments to remind them that when an employee does not submit their timesheet to their supervisor in a timely manner, or the supervisor does not approve their direct report's timesheet in Workforce, the employee and supervisor will receive an email from Payroll requesting their approval and instructing the supervisor to review the employee's time to ensure accuracy. They should then reply with their approval via email or by printing and sending a copy of the approved timesheet to Payroll. A notification should go out to the applicable employees to remind them of this required process.	Internal Audit sent an email to the applicable employees and their supervisors to remind of the required process. Remediation testing will be performed once the required remediation sample size is available.	Open	No

**Exhibit 3 - List of Control Deficiencies**

### **Recommendations**

**Recommendation 3.3.1:** *RCG/SCG LLC recommends that steps be taken to ensure that the IA needs related to CNG are met going forward, as IA's responsibility expands to cover all AVANGRID business units.*

**Recommendation 3.3.2:** *RCG/SCG LLC recommends that IA evaluate the proper frequency of performing a full audit of gas procurement.*

**Recommendation 3.3.3:** *RCG/SCG LLC recommends that IA continue to actively review annually the "gas conversion estimation process." In addition, review the use of the non-firm margin reserve account for reasonableness.*

#### *3.4 Strategic Planning*

### **Objectives and Scope**

Strategic Planning is critical to today's utilities. Utility executives have to navigate a complex environment that sometimes has planning elements competing for limited resources. The environmental changes facing natural gas utilities include:

- *From a customer perspective:* In recent years, a shift has occurred in how utilities manage customer expectations, which are being formed by non utility businesses. One example is customer expectations of service level to customer inquiries.
- *Competing energy Sources:* Oil pricing has been volatile over the last year with oil dropping dramatically from near high in June 2014 of about \$114 per barrel to the current price of about \$51.00 per barrel and even reaching a 52 week low of \$27.82 over the last two months.
- *Fall of natural gas commodity price:* The natural gas price has fallen from a high in mid 2014 of over \$6/MMBtu in mid 2014 to the current price of \$2.95 /MMBtu
- *Aging Distribution Infrastructure:* Most natural gas utilities have a lot of bare steel and cast iron pipe over 30 years old on their systems causing a lot of leaks that must be repaired or replaced. This leads to significant capital expenditures to replace this failing infrastructure.
- *Inadequate infrastructure asset management:* Many utilities rely on a combination of old paper records along with human knowledge of their utility system to know where

things are. This means finding some pipe is a significant effort and the subsoil conditions are lost over time, making estimating of repair and replacement more difficult.

- *Evolving municipal requirements:* From the community restoration requirements to the use of overtime for public safety officers, such as traffic control, impact the cost of repairing and replacing pipe in the ground.
- *Aging work force:* This leads to loss of critical institutional knowledge of the system and efficient or effective methods.

Compounding this difficulty is the rising cost of maintaining a complex gas distribution system coupled with the pressure to manage financials aggressively. In the case of CNG and SCG, having been bought and sold a number of times since the beginning of this century with the most recent sale in December 2015, their priorities shift with the change in ownership.

In this section, RCG/SCG LLC reviews CNG's efforts, as part of both AVANGRID and UIL, to envision and plan for the future while balancing all the competing interests of its stakeholders.

## Overall Assessment

**DUE TO THE RECENT UIL HOLDINGS SALE TO IBERDROLA USA, NOW AVANGRID, MANAGEMENT'S FOCUS IS ON INTERGRATION, AS SUCH STRATEGIC PLANNING AT CNG IS IN THE FORMATIVE STAGES. CURRENTLY, AVANGRID IS APPLYING CORE PERFORMANCE METRICS TO CNG, CAUSING STRATEGY TO BECOME TRANSACTIONAL. STRATEGIC LEVEL PLANNING INITIATIVES HAVE YET TO BE IDENTIFIED.**

Prior to the most recent sale of the company, there appears to have been a reasonably robust strategic plan. This plan led the company to work with the State of Connecticut legislative and executive branches to create Connecticut's Comprehensive Energy Strategy (CES) program. As a result of the recent Iberdrola USA UIL Holdings acquisition, CNG through UIL, elevated its strategic planning and performance management effort, while integrating the two. By management's admission, the companies are still finalizing much of the integration efforts, so the strategic planning process is not yet fully defined.<sup>33</sup>

However, there is a 2016 Operational Business Plan<sup>34</sup> for the Connecticut and Massachusetts gas business units. This operational plan clearly states the Mission, Vision,

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<sup>33</sup> Response to Data Request EXE002

<sup>34</sup> Response to Data Request EXE030

Strategic Objectives, and Initiatives for 2016. Their 2016 high level operational planning priorities<sup>35</sup> include:

- Gas Safety;
- Operational Enhancements/Customer Experience;
- Gas Growth; and
- Capital Plan, Major Capital Projects.

It appears that AVANGRID management has overlaid some of these initiatives with another set of initiatives that are aimed at creating a “one gas company” model. This will be discussed later in this section.

### **Evaluation Criteria**

RCG/SCG LLC proposed the following evaluation criteria as the principal areas of investigation and the foundation for this study area’s chapter in the final report:

- Is there a formal strategic plan and process?
- Does the plan reflect the needs of the gas business going forward – is it visionary?
- What is the Company’s approach to competitive issues for new markets; i.e., what new markets are being considered by the Company, how would the costs for entry into those markets be funded, and would the Company’s entry into those markets serve to help or hinder competition in those new markets?
- Are the planning assumptions defined? Do they consider multiple scenarios – potential best, most likely, or worst case scenarios for the future?
- Is the mission clear and communicated, understood and embraced by employees?
- Are the values defined? Do employees understand what these values mean and what behaviors they should cultivate and practice to be consistent with these values?
- Have the major strategic priorities been defined? Do the strategic priorities address such areas as fiscal viability and profitability, public trust, customer service, process improvements, organizational change, economic development for the region, environment, and initiatives to sustain continuous performance improvement and learning within the workforce?

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<sup>35</sup> May 2016 Management Audit Kickoff Presentation

### **Conclusions**

**Conclusion 3.4.1:** *RCG/SCG LLC found that the recent corporate strategic planning is in its infancy, and for the immediate future, the strategic effort appears to be focused on system and performance metric management and identifying best practices. The 2016 Operational Business Plan is the likely surrogate with some refocusing of its priorities.*

### **Analysis**

The strategic planning mission is to catalyze opportunities to better meet the needs of CNG customers, and increase the customer and shareholder value of AVANGRID by identifying growth opportunities grounded in sound strategic and business analysis. While framing AVANGRID's and UIL's Connecticut gas policy agenda and establishing UIL as the region's energy thought leader.

The Customer focus component of the strategy is the adoption of the utility model wherein the customer is kept well informed and has a definite say in how he or she will use energy. Critical to the customer, is CNG's unwavering management direction to reduce response time to gas odor calls, which they routinely beat the metrics set. In 2012, CNG participated in PSEG's annual benchmarking effort, to a highly limited degree, but doesn't appear to value participation in JD Power's Customer Survey. Its neighbor Eversource Energy's Yankee Gas Services does participate.

Management is moving forward with its core infrastructure upgrades on two fronts:

- As part of CNG's last rate case, they have negotiated an accelerated mains replacement program.
- CNG has nearly completed the upgrade of their Rocky Hill LNG Plant core processes.

Management has stated in the 2016 Operational Business Plan, a "One Company Culture" for all employees. This is a good beginning, but the plan should be promoting a "One Company Approach." This would align all elements of the business: strategy, policy, and process, much like what Eversource Energy is doing. However, the former management team didn't promote this strategy between SCG and CNG. As a result there are still different unions for each core function, work practices vary, materials are not consistently identified between the two companies, and the approach to safety varies.

Prior to the recent merger, CNG was heavily involved in the formulation of Connecticut's CES program. CNG management rightly understood the importance of this initiative and was an active partner with the State to formulate the program.

Currently, the President of Connecticut and Massachusetts Operations and the President and Chief Operating Officer of Connecticut Gas Operations and the gas leadership

team address the UIL gas strategic plan.<sup>36</sup> This is the thought leadership group; as of this writing, it is unclear how this group will change as the transition exercise unfolds.

The current Mission is stated: “We create value as a premier provider of utility and energy related services.”

RCG/SCG LLC finds this mission to be very broad. More importantly, what makes them a premier provider of utility services? They have multiple companies with a number of call centers and modes of customer contact. Are they being proactive with all customers’ energy needs? How do they compare to Eversource Energy? Given that there doesn’t appear to be any recent comparative metric information or a specific definition of “premier provider,” their progress towards their stated mission will remain unknown.

The Vision is “We are a trusted industry leader.” How do they know that if they are not continuously comparing themselves with other non AVANGRID companies? Or for that matter are they sampling customers’ responses to this claim?

In any event, since a mission statement describes what a company wants to do now, and a vision statement describes what a company wants to be in the future, it appears that there is some room to differentiate the type of statements selected for the company.

There are the three common stakeholders they try to address: the shareholders, customers, and employees, each with core objectives.

- For the Shareholders deliver:
  - Top quartile total shareholder returns,
  - Sustained dividend increase with a Payout Ratio at 65%, and
  - Maintain an investment grade credit rating.
- For the Customers deliver:
  - First quartile Natural Gas infrastructure integrity and safety, and
  - First quartile customer satisfaction.
- For the Employees deliver:
  - Accident Free Workplace,
  - One Company Culture, and
  - Engaged diverse workforce.

The other parts of a management audit explore these and other stated objectives and identify the progress made against them.

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<sup>36</sup> Response to Data Request EXE005

**Conclusion 3.4.2:** *RCG/SCG LLC found that CNG through UIL and AVANGRID appear to be focused on best practices across all the related gas business units; therefore, the effort is more tactical than visionary.*

### **Analysis**

Our interviews of executive management through the director level showed an understanding and ownership for the mission and the objectives of the strategic initiatives. Further the current metrics are clear and tracked, even though in some cases in customer service they may be reported in different forms. However, visionary strategies, like the CES initiative, are not apparent from the materials RCG/SCG LLC reviewed or interviews conducted. These visionary strategies are now the responsibility of the AVANGRID strategic planning function.<sup>37</sup>

**Conclusion 3.4.3:** *RCG/SCG LLC found that outside of the established CES program, there is not a current strategy to develop other competitive new markets that could better utilize the existing gas distribution system.*

Outside of the CES program that looks to convert oil heating customers to natural gas, there doesn't seem to be any plan to identify and develop new markets or new natural gas technologies like natural gas vehicles or absorption air conditioning. This may be a direct result of CNG focusing its limited resources on the CES program.

The natural gas vehicle industry has significant up front infrastructure costs associated with building a network of fueling stations throughout the territory. Further, the automotive makers need to gear up to produce these vehicles. The cost for these third parties could be prohibitive in today's market and the current relatively stable gasoline prices. Further, CNG could have to upgrade some portions of its distribution system to support natural gas fueling stations. All these efforts hinge on the public's willingness to buy the vehicles. Another issue is the competition with electric/hybrid vehicles which is finally seeing some growth across the country. Natural gas absorption air conditioning is another market that would be great for CNG, since the new load would not be competing for capacity on the distribution system during exiting peak usage periods. One concern here is this could be a more limited market due to the level of sophistication of the cooling equipment. New construction would be the most likely candidate since the system could be built with gas cooling in mind. Retrofitting existing facilities could present challenges to construction and the costs could make it prohibitive.

CNG should be following these two markets closely and looking for opportunities to promote them. For instance, short distance fleets like the US Postal Service and other local

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<sup>37</sup> Interview: Donnelly 061516

delivery/service fleets could be a significant market since they would have the fueling points at their dispatch centers.

**Conclusion 3.4.4:** *RCG/SCG LLC found that management needs to continue its efforts to broadcast the objectives below the UIL management level. The CNG mission is reasonably clear; both executive and senior management understand the mission and general objectives, but there are areas within CNG where the message is not receiving the full support necessary to convey its importance.*

### **Analysis**

Our interviews of executive management through the director level showed an understanding and ownership for the mission and the objectives and initiatives.

RCG/SCG LLC did observe during our interview process that, below the Director level, crew efficiency performance metrics are absent. This is covered later in the Construction and Maintenance section of this report. Several management personnel and many of the union personnel could only articulate management's directive and metrics on response to gas odor calls.

Management needs to do a better job of getting their message out and ensuring it is received by the first line supervisors and the union personnel.

### **Recommendations**

None – We have two reasons for not including recommendations. First, AVANGRID may be formulating specific strategic plans for their entire operation. Second, we are making a number of recommendations in other areas that address the most pressing issues for CNG.

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## ***3.5 O&M Budget Process***

### **Background**

This section addresses the CNG O&M budgeting processes to understand how the companies develop the budgets, assess or justify the spending levels, and monitor spending relative to the budgeted values. Further, it addresses whether the budget allocations adequately support company operations safely, effectively, and efficiently. Some of the principles associated with assessing the reasonableness of the O&M budgeting processes are also appropriate for consideration in the capital budgeting process, to be discussed in the next section.

## Overall Assessment

**CNG EMPLOYS O&M BUDGETING PRACTICES CONSISTENT WITH THOSE USED BY MANY UTILITY COMPANIES AND THE COMPANY IS GENERALLY EFFECTIVE WITH FINANCIAL CONTROLS – AS EVIDENCED BY THE SMALL O&M BUDGET VARIANCES FOR CNG. HOWEVER, THERE ARE OPPORTUNITIES TO IMPROVE THE BUDGETING PROCESS SO THAT IT SERVES TO “JUSTIFY” THE SPENDING LEVELS AND SUPPORT PERFORMANCE MANAGEMENT AND PROCESS IMPROVEMENT.**

## Evaluation Criteria

The evaluation criteria for assessing O&M budgeting processes include the following. Some of these criteria apply as well to the capital budgeting process, described in the next section.

- What are the roles of executive and senior management in the O&M budgeting process? What processes are used by the Board to oversee O&M budgets? What is the level of budget detail the Board sees and what are their responsibilities with regard to the budgets?
- What are the budgeting guidelines, practices, and procedures, including “zero-based” and other alternative methods?
- Is budgeting formally linked to strategic initiatives?
- Is there clear and independent oversight of O&M budgets all the way up to and including the BOD?
- Is there a formal process for handling emergency spending and integrating results into existing O&M budgets?
- Is the process reasonable for assessing the “right” level of O&M spending?
- Is the budgeting process focused solely on financial controls or does it support operation decision making?
- Are the variance analysis processes meaningful and lead to appropriate corrective actions?
- Are there early warnings in variance reporting as well to lead to appropriate corrective actions?

## Conclusions

**Conclusion 3.5.1: RCG/SCG LLC found that O&M budget development is consistent with the practices employed by many utility companies and supports financial control. Further, CNG is effective in controlling costs to budget as indicated by small budget variances.**

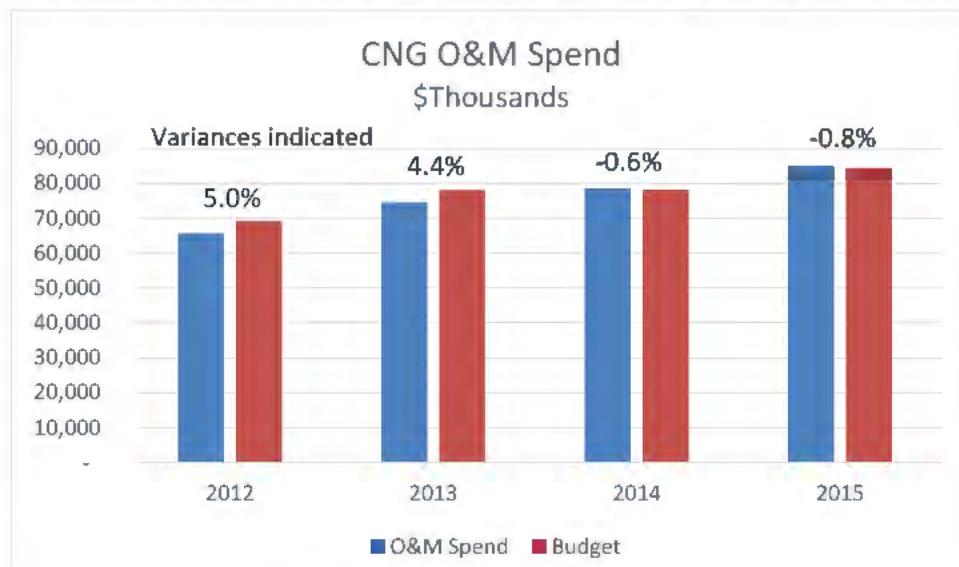
### Analysis

O&M budgets are developed based upon cost center. This approach supports financial controls as each cost center has a manager responsible for the budget in that part of the business. Further, budgets are developed and organized by resource type, as indicated below:<sup>38</sup>

Regular Labor	Overtime Labor	Employee Benefits	Contracts
UIL Charges	IUMC Charges	Uncollectible Expense	Materials
Rents/Leases	Corporate Insurance	Travel	Conservation
Other General Expense	Transportation	Collection Expense	Regulatory Amortization
Appliance Service Revenue			

**Exhibit 4 –Resource Based Budget Categories**

Historical trends indicate increasing annual O&M spending for CNG, as shown below:<sup>39</sup>



**Exhibit 5 – CNG O&M Spending Trends**

The data also demonstrates relatively small annual spending variances relative to budget values – generally 5% or less. These results are very common among utility companies where management personnel are often held accountable for maintaining O&M costs within approved budgets.

<sup>38</sup> BUD007 CNG-SCG Attachment 1

<sup>39</sup> Analysis based on BUD007 CNG-SCG Attachment 1

Further analysis of cost components contributing to increasing O&M costs are as follows:



Exhibit 6 – CNG O&M Costs by Cost Component

While some increases are evident in labor related expenses, usually attributed to supporting the customer growth initiative, the other increases are associated with corporate allocations and conservation programs. According to CNG corporate allocations are greater due to higher capital spending, higher revenues and higher payroll. As discussed in the Affiliated Transaction and Corporate Allocations section of this report, these factors are components of the “Massachusetts Formula”<sup>40</sup> used to allocate costs between affiliated entities and thereby driving the increasing cost trends. Finally, conservation costs have increased as required to support regulatory mandates for conservation and are recovered through the Conservation Adjustment Mechanism (CAM).<sup>41</sup>

Variance reports are produced monthly and are provided both for individual cost center reporting as well as on corporate performance management scorecards. As is evidenced by the small annual variances, these costs are scrutinized closely by management and responsible cost centers.

As is common in the utility industry, the budget process is initiated through the provision of a calendar providing deadlines for budget submittal as well as instructions for completing the budget.<sup>42</sup> UIL recently implemented a new budgeting system (TM1) which provides improved functionality and ease of use for budget collection and budget review. As

<sup>40</sup> See Footnote 1

<sup>41</sup> Response to Data Request BUD006 CNG-SCG Attachment 2

<sup>42</sup> Response to Data Request BUD008 CNG-SCG Attachment 1

will be discussed in the next conclusion, there are opportunities to further enhance TM1 to allow the budget to serve for more than financial controls.

**Conclusion 3.5.2:** *RCG/SCG LLC found that O&M budget development can be enhanced to better support performance management and better provide justification for the proposed spending levels.*

### **Analysis**

While the AVANGRID CT Gas companies follow practices consistent with many utility companies, these practices fail to fully provide adequate justification for spending levels. Leading companies across industries employ “value based” budget practices which effectively link dollars spent to achievements anticipated. Stated another way, while many utilities budget by resource type (e.g., labor, materials, supplies, and expenses) and more accurately budget dollars, leading companies’ budget work and then price the work. It is work or activities that consume resources. While resource based budgeting works for financial control it does not support operational control.

An example is provided below. The budget for repairing cut service lines is composed of two primary factors, a projection of the volume of work multiplied by the target unit cost to complete that work.

$$2500 \text{ cut service line repairs} \times \$175 \text{ per repair} = \$437,500$$

Once a budget is established in this case for cut service line repairs, it can be translated to resources that are consumed by this work to satisfy FERC accounting requirements and financial reporting. That is, with a target of \$175 per repair, this can be disaggregated into its cost components of labor and materials.

The value of this “activity based” approach to budgeting is that it provides much more meaningful variance analysis. Using the example above, suppose that actual costs came in at \$640,000. The normal response is that the particular business unit overspent, but there is often not more granularity in the explanation. And the corrective actions associated with the “blown budget” are not clear. Suppose that the company was right on target at \$175 per repair, but under forecast the number of cut service lines. The proper response would be to analyze why the volume of service line cuts were higher than expected. It could be a poor forecast but it also could represent a growth in contractors ignoring the requirements to request a locate service, or an error in locating company facilities prior to excavation. Corrective actions would be focused on why the volume of service line cuts has risen.

On the other hand, suppose the forecast for cut service lines was exactly correct, but the reason for the budget overrun was the average cost per repair exceeded the \$175 per repair target. The response to this variance would be different. It should now be focused on why the cost per repair was higher than target. This would indicate a process improvement opportunity or a simple productivity issue.

Further, measurement of unit cost performance allows the operating entity to compare its performance to other work entities or service centers within the company. In addition, CNG and SCG unit cost performance can be compared to the unit cost performance of the AVANGRID sister gas companies or even other gas distribution companies in the Northeast. There are six gas distribution companies in Avangrid Networks, including similar service centers or regions within those companies, to benchmark unit cost performance. Our consultants have seen many instances where companies have posted competing productivity performance among operating regions which invariably ends up improving productivity as no center likes to be “at the bottom of the list.”

More broadly, for any repetitive “blanket” type work, the budget can be represented in this manner. As a result, variance analyses will be more meaningful and will likely lead to process improvements and cost reductions. Below are examples from a gas distribution company many years ago that used these principles to “justify” the O&M budget.

**Operational Excellence**

**All Service Cent**  
**Cost per Unit**

**Fiscal Year 2000**

<b><u>Distribution</u></b>	<b><u>October</u></b>	<b><u>November</u></b>	<b><u>December</u></b>	<b><u>January</u></b>	<b><u>February</u></b>	<b><u>March</u></b>
<b>Rechecks</b>	\$36.16	\$31.28	\$35.56	\$23.57	\$22.11	\$28.55
<b>Locate - Company</b>	\$9.39	\$8.46	\$8.91	\$8.45	\$10.86	\$8.00
<b>Locate - Contractor</b>	\$10.95	\$11.73	\$11.08	\$10.88	\$11.84	\$12.09
<b>Repair and Maintain Mains</b>	\$214.39	\$179.22	\$194.27	\$195.37	\$177.63	\$155.36
<b>Repair and Maintain Service</b>	\$116.03	\$122.40	\$121.94	\$118.94	\$114.42	\$100.97
<b>Repair Damage - Mains</b>	\$184.93	\$155.21	\$141.62	\$91.06	\$149.53	\$148.31
<b>Repair Damage - Service</b>	\$98.78	\$90.12	\$94.47	\$91.50	\$91.26	\$86.39
<b>Relocate Service</b>	\$170.61	\$189.64	\$158.28	\$198.69	\$152.11	\$138.44
<b>Regulator Inspection</b>	\$80.62	\$65.99	\$60.03	\$64.80	\$71.33	\$87.45
<b>Regulator Maintenance</b>	\$45.65	\$62.64	\$53.68	\$67.98	\$60.64	\$66.80
<b>Emergency Valve Inspections</b>	\$47.52	\$65.30	\$60.62	\$22.21	\$22.84	\$22.28
<b>Perform Manhole Survey</b>	\$1.19	\$1.86	\$1.43	\$1.29	\$0.54	\$1.28

**Exhibit 7 – Partial Unit Cost Reporting Example**

## Summary Statistical Report

Operational Excellence	All Service Centers					Average Hourly Rate	
	From 4/1/00	to 6/30/00	Hours	% of Time	Labor Cost	Service: \$25.64	Meter Reading: \$17.47
	Volume	Hours	% of Time	Labor Cost	Cost/Unit	Distribution: \$22.80	Hours
<b><u>Service</u></b>							
<i>Single Reads</i>	36,542	7,631	4.58%	\$183,167.67	\$5.01	00: 12	
<i>Turn Off/Remove</i>	70,598	19,250	11.56%	\$490,602.56	\$6.95	00: 16	
<i>Activate Meter</i>	48,072	28,932	17.38%	\$741,850.37	\$15.43	00: 36	
<i>No Gas</i>	10,673	6,432	3.86%	\$164,932.02	\$15.45	00: 36	
<i>Investigates: Leaks</i>	17,501	15,438	9.27%	\$395,862.90	\$22.62	00: 52	
<i>Investigates: Other</i>	2,419	1,196	0.72%	\$30,679.12	\$12.68	00: 29	
<i>P.T. Changes</i>	895	748	0.45%	\$19,179.64	\$21.43	00: 50	
<i>Work Order Not Completed</i>	10,450	4,151	2.49%	\$106,427.94	\$10.18	00: 23	
<i>Maintain Mtr/Reg Proactive</i>	39,478	11,468	6.89%	\$283,498.87	\$7.18	00: 17	
<i>Repair Mtr/Reg Reactive</i>	8,649	5,125	3.08%	\$131,401.04	\$15.19	00: 35	
<i>Charge Work - Appliance</i>	4,280	3,337	2.00%	\$85,560.82	\$19.99	00: 46	
<i>Charge Work - Fuel Line</i>	0	0	0.00%	\$0.00	\$0.00	00: 0	
<i>New Meter Sets</i>	13,168	10,728	6.45%	\$275,081.06	\$20.89	00: 48	
<i>Total</i>		9,456	5.68%	\$242,466.51			

### **Exhibit 8 – Unit Cost Reporting Example**

CNG has started to produce unit cost reporting, particularly for capital work (as will be discussed in the next section). However, while similar unit cost information can be generated (for example using unit cost or hours targets embedded in the company's mobile dispatch system) the company does not in fact use such information for O&M budget development or performance management. In response to a document request the company indicated that work load volumes and unit costs for O&M work was not "off the shelf" available, indicating this type of unit cost and work volume analysis is not used for performance reporting and budgeting.<sup>43</sup>

While TM1 is the new budget collection system, activity based budgeting capability has not yet been configured in the application. The company recognizes this could be added at a later time.

As a final comment on justifying O&M spending levels, occasionally O&M initiatives are organized into a program. Such programmatic activities should be justified through a business case, similar to what would be expected for capital project and programs. Such project or program related work, whether O&M or capital, should follow the current company requirements for justifying project work, discussed further in the next section.

### **Recommendations**

**Recommendation 3.5.1:** *RCG/SCG LLC recommends that CNG enhance the O&M budgeting process to incorporate activity based management principles, including the budgeting of work*

<sup>43</sup> Response to Data Request OPS040 CNG-SCG Final

*volume and developing target unit costs. Target unit costs should consider unit cost performance across AVANGRID companies, if not across other gas companies where such data is available. Variance reports should present variances in work volumes and in unit cost performance, along with appropriate variance explanation.*

### **3.6 Capital Budgeting Process**

#### **Background**

This section addresses the CNG capital budgeting processes to understand how the companies develop the budgets, assess or justify the spending levels, and monitor spending relative to the budgeted values. Further, the assessment considers whether the budget values developed adequately support company operations safely, effectively, and efficiently.

#### **Overall Assessment**

**CNG EMPLOYS CAPITAL BUDGET DEVELOPMENT PROCESSES CONSISTENT WITH THOSE OF MANY UTILITY COMPANIES. HOWEVER, OVERSIGHT OF THE CAPITAL BUDGETING PROCESS BY THE CENTER FOR PROJECT EXCELLENCE PROVIDES A HIGHER LEVEL OF SCRUTINY TO CAPITAL BUDGET DEVELOPMENT AND APPROVALS. OF GREATER CONCERN ARE THE CHALLENGES EXPERIENCED BY CNG IN PROJECT ESTIMATION ACCURACY.**

A significant percentage of capital spend is composed of two primary programs – New Business/Gas Conversion and Bare Steel and Cast Iron Replacement. Spending since 2012 in these programs has increased significantly. Budget variances on a program level have been relatively high, in part due to the difficulty projecting new business growth as the differences in the cost of gas versus oil has diminished greatly, as shown below, narrowing from a difference of about \$2 per gallon in 2012 and 2013, to \$0.76 in 2015. More critical has been a significant level of variance to budget on a project level. Estimating accuracy has clearly been a challenge at the project level. Project execution issues can also contribute to budget variances. These issues are addressed in the System Operations section of the report.

CNG recognizes the problems evident with project estimation and has initiated some steps to improve the process. We agree with the recommendations for improvement provided by a consultant engaged by the companies to evaluate their estimating practices. We also have suggested some additional improvement opportunities.

Finally, we recommend enhancing the use of unit cost analysis to support capital budgeting and performance reporting for the new business and main replacement programs.

#### **Evaluation Criteria**

The evaluation criteria for assessing capital budgeting processes include the following.

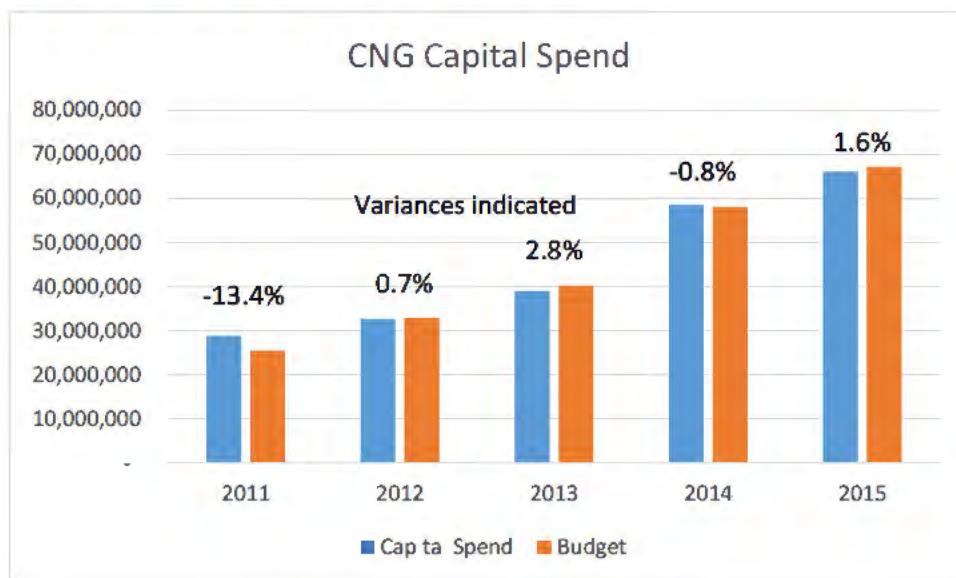
- What are the roles of the executive and senior management in the O&M budgeting process?
- What processes are used by the Board to oversee O&M budgets?
- What is the level of budget detail the Board sees and what are their responsibilities with regard to the budgets?
- What are the budgeting guidelines, practices, and procedures, including “zero-based” and other alternative methods?
- Is budgeting formally linked to strategic initiatives?
- Is there clear and independent oversight of capital budgets all the way up to and including the BOD?
- Is there a formal process for handling emergency spending and integrating results into existing capital budgets?
- What is the construction/capital priority setting process?
- How does the capital budgeting process (including project authorization, project appropriation, increase/decrease of authorization/appropriation, capital budget status reporting, validation in advance of appropriation, funding controls, and other elements of the capital budgeting process) function in the Company?
- How does management oversee and control capital budgeting (including the methodologies used to control and manage program and project capital costs in the near and long term; the annual process for reviewing and determining whether total capital planned expenditures are adequate; cost control systems and processes from both a top down and bottom up perspective; controls to ensure that increases and decreases to the construction budget/expenditures are justified and appropriately approved)?
- Is the process reasonable for assessing the “right” level of capital spending?
- Is the budgeting process focused solely on financial controls or does it support operation decision making?
- Are the variance analysis processes meaningful and lead to appropriate corrective actions?
- Are there early warnings in variance reporting as well to lead to appropriate corrective actions?

## **Conclusions**

**Conclusion 3.6.1:** RCG/SCG LLC found that when viewed on a program or project category basis, CNG has been able to manage its capital spend relatively close to budget.

## **Analysis**

Capital spending trends for CNG are provided below:<sup>44</sup>



**Exhibit 9 – CNG Capital Spend Trend**

Capital spending increased dramatically since 2011. Much of the increase is associated with two programs – New Business/Gas Expansion and Cast Iron and Bare Steel Main Replacement. In fact, when Meters and Regulators are included, these components constitute the following percentages of capital spend:

	2011	2012	2013	2014	2015
Percent of Cap Spend on NB and Replacement Prgm including meters and regulators	87.6	93.5	84.9	69.4	70.3

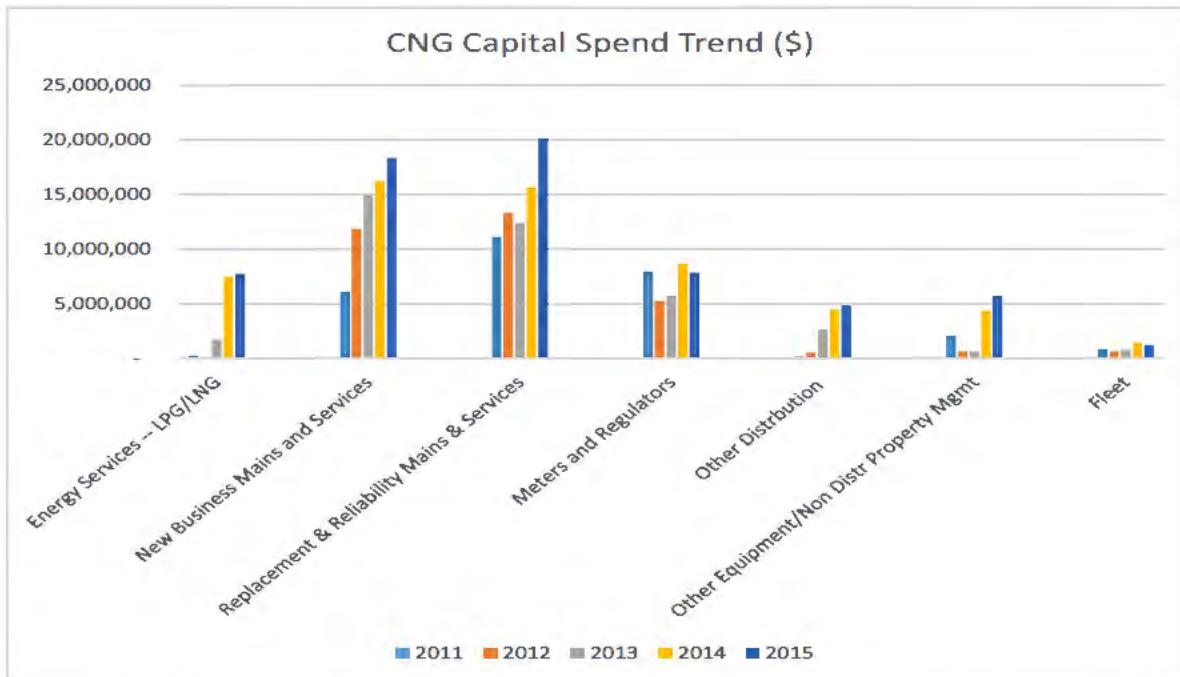
**Exhibit 10** Percent Capital Spend on New Business and Pipeline Replacement

The reduction in percentages of spending associated with new business and pipeline replacement programs in 2014 and 2015 was due to increased spending on LPG/LNG programs at the company's Rocky Hill facility.

Aside from 2011, capital spend variances, again on a programmatic basis, were very tight. An additional breakdown of spending by major cost category is provided below. As can

<sup>44</sup> Response to Data Request SPE007 CNG-SCG Attachments 1 through 6

be seen, the highest contributions to growth in capital spend are in New Business and Pipeline Replacement programs.



**Exhibit 11 – CNG Capital Spend by Major Cost Category**

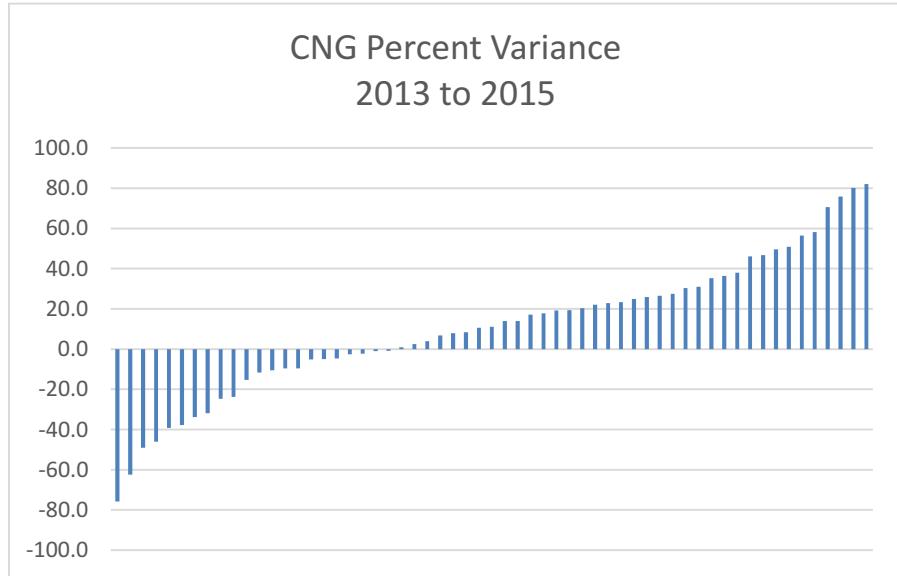
On the question of how well CNG capital spending is linked to corporate strategy, the link is apparent as a high percentage of capital spending is concentrated in new business and pipeline main replacement programs. These programs constitute important strategies for CNG and are mandated and supported through agreements with the PURA.

As can be seen on a component basis, most of the increase in spending has been associated with the new business programs and pipeline replacement programs.

**Conclusion 3.6.2:** *RCG/SCG LLC found that CNG has experienced variations in capital spending as compared to estimates at the project level. These variations are associated with poor estimation (discussed here) and likely issues associated with work execution (discussed further in the System Operations section of the report).*

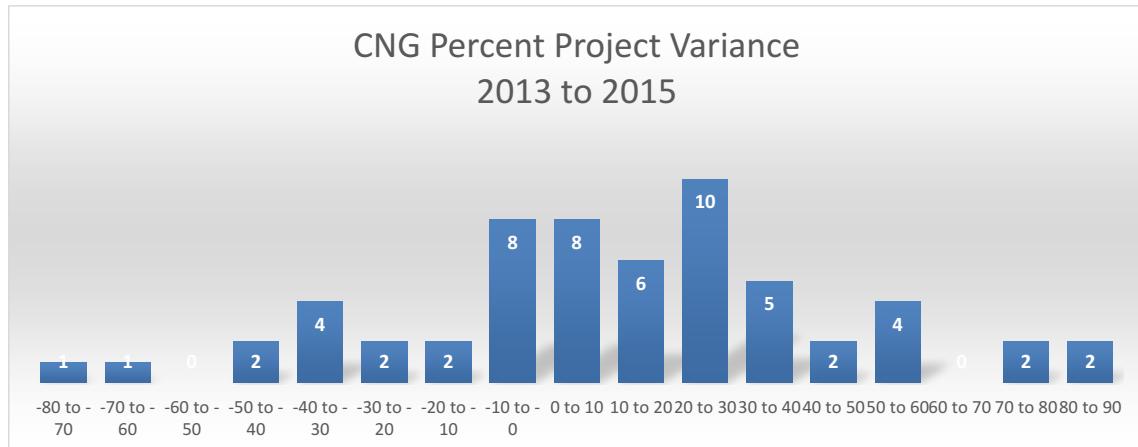
### Analysis

Numerous examples demonstrate the challenges CNG faces in estimating project costs and delivering projects at the budgeted levels. First, as was suggested by the company, we requested project level variances at the “superior order” level, which essentially compiles all associated work orders for a project. The information provided in OPS039 CNG SCG Attachment 1 for CNG projects between 2013 and 2015 demonstrates the following results:



**Exhibit 12 – CNG Percent Project Variance**

The results demonstrate a large number of projects either underestimated or overestimated by more than 10%. An indication of results for CNG by number of projects appearing in designated variance ranges is provided below:



**Exhibit 13 – CNG Percent Project Variance by Number of Projects**

Only 16 projects out of 59 were completed within +/- 10%.

CNG recognizes and acknowledges that they have challenges associated with project cost estimating. Their own internal audit reports recognize the same as indicated in a 2014 report.<sup>45</sup> Finally, as will be discussed in the New Business section of this report, the PURA has

<sup>45</sup>

Confidential

recognized the high level of project cost variances by CNG and has requested the companies provide additional focus on improving estimating practices.

During interviews conducted with the Director of Gas Construction and the Director of Gas Design and Delivery on July 12, 2016 the company was requested to explain why they thought project variances were so large. They suggested a few things were driving the variances including:

- Inadequate handoffs between designers and estimators,
- Inadequate estimating standards (known as compatible units), and
- Inadequate consideration of policing costs and government and landscape restoration costs.

On the last item, evidently each local community has its own rules for policing or flagging requirements during construction. These variations in local rules are not identified as part of the estimating process.

The company indicated they have initiated some practices to improve estimating accuracy. They also indicate that these practices were implemented late in 2014 and early 2015 and the results are not yet apparent. Projects completed in 2015 were likely designed and estimated prior to the process changes.

As part of the company's Comprehensive Energy Strategy, incorporating programs to encourage conversions to natural gas, CNG was instructed to engage a consultant to help them evaluate causes and provide recommendations for improving estimating accuracy. Concentric Energy Advisors was engaged to conduct the study, completed late in 2014. This study focused on New Business projects but their recommendations apply to the Main Replacement Program as well. Their recommendations were as follows, quoting directly from their report:<sup>46</sup>

- Variability in estimating mains and services costs is largely caused by complications with underground construction that cannot be predicted. Specifically, estimating construction costs to install mains and services is significantly impacted by underground obstacles that cannot be predicted with the information and technology that are available to LDCs, including the Companies. Concentric notes that the Hurdle Rate process would not be improved by adding a probability weighted "underground obstacle" adjustment to all project cost estimates to account for potential underground obstructions; the costs of projects that did not encounter obstacles would be overestimated and the costs of projects that did encounter obstacles would continue to be underestimated.

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<sup>46</sup> Response to Data Request GS085 CNG-SCG Attachment 1 Page 32

- Town by town differences and inconsistencies in construction permitting and restoration requirements, and traffic detail requirements may contribute to the variability in estimating mains costs. Concentric recommends that the Companies could attempt to identify towns with requirements that consistently add to construction costs; based on that analysis, the Companies could add an appropriate premium to the cost estimates for installing mains in these towns.
- In addition, Concentric identified several projects in which the actual services costs were extremely low (i.e., less than \$1,000), resulting in fairly large overestimates of services costs (e.g., actual services costs of less than half the cost estimate, and sometimes as low as less than 10% of the cost estimate). The Companies explained that the low residential service costs were sometimes due to the customer providing a trench in which to install the service, and the installation being performed by Company crews, thus reducing the cost. If the customer is going to provide the trench, this should be reflected in the service cost estimate; however, it is understood that often customers decide to provide a trench at the last minute.
- Concentric's review and analyses of estimated meter costs indicate that meter cost estimates used in the hurdle rate analysis are typically underestimated because they (a) are based on outdated meter prices and (b) do not include labor costs to install the meter at the customer premise. In addition, Company cost estimates for some residential projects with multiple premises did not include meter costs for each premise in the project. Concentric recommends that the Companies should (a) annually update meter prices; (b) consistently include labor costs to install the meters and (c) modify the project cost input form to include input fields for the number of meters and cost per meter by type of meter, and to require verification of the entries if the number of meters does not equal the number of premises that are included in the project.
- Similarly, Concentric recommends that the Companies should update mains and service installation costs components on an annual basis to ensure that cost estimates are based on the most current cost information. Concentric understands that the Companies updated costs components in late 2013 based on an analysis of actual costs in 2013 for gas main and service installations, for the first time in several years. In addition, a procedure was developed to perform a review of the estimated and actual costs for jobs at least annually. Based on this review, cost components will be updated annually. Concentric agrees that this process of annually reviewing and updating cost components should improve cost estimates going forward.
- Concentric understands that one of the challenges associated with estimating construction costs is that the Companies' agreements with contractors are of short

duration, e.g., a year or less (per the Concentric report, however, CNG states that it now operates with contractor agreements that run from three to five years in duration). As a result, the contractually set components of a project may change between the time that the Companies agree to a CIAC with a perspective customer to the time that the construction project is completed. Concentric understands that the Companies' construction group is working closely with the UIL Purchasing Department to negotiate longer term construction contracts with expanded Service Level agreements. This initiative will bring added predictability to construction costs. Concentric agrees that entering into longer term construction contracts should improve cost estimation.

- UIL has created a new engineering organization at the corporate level that is responsible for standardizing engineering processes. These standards and associated training should improve cost estimation by removing some of the variation in approaches to planning and executing specific projects by ensuring that project estimates are performed in the same manner across the organization.
- Concentric's cost analysis excludes a number of mains and services with incomplete records because the work orders were not "closed out" from a construction perspective, although the project has been complete for a long time (in several instances, over a year). Concentric understands that these work orders could remain open (a) because some work still remains to be completed (i.e., final restoration) and could take several months due to limits on construction and paving schedules, or (b) because the system has not been updated to reflect the completion of the construction. The Companies should attempt to close these work orders in a timely manner by ensuring the construction is completed and the system has been updated so the Companies' periodic root cause will be based on a more robust database of recent projects.
- Similar to the consumption analysis, there were several projects that Concentric excluded from the cost analysis due to IT system issues associated with matching estimated costs with actual costs. Concentric understands that the Companies are working with IT to develop reports to streamline the process of comparing the actual and estimate costs of the different components of a job. Concentric recommends that the Companies continue to develop and enhance its reporting capabilities in these areas.
- The Companies should continue to evaluate and improve their cost estimation procedures on an ongoing basis. Resources should be assigned to perform periodic root cause analyses to (a) determine the primary reasons that cost estimates are different from actuals (with equal emphasis on over and under estimates), and (b) to identify process changes that will address the root causes. Concentric understands that UIL has created a new gas construction organization with a Director of Construction,

construction and program managers, and cost and scheduling analysts. This organization should be able to help facilitate more detailed cost review analyses and related improvements. Process improvements that have the largest impact on the accuracy of the cost estimates could then be implemented. Concentric notes that the cost of making process improvements must be weighed against the benefits of the improvement. For example, a \$10M system improvement that improves the accuracy of project cost estimates by \$100k annually would not be cost effective. In addition, Concentric notes that it may take a year or more before a full assessment can be conducted of the effects of the Companies' recently implemented process changes that were designed to improve the accuracy of consumption estimates and project cost estimates.

We mostly concur with the Concentric recommendations, adding the following:

- The company should create a list of local community requirements to better reflect variations in policing, flagging, and restoration requirements, and build those factors into the estimates
- While uncertainty regarding underground work is a reality of the gas distribution business, the company should be able to do a better job understanding the local conditions and applying appropriate adjustment factors or contingencies for the given area. This is a common practice by many gas distribution companies that operate in service territories with diverse underground conditions.
- A number of utility companies recognize they need to update their estimating standards or "compatible units (CUs)." Because of the large quantity of compatible units in most estimating applications, it is very difficult to evaluate all CUs. Leading companies will employ an estimating standards group and, using data analysis to identify projects or project types that are routinely over or under estimated, select key CUs that need to be updated. Essentially, the team would start on the worst CUs (measured by inaccuracy) and methodically work on revising them. With the "right people" around the table, they can both identify the CUs that need immediate attention and can modify them to better reflect actual costs.
- Project execution issues will be discussed in the System Operations section of the report. However, it is clear that inconsistent management of company crews can result in project costs exceeding estimates. Work crews and their supervisors may not even know the work standards to set expectations for their crews to those standards.
- Further, for contractor performed work, resultant costs can be impacted by how well CNG provides oversight of contractor work and how tightly change order requests are managed.

- Finally, many companies are challenged in estimating accuracy because designers fail to adequately conduct proper job “walk downs” to fully understand work requirements. Again, these components will be discussed later in the report.

The companies are working on implementing many of these recommendations. In part, greater scrutiny is being applied through construction controls led by the Center of Project Excellence, discussed in the next Conclusion.

As a final comment, there are consequences associated with misestimating projects. Aside from general project control issues, specifically in the case of the pipeline replacement program, systematic project underestimation means that the pipeline replacement program will likely cost more than currently projected and take more years than currently anticipated in the program. For the New Business programs, there are likewise consequences and these are discussed further in the New Business section of this report.

**Conclusion 3.6.3:** *RCG/SCG LLC determined that aside from project level estimating challenges, the overall capital budgeting processes and controls are very good.*

### **Analysis**

The mechanics of assembling the capital budget at CNG are very common to the practices employed by most utility companies. The more important consideration is the level of scrutiny applied to the evaluation of proposed projects and programs.

The Vice President for Engineering and Project Excellence leads a Project Management Organization (PMO) known as the Center for Project Excellence (CPE). The CPE is a UIL organization and serves the gas and electric businesses. While one of the key duties of the group is to manage large capital projects, it is also responsible for managing the overall capital portfolio for each of the business units. They establish the portfolio categories along with the executive team and help manage the work flow of authorization for the consideration of projects within the portfolio. Process features include:<sup>47</sup>

- A reserve is established in the budget if there is a 75% probability that project will be approved. A Project Manager is assigned to develop a project plan. They then submit a Level 1 schedule as well as resource loaded schedule.
- The budget plan is a 10 year plan. A more detailed reforecast is prepared every other year with validations on the “off” years.

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<sup>47</sup> Interview with Vice President Engineering and Project Excellence and Director in that group on July 12, 2016

- To make it in the budget, the group collects the “wish lists” from across the companies and they evaluate available resources (e.g., workforce capacity) and available funding. Once the dollar limits are set by Finance, a portfolio is assembled where projects are grouped into categories such as safety, customer related capacity expansion (much less prevalent on the electric side with zero load growth), compliance, facility relocation, etc.
- An executive team is assembled including the CEO, CFO, Operating Unit leads, etc., and a presentation of the portfolio is presented. The portfolio is segregated into gas and electric and then the group decides what to include in the budget. However, this does not represent authorization to spend.
- Authorizations to spend occur after submittal of project charters. There are various charter templates depending upon type of project.
- Approvals happen based upon grants of authority.
- Project portfolios are maintained in TM1 Cognos. The charter templates include milestone dates, cost baselines, resources, etc.
- The charter is designed to address the consideration of alternatives and describe the need for the project, potential solutions, etc.
- There is somewhat of a gated process as a project owner can ask for engineering dollars – through an engineering charter. An engineering charter cannot exceed 10% of the estimated cost of the entire project.
- The Charter next goes to Project Manager for approval then the Director, Executive Sponsor, and ultimately to the CPE to review.
- Particularly for large capital projects (anything over \$10M) the projects go through considerable challenges in the review. The Risk Management organization is also a “signatory” on approval of large projects.

As discussed earlier, most CNG capital spending is associated with New Business and Pipeline Replacement programs. Therefore, the process described above mostly applies to a relatively small group of individual projects at CNG, for example LPG and LNG related projects.

Further, because CNG has created the Gas Construction Group, which centralizes the management of New Business and Pipeline Replacement programs, the CPE plays a smaller role in the development of those program budgets. However, recognizing the estimating accuracy challenges for CNG, the CPE has assigned personnel to work with the Gas Construction Group to apply improved project management practices in executing the gas construction projects.

CPE also manages the collection of project variance information for gas and electric construction. The results are summarized in a monthly CPE Governance UIL CAP Report.<sup>48</sup> This report provides project level variances to senior management. This report also assesses schedule adherence and earned value to measure the effectiveness of the construction program.

As described in the prior Conclusion and Recommendation, the test of the effectiveness of the process improvement efforts associated with project estimation and project execution, whether implemented by the Gas Construction Group or the CPE, is whether project variances are in fact reduced for CNG.

**Conclusion 3.6.4:** *RCG/SCG LLC determined that there are opportunities to improve the use of unit cost management in gas construction projects to support capital budget development and performance management.*

### Analysis

Similar to the conclusions and recommendations associated with “blanket” O&M work, new business and pipeline replacement work should be budgeted by estimating work volumes and pricing the work. Targets should be set for average unit cost for services, new business main, and replacement main (by type of main). In developing annual budgets, the Gas Construction organization works with the Marketing organization to project work volume goals for New Business. Pipeline replacement work volume goals are set within Gas Construction. Unit costs are considered in the development of the annual budgets including the consideration of contractor unit costs. However, routine company variance reports are provided on the overall program *spending* levels vs. budget. While work volumes are also tracked it would be very easy to report, on a monthly basis, not only variances in work volumes but taking the calculation to the next step and reporting on variances in spending on a unit cost basis.

In this manner, similar to the description provided in the O&M budgeting process assessment, more meaningful discussions can occur on causes of spending variances and appropriate corrective action can be applied. Importantly, unit cost targets should be established unique to each region. However, for similar types of work in similar regions or work environments, unit cost targets should be consistent. Stated alternatively, the cost to install a new service should be compared across all six Avangrid Networks sister gas companies to set an appropriate unit cost target. Further targets can consider unit cost performance obtained through benchmarking studies with other gas distribution companies.

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<sup>48</sup> [REDACTED]

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The Gas Construction Group has begun to issue very good Construction Dashboards. The question is how are these dashboards used? The information below is collected from the December 2015 and June 2016 dashboards.<sup>49</sup> Data for SCG and CNG are shown because the comparison of results between the two companies is important.

	SCG		CNG	
	Dec-15	Jun-16	Dec-15	Jun-16
Average Foot of Main per Crew per Day	83.79	171.00	93.90	107.00
Average Services per Crew per Day	0.84	1.65	0.72	0.97
Cost per New Main per Foot (Rolling 12 month)	61.91	124.00	49.00	65.00
Cost per New Business Service (Rolling 12 month)	4091.81	4339.00	5488.00	5313.00

**Exhibit 14 – Construction Performance Dashboard**

There are a number of interesting observations here.

- It is at first evident that the performance statistics for SCG are different in many respects from the results shown for CNG. There may be a logical difference due to the characteristics of the geographic regions. However, the performance statistics may also differ due to the use of different management practices or simply different capabilities of supervisors. One way to test this performance is to compare the results to the other sister gas companies within AVANGRID.
- Even comparing performance within the same company there are differences and in some cases very considerable difference in performance, especially for SCG. Some of the data indicates improvements in productivity, such as the first two metrics. While the CNG data appears feasible if improvement efforts were in fact implemented, the SCG data shows dramatic change, with approximately a 100% percent improvement in productivity. This information may be valid, but it is suspect. At minimum, these dashboards should be accompanied by explanations as part of routine monthly reporting to management.
- In contrast to the apparent improvements in productivity, the cost per New Main per Foot on a rolling twelve month average has increased. The cost per new business service has also risen, at least for SCG.

Therefore, while the dashboard is a very positive step, explanations should be provided to justify the values. It may also indicate the need for better data collection on the “front line,” a very common issue for utility companies.

While the comments above are more relevant for performance management in gas construction, it is also relevant for the capital budgeting process. Unit cost information and work volumes should form the basis for budgeting and variance reporting. CNG is on the right

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<sup>49</sup> Response to Data Request OPS034 CNG-SCG Attachment 1

track here at least providing visibility to unit costs – which is not currently available for O&M work. The next step is to enhance its use.

### **Recommendations**

**Recommendation 3.6.1:** *RCG/SCG LLC recommends that CNG continue to provide targeted focus to monitoring its construction estimating accuracy, identify root causes of variation, improve estimating practices using the various tools identified in this Conclusion, and further monitor project execution practices to determine whether project cost overruns are impacted by these practices.*

**Recommendation 3.6.2:** *RCG/SCG LLC found that CNG use work volumes and unit cost information to support capital budget development, variance reporting based on work volume variances and unit cost variances, and for performance management. Further, unit cost targets for budgeting should be used consistently for similar type work and in similar conditions across Avangrid Networks gas distribution companies – that is, considering best performers in target setting.*

## 4. SYSTEM OPERATIONS

### Objectives and Scope

System Operations includes a review of gas supply, system planning, system design, system operation and maintenance, and system reliability and construction. System Operations spans a rather significant portion of the natural gas business model from determining the gas requirements all the way to delivering the gas to and satisfying the ultimate customers. In evaluating gas supply and system planning, it is necessary to also look at the requirements forecasting process. We will divide this chapter into the following sections and address each in turn:

- Requirements Forecasting,
- Gas Supply,
- System Planning and Design, and
- System Reliability, Construction, Maintenance, and System Operations.

The last bullet combines all activities related to constructing and maintaining the gas distribution system. There is a separate construction group; however, it functions as a project management and quality assurance group. The majority of their efforts are covered in the engineering section regarding project management.

### Overall Assessment

#### *Requirements Forecasting*

The requirements forecasting function is collaboratively performed by multiple areas within the UIL business units, CNG and SCG. The Rates and Regulatory department appropriately develops a forecast to meet the requirements of the financial and regulatory functions. RCG/SCG LLC believes a more formal review by rates and regulatory (along with a consensus executive approval by all involved functions) of the CES forecast prepared by sales and marketing, could refine the CES impact on the forecast.

#### *Gas Supply*

The performance of Gas Supply is only formally compared to one external measure, and its performance is reasonable. Gas Supply reasonably defines its supply portfolio principles, goals, and objectives to ensure continuity of supply. Gas Supply sets appropriate processes to obtain transportation capacity to meet long term needs. Gas Supply Department has a defined process for developing and obtaining commodity at a reasonable cost. RCG/SCG LLC considers the risk management function for Gas Supply reasonable.

### *System Planning and Design*

UIL Gas Design and Delivery and CNG Distribution Planning and Engineering appear to be organized appropriately with the right resources. RCG/SCG LLC believes the company needs to focus on standardization of materials and equipment across distribution companies, and the project estimating process.

### *Reliability, Construction, Maintenance, and Operations*

CNG'S distribution construction and maintenance operation is reasonably well managed and extremely responsive to leak calls. CNG meets its leak response metrics due to the top down directive on leak response. While there is no formal work management system, as of this writing, they are more consistent in their productivity than SCG. Their response to dig ins is immediate with an all hands approach. In part this is due to management's decision to outsource the majority of large construction projects, using a separate group to manage contractors.

#### *4.1 Requirements Forecasting*

### **Objectives and Scope**

The Requirements Forecasting function included a review of the Company's forecast models; inputs such as economic data sources; the forecast approval process; the methodologies used to validate the forecast, and the use of the forecasts throughout the organization. The review concentrated on the interaction between the elements of forecasting, including model choice, input data, review and approval of the forecast and post forecasting reviews of the model and its results along with key performance indicators, budgets, and staffing.

### **Overall Assessment**

**THE REQUIREMENTS FORECASTING FUNCTION IS COLLABORATIVELY PERFORMED BY MULTIPLE AREAS WITHIN THE UIL BUSINESS UNITS, CNG and SCG. THE RATES AND REGULATORY DEPARTMENT APPROPRIATELY DEVELOPS A FORECAST TO MEET THE REQUIREMENTS OF THE FINANCIAL AND REGULATORY FUNCTIONS. RCG/SCG-LLC BELIEVES A MORE FORMAL REVIEW BY RATES AND REGULATORY (ALONG WITH A CONSENSUS EXECUTIVE APPROVAL BY ALL INVOLVED FUNCTIONS) OF THE CES FORECAST PREPARED BY SALES AND MARKETING, COULD REFINE THE CES IMPACT ON THE FORECAST.**

The Rates and Regulatory Department creates and tracks the sales and revenue forecast for the Company. The revenue forecast is used for short, medium and long term financial planning purposes. The long term forecast (specifically the peak day demand) is an input into the Gas Supply planning process.<sup>50</sup>

The revenue forecast consists of two discrete elements:<sup>51</sup>

1. A forecast of existing customers served under existing tariffs. This forecast is developed with econometric models using economic data inputs and adders as necessary to reflect changes in larger customers' usage as conveyed by the Company's Sales & Marketing representatives.
2. A forecast of customers that are forecast to be connected to the Company's distribution system as a result of efforts by the Company's Sales and Marketing organization under the Connecticut Comprehensive Energy Strategy (CES). This incremental or supplemental forecast consists of two elements:
  - a. New On Main CES customers connected to the Company's existing distribution system.
  - b. New Off Main CES customers connected to an extension or expansion of the Company's distribution system.

Requirements Forecasting is under the direction of the Director, Regulatory and Tariffs, who reports to the Vice President Regulatory Affairs at UIL Holdings.<sup>52</sup> The forecast focuses on the needs of the financial and regulatory groups and also Gas Supply.<sup>53</sup> The forecasts are used as an underlying checkpoint, but it is not directly used for operational functions, such as Gas Supply<sup>54</sup>, because those functions require more granular information.

The annual forecast focuses on forecasting revenue. The forecast is compared monthly to actual requirements and the variances are disaggregated over a number of sources.<sup>55</sup> Although (weather) normalized sales are available, the Company does not track the variance. The pattern of the variance is not unexpected.<sup>56</sup> The performance of the forecast is not

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<sup>50</sup> Response to Data Request GS001

<sup>51</sup> Interview B. Welch 7/13/16

<sup>52</sup> Response to Data Request GS072

<sup>53</sup> Interview B. Welch 7/13/16

<sup>54</sup> Interview C. Goodwin 7/13/16

<sup>55</sup> Response to Data Request GS080

<sup>56</sup> Response to Data Request GS073 (for CNG) and GS074 (for SCG)

compared to the performance of a peer group of similar utilities.<sup>57</sup> Forecasting is adequately staffed to continue this level of performance.

Forecasting does not have a formal mission statement,<sup>58</sup> but interviews with members of Rates and Regulatory do articulate a clear understanding of its mission.<sup>59</sup> Further, formal key performance indicators do not exist for the forecasting function.<sup>60</sup>

Departmental budget versus actual information for the forecasting function was not available but the manning devoted to the function has remained constant and fully staffed since 2010.<sup>61</sup> Job descriptions for the forecasting function are current.<sup>62</sup>

## **Evaluation Criteria**

RCG/SCG LLC applied the following evaluation criteria to the forecasting:

- To what extent were the recommendations from the 2010 audit implemented?
- What are the models, assumptions and key drivers, and other inputs used to forecast local and system wide natural gas requirements?
- What are the inputs, including demand side management (demand response, etc.), energy efficiency, and other initiatives that are factors in the forecasting process?
- Are the organization and staffing of forecasting functions reasonable?
- Does the Company perform customer research?
- Does the Company statistically test and back cast its forecasting models and routinely compare its forecast to actual sales and peak?

RCG/SCG's analysis of the Forecasting function is based upon 25 data requests presented to the Company and interviews with two levels of management within, related to, or supporting Forecasting. RCG/SCG LLC also reviewed the Company's biennial Forecast of Natural Gas Demand and Supply (2015 – 2019) along with its predecessors (2013 – 2017) and (2011 – 2015).<sup>63</sup>

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<sup>57</sup> Response to Data Request GS083

<sup>58</sup> Response to Data Request GS019

<sup>59</sup> Interviews C. Goodwin 7/13/16 and B. Welch 7/13/16

<sup>60</sup> Response to Data Request GS020

<sup>61</sup> Response to Data Request GS021 and GS022 and GS076

<sup>62</sup> Response to Data Request GS077

<sup>63</sup> Response to Data Request GS079

## **Conclusions**

**Conclusion 4.1.1:** *No recommendations in the Company's prior audit apply to the Forecasting Department.*

## **Analysis**

The CNG's prior audit report by Overland did not apply any specific recommendations to the Forecasting area.<sup>64</sup>

**Conclusion 4.1.2:** *RCG/SCG LLC determined that the Rates and Regulatory Department uses an appropriate process to develop a forecast to meet the requirements of the financial and regulatory organizations for its present customers. There is a collaborative relationship with the Gas Supply function for the development of the peak day forecast.*

## **Analysis**

The Company's biennial forecast provides a detailed description of the forecast methodology, which builds a forecast from independent class specific econometric models<sup>65</sup> (residential, multi family and commercial & industrial) with a consistent structure based on economic forecasts of customers by class and use per customer (UPC) by class. External adjustments are made for large customers' loads, including distributed generation<sup>66</sup> and shifts from interruptible to firm service.

Major inputs include effective degree days (EDD), state focused economic data and energy prices provided by nationally recognized firms.<sup>67</sup> The relationships between the inputs and dependent variables are developed through regression techniques, including the impact of weather. Normal weather is defined as the most recent 30 years of historical heating degree days at local airports. Weather normalization is based on a month, not a shorter period. Base usage in the months of July, August and September is subtracted before normalization and then added back.<sup>68</sup> The regression model and associated statistical testing is performed by an outside vendor subject to reviews based on historical experience.<sup>69</sup> The effects of energy efficiency on the sales forecast are developed inherently in the regression analysis.<sup>70</sup> The peak

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<sup>64</sup> Response to Data Request GS125

<sup>65</sup> Response to Data Request GS004

<sup>66</sup> Response to Data Request GS009

<sup>67</sup> Interview B. Welch 7/13/16

<sup>68</sup> Response to Data Request GS017

<sup>69</sup> Interview B. Welch 7/13/16 and Response to Data Request GS082

<sup>70</sup> Response to Data Request GS008

day models do not pick up historical trends and an adjustment is made outside the model to reflect the effects of conservation.<sup>71</sup>

The Company also produces (in a similar manner) annual forecasts that are used internally that report sales by rate schedule.<sup>72</sup> The review and the approval process for forecasts include Gas Supply, Regulatory and Sales and Marketing.<sup>73</sup>

The Company's modeling methodology is consistent with reasonable utility practice. The scope and detail of the Company's biennial forecast is excellent.

**Conclusion 4.1.3:** *RCG/SCG LLC reviewed the Company's methodology to forecast the expected effects of the Comprehensive Energy Strategy (CES) within Sections 10.2 and 10.3 of this report. However, the linkage between Sales and Marketing and Rates and Regulatory should be strengthened to draw on the forecasters' strengths and insights.*

### **Analysis**

Connecticut has developed the CES to aid and encourage increased penetration of natural gas with expected energy cost saving and environmental benefits. The CES process operates within a regulatory arrangement that in effect bifurcates the Company's revenue streams before and after the CES. CES residential customers are primarily heating customers.<sup>74</sup>

The CES forecast is added to the Company's existing customer base to prepare the overall forecast.<sup>75</sup> RCG/SCG LLC reviewed this process with the Rates and Regulatory<sup>76</sup> and the Sales and Marketing<sup>77</sup> to explore how the bifurcated forecast is coordinated.

The CES forecast prepared by Sales and Marketing includes estimates (for both residential and commercial customers) of on main conversions and new service, off main new construction and new service, multi family new service and firm key accounts new service. Sales and Marketing's estimates have evolved over three forecasts<sup>78</sup> and have shifted due to the changing ratio of the cost of heating oil to natural gas.<sup>79</sup>

Estimates provided by Sales and Marketing are based on the conservative assumption that a CES residential customer will only be installing gas heating and water heating loads and

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<sup>71</sup> Response to Data Request GS008

<sup>72</sup> Response to Data Request GS078

<sup>73</sup> Response to Data Request GS012

<sup>74</sup> Interview R. Diotalevi 7/15/16

<sup>75</sup> Response to Data Request GS084

<sup>76</sup> Interview C. Goodwin 7/13/16

<sup>77</sup> Interview R. Diotalevi 7/15/16

<sup>78</sup> Response to Data request GS088

<sup>79</sup> Interviews R. Diotalevi 7/15/16 and J. Lano 7/13/16

does not assume ancillary loads such as ranges, dryers and spas. The load estimate is based on the age and square footage of the home and is derived from the Connecticut Program Savings Document (PSD), which is expected to lead a conservative load estimate. For commercial customers the load estimate is based on the oil consumption being displaced or usage derived from existing commercial customers with related North American Industrial Classification System codes.<sup>80</sup>

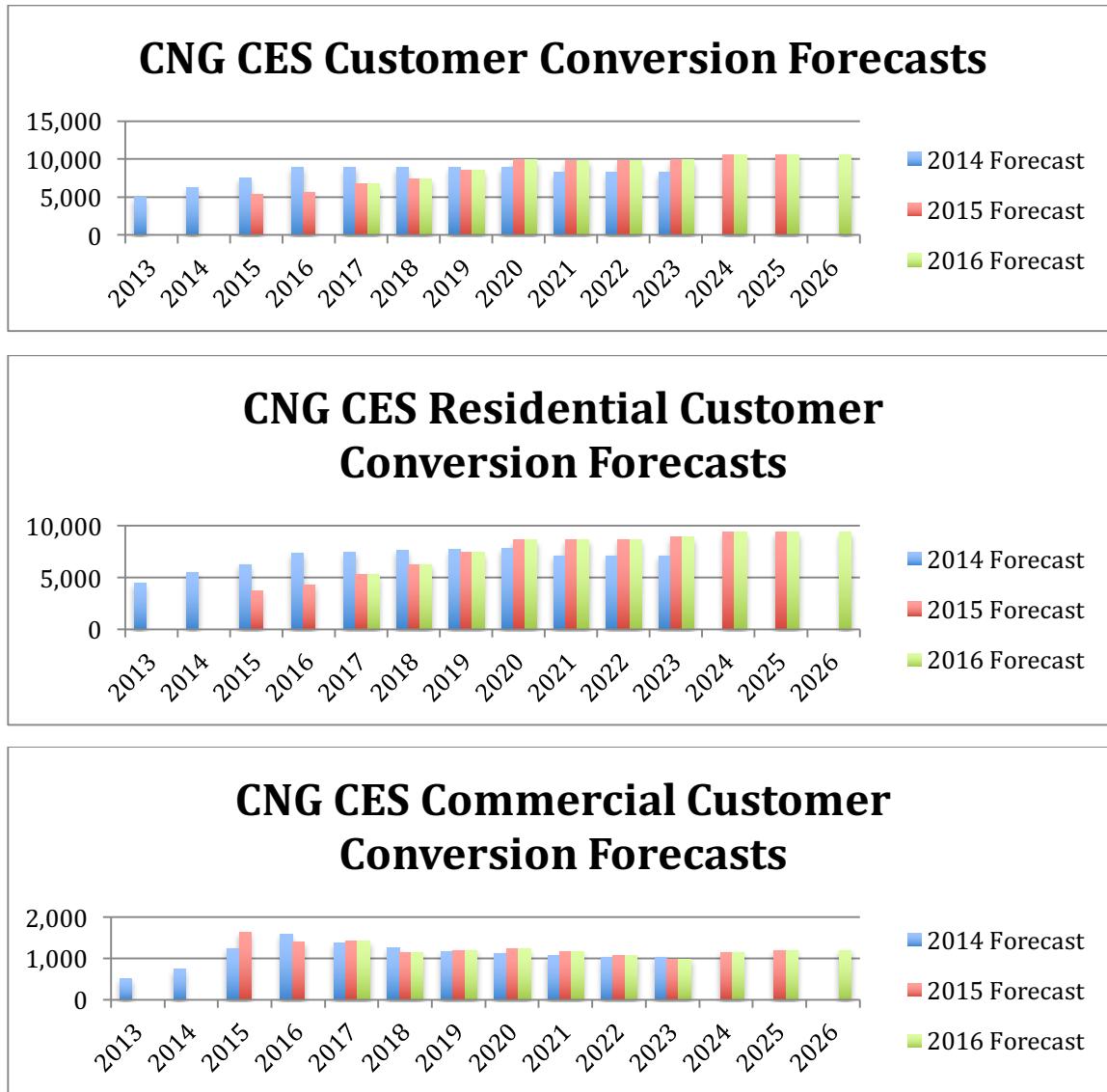


Exhibit 15 - CNG CES Forecasts<sup>81</sup>

<sup>80</sup> Interview R. Diotalevi 7/15/16 and Response to Data Request GS007

<sup>81</sup> Response to Data Request GS088

As the data above demonstrates the Company's estimate of conversions has been lowered and extended out to a later date and now residential conversions are expected to be 5,300/6,550 in 2017 and increase thereafter.



Exhibit 16 – CNG Residential Customer History<sup>82</sup>

As the above data show residential customers in 2016 are expected to be over 155,000/172,000. Thus the CES impact for the residential forecast is approximately 3.4%/3.8%, a substantial impact with similar results in later years.

While the CES specifies a tracking process for rate regulation of new customers, the Company's longer-term forecast of expansion has impacts across the Company as the sales and demand forecast drives the Company's supply needs.

Over time, it is possible that there will be an overlap of present low-use customers in the two forecasts. Further, as CES customers become long-term customers, the estimate produced by Sales and Marketing may not include the changes in usage that affect all customers over time (conservation and/or new uses).

**Conclusion 4.1.4:** *RCG/SCG-LLC is concerned that there is no formal, integrated approval process for the forecast, which includes significant inputs from both Rates and Regulatory (existing) and Sales and Marketing (CES).*

### Analysis

<sup>82</sup> Response to Data Request GS079

The existing customer forecasts are reviewed within the Rates and Regulatory organization.<sup>83</sup> Gas Supply works collaboratively with Rates and Regulatory during the development of the forecast.<sup>84</sup>

The CES forecast has a separate approval process that does not involve Rates and Regulatory directly.<sup>85</sup>

**Conclusion 4.1.5:** *RCG/SCG-LLC determined that Rates and Regulatory reviews forecast accuracy (forecast to weather normalized sales), and RCG/SCG-LLC reviewed the pattern of variance and considers that the forecast is reasonable based on existing constraints and meets the needs of the Company's financial and regulatory organizations.*

#### **Analysis**

RCG/SCG-LLC examined the variance reporting provided by the Forecasting Department. RCG/SCG-LLC requested and reviewed the variance reports for various months and found that detailed variance analyses are presented on a monthly basis.<sup>86</sup> RCG/SCG-LLC compared the forecast to normalized sales<sup>87</sup> and based on our review RCG/SCG-LLC considers the Company's forecasting performance to be reasonable.

**Conclusion 4.1.6:** *RCG/SCG-LLC has determined that the function of forecasting is executed similarly at both CNG and SCG except as needed to meet some minor disparate regulatory situations.*

#### **Analysis**

RCG/SCG-LLC examined how Rates and Regulatory performs the forecasting function and related efforts. Based on interviews with employees<sup>88</sup> and examination of reports and other documents, the forecasts for the two companies are similar. At this time only CNG has revenue decoupling authorized by PURA and this translates into a minor but not significant difference.

#### **Recommendations**

**Recommendation 4.1.1:** *RCG/SCG-LLC recommends, because of its expertise and existing responsibility for the existing customer forecast, the Company should assign Rates and*

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<sup>83</sup> Interview C. Goodwin 7/13/16

<sup>84</sup> Response to Data Request GS001

<sup>85</sup> Interview R. Diotalevi 7/15/16

<sup>86</sup> Response to Data Request GS018, GS073, GS078 and GS080

<sup>87</sup> Response to Data Request GS073 and GS074

<sup>88</sup> Interviews C. Goodwin 7/13/16, B. Welch 7/13/16 and D. Hannibal 7/15/16

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*Regulatory the responsibility to review the CES forecast prepared by Sales and Marketing. Additionally, the combined forecast should be reviewed at the executive level before it is formally issued. This change will ensure the input of Sales and Marketing is tightly coordinated with the existing customer forecast and the resulting forecast meets the needs of the Company.*

#### 4.2 Gas Supply

##### **Objectives and Scope**

The review of Gas Supply evaluated the Company's commodity, transportation, storage planning, and procurement process; the shorter-term management of those assets; the interaction between Gas Supply and organizations such as Gas Control, Forecasting and Sales & Marketing; the management of interruptible load; risk management; and controls. Gas Supply's mission, key performance indicators, budgets, and staffing were explored and evaluated.

##### **Overall Assessment**

**THE GAS SUPPLY FUNCTION APPROPRIATELY MANAGES COMMODITY, PIPELINE TRANSPORTATION AND STORAGE TO MEET BOTH LONG-TERM NEEDS AND SHORT-TERM OPERATIONS. RCG/SCG-LLC BELIEVES THE COMPANY NEEDS TO FOCUS ON SUCESION PLANNING AND DOCUMENTATION OF ITS PROCESSES DUE TO THE RISKS INHERENT IN A SMALL ORGANIZATION PERFORMING A CRITICAL FUNCTION.**

Gas Supply obtains and manages commodity, pipeline transportation, and storage capacity. Gas Supply supports and/or interacts with the operating, financial and regulatory groups of the Company. The Department has a clear mission, which is well understood and focuses on the needs of customers. The long-term planning and procurement of commodity and transportation are managed to meet both existing and emerging needs, such as those resulting from Connecticut's Comprehensive Energy Strategy (CES). There is a robust short-term gas supply management process.

The Gas Supply function is led by the Senior Director – Energy Supply, who reports directly to the President.<sup>89</sup>

The performance of Gas Supply is only formally compared to one external measure, and its performance is reasonable. As a result of a longstanding decision based upon a disparate regulatory allocation of risk versus reward, the Company does not undertake action (hedging) to reduce price volatility. The Company's risk management process as related to Gas Supply is reasonable. The overall Gas Supply function is adequately staffed to continue this level of performance.

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<sup>89</sup> Interview J. Rudiak 7/14/16 and Response to Data Request GS072

## **Evaluation Criteria**

RCG/SCG-LLC Gas Supply criteria include:

- To what extent were the recommendations from the 2008 audit implemented?
- Are the supply portfolio principles, goals, and objectives for mass-market default customers reasonable and appropriate to ensure continuity of supply?
- Are the risk management strategies and practices appropriate for a gas operation of this size?
- What are the supply procurement strategies, policies, processes, and methods?
- Are the financial and physical hedging practices reasonable and appropriate?
- Does the Company use performance benchmarking with other utilities as part of its supply strategy?
- What are the Company's portfolio performance goals?
- Are portfolio oversight and controls appropriate?
- How are demand management/response, energy efficiency, and migration of retail customers to competitive suppliers integrated into both the portfolio and procurement processes?
- How are the management of local assets (such as storage, LNG/CNG and propane/air) planned?
- How will emerging supply in the Marcellus Region impact supply planning.
- Review the Company's management and reporting structures, staffing, accountability, and experience to determine if they are consistent with the goals and objectives of the procurement process.
- Examine whether the Company has adequately considered the pace of the economic recovery on wholesale prices and the electric/gas supply process.

## **Conclusions**

**Conclusion 4.2.1:** *RCG/SCG-LLC has determined that the Gas Supply Department has not met the requirement to maintain an inventory of skills of its Gas Supply Department, a key recommendation from the prior CNG audit.*

## **Analysis**

CNG's prior audit report by Overland applied two recommendations to Gas Supply.

*9-2 CNG should maintain an inventory of the skills of its gas department.*

In 2011 the Company performed a review of key (management level) positions in Gas Supply as part of an overall review. The review was followed up in 2013 with no material changes. A review of this confidential document indicates that as of the time of the review there was a shortage of employees in a development position in Gas Supply. A potential successor was identified for a position identified as key. A skills assessment was also performed in 2011 that identified Gas Supply Tasks and rated the incumbents.<sup>90</sup> Job descriptions (updated in 2014) exist for all positions.<sup>91</sup>

Because the last update of the skills assessment was performed in 2011 and updated in 2013, the Company (for the Gas Supply area) has not maintained an inventory of the skills necessary for the proper operation of the Gas Supply function. RCG/SCG-LLC has provided a recommendation for this issue. This recommendation is significant because the Gas Supply department is small, must execute its responsibilities every day and is responsible for a large portion of the Company's costs.

*9-1 CNG should be required to submit an additional disclosures concerning pursuit of non-firm margin maximization.*

The Company disagreed with the recommendation as unnecessary and the Company declared its status as complete. The Company argues that non-firm margin activities are performed pursuant to PURA regulation and sales margins and related information are reported to PURA within the PGA process.<sup>92</sup>

**Conclusion 4.2.2:** *RCG/SCG-LLC has determined that the Gas Supply Department has reasonably defined supply portfolio principles, goals and objectives to ensure continuity of supply.*

### **Analysis**

The mission of Gas Supply is consistently described as "Provide best cost, fully reliable service to customers under all weather conditions over all time horizons to foster growth and customer satisfaction, increasing the competitiveness of natural gas at the retail level vis-à-vis competing forms of energy."<sup>93</sup> This mission is clearly understood by all employees of the department. Gas Supply has performance indicators as part of the Company's 2015 Balanced Scorecard process that include long-term (strategic) and short-term (operational) items.<sup>94</sup>

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<sup>90</sup> Response to Data Request GS127

<sup>91</sup> Response to Data Request GS055

<sup>92</sup> Response to Data Request GS127

<sup>93</sup> Interviews J. Rudiak 7/14/16, C. Gaudet 7/14/16 and L. Hill 7/14/16 & Response to Data Request GS048

<sup>94</sup> Response to Data Request GS049

Gas Supply has a daily 8:10 AM meeting designed to set the schedule for the present and following day(s) and at this meeting a number of short-term information sources covering commodity, storage and transportation are reviewed.<sup>95</sup> The Company has defined a wide range of information sources to perform its functions.<sup>96</sup> The scope and actions needed to manage commodity, storage and transportation is defined and comprehensive.<sup>97</sup> Instant messaging (IM) is used to confirm transactions and make a formal recording of instructions throughout the day, although IM is not available for review other than for transactions.<sup>98</sup>

For the longer term the Company responds to a forecast that is driven primarily by the impact of Connecticut's CES to determine longer term capacity needs. The Company recognizes that its location near the end of pipelines that have had limited expansion requires an active presence in the capacity marketplace. The situation is also challenged by the recent use of natural gas for electrical generation. The Company has taken an active (and leading) presence in the marketplace and negotiated contracts in 2013 and that capacity has had varying completion status. One project is expected in-service as planned for November, 2016; a second project is delayed due to jurisdictional litigation; and a third project was cancelled along with the Company's contract for that capacity. PURA and the Company have explored the impact on the CES due to the decline in oil prices. The next several years should see a gas regulatory focus on the updated CES review and strategies for mitigation of increasing fixed capacity costs.<sup>99</sup> The Company has taken an active (and leading) role in regional, national and international efforts to shape the Connecticut capacity situation.<sup>100</sup>

Gas Supply monitors an extensive number of information sources to oversee the environment related to long-term issues.<sup>101</sup>

PURA has extensively reviewed the Company's five-year forecast of natural gas demand and supply beginning with a filing by the Company on October 1<sup>st</sup> of even years. The latest forecast filing review was completed on February 3, 2016.<sup>102</sup> The winter of 2014/2015 included February 2015 the second coldest month on record (some of the coldest temperatures in 100 years). Although this period did not set a record for a single peak day (which remains January 15, 2004, the coldest day in the last 30 years), the Company's system was tested issues on

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<sup>95</sup> RCG/SCG attendance at 8:10 AM meeting 7/14/16 and Response to Data Request GS104

<sup>96</sup> Response to Data Request GS028 and GS104

<sup>97</sup> Response to Data Request GS031

<sup>98</sup> Interview L. Hill 7/14/16 and Response to Data Request GS109

<sup>99</sup> Response to Data Request GS025

<sup>100</sup> Response to Data Request GS026 and GS103

<sup>101</sup> Interviews J. Rudiak 7/14/16 and C. Gaudet 7/14/16

<sup>102</sup> Response to Data Request GS059 Attachment 2

pipelines supplying Connecticut including compressor station capacity reductions, operational flow orders and interruptible secondary out-of-path restrictions at numerous points.

The Company's Peak Day Demand and Capacity were specifically reviewed and were forecast as shown in the following Exhibit.

	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
Peak Day Demand	330,767	335,916	345,991	354,974	363,444
Peak Day Supplies	338,818	346,318	404,818	404,818	393,818
Peak Day Surplus	8,051	10,402	58,827	49,844	30,374
% Surplus	2.4%	3.1%	17.0%	14.0%	8.4%

**Exhibit 17 – CNG Peak Day Demand & Capacity**

PURA also reviewed the Company's algorithmic models used to estimate consumption. These models use temperature projections, wind, cloud cover, the prior day's weather conditions and other variables such as day of the week and holidays to forecast peak consumption. PURA has judged the Company's model as accurate.<sup>103</sup>

15-Feb-15			
Effective Heating Degree Days (EHDD)			
Forecast	Actual	Difference	
71	71	0	
Sendout MMBTUs			
Forecast	Actual	Difference	% Difference
306,000	304,648	-1,352	-0.40%

**Exhibit 18 – CNG Peak Day EHDD & Capacity**<sup>104</sup>

The Company's peak day modeling is based on Effective Heating Degree Days (EHDD) and is subject to some variance.<sup>105</sup> The Company indicates that it uses various sources to compensate for the variance in the models.<sup>106</sup>

**Conclusion 4.2.3:** *RCG/SCG-LLC has determined that the Gas Supply Department uses appropriate processes to obtain transportation capacity to meet long-term needs.*

### Analysis

<sup>103</sup> Response to Data Request GS059 Attachment 2

<sup>104</sup> Response to Data Request GS059 Attachment 2

<sup>105</sup> Response to Data Request GS059

<sup>106</sup> Response to Data Request GS120

The Company's geographic location coupled with the historical limitations of pipeline capacity in New England complicates procurement of long-term pipeline capacity. The costs for new capacity can be substantially higher than for pipelines constructed decades ago.<sup>107</sup>

The Company recognizes that not all opportunities for new capacity will eventually be built on time and that expansion is subject to commitments by other parties, utilities, and regulators.<sup>108</sup>

Need for capacity is established through a formal planning process including modeling and input from other departments (including input from Sales and Marketing, Rates and Regulatory and other areas) and a range of alternatives is considered.<sup>109</sup>

The approval process for capacity contracts (extensions, renewals or new) is specified based on both annual cost and duration and requires at a minimum the approval of the President and may require approvals by at least two officers (CEO, CFO, COO or President) consistent with the UIL Grants of Authority.<sup>110</sup>

The Company reviewed a number of opportunities and responded to a number of pipeline "open season" opportunities for potential capacity expansion projects. In some cases the Company had already procured capacity on the pipeline prior to the open season. In other situations after analysis and negotiations the Company determined the offered capacity was less favorable than alternatives.<sup>111</sup>

The Company led negotiations for capacity for the regional LDC group for the AIM project, which is under construction and expected in service in late 2016 and similarly for the Tennessee Gas Pipeline's Connecticut expansion. Capacity extensions (often supported by a right of first refusal) are negotiated with pipelines and compared to other alternatives. In most instances the Company has negotiated a right of first refusal to extend the initial term of the capacity and a most favored nation clause compared to pricing that may be offered in subsequent expansions.<sup>112</sup> These terms are favorable to the Company and its customers.

Potential mitigation alternatives are being explored as a mitigation strategy is being developed.<sup>113</sup>

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<sup>107</sup> Response to Data Request GS025

<sup>108</sup> Interviews Pranaitis 7/14/16 and J. Rudiak 7/14/16

<sup>109</sup> Response to Data Request GS032 and GS103

<sup>110</sup> Response to Data Request GS032 Attachment 1

<sup>111</sup> Interviews Pranaitis 7/14/16 and J. Rudiak 7/14/16 and Response to Data Request GS046 and GS103

<sup>112</sup> Response to Data Request GS032 Attachment 1 and GS103

<sup>113</sup> Response to Data Request GS097

**Conclusion 4.2.4:** *RCG/SCG-LLC has determined that the Gas Supply Department has defined process for managing its transportation capacity.*

### **Analysis**

Under Connecticut's Supplier of Last Resort (SOLR) requirement, the Company is obligated to procure transportation capacity for all firm customers. Should a customer decide to obtain transportation and commodity from a retail supplier, the Company is then obligated to dispose of the resulting excess capacity in a manner that still will provide capacity if the retail supplier should subsequently default. This requirement can impact day ahead and intraday planning.<sup>114</sup>

The Company uses a multiple regression model for determining peak day requirements and then determines its best cost supply plan using the SENDOUT model.<sup>115</sup> A supply strategy has been defined including sufficient capacity for 100% of firm customer requirements and SOLR requirements to be met by firm pipeline capacity and peak shaving.<sup>116</sup>

To provide diversity, the Company has a number of transportation contracts with varying Maximum Daily Quantities and expiration dates with a number of pipelines.<sup>117</sup> A purchase point analysis has been performed and various alternatives considered.<sup>118</sup>

The SOLR policy provides increased reliability for Connecticut that allows transportation customers to convert to firm service without a new cost impact on existing customers and generates non-firm margins. The Company has not recently rigorously analyzed the costs and benefits of the SOLR policy in light of increasing costs for new capacity.<sup>119</sup>

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<sup>114</sup> Interview M. Pranaitis 7/14/16 and Response to Data Request GS032 Attachment 2

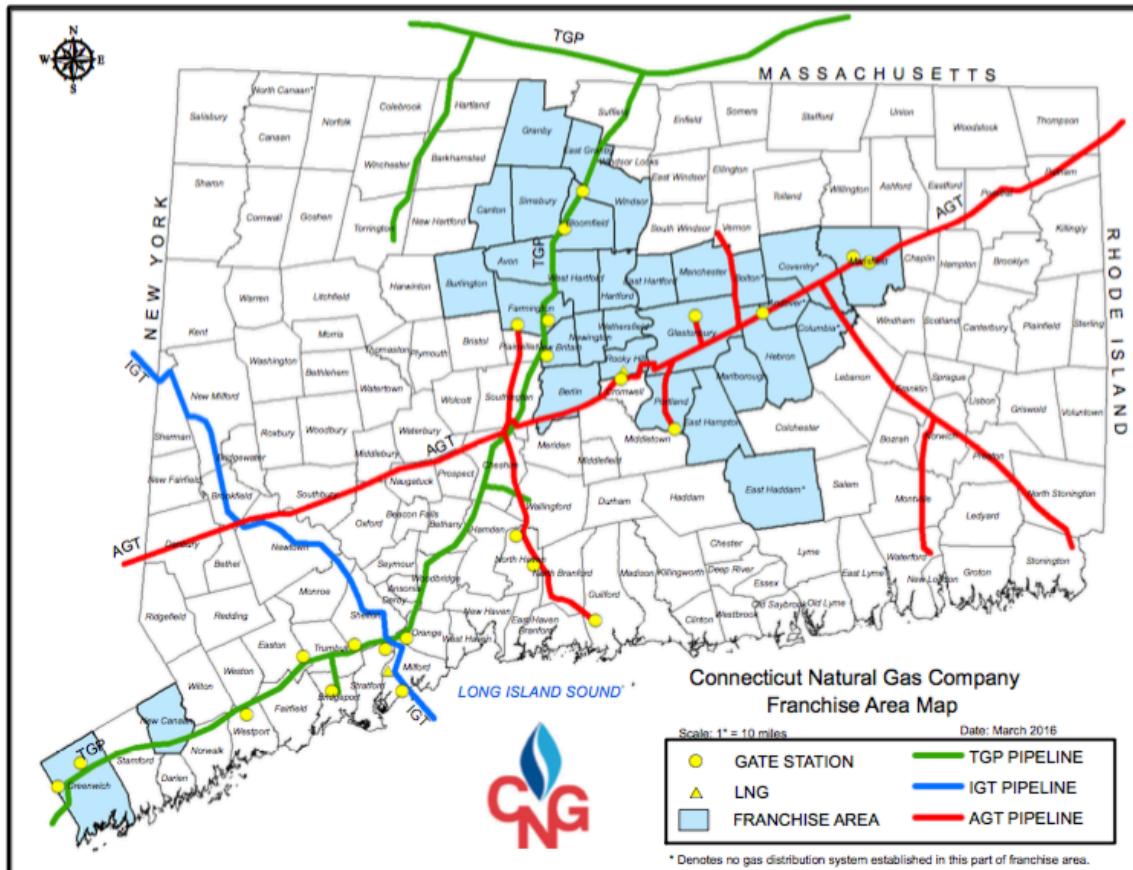
<sup>115</sup> Interviews C. Gaudet 7/14/16 and J. Rudiak 8/16/16 and Response to Data Request GS093 and GS079

<sup>116</sup> Response to Data Request GS032 Attachment 2

<sup>117</sup> Response to Data Request GS042

<sup>118</sup> Response to Data Request GS103

<sup>119</sup> Response to Data Request GS118



**Exhibit 19 - Pipelines Servicing CNG<sup>120</sup>**

CNG has separate connections to two pipelines (Tennessee Gas Pipeline and Algonquin Gas Transmission) based on its geographic location and multiple City Gates stations to deliver its supplies as needed.

The Company has issued curtailment orders to its interruptible service customers based on extreme cold weather, margins and recently pipeline emergencies.<sup>121</sup> Interruptible (non-firm) customers can be used to manage capacity requirements. The process includes consultation with Gas Control.<sup>122</sup> Operational Flow Orders (OFO) and curtailments are tracked, including reasons and EHDD.<sup>123</sup>

The focus of the capacity release program is to obtain the highest price for the capacity in a transparent manner, while complying with a range of requirements. Asset management

<sup>120</sup> Response to Data Request GS041

<sup>121</sup> Response to Data Request GS044

<sup>122</sup> Interview M. Pranaitis 8/-/16

<sup>123</sup> Response to Data Request GS104

agreements are structured to allow for recall to meet peak needs, which provides flexibility. There is a defined approval process for capacity release and system sales.<sup>124</sup>

Gas Supply, Gas Control, Rates and Regulatory and Sales and Marketing<sup>125</sup> participate in the decision to curtail interruptible customers. This decision is influenced by the economics of the individual contracts. Although the tariff defines interruptible service, there are no written procedures defining the interruptible process.<sup>126</sup> The Company does not track the total volume curtailed/interrupted for each event.<sup>127</sup>

The Company has not been assessed any pipeline penalties.<sup>128</sup>

**Conclusion 4.2.5:** *RCG/SCG-LLC has determined that the Gas Supply Department has a defined process for developing and obtaining commodity at a reasonable cost.*

### **Analysis**

The Company procures its commodity supply from large supply regions which are areas of high liquidity and numerous suppliers,<sup>129</sup> purchased at market prices under seasonal, monthly or mid-term contracts with some spot market purchases. The Company maintains firm transportation contracts to support these purchases. The Company focuses on gas producers rather than marketers for its supplies. Gas is sourced from the Gulf of Mexico, Canada and the Marcellus area to develop supply diversity through an RFP process, primarily for an individual winter season, and includes in some cases a reservation charge in order to gain offsetting take or release and delivery flexibility. The RFP is not prescriptive and allows suppliers to suggest alternatives.<sup>130</sup> There is a “pre-month” analysis performed on a continuing basis to assess the volumes needed. Supplies are generally acquired on a fixed basis to the NYMEX monthly settlement prices, Inside FERC Gas Market Report and/or Gas Daily.<sup>131</sup> The Company makes off-system sales transactions or short-term capacity release sales subject to reliability criteria to generate credits to firm customers within the PGA (and since January 1, 2014 to gas expansion).<sup>132</sup>

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<sup>124</sup> Interview M. Pranaitis 7/14/16 and Response to Data Request GS024

<sup>125</sup> Response to Data Request GS112

<sup>126</sup> Interview M. Pranaitis 8/16/16

<sup>127</sup> Response to Data Request GS102

<sup>128</sup> Response to Data Request GS047

<sup>129</sup> Interview L. Hill 7/14/16 and Response to Data Request GS103

<sup>130</sup> Response to Data Request GS089

<sup>131</sup> Interview J. Rudiak 7/14/16 and Response to Data Request GS024 and GS032 Attachment 2 and GS103

<sup>132</sup> Interview L. Hill 7/14/16 and Response to Data Request GS0024, GS032 Attachment 2 and GS096

The Company uses long-term contracts for underground storage located in MI, WV, PA, NY and Ontario to purchase gas in the summer for later withdrawal during high demand periods. It has performed detailed analyses to review storage costs and capabilities.<sup>133</sup> To provide additional peak response the Company also has access to a LNG facility located in its service territory.<sup>134</sup>

The 8:10 AM meeting is held each working day to determine the commodity and capacity needs and develop a plan to purchase (or release) commodity and transportation if appropriate. Meeting notes document the decisions made and are transmitted to Gas Supply and Gas Control. The notes include spot purchases, pipeline take instructions, nominations (including for the weekend from the Friday meeting), weather data, historical prices and volumes, and pipeline conditions and restrictions (such as operational flow orders, imbalance warnings, and capacity constraints) and ISO-NE/ISO-NY status (electrical generation and demand).<sup>135</sup> This plan includes the use of storage and LNG as required. Storage is evaluated against a number of criteria that include prices, storage volumes, timing, weather, duration to end of winter and other factors.<sup>136</sup>

The Company's LNG peaking facility is typically dispatched after all pipeline resources are used, but it is generally not used to serve non-firm demand, although specific exceptions have been identified and the marginal revenue must exceed replacement cost.<sup>137</sup>

The Company has detailed approval requirements for commodity that depend on the value and term of the commitments. The standard form NAESB contract is used subject to needed additions and legal review.<sup>138</sup>

Gas Supply compares its costs using the PGA to the other unaffiliated Connecticut gas LDC and also to Massachusetts LDC.<sup>139</sup> All gas costs are passed through to customers at cost through the Purchased Gas Adjustment (PGA) mechanism which is calculated and overseen within the Rates and Regulatory area by the designated Manager Pricing and Analysis.<sup>140</sup>

In response to a longstanding Connecticut regulatory decision (in 1994)<sup>141</sup> on the disparate allocation of risks and rewards of using the futures market, the Company has not

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<sup>133</sup> Response to Data Request GS103

<sup>134</sup> Response to Data Request GS002

<sup>135</sup> Response to Data Request GS024

<sup>136</sup> Response to Data Request GS032 Attachment 2

<sup>137</sup> Response to Data Request GS032 Attachment 2

<sup>138</sup> Interview M. Pranaitis 7/14/16 and Response to Data Request GS032

<sup>139</sup> Interview M. Pranaitis 7/14/16 and Response to Data Request GS050 and GS040

<sup>140</sup> Response to Data Request GS032 and Interview D. Hannibal 7/15/16

<sup>141</sup> Response to Data Requests GS101 and GS147

entered into hedges for firm customers.<sup>142</sup> However the Company's practice of depending on portfolio of commodity at peak of one third storage, one third LNG and one third flowing gas<sup>143</sup> tends to moderate commodity costs on peak days.

**Conclusion 4.2.6:** *RCG/SCG-LLC considers the risk management function for Gas Supply reasonable with the exception of the location of credit approval. While there is some concern that the negotiation and approval of contracts resides within the purview of the Senior Director of Energy Supply, the volume of reporting, independent calculation and review by Accounts Payable and specifically the PGA process is reassuring when coupled with the volume of Internal Auditing process activity and PURA's lack of adverse findings.*

### **Analysis**

The Company has detailed procedures to manage the risk of gas supply contracts. These procedures include transaction authority, confirmation of transactions, gas supply contract review, and counterparty credit approvals.<sup>144</sup> In 2012 the Company performed a comprehensive Risk Review Final Assessment. This assessment details several changes and they have been implemented.<sup>145</sup>

The negotiation of purchases and sales is performed only by specific employees within Gas Supply reporting to and including the Manager of Gas Supply who reports to the Senior Director of Energy Supply.<sup>146</sup> Analysts that report directly to the Senior Director of Energy Supply confirm the invoices for purchase and sales made under the Manager of Gas Supply<sup>147</sup> offering limited independent review within the Gas Supply Department.

The Senior Director of Energy Supply approves authorizations for payments in compliance with the defined Grants of Authority.<sup>148</sup> A forecast of cash requirements is provided to Treasury, which handle payments and receipts.<sup>149</sup> Treasury indicates that the timing and information flow is acceptable and recommends no changes.<sup>150</sup>

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<sup>142</sup> Response to Data Request GS037

<sup>143</sup> Interview J. Rudiak 7/14/16

<sup>144</sup> Response to Data Request GS032 Attachments 1 and 2

<sup>145</sup> Response to Data Request GS027

<sup>146</sup> Interviews Pranaitis 7/14/16 and J. Rudiak 7/14/16 and Response to Data Request GS054

<sup>147</sup> Interviews C. Gaudet and J. Rudiak 7/14/16 and Response to Data Request GS032 Attachment 2

<sup>148</sup> Interview Rudiak 7/14/16 and Response to Data Request GS032 Attachment 2

<sup>149</sup> Interviews Gaudet 7/14/16 & Bernardi 7/15/16 and Response to Data Request GS032 Attachment 2

<sup>150</sup> Interview D. Bernardi 7/15/16

The North American Energy Standards Board (NAESB) Base Contract for the Short-Term Purchase and Sale of Natural Gas is generally used with special provisions as needed. The process to establish a contract is defined.<sup>151</sup>

Credit approval and monitoring are performed by Gas Supply<sup>152</sup> and credit status is reported within the department bi-weekly. There are specific credit standards linking dollar exposure and the counterparty's credit ratings. Deviations for rated counterparties can be approved by the Senior Director Energy Supply, while non-rated counterparties require approval by the Senior Director Energy Supply and UIL Treasury.<sup>153</sup>

The Company does not engage in hedging.<sup>154</sup>

Significant amounts of Gas Supply's information are contained on spreadsheets. The information on these spreadsheets is also contained on delivery sheets and IM. The spreadsheets are password protected and many are read only. Corporate IT is responsible for backing up the Gas Supply's local information storage.<sup>155</sup>

Invoices for purchases and sale information are sent to both Accounts Payable and the PGA function in Rates and Regulatory. Accounts Payable performs its functions independently. The Manager of Pricing and Analysis in Rates and Regulatory performs the gas cost accounting including the month end journal entries, the PGA development and various reporting.<sup>156</sup>

The Company's external auditors have not performed a formal audit of Gas Supply within the last five years.<sup>157</sup>

Internal Auditing has not performed a formal audit of Gas Supply since 2011 although an audit of gas storage and inventory was performed in 2016. There were no significant recommendations.<sup>158</sup>

Internal Auditing does perform wide ranging process audits of Gas Supply twice per year reviewing completeness and accuracy; volumes and invoices; under/over delivery volumes at city gates versus scheduled; the reconciliation performed by the Manager of Pricing and

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<sup>151</sup> Interview M. Pranaitis and Response to Data Request GS032 Attachment 2

<sup>152</sup> Interviews C. Gaudet and L. Hill 7/14/16

<sup>153</sup> Response to Data Request GS032 Attachment 2

<sup>154</sup> Interview J. Rudiak 7/14/16 and Response to Data Request GS037

<sup>155</sup> Interview M. Pranaitis 7/14/16

<sup>156</sup> Interview D. Hannibal 7/15/16

<sup>157</sup> Response to Data Request GS057

<sup>158</sup> Interview S. Belfonti 7/13/16 and Response to Data Request IA005

Analysis (for the PGA); and restricted access to pipeline information. Management is asked to review controls twice each year by Internal Auditing.<sup>159</sup>

Internal Auditing performed a formal audit of the PGA in 2013 and found some areas for improvement (within the spreadsheet based model) that did not impact the filed rates. Rates and Regulatory now sends the draft regulatory filing to Gas Supply for review.<sup>160</sup>

PURA reviews the PGA twice per year using an extensive process down to the invoice level covering not only the cost of gas but also ancillary services revenues, non firm gas costs, non firm margins (NFM), transportation service charges (TSC) and amortized deferred balances and interest credited or charged. No errors have been found or significant changes required in the PGA process.<sup>161</sup>

The credit approval process for Gas Supply should be consolidated with other credit functions in the larger corporate entity as there is no separation of duties for this function and it may be more efficiently performed by the larger corporate entity.

**Conclusion 4.2.7:** *RCG/SCG LLC found that Gas Supply does not have specific, documented emergency plans for contingencies.*

### **Analysis**

Gas Supply does not have written contingency plans for supply interruptions such as a recent force majeure pipeline failure in Pennsylvania but depended on its institutional knowledge to react quickly. There was a second force majeure event in Pennsylvania that did not affect the Company but did affect non firm service.<sup>162</sup> There was a drill in 2015, the drill was part of a UIL scenario that had a significant impact on gas and included various injects to test the participants (ten different Company departments/areas).<sup>163</sup> As of August 9, 2016, a drill has not been scheduled for 2016.<sup>164</sup> Gas Supply rotates three on call employees during evenings and weekends to ensure coverage of unusual events.<sup>165</sup>

While the risks related to Gas Supply have been explored and defined<sup>166</sup>, Gas Supply does not have written emergency or contingency plans.<sup>167</sup> Written emergency plans allow the

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<sup>159</sup> Interview S. Belfonti 7/13/16

<sup>160</sup> ██████████ CONFIDENTIAL

<sup>161</sup> Interview D. Hannibal 7/15/16 and Response to Data Request GS059 Attachment 1

<sup>162</sup> Interview Pranaitis 7/14/16 and Response to Data Request GS113

<sup>163</sup> Response to Data Request GS122

<sup>164</sup> Interview J. Rudiak 7/14/16 and Response to Data Request GS121

<sup>165</sup> Interviews M. Pranaitis 7/14/16 and L. Hill 7/14/16

<sup>166</sup> Response to Data Request GS027

<sup>167</sup> Response to Data Request GS123

utility to develop and confirm its reaction before the pressure of the event and provide checklists of needed actions to ensure that all are accomplished even under the stress of the event.

**Conclusion 4.2.8:** *RCG/SCG LLC found, based on the above, that it considers the Company's actions towards reducing LAUFG reasonable but suggests that the Company should review its methodology to confirm it is up to date, paying specific attention to unbilled volumes.*

### **Analysis**

Gas can be “lost” in a number of physical ways but LAUFG cannot be measured directly. Gas can be lost during storage due to leakage; during pipeline transportation due to leakage, use for compression fuel and use as a pressure source to other valves and control equipment; during distribution construction activities such filling and purging of new lines and removal of old lines; during distribution operations such as setting meters, piping and joint leakage and use as a pressure source to other valves and control equipment; and theft of service.

The Lost and Unaccounted for Gas (LAUFG) function is spread across a number of areas of the Company and is subject to PURA reporting requirements. LAUFG is under the responsibility of the Director Gas Design and Delivery, who reports directly to the President of CNG/SCG.<sup>168</sup> The Company defines LAUFG as Total Distribution Supply less Customer Usage less Known Adjustments. The Company considers four major components to LAUFG – Leakage, Measurement, Accounting and Theft.<sup>169</sup> The Company’s LAUFG methodology is based on report dated June 1, 2006.<sup>170</sup>

LAUFG should be tracked and the methodology reviewed to ensure that the Company’s operations are not increasing the discharge of natural gas to the atmosphere (physical losses) and metering and other management processes are being properly managed (metering and theft).

Because LAUFG cannot always be measured directly (examples such as theft and small unknown leaks) it is estimated by netting the measurement (metering) of gas entering the system at city gates less sales to customers. While this formula appears to be straightforward each element of LAUFG is subject to tolerances and errors (meters can be plus or minus the actual reading and still be within acceptable commercial or regulatory limits).

LAUFG is also important as losses are applied to transportation customers to ensure that gas delivered for their account also provides for expected distribution losses. Physically LAUFG

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<sup>168</sup> Response to Data Request GS072

<sup>169</sup> Response to Data Request GS060

<sup>170</sup> Response to Data Request GS061 Attachment 1 and Interview A. Barnes 8/26/16

cannot become negative and transportation customers should not benefit from that calculated value due to a methodology that generates a negative value.

PURA has an active process to review LAUFG filing with the latest Docket occurring in 2016.<sup>171</sup> PURA is required by statute to investigate LAUFG if it exceeds 3% in any calendar year.<sup>172</sup> The Company reports that its LAUF % by calendar year is as follows:<sup>173</sup>

% LAUFG by Calendar Year		
Year	CNG	SCG
2010	1.47%	1.90%
2011	0.67%	0.74%
2012	0.93%	0.52%
2013	0.01%	0.11%
2014	1.69%	0.13%
2015	1.33%	0.28%

**Exhibit 20 Six Year Comparison of LAUFG**

LAUF is reported annually to the federal Department of Transportation based on a year ending June 30<sup>th</sup>.<sup>174</sup>

Management of leaks, which is a component of LAUFG, is discussed in Section 4.4, conclusion 4.4.2 of this report.

The Company indicates that it has taken a number of steps to reduce LAUFG including various leak management enhancements, improved purging procedures, identification and planned elimination of pneumatic purge devices, field efforts in collections and the “Soft Close” program.<sup>175</sup> The Company has developed a process to reuse gas used in high pressure testing rather than releasing it to the atmosphere.<sup>176</sup>

The Company reports LAUF with multiple ending dates and varying impacts of unbilled sales. RCG/SCG LLC has provided a recommendation for this issue.

**Conclusion 4.2.9:** *RCG/SCG LLC has determined that the Purchased Gas Adjustment (PGA) process is reasonable.*

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<sup>171</sup> Response to Data Request GS061 Attachment 2 and GS148

<sup>172</sup> Response to Data Request GS061 Attachment 2

<sup>173</sup> Response to Data Request GS062 Attachment 1

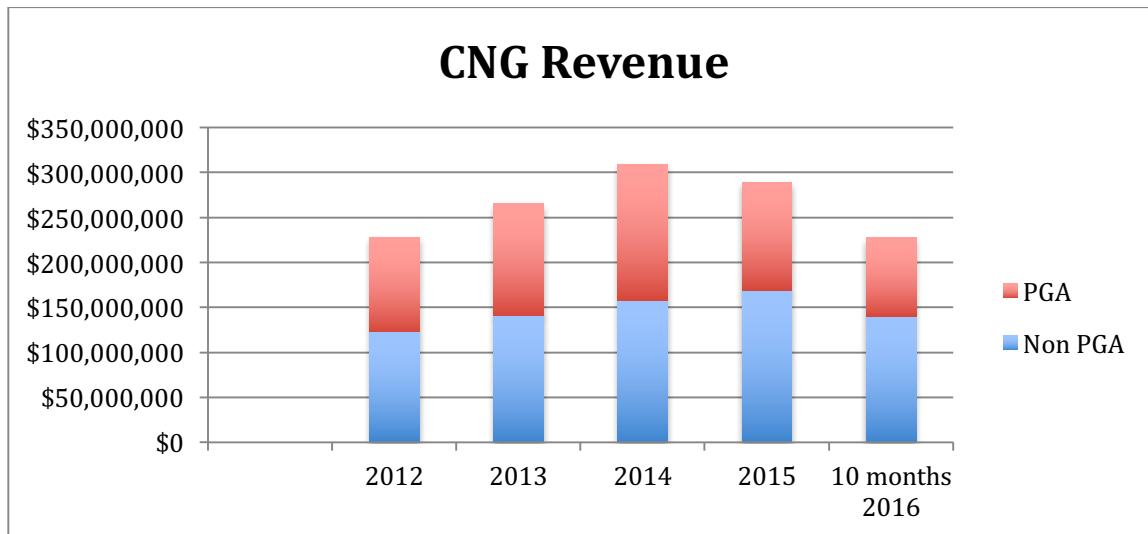
<sup>174</sup> Response to Data Request GS149

<sup>175</sup> Response to Data Request GS063

<sup>176</sup> Response to Data Request GS151

## Analysis

The intent of the PGA is to recover substantially all of the gas costs within the period from September 1<sup>st</sup> to August 31<sup>st</sup><sup>177</sup> and does not include any profit or return for the Company on those gas costs.<sup>178</sup>



**Exhibit 21 – Historical CNG Revenues**

As shown above, PGA costs are a substantial portion of total customer revenues and vary with the cost of gas.

The Company has a detailed PGA process performed in the Rates and Regulatory area and separate from the Gas Supply area. This process uses the individual invoices and other information to develop and track all of the Company's gas costs and any sales of commodity and capacity.<sup>179</sup>

The PGA model (spreadsheet based) uses the NYMEX pricing (and monthly settlement pricing updates) as a key input. With the advent of lower cost gas from the Marcellus region the Company had to develop changes to the model to reduce variances. The Company considers the resulting end of year (August 31<sup>st</sup>) balances small in comparison to overall annual PGA costs.<sup>180</sup> This process is challenging to accomplish due to the smaller volume of sales during the summer period.

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<sup>177</sup> Interview D. Hannibal 8/16/16

<sup>178</sup> Response to Data Request GS032 and Interview D. Hannibal 7/15/16

<sup>179</sup> Interviews C. Gaudet 7/14/16 and D. Hannibal 7/15/16

<sup>180</sup> Interview D. Hannibal 8/16/16 and Response to Data Request GS106

Due to the varying sales volumes and gas costs there may be monthly under or over balances for which interest is accrued or charged at a PURA specified rate of return.<sup>181</sup> The monthly PGA rate is determined collaboratively by the Senior Director of Energy Supply, the Director Rates and Forecasting and the Manager-Pricing and Analysis, without any further Company approvals.<sup>182</sup>

PURA also reviews the monthly PGA rate before it is implemented and semi-annually in a formal process and no significant errors have been found or changes required in the PGA process, which includes gas supply costs.<sup>183</sup>

The Company compares its PGA rates to the other non-affiliated Connecticut LDC.<sup>184</sup> The graphs below chart the differences between the Company and Yankee Gas (negative number is better performance).

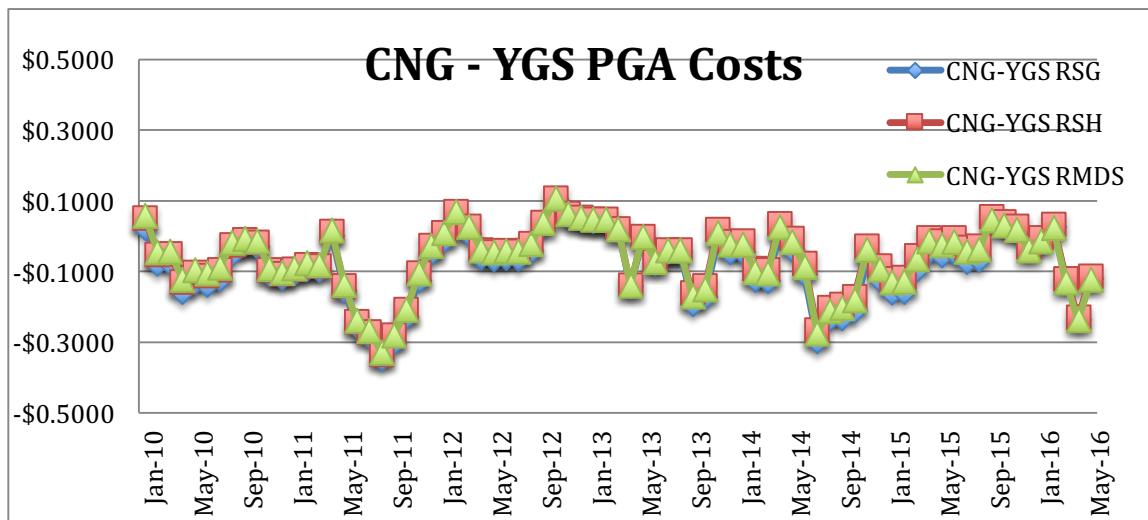


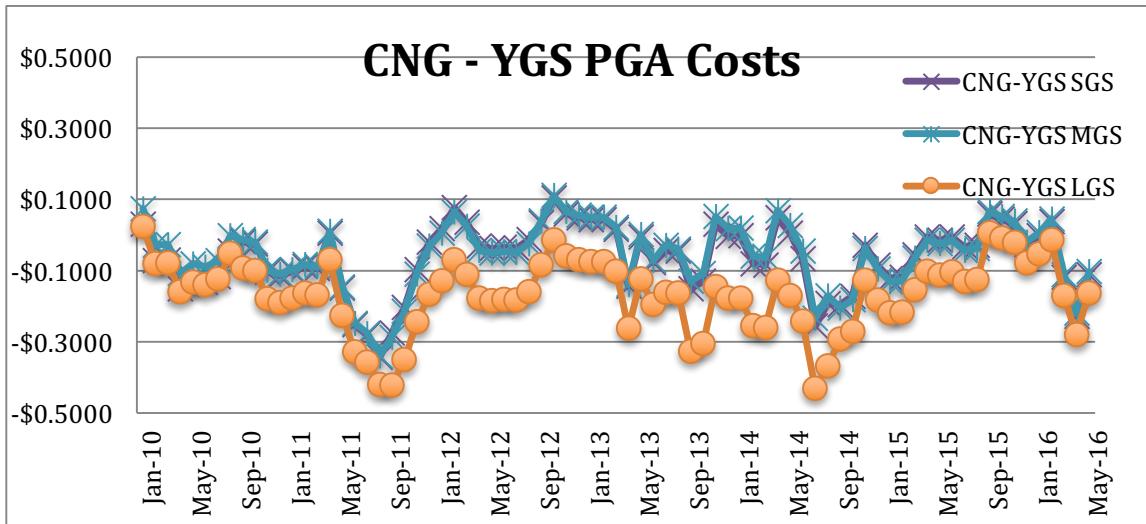
Exhibit 22 – CNG-YGS Residential PGA Costs

<sup>181</sup> Interview D. Hannibal 7/15/16

<sup>182</sup> Interview D. Hannibal 7/15/16

<sup>183</sup> Response to Data Request GS059 Attachment 1

<sup>184</sup> Response to Data Request GS040



**Exhibit 23 – CNG-YGS General Services PGA Costs**

**Conclusion 4.2.10:** *RCG/SCG-LLC has concluded that Gas Supply is relying excessively on experience and knowledge rather than documenting important processes and procedures.*

### Analysis

In a number of important areas Gas Supply depends on the knowledge and experience of its employees to perform important processes and procedures. There have been no indications that this reliance on knowledge has impacted costs or operations, however the Gas Supply organization is modest in size and as all organizations has the potential for untimely or unplanned turnover.

In a similar vein, significant work is done on spreadsheets, which although backed up by IT are under the control and knowledge of a small number of employees.<sup>185</sup> The spreadsheets may have different formats.<sup>186</sup> A request for copies of a significant RFP and the evaluation matrix resulted in a pair of spreadsheets.<sup>187</sup> Delivery sheets are maintained as a spreadsheet.<sup>188</sup> The weekly credit report is maintained as a spreadsheet.<sup>189</sup>

The decision to declare an interruption for interruptible customers is made in consultation with Gas Supply, Gas Control and Regulatory with input from Marketing and is

<sup>185</sup> Interview M. Pranaitis 7/14/16

<sup>186</sup> Interview C. Gaudet 7/14/16

<sup>187</sup> Response to Data Request GS089

<sup>188</sup> Response to Data Request GS116

<sup>189</sup> Response to Data Request GS098

determined by weather, pipeline situation and costs. Although the tariff defines interruptible service, there are no written procedures for the interruptible process.<sup>190</sup>

During a recent force majeure event the Company reacted but no contingency plan was mentioned as preparation<sup>191</sup>, SENDOUT modeling was “not needed due to low loads”<sup>192</sup>, instead it appears the concept “These contingencies are common knowledge to the gas supply leadership and group” and have replaced the development of written contingency or emergency plans, procedures, or any related information for Gas Supply other than the Company’s Emergency Plan.<sup>193</sup>

The SENDOUT model is used for capacity planning and three employees can operate the model and its operation takes “lots of experience”.<sup>194</sup> The output of the model has limited explanation included in its report format.<sup>195</sup>

The spreadsheet used for the monthly pipeline cash out allocation calculations does not include explanatory information to allow its easy review.<sup>196</sup> The Company depends on a 2004 order and subsequent PGA orders to support its cash out with its affiliate, which is needed because of the joint balancing arrangement with its pipelines.<sup>197</sup> The monthly cash out process itself is reasonable.

Although there are defined procedures for Off System Sales, “knowledge is necessary” for this function.<sup>198</sup> However, another data response did not refer to these procedures at all.<sup>199</sup> In response to a data request to provide a copy of short term acquisition and system sales of natural gas policies and procedures as document dated May 2009 (although the pages each are marked January 2000), which refers to position titles no longer used was provided. A document of this age has limited value.<sup>200</sup>

Instant Messaging is reported to be used by Gas Supply personnel for various communications<sup>201</sup>, however historical copies are not retained other than when a transaction is

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<sup>190</sup> Interview M. Pranaitis 8/16/16 and Response to Data Request GS112

<sup>191</sup> Response to Data Request GS113

<sup>192</sup> Interview J. Rudiak 8/16/16

<sup>193</sup> Response to Data Request GS123

<sup>194</sup> Interview J. Rudiak 8/16/16

<sup>195</sup> Response to Data Request GS093

<sup>196</sup> Response to Data Requests GS100 and GS130

<sup>197</sup> Response to Data Request GS131

<sup>198</sup> Interview J. Rudiak 8/16/16

<sup>199</sup> Response to Data Request GS111

<sup>200</sup> Response to Data Request GS129

<sup>201</sup> Interview L. Hill 7/14/16

consummated to buy or sell.<sup>202</sup> Further, the data response highlighted the Company's use of "highly experienced" personnel.<sup>203</sup>

Training is done informally (on the job).<sup>204</sup> There is some cross training for backup, but some concern about "gray hair" as a major question for the Company.<sup>205</sup> An employee expressed a desire for rotation within the Company as a learning experience.<sup>206</sup> As noted above skills tracking and succession planning have not been performed since 2013.

RCG/SCG LLC has provided a recommendation for this issue.

**Conclusion 4.2.11:** *RCG/SCG LLC has determined that opportunities exist to more effectively use the planning assets and experience in Gas Supply.*

### **Analysis**

As discussed above Gas Supply is responsible for a significant portion of the total expenses of the Company. Among these expenses are commodity, storage, transportation and LNG activities. While the processes and procedures for obtaining and managing these resources are well defined, the planning process for this area has opportunities for improvement including efficiency and effectiveness.

The Company recognizes that new transportation and storage capacity will come at a higher cost than the present embedded resources.<sup>207</sup> These resources are "lumpy" and will be in service at a date controlled by the resource provider (pipeline) rather than precisely meeting the Company's needs.<sup>208</sup> The Company is exploring methods to mitigate these costs.<sup>209</sup>

The regulatory policy that requires the Company to be the Supplier of Last Resort (SOLR) for all customers may have potential costs and benefits to firm customers, but the Company has not rigorously analyzed the costs/benefits of that requirement.<sup>210</sup>

Gas Supply employs the SENDOUT model for some of its analysis. The model was updated in 2015<sup>211</sup> but the Company does not use outside consulting support on a regular basis to optimize its use of the model.<sup>212</sup>

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<sup>202</sup> Response to Data Request GS109

<sup>203</sup> Response to Data Request GS109

<sup>204</sup> Interview L. Hill 7/14/16

<sup>205</sup> Interview J. Rudiak 7/14/16

<sup>206</sup> Interview C. Gaudet 7/14/16

<sup>207</sup> Response to Data Requests GS025 and GS136

<sup>208</sup> Response to Data Request GS025

<sup>209</sup> Response to Data Requests GS097 and GS142

<sup>210</sup> Response to Data Request GS118

The Company does not use the model to analyze capacity release<sup>213</sup>, resource mix optimization<sup>214</sup>, scheduling<sup>215</sup>. The Company asserts that the model is a seasonal, mid term and long term planning model and does not contribute useful information, but the Company did not indicate how it models these functions. The Company is planning to experiment with the resource mix optimization feature in the future.<sup>216</sup>

The Company does not use formal models for analysis provided to other parties for issues such as the comparison of LNG to pipeline capacity<sup>217</sup>, purchase point<sup>218</sup>, underground storage<sup>219</sup> and pathing analysis<sup>220</sup>.

The Company does not regularly use scenario analysis for weather (although it does model normal and design weather)<sup>221</sup> and considers an analysis based on normal weather is equivalent to scenarios of abnormal conditions of varying degrees (both ways).<sup>222</sup> Other analyses consider load factor at a single point (with a complementary value offset) rather than using a range of variables or developed scenarios.<sup>223</sup> These simplifying assumptions are inappropriate for planning studies. If variable ranges or scenarios were considered potential decision points and the related inflections could be identified.

While the use of different methods of analysis or not using a specific model's full capabilities does not invalidate prior analyses made, the responses call into question whether a more formalized method of analysis including areas such as future rates, SOLR and/or reliability might inform the Company and its regulators about the evolving aspects of various policies and/or their costs. With the recent Massachusetts decision to not support its electric utilities' support of gas pipeline capacity the cost picture may have shifted. A potential cost shift may call into question the magnitude and term of Connecticut's CES program and lead to a different estimate of the cost and value of new customers in the future.

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<sup>211</sup> Response to Data Request GS133

<sup>212</sup> Response to Data Request GS134

<sup>213</sup> Response to Data Request GS135

<sup>214</sup> Response to Data Request GS136

<sup>215</sup> Response to Data Request GS141

<sup>216</sup> Response to Data Request GS136

<sup>217</sup> Response to Data Request GS143

<sup>218</sup> Response to Data Request GS144

<sup>219</sup> Response to Data Request GS145

<sup>220</sup> Response to Data Request GS146

<sup>221</sup> Response to Data Request GS137

<sup>222</sup> Response to Data Request GS143

<sup>223</sup> Response to Data Request GS146

A well developed planning methodology can include robust scenarios that provide the costs and bounds for various decisions, including trigger points that can highlight when a strategy needs to be reconsidered. The use of consistent modeling tools can reduce the time and cost to evaluate emerging issues and day to day decision making. Consistent modeling tools can save time restructuring analyses by using prior data inputs or resource mixes.

RCG/SCG LLC has provided a recommendation for this issue.

**Conclusion 4.2.12:** *RCG/SCG LLC has determined that the Gas Supply process is executed similarly at both CNG and SCG except as needed to meet the different pipeline access situations between the companies.*

### **Analysis**

CNG has separate connections to two different pipelines (Tennessee Gas Pipeline and Algonquin Gas Transmission) based on geographic locations (City Gates).<sup>224</sup> Based upon the pipeline locations and the Company's LNG capabilities, the Company's gas supply costs and profiles will be different. Gas Supply seeks to develop separate efficient portfolios for CNG and SCG to match the load curve as needed.<sup>225</sup> Interviews with Gas Supply employees and the examination of processes and procedures confirmed that the gas supply process is executed similarly at each company.<sup>226</sup> Losses for transportation and sales customers are established differently between the Companies, but using a consistent methodology. At CNG losses are recalculated after a rate case, while SCG makes an annual filing.<sup>227</sup>

CNG and SCG have a joint operational balancing agreement with the Tennessee and Algonquin pipelines, which provides greater flexibility than two separate agreements. Pipeline cash out is allocated on a pro rata basis between CNG and SCG.<sup>228</sup>

### **Recommendations**

**Recommendation 4.2.1:** *RCG/SCG LLC recommends Gas Supply update its critical skills review, succession planning and training plans on a regular basis due to small size of the Gas Supply group and the specific expertise required for day to day operations and dealing with the regulatory environment.*

**Recommendation 4.2.2:** *RCG/SCG LLC recommends Gas Supply execute a rigorous, detailed process to determine which processes and procedures should be documented and which related*

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<sup>224</sup> Response to Data Request GS041

<sup>225</sup> Response to Data Request GS032 Attachment 2

<sup>226</sup> Interviews M. Pranaitis 7/14/16, C. Gaudet 7/14/16 and J. Rudiak 7/14/16

<sup>227</sup> Interviews M. Pranaitis 8/16/16 and D. Hannibal 7/15/16

<sup>228</sup> Interview J. Rudiak 7/14/16 and Response to Data Request GS032 Attachment 2 and GS100

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*information should be tracked. Gas Supply is responsible for a significant portion of the Company's costs and areas such as off system sales and capacity release, the interruptible process and emergency planning are either not documented or out of date. These processes have significant potential impacts on customers.*

**Recommendation 4.2.3:** *RCG/SCG LLC recommends Gas Supply execute a rigorous, detailed process to determine the capabilities of its various models, how inputs (including variances and scenarios) are structured, whether forward looking studies should be performed, how the results are catalogued and retained, and consider whether the functions of some models can be performed within other existing model(s). Gas Supply should consider engaging an internal or external consultant to perform this review, which would also consider training recommendations. Gas Supply relies on the experience and knowledge and expertise of its small staff to perform this work, which may place the Company at risk due to employee turnover or other unplanned situations.*

**Recommendation 4.2.4:** *RCG/SCG LLC recommends the Company update its LAUF methodology and determine the appropriate time period to estimate and report LAUF with due regard to the variability of unbilled sales.*

#### *4.3 System Planning & Engineering*

#### **Objectives and Scope**

System Planning and Engineering functions are responsible for designing a gas distribution system that ensures existing customers receive an adequate supply of natural gas during peak heating days while providing adequate capacity for future customers. Maintaining adequate volume and pressure is critical in a gas distribution system to prevent serious problems at the customer's premise. For example, loss of pilot lights in older gas equipment and very pressure sensitive newer model furnaces, during a low pressure event, could lead to gas leaks inside the home or business caused by faulty or outdated customer equipment, or in newer equipment unnecessary service calls caused by intermittent operation. Essentially these functions will:

- Plan the company's capital construction program which includes the replacement of aging infrastructure, particularly, cast iron and bare steel mains:
  - Ensures adequate gas supply to existing and new customers,
  - Reduces lost gas (through leaks), and
  - Minimizes the need for excessive corrective maintenance actions;
- Support the development of a formal asset management strategy and plan;
- Develop the main replacement schedule;
- Identify services tied to the mains;
- Maintain and evaluate the distribution system planning model (Stoner) results;
- Identify pressure upgrades to alleviate issues on low pressure systems;
- Ensure compliance work (both inspection and preventative maintenance schedules) are properly included in all scheduled construction and maintenance activities;
- Approve equipment (pipes, meter bar, meters, regulators, etc.) for use on the distribution system;
- Determine design and construction standards for the various pressures used on the distribution system,
- Define methods of construction;
- Design and locate regulator stations;
- Enhance SCADA design and operations;
- Develop designs and estimates for specific work orders; and

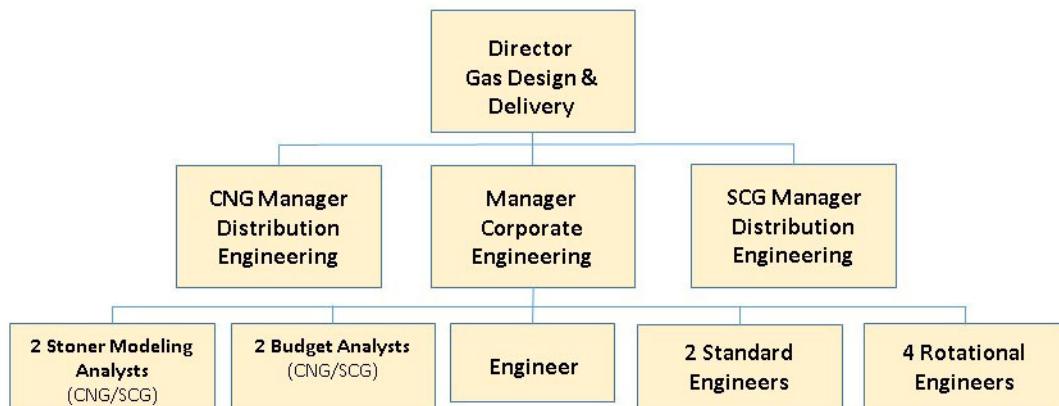
- Develop the asset management plan.

## Overall Assessment

**UIL GAS DESIGN AND DELIVERY AND CNG DISTRIBUTION PLANNING AND ENGINEERING APPEAR TO BE ORGANIZED APPROPRIATELY WITH THE RIGHT RESOURCES. RCG/SCG-LLC BELIEVES THE COMPANY NEEDS TO FOCUS ON STANDARDIZATION OF MATERIALS AND EQUIPMENT ACROSS DISTRIBUTION COMPANIES, AND THE PROJECT ESTIMATING PROCESS.**

System planning and engineering is the cornerstone of the utility's effort to ensure adequate, safe, and reliable natural gas delivery. It must be consistent with the Company's strategic plan and will affect customer satisfaction. The system planning efforts drive a utility's capital budgeting and influence the O&M budgeting.

The Gas Design and Delivery organization is responsible for all of the system planning and engineering of the gas distribution systems for both UIL Connecticut gas companies, including CNG's Greenwich distribution system. The corporate function maintains the Stoner planning model with critical input from the operating companies input as to problem areas and growth opportunities. Now under AVANGRID, this may change to include all AVANGRID gas networks sometime in the future.<sup>229</sup> But for now and this report, we will focus on the Connecticut gas operating companies. At the UIL level of the Avangrid Networks structure, the corporate engineering and planning group reports to the Director of Gas Design and Delivery. The following Exhibit shows this organization.<sup>230</sup>



**Exhibit 24 – Corporate Gas Design & Delivery**

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<sup>229</sup> AVANGRID, Inc. has six operating gas companies: The Southern Connecticut Gas Company and Connecticut Natural Gas Company in Connecticut; New York State Electric and Gas Corporation and Rochester Gas and Electric Company in New York; Berkshire Gas Company in Massachusetts; and Maine Natural Gas Company which was founded in 1998.

<sup>230</sup> Interview with Barnes on July 14, 2016.

As shown in the Exhibit both CNG and SCG Gas Design & Delivery functions report into the Director and are an extension of the corporate function. Essentially all the large projects – area upgrades to pressure systems, main replacement, and system expansion – are designed and estimated at either the corporate or company level. In addition, standards are being developed at the corporate with input from across the gas systems in the UIL portfolio. There is an initiative at the AVANGRID level to standardize across the AVANGRID gas holdings that would cover several states.<sup>231</sup>

For the purposes of this review we will evaluate this corporate operation along with the individual company's function.

### **Evaluation Criteria**

RCG/SCG LLC proposed the following evaluation criteria as the principal areas of investigation and the foundation for this study area's chapter in the final report:

- To what extent did the Company implement the 2010 audit recommendations?
- Are design operating pressures maintained across a range of temperatures and demand requirements?
- Are design estimates reasonable?
- Are standards consistent between SCG and CNG?
- How are distribution problem areas included in the system planning process?
- Are planning results adequately back casted for accuracy and model manipulation?
- Is there consideration of other load and infrastructure factors, such as advanced metering and energy efficiency initiatives, in the planning process?
- Are there formal processes for identifying, developing, and justifying the need for major projects (e.g., gas mains, regulator stations, LNG upgrades, etc.)?
- Are there a formal process and criteria for making decisions regarding replace versus repair, including how the overall construction program planning process is affected?
- Are there planning processes for: (a) reliability versus new business tradeoffs, and (b) regional versus central planning dynamics?
- To what extent are benefit/cost analyses and risk analyses considered in the decision making process; and are the specific types of benefit/cost and risk analysis

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<sup>231</sup> This would coordinate standards and work practices where appropriate, across AVANGRID's six natural gas distribution operating companies in Connecticut, Massachusetts, New York, and Maine.

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methodologies assessed?

- What tools and models are used to project distribution line replacement? How are the results verified?
- Does the Company plan to increase gas storage over the next five years? What drives storage decisions?
- Is infrastructure engineering function appropriately staffed and aligned to support system planning, construction, and field operations?
- Are Standards consistent between CNG and SCG?
- Are there adequate geographic data to assist in design projects accurately?
- What is engineering role in asset management?

### **Conclusions**

**Conclusion 4.3.1:** *RCG/SCG LLC found that CNG management has implemented the recommendations for Gas System Planning and Engineering listed in the 2010 Management Audit, but could do more in the area of benchmarking.*

### **Analysis**

Management has satisfactorily implemented the 2010 Management Audit recommendations.

*10 1 A new or updated long range system plan should be performed by Technical Services when new information becomes available that materially changes the findings in the previously released report.*

*In the only long range plan performed to date, Technical Services concluded that two of the four major sub systems “exhibit potential pressure problem areas” under certain assumptions. The company later concluded that the remedial work suggested in the report was not necessary. However, it did not update its original report or prepare a new one.*

*CNG Agreed: But level of documentation will be determined by extent and materiality of changes. For the interim, a memo to file will be prepared to confirm the follow up findings that remedial work was not necessary for one of the systems. CNG will prepare a 2011 update to its long range system analysis and plan.*

*Long Range Plan will be updated as part of 2011 goals. Changes will be documented in a manner deemed appropriate based on the materiality of changes. Status: Complete.<sup>232</sup>*

RCG/SCG LLC reviewed and understands the intent of this recommendation. CNG in the body of AVANGRID/UIL has a very robust system planning tool which identifies areas of low pressure. Currently, corporate engineering prepares a 10 year distribution system plan which is updated annually. In addition, the Director of Gas Design and Delivery on more than one occasion expressed his concern over the remaining low pressure areas on an otherwise high pressure distribution system.<sup>233</sup> This will be further discussed in this section.

*10.2 The Technical Services and Construction and Maintenance organizations should integrate industry benchmark statistics into their performance targeting and should set performance targets at "stretch" (aspirational) levels.*

*CNG should make it a regular practice to compare its performance to industry benchmarks. The one relevant SQM employed by the company had a target that was easily achieved in each of the last three years. Performance is more likely to improve, and good performance is more likely to be maintained, when targets are set at levels that require effort to achieve. When possible, industry best in class performance levels should be used as benchmarks for setting internal performance targets.*

*Agree – Ongoing Where appropriate, will be incorporated in 2011 goals which are developed and finalized in early 2011. Benchmark statistics gathered from NGA were used to establish the goals for third party damages and class 2 leaks in the 2011 Balanced Scorecard. Status: Complete<sup>234</sup>*

RCG/SCG LLC agrees with the recommendation, but has some concerns over the ongoing level of commitment to benchmarking. In 2012, CNG in the body of UIL, participated in PSE&G's broad based benchmarking efforts and, like many of the participants, didn't complete all areas of the survey. But more to the point, there doesn't seem to be any additional participation in this annual survey.

**Conclusion 4.3.2:** *RCG/SCG LLC found that CNG's infrastructure planning and engineering functions are appropriately staffed and aligned to support system planning and engineering.*

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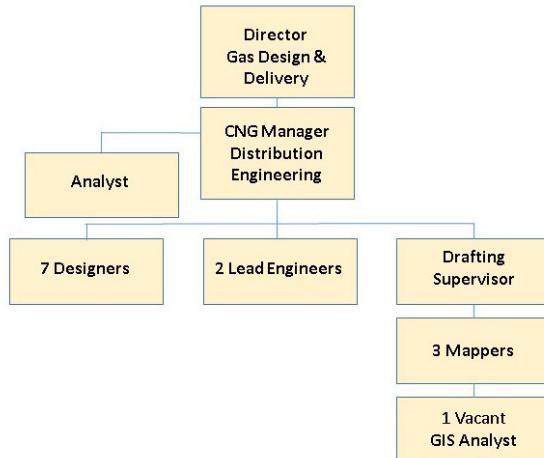
<sup>232</sup> Response to Data Request GEN012 Attachment 1, CNG recommendations and Company responses

<sup>233</sup> Interview with Barnes 051116

<sup>234</sup> Response to Data Request GEN012 Attachment 1, CNG recommendations and Company responses

## Analysis

The Exhibit below shows CNG's Gas Engineering organization. The Manager is part of the UIL Corporate Gas Design and Delivery function.



**Exhibit 25 – CNG Gas Engineering**

CNG Engineering has the appropriate level of engineers as well as engineering technicians to perform the normal functions of a gas utility distribution engineering function of its size. The group appears to have only one Technician vacancy. CNG does make use of GIS mapping and has a section devoted to supporting that critical function. Estimates emanating from this group appear to be more accurate than those out of its counterpart in SCG. See Section 3.6 of this report on Capital Budgeting for more detail.

**Conclusion 4.3.3:** *RCG/SCG LLC found that the combination CNG and SCG with UIL Corporate Gas Design and Delivery prepare reasonable system forecasts for peak degree day heating using the Stoner Model to evaluate the integrity of the gas distribution systems.*

## Analysis

Engineering has been using the Stoner (DNV GLN) gas distribution model for years and believes it accurately portrays their gas distribution systems.<sup>235</sup> The Stoner model is maintained by Corporate Gas Design and Delivery with input from the individual gas companies.

The Stoner application tests the effects of forecast demand over a peak period on various nodes across the CNG and SCG systems. The model “nodes” correspond to key

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<sup>235</sup> The Stoner model was/is very prevalent in the natural gas distribution sector. It was part of Advantica until being acquired by GL in 2007. In 2013, GL merged with DNV to create DNV GL. DNV GL is based in Norway and offers sophisticated natural gas, oil, and water pipeline system modeling applications to utilities and other companies around the world.

locations such as city gate stations, regulators, key mains, key customer off take points, and lateral end points. The model enables engineering staff to test various scenarios of varying load and conditions to ensure that the overall system is able to contend with almost every conceivable load scenario.

The model allows the engineers to prepare their rolling ten year forecast. The model is verified using peak heating day data from the Company's SCADA system. The SCADA system is very advanced in that it monitors and records data from:

- All gate stations with full monitoring (pressure, flow, temperature) and control,
- Regulator stations monitor the flow in/out,
- Monitoring pressure at the end of laterals,
- LNG plants monitoring and control, and
- Major customer consumption.

Corporate engineering collects peak day and peak hour information for all the critical points and compares them to the Stoner Model's output. The goal is to have them match.<sup>236</sup> When the estimates generated by the Stoner model parallel actual data measured on the system, it is providing reliable results to guide remediation and system expansion projects. The annual forecast process begins in July and all engineering units from the individual gas operating companies under the AVANGRID umbrella participate.

**Conclusion 4.3.4:** *RCG/SCG LLC found that both CNG and SCG with UIL incorporate distribution problem areas in the system planning process.*

### **Analysis**

There are two major areas of concern that are factored into the annual gas distribution planning effort. The first area is leaks and the second area is low pressure areas. In section 4.5.2 we discussed the leak survey program for UIL Gas Networks. The principal criteria for elevating a section of main higher in the replacement program are three leaks per 800 feet and/or water intrusion.<sup>237</sup> This is similar to the criteria Eversource applies to its decisions. Engineering maintains records on leak locations. CNG has an advantage over SCG as it is already using GIS for its distribution network.

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<sup>236</sup> Interviews with Barnes 05/11/16, July 13, 2016, and 07/20/16

<sup>237</sup> Water intrusion tends to be more of a concern in SCG's territory along Long Island Sound where water tables are generally higher, salt concentrations (which accelerate the corrosion of cast iron and bare steel mains) are greater, and there were several low-pressure mains which can allow water penetration.

**Conclusion 4.3.5:** *RCG/SCG LLC found no significant issues with CNG design operating pressures being maintained across a range of temperatures and demand requirements.*

### **Analysis**

Maintaining operating pressures across a range of temperatures and demand requirements starts with Planning and Engineering's Stoner peak hour forecast model that models the distribution system and determines, as one of its outputs, the peak load forecast for the coldest day/hour of the year. The Gas Supply section of this report explains how CNG and SCG forecast peak load using forecast customer counts, expected usage per customer, and postulated design day weather conditions. This analysis indicates any main pipe constraints that need to be upgraded. It's important to remember that the majority of the CNG'S distribution system is operating with about 60% of the available customers<sup>238</sup> already tied to the system. This means that CNG needs to focus its attention on those areas where the pipe capacity is nearing its limits and additional customers are coming on to the system through organic growth or through the gas conversion program sanctioned by the state of Connecticut. Organic growth for the purposes of this review includes new customers coming online without any significant input to their decision process from CNG. This would also include customers replacing existing water heating and heating equipment due to equipment failure or desire to use less energy (energy efficiency) regardless of original fuel used. Non organic growth would require CNG intervention to influence the customer decision via education, incentives, and marketing efforts.

Engineering is replacing old cast iron systems with plastic up to 99 pounds and, where possible, steel for the high pressure systems over 99 pounds and up to 150 pounds. Inherent in this policy is the need to replace most of the existing cast iron mains and where required their associated services, which is being done under the accelerated mains replacement program. In addition, this policy generally requires that metering be moved outside and a regulator included in the installation to reduce the pressure for customer use. This is no small undertaking and will take up to 20 years to fully implement.

CNG engineering programs:

- CNG does use plastic pipe for mains and services, but CNG industry standards limits the pressure to 99 pounds on most plastic pipe. Insertion solutions to pipe integrity are done on some services and mains, but the majority of the replacement program is new

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<sup>238</sup> This means that CNG has achieved about 60 % market penetration of customers that are on its existing mains. The pace at which a natural gas distribution company can obtain additional "fill-in" load on its existing mains is a function of connection costs, regulatory incentives, timing, and the cost differential between fuel oil and natural gas.

pipe installed right next to the old. The company has set a target for doing these large area replacements and abandoning the old main in place in the same year. This is a significant undertaking, as it requires all the services associated with the old main to be replaced and in most cases moving the meter outside to meet high pressure code requirements.

- CNG uses its Rock Hill LNG facility to inject gas during peak requirements or during transmission outages such as the one caused by a transmission pipeline rupture in Pennsylvania last year.<sup>239</sup> They did receive notice to standby for gasification and injection, but the June loads were not severe so there was no injection.

From the physical delivery system perspective, CNG has a Supervisory Control and Data Acquisition (SCADA) system that monitors system gas pressures and flows from transmission to distribution at take points (gate stations), regulators, mains, and lateral endpoints. These additional downstream sensing units provide more granular level data even if the pressure is all that is monitored. Gas Control manages this activity. The system does not communicate over the Internet; therefore, the servers and work stations that operate SCADA are dedicated to SCADA and as a result the system is not connected to internet, thereby reducing its vulnerability to cyber attacks.

Both the CNG and SCG SCADA systems operate out of the same location. Each has its own operator monitoring the system on a 24/7 basis. There is a common supervisor for both systems. They use the same SCADA platform.

**Conclusion 4.3.6:** *RCG/SCG LLC concluded that both CNG and SCG need to improve theirs estimating practices to minimize the final number and dollar value of projects falling outside the plus/minus 10% range and increase the number of projects estimated correctly.*

### Analysis

The Capital Budgeting, Section 3.6, provides a thorough analysis of the capital budget variances and the results are problematic.

Capital project estimating is done through Compatible Units, used by the engineers in the design of projects. Compatible Units in SAP exist for constructing the project in SAP. But the estimating is done using SAP's Pay IDs. When SCG goes out for contractor bids and the bids are then accepted, the individual "Compatible Unit's costs, provided by all the accepted bidders, are averaged together to get what is then referred to as a Pay ID in SAP and becomes the Compatible cost Unit used by SAP to estimate the project. This methodology as applied at SCG

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<sup>239</sup> On June 9, a 24-inch natural gas pipeline ruptured in [Lycoming County, Pennsylvania](#).

and CNG has a number of inherent flaws which can lead to project overruns as discussed in the Section 3.6 Capital Budgeting Process.

- When a higher priced contractor is chosen for the work, the estimate will be off by the difference between the average cost per unit and per unit rates in the signed contractor contract. So before the first length of pipe is purchased and the contractor arrives at the site, actual project costs will exceed estimates.
- SAP as configured at CNG and SCG does not contain all the critical extra Pay IDs that most capital work requires, but are available in a more general fashion. These can include:
  - Local police detail for traffic control. In some communities, the company must use overtime police,
  - Other flaggers,
  - Varying pavement or landscaping restoration requirements of the local municipality,
  - Obstacle or ledge removal, and
  - Non typical surfaces such as brick or cobble stone pavement, etc.

Complicating the above, is the fact that for SCG the resulting estimate is based on a composite, or cross section for a particular pipe size and ground composition. CNG, on the other hand, uses a finer breakdown by work elements; hence CNG appears to achieve better estimates, although still on the high side.

The engineer/designer needs to understand the limitations of SAP as well as the special requirements of the municipality and the uniqueness of the work site. Large projects and even some complex service installations will require site visits to note any surface issues which will impact the final cost of the project. Most utilities will have the designer and a field supervisor walk the proposed work site to uncover these special conditions. In some cases, the field supervisor will have local knowledge of the type of subsurface conditions one can expect.<sup>240</sup>

Thorough pre construction site walk downs along with a firm understanding of the municipal requirements for flagging and restoration can help the designer adjust the SAP estimate to better reflect the ultimate cost of the work.

**Conclusion 4.3.7:** *RCG/SCG LLC concluded that another reason for overruns is the difficulty with soil conditions and contractor oversight on change orders or additions to work scope.*

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<sup>240</sup> RCG/SCG-LLC was told in several interviews that the geology and substrates of the CNG and SCG service territories are complex featuring the effect of successive glacial onslaughts depositing considerable, but recent till amid much older surrounding bedrock.

### **Analysis**

Once large projects are awarded to a contractor, construction management assigns a project manager who tracks the project and manages the effort. Essentially, these individuals are responsible for quality control and project progress in near real time. Construction management is supposed to capture all change orders caused by unforeseen obstacles or unexpected soil changes requiring the use of special equipment and techniques.

Project managers or construction supervisors are required to visit each work site daily to verify progress, the number of contractor personnel onsite, and the quality of the work being performed. In addition, the contractor should inform the company construction supervisor of emerging issues and be prepared to show evidence of the issue impacting the work progression and cost. From our observations and discussions with all parties this appears to happen although the latter information may or may not occur during a particular issue. In such cases, it would be picked up the next day but possibly without the benefit of a company inspection of the issue. In discussions with one Engineering Manager, he felt that his people were not receiving feedback on these issues, so cost could not be adjusted proactively.<sup>241</sup>

**Conclusion 4.3.8:** *RCG/SCG LLC concluded CNG and SCG are not taking full advantage of UIL's well conceived "Project Management Guide" Manual.*

### **Analysis**

UIL provided CNG and SCG its Project Management (PM) manual. After reviewing the manual, we found it to be well conceived and process driven. Instead of adopting the UIL PM process in its entirety, the companies selected those elements that fit their needs. While this approach is in the right direction, it does not allow CNG to achieve the full benefits of the UIL process.<sup>242</sup>

**Conclusion 4.3.9:** *RCG/SCG LLC concluded CNG and SCG through the Gas Construction function is not consistently assigning a project manager early in the plan–design–build process who can shepherd a project through the review process and provide critical oversight during design and construction.*

### **Analysis**

Currently, Construction management doesn't assign a project manager until the build or construction phase of the work.<sup>243</sup> At that point a project is fully finalized and construction

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<sup>241</sup> Interview with Gerety 092216

<sup>242</sup> Interview with Therrien 051016; Response to Data Request FIN098, UIL Project Management Guide

<sup>243</sup> Interviews with Therrien 051016 and Barnes 082616

begins. We have found that assigning a project manager early in the concept phase allows for better control over project scope and budgets. Certain utilities assign a project manager early in the project and invariably achieve much closer actual to budget performance. A better process would be:

- Assigning a project manager to all projects of a certain dollar level at the planning stage;
- Having the project manager on larger projects manage the project book, participate in challenge sessions by peers and executives, work with the project engineer to steer the project through planning, design and construction, track the spend to budget, proactively work to control costs, manage project close out, and document lesson learned; and
- Reporting results to executive management on the progress and budget.

This level of proactive management helps the companies manage capital spend closely, maximizing the planned number of projects completed in each capital budget cycle.

**Conclusion 4.3.10:** *RCG/SCG LLC concluded CNG's and SCG's LNG operations and capital betterment program are reasonable and well thought out for the size of each company. Further given the plants' usage over the last five years, expansion of capacity is not necessary.*

### **Analysis**

Both SCG and CNG operate LNG storage plants, one in Milford and the other in Rocky Hill, respectively. CNG's Rocky Hill plant is completing a comprehensive modernization of its liquefaction, vaporization, and boil off recovery processes. The modernization includes updating controls, pumps, motors, technology, and enhanced process reconfigurations. This project was one of the first CNG projects to have a formal project manager and use the UIL PM manual. SCG's Milford plant is waiting FERC approval for upgrading its vaporization process, which will parallel the process installed at Rock Hill. The joint project effort is very well conceived as the two vaporization systems will use identical equipment, thus allowing mechanics/technicians to work at either plant and reduce the number of critical parts and equipment maintained in inventory.

The plants had to vaporize and dispatch gas into the distribution systems 22 times during the very cold 2014 15 winter.<sup>244</sup> Both CNG and SCG use a peak day planning temperature in the Stoner model of 65° and 68° degree day peak, respectively, and both design degree days

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<sup>244</sup> According to the Hartford Courant on February 28, 2015, Connecticut endured the coldest February ever recorded. The average temperature was about 16 degrees Fahrenheit, relative to an average February temperature of 28 degrees. See: <http://www.courant.com/data-desk/hc-february-breaks-cold-record-in-connecticut-20150228-htmlstory.html>.

were exceeded during that winter. During the 2015 2016 winter, which was much warmer, there were less than 12 injections in smaller quantities. In addition, both plants were put on notice to inject, as a result of the transmission pipeline rupture in Pennsylvania last year.<sup>245</sup> The plants can be used to manage the cost of gas as well. Given this usage level, there doesn't appear to be an immediate or near term need for additional capacity.

Boil off is managed well. CNG's Rocky Hill plant, with all its upgrades can better manage this effort. The boil off gas on a monthly basis has ranged from 16,479 MCF to 24,473 MCF at Rocky Hill and 13,967 MCF to 25,862 MCF for the Milford plant. These ranges were based on five year review of monthly boil off statistics.<sup>246</sup> Boil off is affected by outdoor temperatures and the level of tank filled. Both CNG and SCG capture the boil off and compress it to feed in their respective distribution systems at the requisite pressures.

Currently, Gas Supply has negotiated a favorable LNG contract that allows both plants to maintain their design LNG capacity without using the liquefaction process. According to the company the cost just to get the liquefaction process ready to run can exceed \$200,000.<sup>247</sup> However, in the future when the existing contract expires, bringing SCG's Milford LNG plant's liquefaction process brought up to the Rocky Hill plant's level could positively influence any future favorable LNG contracts.

It is important to note, that the UIL Project Management Office (PMO) was applied to the Rocky Hill upgrade along with the lending of an experienced project manager to help implement the PMO at Rocky Hill.

The use of the plants has been what would be expected. The Exhibit below shows the number months when there has been vaporization.<sup>248</sup>

Company	2010	2011	2012	2013	2014	2015	2016 (Partial)
SCG	NA	3	2	2	5	4	2
CNG	0	0	1	2	4	3	2

**Exhibit 26 - Number of Months per Year Vaporization Was Used**

The winter months are when the LNG facilities are normally used. The heating season for 2014 and 2015 show a high use of the LNG facilities for vaporization. However, neither company experienced a real challenge to the design capacity of the storage facility.

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<sup>245</sup> Interview Kopjanski 0716

<sup>246</sup> Response to Data Request GS108, Attachments 1 and 2

<sup>247</sup> Interview Kopjanski 0716

<sup>248</sup> Response to Data Request GS108 Attachments 1 & 2

**Conclusion 4.3.11:** *RCG/SCG LLC concluded that both CNG and SCG need to standardize across the companies all material, equipment, and procedures for designing and building their distribution systems.*

### **Analysis**

Both CNG and SCG have been together for 16 years through a number of different ownership models. Engineering and Gas Construction and Maintenance have had the same leadership for most of the same time. Yet standardization of materials, equipment, and procedures has never been fully achieved. Some of the major equipment such as pipe has been standardized. Many of the methods or procedures have been standardized through the use of plastic pipe. But there remain a number of equipment specifications and methods that are not standardized. For example, in SCG all regulator stations are color coded by pressure level, but not in CNG.

The lack of common standards across the two companies leads to:

- Difficulties sharing materials across both companies due in part to lack of common stock numbering;
- Lack of common stock numbering leads to independent ordering which precludes some quantity level price breaks;
- In the event of an emergency, crews from either company can't request common parts since stock numbering is inconsistent; and
- It would be more complex for regulator crews to support each other due to the physical appearance differences and potentially part numbers.

Under AVANGRID, there are a number of initiatives to standardize all material and designs where appropriate. One could argue that waiting on full standardization for CNG and SCG was reasonable, as they now have to do so across more operating companies. However, both CNG and SCG have not been able to accomplish this for a number of years, so why would it occur now? There needs to be management formality and reporting responsibility to achieve these strategic results.

### **Recommendations**

**Recommendation 4.3.1:** *RCG/SCG LLC recommends that CNG formalize the Planning and Scheduling of Gas Construction and Maintenance, to permit better control over the crew work day.*

**Recommendation 4.3.2:** *RCG/SCG LLC recommends that CNG revisit the cost of contractor digs and ensure that they include all the costs associated with their crew's efforts to restore the system and not adversely impact the cost of planned maintenance or capital work the crews were performing. CNG should consider some form of disincentive to promote contractor's awareness of facilities in and around their work sites.*

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**Recommendation 4.3.3:** *RCG/SCG LLC recommends that CNG immediately adopt placing the estimated man hours on all work orders to help set expectations for both crews and management performance to minimize cost overruns resulting from inappropriate crew configurations.*

**Recommendation 4.3.4:** *RCG/SCG LLC recommends that CNG and SCG develop a common strategy and methodology for annually re evaluating service center satellite locations in light of the aggressive expansion program. Focus of the methodology should be on minimizing both crew windshield and leak response times.*

**Recommendation 4.3.5:** *RCG/SCG LLC recommends that CNG and SCG develop a common methodology for capturing specifics of soil conditions and obstacles found by both contractors and company crews. In addition, both companies should capture municipal requirements traffic control and post dig in street and landscaping restoration. We understand that CNG is using GIS and SCG is using digital mapping, but the form of the information should be the same regardless of the mapping storage medium.*

**Recommendation 4.3.6:** *RCG/SCG LLC recommends that both CNG and SCG participate in non AVANGRID benchmarking studies every three years.*

**Recommendation 4.3.7:** *RCG/SCG LLC recommends that CNG and SCG continue their vigilant watch for low pressure areas on their respective distribution systems.*

**Recommendation 4.3.8:** *RCG/SCG LLC recommends that AVANGRID UIL Gas Engineering redesign both the SAP Pay IDs and engineering design tools to better reflect the true cost of construction projects.*

**Recommendation 4.3.9:** *RCG/SCG LLC recommends that CNG and SCG require direct input for municipal induced cost elements before approving design estimates.*

**Recommendation 4.3.10:** *RCG/SCG LLC recommends that CNG both adopt and adapt the entire UIL Project Planning Manual and Project Management Office approach for all large projects.*

**Recommendation 4.3.11:** *RCG/SCG LLC recommends that CNG and SCG both, through Corporate Gas Design and Delivery, assign a Project Manager to large projects at the beginning of planning phase. Further, as part of the project approval process, institute two levels of management challenge to ensure alternate solutions have been considered and all costs are properly represented.*

**Recommendation 4.3.12:** *RCG/SCG LLC recommends the engineering and construction work to complete the standardization between CNG and SCG within the next two years.*

#### **4.4 Reliability, Construction, Maintenance, and Operations**

##### **Objectives and Scope**

The Distribution Construction and Maintenance (DCM) function ensures that customers receive adequate supply of natural gas, timely service, and meter installs; that leaks are

addressed in an appropriate manner and consistent with DOT<sup>249</sup> standards for the type of leak identified; and gas appliance repair. Maintaining adequate volume and pressure is critical in a gas distribution system to prevent serious problems at the customer's premise and rapid response to gas odor calls is of paramount importance. The work includes main repair and replacement (including small capital jobs as time permits), new service installations, compliance work (both inspection and preventative maintenance), installing and repairing meter sets, leak calls and repairs, meter reading, regulator installation and maintenance, mark outs, etc. This includes essentially any work on the distribution system except large capital projects that are assigned to approved contractors. Since the overwhelming issue with construction has to do with project management some of the construction discussion is in the previous Planning and Engineering section 4.3.

The mechanics are fully trained in all areas of gas distribution operation and maintenance. The operations department:

- Supports the implementation of an asset management plan,
- Manages maintenance expense spend,
- Coordinates with supply chain services to ensure the right materials and equipment are at the job site at the right time to minimize both delays and labor costs,
- Allows management to identify the appropriate staffing levels for maintaining the system, and
- Optimizes the use between in house and contracted resources.

In addition to the above the Customer Service Technicians also are fully licensed to install and repair HVAC and other gas appliances. These repairs are done under contract with the customer or on a per hour basis.<sup>250</sup> They are the front line for leak investigation and repairs at the premise, while DCM crews are the front line for street leaks repairs. This arrangement is serving both companies very well.

CNG has opted to outsource the majority of large construction to a number of approved contractors with five year negotiated rates and escalators. This policy and practice allows Company street crews to be pulled off jobs to address leak reports and allow CNG to meet or

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<sup>249</sup> The U.S. Department of Transportation Pipeline and Hazardous Material Safety Administration (PHMSA) is the entity that develops and enforces regulations for the safe, reliable, and environmentally sound operation of the nation's 2.6-million-mile pipeline transportation system.

<sup>250</sup> CNG's and SCG's customer gas appliance repair operation is described in the Affiliate Transaction and Cost Allocation of the report. All margin derived from providing appliance repair service is used as an offset to overall revenue requirements.

exceed its response time targets. Further, this minimizes the elongation of large constructions due to leak response interruptions.

## Overall Assessment

**CNG'S DISTRIBUTION CONSTRUCTION AND MAINTENANCE OPERATION IS REASONABLY WELL MANAGED AND EXTREMELY RESPONSIVE TO LEAK CALLS. CNG MEETS ITS LEAK RESPONSE METRICS DUE TO THE TOP-DOWN DIRECTIVE ON LEAK RESPONSE. WHILE THERE IS NO FORMAL WORK MANAGEMENT SYSTEM, AS OF THIS WRITING, THEY ARE MORE CONSISTENT IN THEIR PRODUCTIVITY THAN SCG. THEIR RESPONSE TO DIG-INS IS IMMEDIATE WITH AN ALL-HANDS APPROACH. IN PART THIS IS DUE TO MANAGEMENT'S DECISION TO OUTSOURCE THE MAJORITY OF LARGE CONSTRUCTION PROJECTS, USING A SEPARATE GROUP TO MANAGE CONTRACTORS.**

RCG/SCG LLC believes that the organization is moving in the right direction, but we did notice a several opportunities to correct a number of emerging issues.

Distribution Construction & Maintenance has not had a significant organizational change as shared services functions have in the recent AVANGRID, Inc. purchase. Both CNG and SCG have been under the same corporate umbrella for over 16 years<sup>251</sup> and field operations have not been integrated together below the manager level; they remain as two separate operating entities. At the Senior Director level, the two organizations are merged under this individual and there are common operating policies. Each operating company has a different union representing the craft employees, further complicating management of all Connecticut gas operations.

One significant negotiated difference is the crew lunch policy:

- CNG has a negotiated 30 minute lunch, while
- CNG has a negotiated "Lunch on-the Fly" which is designed to allow crews to keep working but as individuals have the opportunity, they eat their lunch at the job site.

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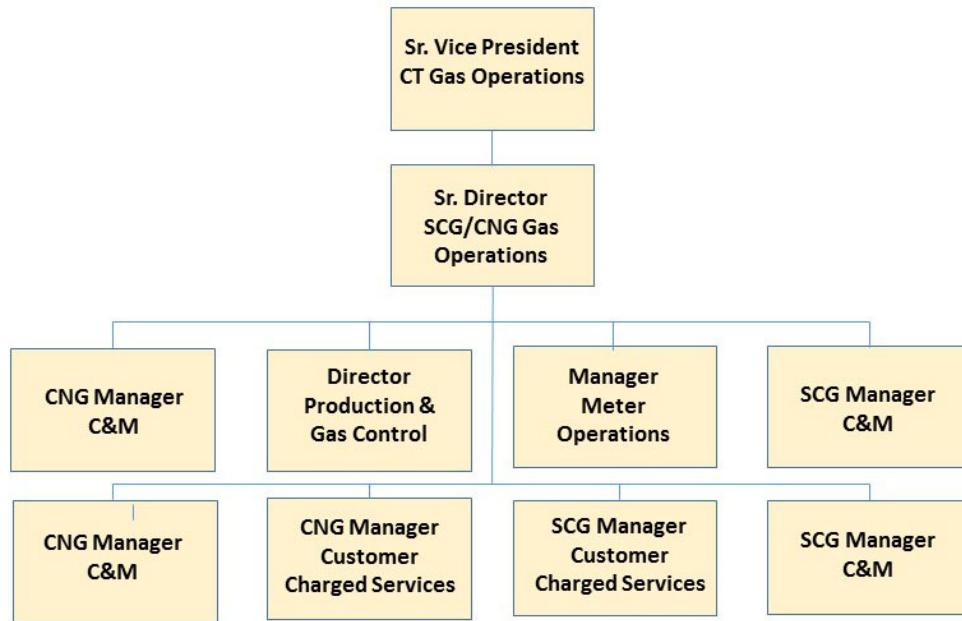
<sup>251</sup> Energy East Corporation (former NYSE: NEG) announced in a SEC Form 8-K on February 8, 2000 that it had completed its acquisition of Connecticut Energy Corporation (former NYSE: CNE). Connecticut Energy was the parent of Connecticut Natural Gas (CNG). Previously Energy East obtained final approval from state utility regulators on December 16, 2000 to acquire the Connecticut Energy Corp., the parent of The Southern Connecticut Gas Company. In turn, Energy East Corporation was acquired by Iberdrola S.A. of Spain on September 17, 2008. In May 2010, UIL Holdings Corporation agreed to purchase Connecticut Natural Gas and Southern Connecticut Gas Company from Iberdrola. Accordingly, the two Connecticut natural gas distribution companies have been under common ownership for over 16 years.

The overall arrangement of having two separate operating companies is very different from the Eversource approach, which was to create “One Gas Company” for all of Eversource.<sup>252</sup>

Below the Senior Director level are managers for distribution street construction and maintenance, production and gas control, meter shop and fittings, and customer service functions:

- Production & Gas Control,
- Planning & Scheduling,
- Dispatch, Leak Survey, Odor Response, and Damage Prevention,
- Meter services (emergency response, ERT, install, replacement),
- Maintain the meters CNG uses AMR (Drive by –one way system) While SCG is rapidly moving to AMI (Two way metering system)<sup>253</sup>,
- Construction (in house and contractors; new main extension and main replacement),
- Regulator maintenance,
- Maintenance,
- Appliance repair, and
- LNG operations.

The Gas Operations organization is shown below.



**Exhibit 27 - AVANGRID CT Gas Operations Organization**

The Senior Director of Gas Operations is extremely qualified for this role having worked in both CNG and SCG. At Eversource the single goal is to have a common platform for all policies, procedures, processes, materials, equipment, and work methods insofar as these are permissible by of local regulation and existing union contracts.<sup>254</sup> While that is a long term goal in AVANGRID, the DCM is not there yet.

Based on the organization chart above, the two common functions between CNG and SCG are Meter Operations and Production Gas Control. Interestingly, CNG uses a drive by AMR metering system, a one way communications system. Meanwhile, SCG is installing AMI or a two way communications metering system.

CNG's service territory has different characteristics than SCG's coastal territory. The following Exhibit shows compact territory with the exception of two outliers, Greenwich and New Canaan.

<sup>254</sup> Existing collective bargaining units are not necessarily a long-run impediment to additional standardization across a company such as AVANGRID, Inc. with multiple operating companies and different unions representing each one.

CNG has a crew in Greenwich to handle the business of DCM. Essentially, CNG covers its service territory from Hartford radially outward to suburban and rural communities. Two major pipelines with a number of gate stations serve CNG.<sup>255</sup> There is one service center located in the East Hartford area near major transportation arteries with relatively easy on/off access. Greenwich has its own small satellite center.

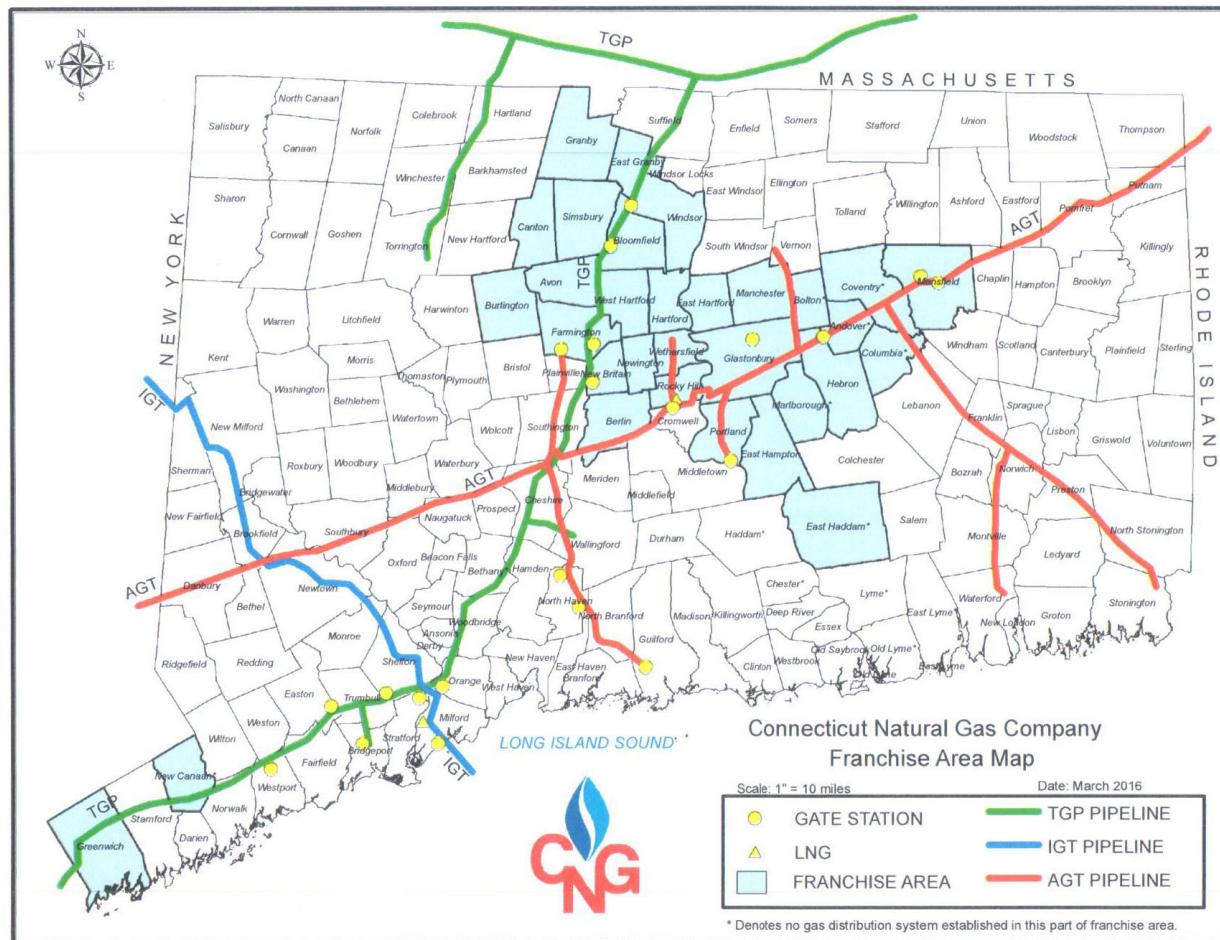


Exhibit 28 - CNG Service Territory<sup>273</sup>

<sup>255</sup> CNG is served by Algonquin Gas Transmission (AGT) which is a 1,129 mile natural gas pipeline that goes from New Jersey to Massachusetts. It has interconnections with Texas Eastern Transmission and Northeast pipelines. See: <http://www.spectraenergy.com/Operations/US-Natural-Gas-Operations/US-Pipelines/Algonquin-Gas-Transmission/>. It is also served by Tennessee Gas Pipeline (TGP) which is a natural gas pipeline that goes from Texas and the Gulf of Mexico to Massachusetts. See: <http://www.kindermorgan.com/>.

## **Evaluation Criteria**

RCG/SCG LLC proposed the following evaluation criteria as the principal areas of investigation and the foundation for this study area's chapter in the final report:

- To what extent did the Company implement the 2010 audit recommendations?
- Is there a reasonable balance between in house and contracted resources?
- Are design operating pressures maintained across a range of temperatures and demand requirements?
- What percentage of maintenance work is performed on budget and on schedule?
- What are the primary reasons for overruns?
- What is the maintenance safety record? What is the number of lost time accidents?

## **Conclusions**

**Conclusion 4.4.1:** *RCG/SCG LLC found that CNG management has implemented the recommendations for System Operations and Maintenance listed in the 2010 Management Audit.*

## **Analysis**

Management has satisfactorily implemented the 2010 Management Audit recommendations.

*12 1 Establish marketing and sales objectives for appliance services (in particular, service contracts) and provide performance incentives for the appropriate managers, including Mr. Dobos and Mr. Fryxell.*

*Appliance service is a highly profitable business that appears to be under exploited, due at least in part to a lack of sales and marketing objectives and a lack of associated managerial incentives. Agree for Service Contracts; Disagree for Charged Services as this is for workforce valley filling only.*

*The Service Contract 2011 Project is developed. Marketing managerial staff objectives will be incorporated into the project. Now Complete.*<sup>256</sup>

RCG/SCG LLC found that the CNG implemented recommendation, but still has sufficient room to promote the service appliance contracts adoption by additional CNG customers. While this is viewed as a revenue generator, it is also a safety opportunity to help customers ensure their gas appliance equipment is in sound working order with no gas leaks.<sup>257</sup>

*12.2 Update and make consistent all internal and DPUC reported performance targets to reflect the levels of performance CNG achieved with recent productivity improvements.*

*Performance targets should be consistent for internal purposes (departmental and individual managerial performance evaluation targets should generally be the same) as well as for external reporting (SQMs reported to the DPUC). For example, given that automated meter reading has enabled CNG to bill more than 98% of accounts based on actual reads, all associated internal and external performance targets should be 98%. Currently, the SQM remains at 89%. Given the improvements in phone procedures and the corresponding improvements in leak responsiveness, the business hour responsiveness target should be increased from 91% to 98% (in 2009 CNG achieved a nearly 99% leak responsiveness rate). The service call responsiveness target should be raised from 89% to 96%, the level achieved in 2008 and in 2009.*

*SQM targets are approved by the DPUC during rate case proceedings. SQM annual results are filed with the DPUC. Stretch goals are incorporated where appropriate as part of the annual planning process regardless of the current SQM targets. Complete.*

RCG/SCG LLC found that the CNG has met and in many cases exceeded the recommendation. This has been a core initiative driven by upper management with very good results.<sup>258</sup>

**Conclusion 4.4.2:** *RCG/SCG LLC concluded that the centralization and use of a focused contractor allows Leak Management to produce consistent results. However, contractor dig ins are all too frequent.*

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<sup>256</sup> Response to Data Request GEN012 Attachment 1

<sup>257</sup> Note that all margin derived from CNG's and SCG's appliance repair operations are applied to reduce the overall cost of service. None of this margin accrues to AVANGRID, Inc. shareholders. See the Affiliated Transactions and Cost Allocation section of the report for additional background and context.

<sup>258</sup> Response to Data Request OPS011 Attachment 1

## Analysis

Leak Management has been a success for CNG as it consistently and proactively identifies grade 1, 2, and 3 leaks across the CNG system. The Exhibit below shows the rate of leak repair for the last five years. The Exhibit on the following page shows CNG's leak history, repairs and percent leaks found through survey. The remaining leaks are caused by contractor dig ins, equipment failure, or other causes.

CNG Survey Leak Repairs	2011	2012	2013	2014	2015
Main Leak Repairs Grade 1	19	11	26	13	43
Main Leak Repairs Grade 2	239	209	212	190	298
Main Leak Repairs Grade 3	19	15	8	5	89
<b>Sub Total Main Leak Repairs</b>	<b>277</b>	<b>235</b>	<b>246</b>	<b>208</b>	<b>430</b>
Service Leak Repairs Grade 1	39	24	20	40	64
Service Leak Repairs Grade 2	117	122	94	107	151
Service Leak Repairs Grade 3	1	15	9	1	53
<b>Sub Total Service Leak Repairs</b>	<b>157</b>	<b>152</b>	<b>123</b>	<b>148</b>	<b>268</b>
<b>Total Leak Repairs Found by Survey</b>	<b>434</b>	<b>387</b>	<b>369</b>	<b>356</b>	<b>698</b>
All Leak Repairs	808	769	869	805	1137
<b>Percent Found by Survey</b>	<b>54%</b>	<b>50%</b>	<b>42%</b>	<b>44%</b>	<b>61%</b>

**Exhibit 29 - Total CNG leaks repaired and percent discovered by survey**<sup>259</sup>

All CNG Leak Repairs	414	366	352	349	556
All SCG Leak Repairs	754	706	588	446	482

**Exhibit 30 - CNG/SCG Grade 1 & 2 leaks compared & percent discovered by survey**

SCG isn't tracking Grade 3 leaks, so there is some variation in the results. CNG has consistently had less total leaks than its sister company, SCG, except for 2015.

CNG Percent Found by Survey	54%	50%	42%	44%	61%
SCG Percent Found by Survey	56%	54%	46%	43%	45%

**Exhibit 31 - CNG/SCG Percent discovered by survey**

The previous Exhibit shows reasonably consistent survey results for CNG and SCG, although, CNG for 2015 has 36 percent more survey discovered leaks than SCG.

CNG has adopted significant program to eliminate both bare steel and cast iron main that is still in service within 20 years.<sup>260</sup> Since this main replacement program focuses first on

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<sup>259</sup> Response to Data Request OPS048 Attachment 1

<sup>260</sup> Interviews with Barnes 07/11/16 and Therrien 05/10/16.

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the sections exhibiting the worst pipe condition, CNG's leak incidence should decline steadily over time.

Currently, both CNG and SCG use a single, highly responsive contractor whose employees are trained leak surveyors. Supporting this effort is a robust plan for surveying the systems. Specifically, the plan includes the following four surveys:

- **Walking survey** – of both residential and commercial perimeter checks – intended to complete a third of the gas service lines annually,
- **Mobile survey** – 100 percent of the distribution mains annually,
- **Winter patrol** – this a fast mobile survey of all cast iron and bare steel pipes, and
- **Business district survey** – performed annually.<sup>261</sup>

RCG/SCG LLC found this very similar to Eversource's Connecticut leak survey plan. CNG, SCG, and Eversource make use of the same leak survey contractor. The early winter patrol is very important, as the distribution system is starting to be stressed with increased demand for gas.

The natural gas industry classifies leaks according to severity and potential impact. A Grade 1 gas leak represents an existing or probable hazard to persons or property and requires immediate repair or continuous action until conditions are no longer hazardous. A Grade 2 leak is non hazardous to persons or property at the time of detection but still requires a scheduled repair because it presents a probable future hazard. Grade 2 leaks must be repaired within a set length of time. If they become hazardous, they are upgraded to Grade 1 and should be immediately repaired. A Grade 3 leak is non hazardous at the time of detection and can reasonably be expected to remain non hazardous. These leaks are monitored to ensure that they do not get worse.<sup>262</sup>

Both CNG and SCG spend a significant amount of time annually repairing leaks as the data in the following Exhibit.<sup>263</sup>

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<sup>261</sup> Interview with the Leak Survey Manager 072016

<sup>262</sup> California Public Utilities Commission Safety and Enforcement Division Staff Report Survey of Natural Gas Leakage Abatement Best Practices, March 17, 2015.

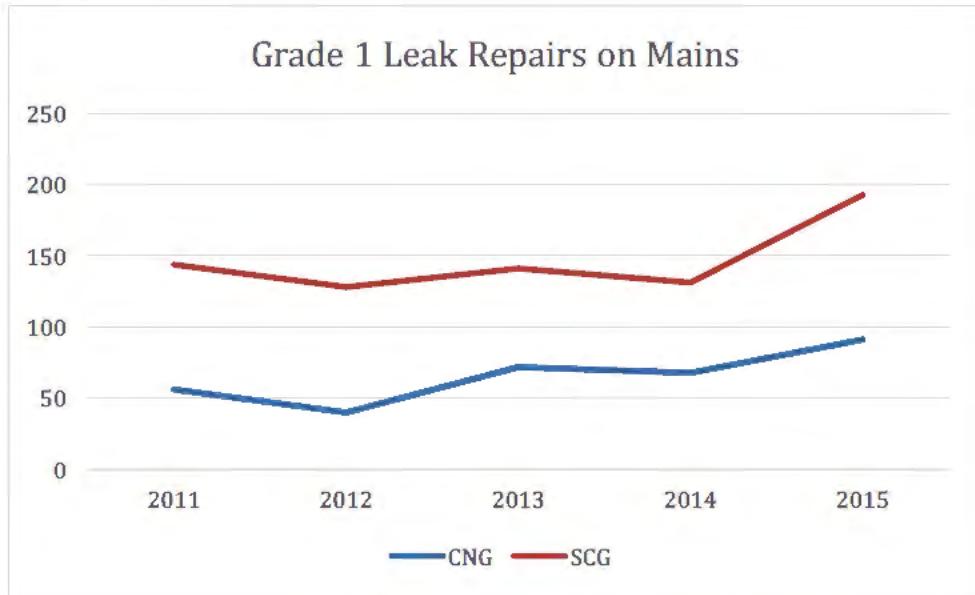
<sup>263</sup> Response to Data Request RC003

CNG			SCG		CNG to SCG Main Repairs	CNG to SCG Service Repairs
Year	Mains	Services	Mains	Services		
<b>Grade 1 Leak Repairs</b>						
2011	56	189	144	365	39%	52%
2012	40	186	128	445	31%	42%
2013	72	239	141	514	51%	46%
2014	68	229	131	384	52%	60%
2015	91	249	193	390	47%	64%
<b>Grade 2 Leak Repairs</b>						
2011	333	202	400	444	83%	45%
2012	279	236	354	392	79%	60%
2013	292	240	256	355	114%	68%
2014	259	238	240	292	108%	82%
2015	385	236	234	250	165%	94%
<b>Grade 3 Leak Repairs</b>						
Year	Mains	Services	Total			
2011	25	3	83		34%	
2012	20	8	82		34%	
2013	13	13	125		21%	
2014	9	2	222		5%	
2015	116	60	242		73%	

#### Exhibit 32 - Comparison of Number of Leaks Repaired

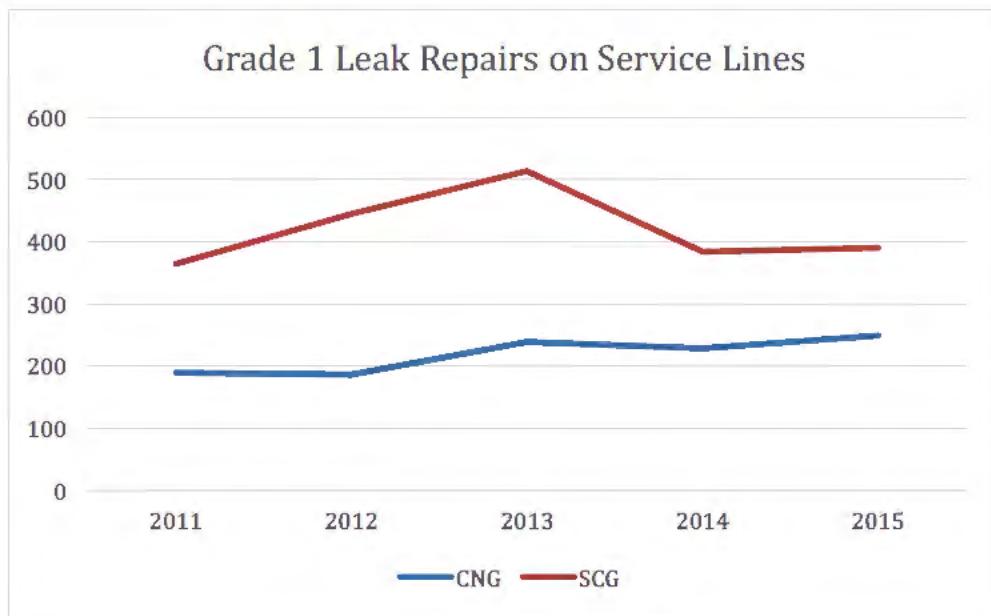
Upon inspection of the above exhibit one sees that CNG tends to have half the Grade 1 leaks of SCG. CNG seems to repair more Grades 2 and 3 leaks. This is due in part to the different pipe types currently deployed in each company's service territory. The exhibit below shows the composition of pipe types installed.

Ever since the San Bruno, California, gas pipeline explosion in 2010, most natural gas utilities have been more aggressive in conducting leak surveys and repairing noted deficiencies. The trend in Grade 1 leak repairs on mains gone up as seen in the following Exhibit.



**Exhibit 33 - Trend of Grade 1 Leak Repairs on Main**

The Exhibit below shows the trend in Grade 1 leak repairs to service lines. CNG's incidence of service line leak repairs is much lower than SCG's, despite the similarity in size between the two companies.



**Exhibit 34 - Trend of Grade 1 Leak Repairs on Service Lines**

Upon inspection of the above Exhibit, one sees that CNG tend to have half the Grade 1 leaks of SCG. CNG seems to repair more Grades 2 and 3 leaks. This is due in great part to the

different pipe types currently deployed in each company's service territory. The Exhibit below shows the variation pipe types deployed

	STEEL wo/CP		STEEL w/CP		Plastic	Cast Wrought Iron	Ductile Iron	Total
	Bare	Coated	Bare	Coated				
<b>CNG</b>	13	6	0	946	821	329	3	2118
<b>SCG</b>	82	9	0	643	1006	646	7	2393

Note: Steel wo/CP <sup>264</sup>

**Exhibit 35 - 2015 Miles of Gas Main by Composition<sup>265</sup>**

CNG has only 15.8% of the bare steel pipe, 50.9% of the cast iron pipe, and 42.8% of the ductile iron that SCG has, significantly reducing its exposure to potential leaks. The complication in the leak repair analysis is dig ins. While observing CNG crews on a supervisor ride along, we witnessed two high pressure service dig ins within an hour of each other. In both cases the lines were properly marked out, mark outs visible, but the contractors working these non gas jobs still managed to hit and damage the services. Fortunately, CNG has an excellent response protocol and the leaks were made safe in a very short amount of time. In the case of the 150 psi service dig in, within 10 to 15 minutes CNG supervisors were on site, assessing the problem, shutting down the flow of gas at the tape valve, calling for a crew and welder, and testing for gas in the ground. Both these instances are not uncommon, indicating need for stronger disincentives for contractor dig ins. The following Exhibit shows the 2012 number of dig ins per mile of combined mains and services for several regional gas utilities.<sup>266</sup> Both SCG and CNG are higher than their counterparts at Eversource by about 38%.

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<sup>264</sup> Steel wo/CP refers to steel pipe without cathodic protection. Steel w/CP refers to steel pipe that is cathodically protected. Cathodic protection is "a technique used to control the [corrosion](#) of a metal surface by making it the [cathode](#) of an [electrochemical cell](#). A simple method of protection connects the metal to be protected to a more easily corroded "sacrificial metal" to act as the [anode](#). The sacrificial metal then corrodes instead of the protected metal."

<sup>265</sup> Response to Data Request OPS021

<sup>266</sup> Response to Data Request GEN018 CNG-SCG Attachment 1- From the 2013 PSE&G Benchmarking survey (only year available)

Company	Incidents of 3 <sup>rd</sup> Party Damages/Mile of Mains and Services
Connecticut Natural Gas	0.025
Southern Connecticut Gas	0.025
Yankee Gas (Eversource Energy)	0.019
NSTAR (Eversource Energy MA)	0.017

**Exhibit 36 - Incidents of 3<sup>rd</sup> Party damage per mile of Mains & Services**

Currently, excavation contractors are liable for only the repair costs, which don't appear to persuade them to exercise more caution. Contractors need to have their on site supervisors paying closer attention to the position of the mark outs during the digging effort and letting the equipment operator know when there is a gas pipe near the dig site.

Another issue is the true cost of repair. As we have been told,<sup>267</sup> once a crew leaves a regular work site and is dispatched to a dig in/gas interruption, the clock starts on the new work order. The clock continues until the repairs are complete and the restoration is finished (including landscaping and road surface repair). That combined set of activities drives what the contractor will be required to pay for causing the damage. However, the CNG crew returns to the original planned work site and continues with the original planned work. In this process, the crew, if it is a three person crew, is now charging the following additional components added to the original work order times three plus any vehicle and equipment charges:

- One extra job site setup including, tailgate discussion, safety brief and sign off, safety setup (traffic and crew),
- Additional local police traffic control costs,
- One extra job site breakdown after the work is complete,
- At least one extra travel time for to/from work worksite, and
- Supervision time.

On small service replacements or new installations, these added costs can lead to cost overruns and missed estimates. A single emergency response forces the original estimate to be exceeded through no fault of the designing engineer or the crew itself. These costs should be attributed to the contractor since they caused the emergency situation.

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<sup>267</sup> Cite date of field visits here.

**Conclusion 4.4.3:** *RCG/SCG LLC found that CNG has done an excellent job of providing galvanic protection for its metal distribution mains.*

### **Analysis**

As the end of 2015 CNG had 98% of its metallic mains under cathodic protection, while SCG had 88% protected. The Eversource management audit, published in early 2015, found that they had over 94% of metallic mains protected. According to management at the UIL level, Management determined that SCG has over 81 miles of bare steel that is scheduled for replacement, so the Company will not install cathodic protection. CNG has only 13 miles of bare steel in the same circumstance, with the same outcome.<sup>268</sup>

For both CNG and SCG, UIL have a consistent definition for maintaining galvanic protection on mains and services. The program is divided into two parts; one for distribution mains greater than 100 feet, and the other for services and distribution mains less than 100 feet.

- Metallic main segments greater than 100 feet – are generally cathodically protected. With annual inspections where the interval between inspections does not exceed 15 months to assure that the level of cathodic protection meets Part 192<sup>269</sup> cathodic protection requirements.
- Metallic services and main segments less than 100 feet – that are cathodically protected will be inspected at intervals not exceeding 10 years in time. Each year a different 10% that is representative of the entire system is to be inspected, thereby providing for inspection of all such sections over a 10 year cycle.<sup>270</sup>

In contrast, Yankee Gas (Eversource Energy) has over 94% of its mains under cathodic protection.<sup>271</sup>

**Conclusion 4.4.4:** *RCG/SCG LLC concluded that field crew Planning and Scheduling activity is a manual process with no formal expectations for time to perform the work. The morning flow is very streamlined and conducted under the watchful eye of management.*

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<sup>268</sup> Response to Data Request OPS022

<sup>269</sup> 49 CFR Part 192, Appendix D to Part 192 - Criteria for Cathodic Protection and Determination of Measurements.

<sup>270</sup> Response to Data Request OPS023

<sup>271</sup> PURA Management Audit of Yankee Gas Services, published in the first Quarter of 2015.

### **Analysis**

There is no formal planning and scheduling (P&S) function in the CNG DCM organization. Work orders are sent to the DCM management, either the manager or a senior supervisor. The first line supervisors receive them and then assign them to individual crews. The work order contains almost all the necessary information for the crews to perform the work.

The supervisors get the work orders in advance and pre check the work site and mark the street and locations for main location well in advance of the job. This process is less formal than the one we observed at Eversource.

Scheduling is dynamic, as it is in other utilities, and the DCM manager along with the supervisors make necessary daily adjustments to the crew complement based on available personnel. All utilities have to deal daily with personal injuries, vacations, and sick leave impacts on the availability of field personnel.

The management team gives the work orders to Stores for them to pull the required material the day before the actual start of the work. In a very brief meeting with the manager and field supervisors, the crews receive their daily work order(s), then disperse and each crew member goes about readying the crew to roll out quickly. One crew member goes to the materials issue desk to retrieve the pre staged materials for the specific job. There are no long crew lines, as seen in many other utilities. The remainder bulk material, clean sand, and gravel are gathered by the equipment operator assigned to the crew. This operator drives a dump truck.

RCG/SCG LLC conducted several field observations of the supervisory pre job checkout and the issuance of work orders and found the process to work rather well. In general, the crews understand what is expected of them in the morning huddle and move out quickly in 20 minutes or less. The one exception is Friday when safety meetings are held. We were told the only exceptions to this behavior is inclement weather and if there is a serious utility accident elsewhere, management will order an immediate stand down by the crews to review the safety incident with them and discuss its prevention.

Crew vehicles, shown in the following Exhibit, which are the “bread wagon” design common in many gas utilities, are parked in specific spots backed into the loading dock to allow easy loading of materials and tools.



**Exhibit 37 - CNG Bread Wagon**



**Exhibit 38 - CNG Service Center Dock**

Contributing to this fast roll out time is staggered start times. This was introduced to support broader leak response coverage.<sup>272</sup> Management set up a staggered roll out schedule to ensure 24 hour coverage along with additional seasonal shifts to cover seven days a week, 52 weeks a year. The work week is divided into a Sunday Thursday shift and a Tuesday Saturday shift. For day coverage, the shifts are set up as follows:<sup>273</sup>

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<sup>272</sup> Staggered start times for field crews is a best practice. It affords better day-long emergency response coverage and also reduces or eliminates early morning congestion in the maintenance yard.

<sup>273</sup> Response to Data Request OPS009

1 <sup>st</sup> Shift	2 <sup>nd</sup> Shift	3 <sup>rd</sup> Shift
6AM to 2PM	12PM to 8PM	12AM to 8AM
7AM to 3PM	3PM to 11PM	
8AM to 4PM	4PM to 12AM	
9AM to 5PM		

**Exhibit 39 - DC & M Split Shifts**

Additionally, the split starts also prevent crews from queuing up at stores and on the docks, allowing more fluid crew movement out of the service center. CNG's service center was custom built for the natural gas business; accordingly, it facilitates efficient operations.

**Conclusion 4.4.5:** *RCG/SCG LLC concluded that CNG crew short cycle work orders are inconsistent with those of other utility companies; orders don't include man hour estimates to complete projects.*

#### Analysis

During our field observations we had several opportunities to view work orders as they were issued to the company crews. We would expect these to be short cycle work orders which can be completed in less than a day's work. In no case, did we see an estimated man hours requirement for the work. RCG/SCG LLC is concerned that without this time expectation included on the work orders, crews set their own expectations. We acknowledge that an effective supervisor can convey an expectation, but this is not best practice. Generally, crews are expected to complete the new service work that, day and time permitting, investigate and clear leak complaints or perform some other work. From our experience, this practice is highly unusual given modern work management technology and tools, since it doesn't allow for setting a reasonable crew expectation for hours consumed performing the work. We understand the under the SAP OEI release three, that this may be addressed sometime in late 2016.<sup>274</sup>

**Conclusion 4.4.6:** *RCG/SCG LLC concluded that CNG crew management in the field appears to be reasonably well managed.*

#### Analysis

Typically, CNG will use a two or three person crew to install services. Larger projects may require additional resources, which are determined by supervision In any case, the Crew

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<sup>274</sup> Need to cite the interview or field visit where this information was conveyed if possible.

Lead has to be certified to perform fusing and other critical functions. The mechanic, often an apprentice grade, can work on the fusing under the direct supervision of the licensed Lead. From our observations, the crew lead generally does the work around the main including ensuring the backfill is carefully placed in the hole and the marking tape is positioned correctly.<sup>275</sup> We have been told that PURA Pipeline Safety personnel will show up at work sites, either company or contractor, and verify that the individuals performing the work are certified to do the work or are under the direct supervision of the licensed crew member.<sup>276</sup>

When an emergency occurs, the closest crew at a natural work break point is pulled off and told to head to the emergency. The crew breaks down the work site and makes it safe for the public. In the meantime, the Dispatcher opens an emergency work order. The crew charges travel time to the emergency and stays on that work order until the work is completed or is relieved. Supervision also moves to the scene. In the two instances we observed, there were two or three supervisors arriving on the scene to ensure the leak was being dealt with in accordance with management policy and to assess what precipitated the break. Generally, a customer service tech supervisor shows up to begin monitoring gas permeation in the surrounding soil.

There is a formal form, Emergency Event Log, used to track all reported leaks and restoration efforts. The CNG management and crew individuals responsible for the work are captured on the form as well. Critical non company personnel's names are captured on this form as well; DPUC notification and attendance at site, Fire, Police, and media. Witnesses' names and addresses are captured as well.<sup>277</sup>

In the 150lb service break we observed, due to contractor error, one of the experienced DCM supervisors had the appropriate key to shut off the gas at the main. Soon after the emergency response crew arrived and began the repairs and gas remediation efforts. While gas shutoffs are normally the crews' work, public safety is paramount and supervisory personnel can take action. Because this was a break in a 150lb steel pipe service, a certified welder had to be brought in to make the connection in the street.

We observed another two person crew in downtown Hartford evaluating a yet to be determined location of a Grade 1 leak. The pipe had had previous leaks and the supervisor was

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<sup>275</sup> RCG/SCG-LLC field observations

<sup>276</sup> The PURA Gas Pipeline Safety Unit "uses a combination of field inspections of new construction, and operation and maintenance of pipeline facilities and plants, as well as reviews of company plans, procedures and records, to ensure compliance with applicable safety requirements. Statistical information and risk assessments are used to focus the program. Inspections are performed by qualified engineers with specific training in the field of pipeline safety. The Gas Pipeline Safety Unit performs approximately 500 field inspections per year." See: <http://www.ct.gov/pura/cwp/view.asp?a=3363&q=414220> for additional detail.

<sup>277</sup> Response to Data Request OPS18, CNG-SCG Supplement Attachment 1.

going to engineering to get the section of main replaced as soon as possible. The crew was also monitoring the status of the leak.

The CNG supervisor appears to function well together with the crew, and has reasonable control over the crews. Occasionally they will have a minor issue with a crew person not performing to their standards and they take action. We witnessed one event at the UCONN service break. A dump truck was initially dispatched to the site with a backhoe in tow. The on site crew saw that the break was in plain sight and fully exposed by the contractor who hit it. Supervisor canceled the dump truck and backhoe. But the equipment operator remained on site. The supervisor went over and informed the dump truck driver to return to the service center immediately. The supervisor informed us that the crew person would be counseled later.

**Conclusion 4.4.7:** *RCG/SCG LLC concluded that the CNG Service Center is reasonably well situated to minimize crew windshield time for the territory covered. This may change with the gas expansion program and may require new locations, satellite locations, or at a minimum redeployment of crews.*

#### Analysis

The CNG territory was shown earlier in the chapter. The CNG areas are in blue, and the white towns are either Eversource or are “in play” for the gas expansion program. The Service Center seems to be well placed for the territories they currently serve with access to major transportation arteries. However, as CNG moves into the unserved towns during the ten year expansion program, additional service centers or small satellite centers, similar to the leased space in Greenwich, could be required to allow CNG to continue meeting its leak response targets and position crews closer to future work areas.

**Conclusion 4.4.8:** *RCG/SCG LLC concluded that CNG is outsourcing the majority of construction work and a number of other functions that could impact its system’s knowledge base. CNG has a fully functional GIS that could form the basis for an asset management system.*

#### Analysis

CNG is doing what many other utilities are doing to control costs – maintaining a stable number of field personnel and ensuring leak response metrics meet or exceed the targets. They are outsourcing the majority of construction work as well as work in several other areas. This includes areas already reviewed:

- Leak Surveyors<sup>278</sup> (covered in the previous section),
- Major rebuild of regulator and gate stations, and
- Main and service replacements and extensions.

Based on its review of leak surveyors, discussed earlier, RCG/SCG LLC has little concern with this group of contractors, as they are providing consistent service across CNG's service territory.

CNG needs to ensure for its contracted main and service work that the contractors also provide accurate information on the subsoil conditions, noting on all drawings any impediments to the trenching found during construction. This information is also essential to explain cost variances and adjustments to the original agreed upon cost.

The contractors work to CNG standards and prepare as built prints. CNG has had GIS in place since early 2000. This institutional knowledge should reside in the GIS. This does should apply to company personnel work as well. RCG/SCG LLC is a strong proponent of GIS as a core Asset Management system, but that requires a certain level of scrutiny to ensure the right information is being captured and stored in the system and is easily assessable to future CNG crews.

**Conclusion 4.4.9:** *RCG/SCG LLC found that CNG is working with the Rocky Hill Fire Department in developing a fire fighter training center.*

### **Analysis**

We observed CNG's work effort to coordinate constructing a Fire Fighter training center. CNG is heavily involved in the development of this training facility and has as of this writing contributed to the installation of a number of gas feeds to different fire scenarios used to train firemen in quickly and safely controlling a fire including those caused by damage to gas system equipment. Some of the scenarios include:

- A gas meter set at a residence,
- Car fire,
- Grill fire,
- Structure fire, and others.

CNG's contribution includes bringing in a gas service to the facility and setting a control center with a manifold of mini set of services feeding each of the scenes, for managing and directing the flow of gas to each scene. Further, the Company had to develop and fabricate the

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<sup>278</sup> Interview with Gregg Therrien on July 13, 2016. Both CNG and SCG use Sargis Associates, Inc. of Cromwell, CT to perform construction inspections.

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burners to simulate real events. The following exhibits depict the control house, appliance fire area attached to a building fire scene.



**Exhibit 40 - The Rocky Hill Fire Fighter Training**



### **Recommendations**

**Recommendation 4.4.1:** *RCG/SCG LLC recommends that the company formalize the Planning and Scheduling function by publishing a two week look ahead at work orders ready to be executed. Publish a one week ahead schedule, by supervisor, for work one week out. Issue work orders, ready to work, for the current week on Monday to each crew. Daily reviewed progress against schedule and document delays caused by leak calls, dig ins, and road blocks or other delays to work order completion.*

**Recommendation 4.4.2:** *RCG/SCG LLC recommends that the company include the total labor hours planned for the specific job on the work order. Have supervisors review work orders and challenge any overages. Have changes crew composition or size approved by manager.*

**Recommendation 4.4.3:** *RCG/SCG LLC recommends that SCG and CNG develop a common strategy and methodology for annually re evaluating service center satellite locations in light of*

*the aggressive expansion program. Focus of the methodology should be on minimizing both crew windshield and leak response times.*

**Recommendation 4.4.4:** *RCG/SCG LLC recommends that CNG and SCG develop a common methodology for capturing specifics of soil conditions and obstacles found by both contractors and company crews. In addition, both companies should capture municipal requirements traffic control and post dig in street and landscaping restoration. We understand that CNG is using GIS and SCG is using digital mapping, but the form of the information should be the same regardless of the mapping storage medium.*

**Recommendation 4.4.5:** *RCG/SCG LLC recommends that the company accelerate the investments in GIS for SCG. As a first step, confirm the new data model or adapt from the existing CNG data model so it is clear what kind of asset attributes are important to capture. Develop other means for capturing the data that will ultimately be required for the SCG GIS system when implemented. Given the aggressive construction programs over the next five to ten years, we believe accelerating investments in GIS, including the planned upgrades to GIS for CNG, is in the best interests of CNG and SCG customers.*

## 5. FINANCIAL OPERATIONS

### Objective and Scope

Within CNG, as with any corporate entity, financial operations play a critical role for management's allocation of capital resources, control of and the allocation of costs, working capital and cash management and collecting, analyzing and reporting financial information, complying with capital structure requirements, and managing sources of funding. Given the new ownership structure the accounting function will have the added responsibility of regarding international reporting and disclosure issues and its differing reporting requirements.

CNG has a fiduciary responsibility to minimize its expenses, control all costs, and maximize its profitability while at the same time operating safely, providing a critical customer service, supporting corporate strategies, and complying with regulatory requirements. In that context and CNG's role as a regulated utility we reviewed and evaluated all of Financial Operations for CNG and included in our review CNG's:

- Finance Organization,
- Treasury, Corporate Finance and Capital Structure,
- Accounting, and
- Tax.

Financial operations have been reviewed relative to current practices and procedures, financial and budgetary policies, controls, and the appropriateness of the methodology. The effectiveness of Corporate Finance with appropriate controls, reasonable performance and management oversight and its support on management have also been reviewed. All general functions of corporate finance including cash management and treasury should demonstrate both competence and prudent controls and reasonable results. Corporate cash flow, capital structure, risk management, and liquidity must be managed appropriately to ensure a reasonable debt rating and benefit the company in the long and short run by virtue of a consistent and competent treasury function.

Further, the accounting must be appropriate with GAAS standards adhered to, adequate controls, benchmarking, efficient and effective processes and systems yielding a balance sheet, and other schedules that reflect reasonableness and control. In addition, given the Utility's ownership by a Spanish company Iberdrola SA, accounting must now be cognizant of the substantive differences between the Generally Accepted Auditing Standards and the International Standards on Auditing (International Federation of Accountants or IFAC) and the type and form of its additional reporting requirements.

The Tax area was also reviewed for efficiency and effectiveness of its activities, current practices and procedures, and whether their applied methodology was reasonable.

The Cost Control functions used at CNG have been assessed to ensure reasonableness and efficiency and the cost allocation process has also been assessed. In addition, we reviewed the CNG receivable collection process and its application. In addition, we reviewed how CNG applies CIAC to its customers.

The O&M and Capital Budget Processes, Internal Audit, and the Parent impact on financials and potential synergies are covered in the executive management section of this management audit report.

## **Evaluation Criteria**

RCG/SCG LLC applied the following evaluation criteria to the CNG Financial Operations review:

- Given earlier external and internal audits, has management adequately addressed the key issues and recommendations that were provided?
- Are the financial systems, policies, controls, and performance reporting reasonable and support what is required and the needs of executive management? Does the timeliness and the scope of the reporting support management priority?
- Does the treasury function utilize appropriate staffing, systems and processes to ensure good cash management practices, liquidity, risk avoidance, and effective results reporting?
- Does the accounting function have systems, processes, staffing, and procedures that are rigorously followed to yield accurate financial statements, supportive of an appropriate capital structure, proper cost control and tax reporting, and reasonable ratio results determinations and reporting?
- Does the Company adequately protect its assets, control its expenditures, and provide reports that reflect actual results via reasonable systems and financial standards and policies?
- Are the systems and procedures used to provide accurate customer billing and receivables and collections well developed and applied reasonably and adequately utilized?
- Does the overall financial management function provide a competent, effective, and efficient approach to meet the fiduciary responsibilities of a regulated utility and its executive management?
- Does the parent company add extra and inappropriate financial burdens on the Company and have a negative impact of the performance of the regulated utility?

## 5.1 Finance Organization

### Overall Assessment

**CNG'S FINANCIAL SUPPORT COMES FROM THE UIL HOLDINGS SHARED SERVICE ORGANIZATION UNDER THE VICE PRESIDENT AND CONTROLLER. WHILE THE SUPPORT AND THE PERSONNEL INVOLVED ARE GOOD, THE CURRENT ORGANIZATION IS STILL IN TRANSITION FOLLOWING THE DECEMBER 2015 ACQUISITION OF UIL HOLDINGS INCLUDING CNG AND NEEDS TO BE FINALIZED AND COMMUNICATED.**

The response to their prior audit recommendations has been adequately addressed. In addition, the financial personnel have participated in numerous training programs to stay current and the annual performance management program for their leadership talent and all non union employees appears to be well designed, used, and useful. While succession planning is done at the executive levels, aging of their workforce could be mitigated by the use of a mentoring program to capitalize of the high experience levels currently available. In addition, steps should be taken to hire talent to fill the authorized staffing shortfall which exists after confirming their need in their new organization.

### **Conclusions**

**Conclusion 5.1.1:** *RCG/SCG LLC believes that CNG has a reasonable system to track the 2010 external audit recommendations contained in the Overland Consulting July 2010 final report related to the financial functions, and has adequately addressed these recommendations where appropriate and still applicable. In addition, the Internal Audit recommendations are tracked, managed, and responded to appropriately.*

### **Analysis**

The Overland Consulting firm's management audit final report was completed in July 2010. Three recommendations for the financial areas focused on Affiliated Relationships & Transactions (covered with that area of our report). Seven other recommendations, covered here, were addressing Accounting and Controls.<sup>279</sup> CNG only agreed fully with three of these seven recommendations, and they implemented these recommendations in a reasonable fashion. CNG disagreed with three recommendations.

- *7.1 In the absence of any near term transfer of additional CNG accounting and tax functions to the parent, CNG should recruit and hire a "Big Four" CPA, who*

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<sup>279</sup> Response to Data Request GEN012 Attachment 1

*is or has been a manager or senior manager with electric and gas utility experience.*

*CNG disagreed because at that time two accounting individuals (out of the five) had certifications such as the CMA (Certified Management Accountant) and the CIA (Certified Internal Auditor) as well as MBAs. Although "Big Four" CPA firm experience is not part of the CNG employee's professional career, two individuals have public accounting experience with smaller CPA firms. The education, certification, utility experience, and professional background of the accounting employees at CNG is more than adequate to mitigate any perceived risk by Overland associated with accounting controls, policies, and procedures.*

*We agree with CNG's prior position and believe that the new organization makes this recommendation no longer applicable.*

- *7 6 CNG should demonstrate that it has the capability of producing in a timely manner an actual to budget variance reporting package at a departmental level that sums to a consolidated CNG income statement. Alternatively, it should develop such a package prospectively.*

*CNG provided a reasonable explanation that the response to OC 115 and OC 115 Supplemental already provided actual versus budget data for each cost center that totaled to net income in the audited financial statements of the Company for calendar years 2007, 2008, and 2009.*

- *7 7 CNG should assign costs billed by its shared service organizations to the departments that benefit from them, and these costs should be tracked by expense type (labor, outside services, maintenance agreements, etc.).*

*Both CNG and UIL believed that their process of not allocating shared services costs to the user departments allows for sufficient control and analysis of those costs.*

*RCG/SCG LLC agrees with CNG and UIL. We do not see any benefit to the implementation of this recommendation and feel it will not make it easier to control costs.*

And they partially agreed with another asking in 7 6 that CNG notify the DPUC in writing if and when company management decides to deviate from compliance with Sarbanes Oxley requirements and also when CNG's key business cycles are no longer

considered material to Iberdrola USA, thus implying that they would not be subject to management's assessment of internal controls.

- This was originally based on Management's responses to requests concerning the company's intentions with respect to future compliance with Sarbanes Oxley requirements which the auditor felt were guarded.
- With the new organization and the fact that the company and its U.S parent parents have invested appropriately in meeting SOX requirements and are currently SOX compliant. Therefore, RCG/SCG LLC agrees with the company's response.

The company's response to internal audits and internal audit recommendations also has a formal written procedure.<sup>280</sup>

- Management's activities related to Internal Audit issues, defines how management's responses to internal audits should be written and how audit issues should be resolved to reduce risk to the company of not remediating the issues. Management's response is the Audit Committee of the Board of Directors and the procedure requires an action plan, reasonable details, management ownership by name(s), and a timeline for completion.
- Periodic reporting of status is made by a Senior Internal Auditor in a Summary of Open Audit Issues report to senior management and the Audit Committee of the Board. A two week response time to any issue is required.
- An escalation process has also been established to deal with Audit issue disputes including the issue itself or the plan or timing to resolve the issue.
- While RCG/SCG LLC concurs with both the recommendation and the response, we do note however that the Internal Audit activity does not include the Controller function.

**Conclusion 5.1.2:** *RCG/SCG LLC believes that CNG is served well by the Shared Services Controller's financial operations organization; however, given the transition to its new post merger organization, specific areas of responsibility and ownership for functional components need to be finalized from the top of the organization and communicated throughout the company.*

### **Analysis**

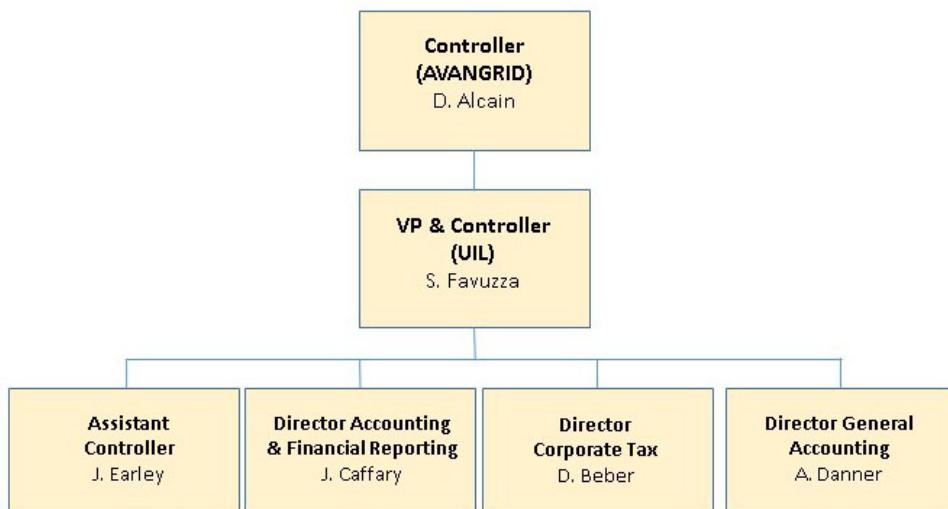
Richard Nicholas is the Chief Financial Officer of all of AVANGRID. Steve Favuzza is Controller & Treasurer of UIL Holdings serving essentially as UIL Holdings financial leader. Mr.

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<sup>280</sup> Response to Data Request IA010

Favuzza has four direct reports including an Assistant Controller (James Earley) who covers the Connecticut gas companies, CNG, and its sister company SCG. Other direct reports to Mr. Favuzza in UIL Shared Services were mentioned in interviews<sup>281</sup> to include functions of Tax (Property and Income Tax), Budgeting & Forecasting, General Accounting and External Financial Reporting. The UIL Director of Treasury reports to H. Coon, VP and Treasurer of the Avangrid Service Company.

The UIL Holdings Shared Services activities and responsibilities for CNG includes transaction processing, financial reporting, budgeting, accounts payable, accounting, rate case testimony, capital structure management, and compliance management. Their responsibility does not include customer billing/accounts receivable/collections (covered by CNG Customer Service) and payroll (covered by Human Resources). The exhibit below provides the current organization chart for the UIL Vice President & Controller. Occasionally the current title of an individual is inconsistent with their current role.<sup>282</sup> This UIL function reports to the AVANGRID Controller as shown below and not to AVANGRID Networks.



**Exhibit 41 - Shared Services Controller's Organization within UIL Holdings**

While shown above with a title of Director Accounting & Financial Reporting, J Caffary is actually responsible for Transactions: Accounts Payables, Fixed Assets, and Administrative Systems. While not shown in the above organization but interfacing with it, D Bernardi carries the title of Director of Corporate Finance yet at the start of our interview I was told that she

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<sup>281</sup> Interview with S Favuzza 5/11/16

<sup>282</sup> The Director of Treasury in UIL Holding had a title Dir of Corporate Finance, A Danner and J Caffary are also incorrectly titled.

was actually the Director of Treasury. In addition, A Danner, shown in the Chart as General Accounting, is actually responsible for General Accounting & Financial Reporting.<sup>283</sup>

- In addition, Steve Favuzza's reporting relationship also is not clear: one document shows him as reporting to the AVANGRID Corporate CFO Richard Nicholas<sup>284</sup> and another showing him as reporting to the AVANGRID Controller D. Alcain.<sup>285</sup>
- While understandable during the earlier transition period, such as the first two months, these title anomalies remain during this ninth month as this audit section is written.
- Further, a significant amount of current work by Steve Favuzza has been focused on Purchase Price Accounting or PP Allocation: (PPA). This is an application of goodwill accounting whereby an acquirer when purchasing a company allocates the purchase price into various assets and liabilities acquired from the transaction. PPA is typically conducted in accordance with the Financial Accounting Standards Board's ("FASB"). The overall process of conducting the appraisal, reporting the FV of the assets and liabilities, and the allocation of the net identifiable assets from the old balance sheet price to the FV, including the determination of the goodwill in the transaction, is referred to as the PPA process.
- In addition, the UIL Holdings Shared Services financial leadership has a role to play regarding ensuring that the Ring Fence agreements are adhered to and that a number of commitments made to PURA with regard to the Merger with Iberdrola are adhered to. This agreement with PURA was developed to make sure that there was no co mingling of funds with other components of UIL (and beyond) to protect the Connecticut utilities from the rest of the organization. It is designed to protect the financial condition of UIL and the UIL Utilities over the long term from potential changes in the financial circumstances of AVANGRID, Iberdrola, or their other affiliates.
- The Assistant Controller ("the Gas Guy") has full time responsibility to cover the Connecticut gas utilities. Working with others in his Shared Service organization his efforts cover Accounting, O&M, and Capital Budgeting, Forecasting and Rates & Regulatory solely for CNG and SCG. He essentially supports and is the gatekeeper for all Gas financial informational needs. He also handles the month end closings, reporting, and Compliance filings.

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<sup>283</sup> Based on Interviews with both individuals

<sup>284</sup> Response to Data Request FIN001

<sup>285</sup> Response to Data Request Gen019

As one would expect, the new AVANGRID organization has some advantages and some potential challenges.

- Currently there 50 positions in the Shared Service group covering financial operations with 46 filled. It appears that getting approval to fill existing positions has little delay. However, it is generally thought by the Shared Services financial organization that new positions will take more time than in the past because of the current corporate approval requirements, more layers for approval. As a result the organization feels it must account for this time lag in plans and processes.<sup>286</sup>
- Parties to the UIL Money Pool were UIL, as lender only, UI, CNG, SCG and BGC. In April, UI, CNG, SCG and BGC became parties to a Virtual Money Pooling Agreement, which includes their other utility affiliates. Borrowing under the Virtual Money Pooling Agreement is less costly than under the Avangrid Credit Facility.
- In addition, the firm has the money or access to money to provide capital when needed.
- As a result of this broad organization, there is provided an opportunity to find, learn from, and replicate better practices across the organization.
- There is less communication from the top of the entire organization regarding the new corporate organization and as a result there is confusion regarding dollar approval levels, authorities, and decision making imperatives. While the Grants of Authority has been issued, there remains less understanding of authority by management than appropriate (see Executive Section covering management and operations committees and Grants of authority).
- When asked about the makeup of AVANGRID itself, key individuals knew little about this parent company other than the name of the CEO and the CFO.<sup>287</sup>
- In addition, well after all interviews for this audit were conducted, our request for a Shared Services organization remained unfilled. We did receive this Document Request on August 24, 2016,<sup>288</sup>
  - The RCG/SCG LLC audit team requested<sup>289</sup> a "... complete organizational chart of AVANGRID/Iberdrola Networks/UIL Corp. including all entities. For the shared service organizations and other support groups interfacing with SCG and CNG, show details of those organizations with individual names and functions served."

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<sup>286</sup> Interview Notes with S Favuzza May 11, 2016

<sup>287</sup> Interview J Earley May 24, 2016

<sup>288</sup> Response to Data Request GEN 19 filed August 24, 2016

<sup>289</sup> Response to Data Request GEN005

- The response received was “Due to ongoing corporate integration projects, a complete organizational chart for AVANGRID is not currently available.”
- In general, after conducting many interviews it became clear that there are a lot of changes and management is “learning and evolving as they go.”

**Conclusion 5.1.3:** *RCG/SCG LLC found that the financial functional area personnel participate in a reasonable level of training and have annual individual performance assessments to maintain an appropriate and strong level of talent; however turnover, workforce aging, and a current shortage of personnel is a challenge as it would be for any company.*

### **Analysis**

The leadership talent within UIL Holdings in support of CNG is reasonably strong. The Shared Services financial group is led by a CPA with a substantial financial background. Further, others have certifications such as the CMA (Certified Management Accountant) and the CIA (Certified Internal Auditor) as well as MBA's.

The education, certification, utility experience, and professional background of the accounting employees at CNG is more than adequate to mitigate any risk associated with finance and accounting controls, policies, and procedures.

There are no formal training requirements for financial personnel and the responsibility for Continuous Professional Education required for maintaining and staying current for certifications such as CPAs and CMAs are the responsibility of the individual employee.

However numerous training programs were provided to keep this financial organization current or systems proficient. For example in 2015 various members of the organization took financial courses, seminars or attended informational conferences such as:<sup>290</sup>

- Accounting conference by AGA/EEI,
- Property Accounting and Depreciation seminar by AGA/EEI,
- Excel courses by Connecticut Computer Assistants (CCA),
- Advanced Public Utility Conference by AGA/EEI,
- Computer Based Training (CBT) of TM1 by Quebit,
- Knowledge Transfer on BAG by Quebit,
- ICC Training by Open Text,
- Advanced Excel course by CCA,

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<sup>290</sup> Response to Data Request FIN002

- Supervisory Development Program by PPS International and internal employees,
- TM1 Power User training by Quebit and internal employees,
- Livelink Workflow Refresher training performed internally,
- New Supervisors training performed internally,
- New employee training performed internally, and
- Company Rates and Regulations course performed internally.

Employees subscribe to various business journals that provide accounting and finance related information to stay current on the latest issues in the utility industry and accounting and finance.

In addition, a variety of tax courses were taken by the Tax group:

- Federal Income Tax Review Course,
- Power and utilities Income Tax Training,
- Domestic Tax conference,
- Tax Committee Meetings,
- Advanced Corporate Tax,
- Quarterly Federal Tax Roundup,
- Mergers and acquisitions Tax seminar,
- Year end annual disclosures, and
- Key Tax Developments Affecting the Power and Utilities Industry.

Annual performance reviews are conducted and Balanced Scorecard Metrics are used annually to measure the effectiveness and goal achievement of individuals within Shared Services financial organization.

However, as with all corporations, the financial operations work force is aging and the future retirements will be a threat. Importantly at CNG's shared services (and within CNG itself) there is no formal program to capitalize on its aging work force and to leverage their system knowledge.

In addition, turnover and retirements within the UIL Controller's organization have resulted in 46 positions filled out of 50 authorized. While the group feels that filling these positions is required, with the new organization these positions may or may not be justified.

It is recognized that succession planning is enterprise wide, and includes Corporate Finance, Accounting, Planning & Reporting, and Internal Audit, on an annual basis during the Talent Planning Process.<sup>291</sup> The succession planning part of the process consists of identifying successors based upon position. But succession plans have historically been created for officer

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<sup>291</sup> Response to Data Request FIN006

and executive positions, the leadership positions that report directly to those positions, and then any other position within the organization that was deemed to be key.

**Conclusion 5.1.4:** *RCG/SCG LLC found that the policies and procedures that are in place are used and useful but benchmarking or best practice programs are currently limited. In addition, RCG/SCG LLC found that the Main SAP system used by the financial shared services organization is not the upgraded version used by AVANGRID and has a number of disadvantages. RCG/SCG LLC believes that upgrading to the newer version is necessary and should be planned as soon as possible.*

### **Analysis**

CNG, through its Shared Services finance organization, uses well defined and written policies<sup>292</sup> for relevant functions. With the change in their General Ledger system from PeopleSoft to SAP, some of these policies are being revised. The policies were reviewed and found to be both detailed and appropriately prescriptive. These relevant policies include:

- General Accounting and Financial Reporting Policies,
- Plant Accounting Policies,
- Tax Accounting Policies,
- Accounts Payable Policies, and
- Treasury Policies.

The AVANDRID companies are said to be participating in best practice discussions aimed at determining the practices and processes needed to maximize collection effectiveness in order to reduce delinquent accounts receivables and uncollectible expense.<sup>293</sup>

At the parent level, while the acquisition may eventually enable AVANGRID wide and Iberdrola SA internal best practices to be evaluated and potentially applied, there has not been any recent benchmarking or best in class studies performed for Corporate Finance, Accounting, and Planning & Reporting.<sup>294</sup> Given the size of the parent company an industry wide best practices effort, including companies with international and U.S based affiliates, potentially could provide some advantages to subsidiaries such as SCG.

A wide variety of systems are currently in use by the UIL Shared Services in support of the affiliated subsidiaries including CNG. The Exhibit below summarizes these systems:<sup>295</sup>

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<sup>292</sup> Response to Data Request FIN007

<sup>293</sup> Response to Data Request FIN 072

<sup>294</sup> Response to Data Request FIN 008

<sup>295</sup> Response to Data Request FIN 009

Area	Software Used	Function/Purpose	Hardware
Corporate Finance	SAP	Analysis	Hosted
General Accounting	SAP	General Ledger, Accounting	Hosted
Accounts Receivable	SAP	Billing Customer Accounts	Hosted
Accounts Payable	SAP	Posting & Paying Invoices	Hosted
Accounts Payable	Enterprise Scan	Scanning Software for Invoices	Hosted
Accounts Payable	ICC Validation	Invoice Capture Center for Invoices	Hosted
Accounts Payable	VIM	Vendor Invoice management	Hosted
Accounts Payable	W-2 Mate	1099 Upload to IRS	Cloud Solution
Accounts Payable	Image Silo	View Images of Invoices	Hosted
Accounts Payable	Open Text Windows Viewer	View Images of Invoices	IBM
Treasury & Cash Mgmt/Forecasting	Banking Platform	Daily Cash Work (wires, etc.)	Cloud Solution
Treasury & Cash Mgmt/Forecasting	treasury workstation	Daily Cash Positioning	Cloud Solution
Planning & Reporting	Impact	Corporate Modeling	IBM
Capital and O&M Budgeting	TMI Webworks	GUI Budgeting/Reporting Tool	IBM
Capital and O&M Budgeting	IBM Cognos Perspectives	Backend Budgeting/Reporting Tool	IBM
Tax	PowerPlan	Provisioning/Property Tax/PwrTax	IBM
Tax	E-Form	Sales & Gross Receipts Tax Returns	Cloud Solution
Property Accounting	PowerPlan	Fixed Asset Accounting	IBM

#### Exhibit 42 - Current Financial Systems Used by UIL Financial Shared Services

The SAP system used by the UIL Shared Services financial group is not the upgraded SAP system used by AVANGRID and has some disadvantages which would be eliminated with the use of the AVANGRID SAP version. These disadvantages include:

- A large number of manual processes,
- Built in controls are not included (for example if an expenditure over budget were attempted, the upgraded system would automatically prevent it while the UIL system does not do so automatically),
- Financial reporting support is not as strong,
- It does not support organizational alignment when multiple systems are used,
- Unlike the SAP system used by AVANGRID, it does not contain a Treasury module, and
- International requirements are not supported.

The implementation of an upgraded SAP system could be a two year process. While most UIL Shared Services financial group members believe that this will eventually be done, we did not find a plan to do so and any further delay could mean not having the upgraded system until the end of 2018. However not all members of the group felt that it is critically necessary.

Regarding the systems used by CNG for its budgeting process;<sup>296</sup>

- They currently use IBM Cognos TM1 for budgeting.

<sup>296</sup>Response to Data Request FIN060

- The normal monthly cycle begins about the 25<sup>th</sup> of the month and concludes on about the 10th business day of the following month.
- Budget updates are done in the working budget version and are due into TM1 by the 5<sup>th</sup> business day of the month.
- With final forecast allocations, actual loads completed, the system locked down and the updated forecast is saved as a new reforecast version by the 10<sup>th</sup> business day.
- Human Resource data is loaded into TM1 from the SAP/HR system for existing employees and open positions and financial actuals are loaded from SAP/ECC during this process.

### **Recommendations**

**Recommendation 5.1.1:** *RCG/SCG LLC recommends that consideration be given to expand the current Internal Audit activity within UIL established during the earlier audit of CNG's sister company, SCG, to include the Shared Services Controller function.*

**Recommendation 5.1.2:** *RCG/SCG LLC recommends for the benefit of all stakeholders that, beginning at the AVANGRID level, the financial group's ultimate organization, and functional roles and titles be finalized and communicated.*

**Recommendation 5.1.3:** *RCG/SCG LLC recommends that steps be taken by the Shared Services UIL Controllers organization to fill any positions that are still needed and reauthorized once the transitioned organization is finalized and to consider establishing a mentoring process to capitalize on the experience levels that exist.*

**Recommendation 5.1.4:** *RCG/SCG LLC recommends that a detailed needs analysis be performed regarding upgrading to the SAP System currently being used by AVANGRID, to ensure this particular upgrade and timing are justified; a cost benefit analysis performed, and if warranted, coupled with a formal implementation plan.*

**Recommendation 5.1.5:** *RCG/SCG LLC recommends that a Benchmarking and Best Practices program be designed and implemented for the entire UIL Shared Services financial functional area.*

## *5.2 Treasury, Corporate Finance and Capital Structure*

### **Objective and Scope**

The Treasury function in any corporate environment is a critical one with numerous core functions that were reviewed such as:

- Cash monitoring and management,

- Liquidity management, planning, and control,
- Maintaining the appropriate capital structure,
- Managing short and long term borrowing, financial investments, credit management, and interest rate risk, and
- Maintaining relationships with funding and ratings agencies.

In addition, the effectiveness of Corporate Finance with appropriate controls, reasonable performance and management oversight and its support of management have also been reviewed. All general functions of corporate finance including cash management and treasury should demonstrate both competence and prudent controls and reasonable results. Corporate cash flow, capital structure, risk management, and liquidity must be managed appropriately to ensure a reasonable debt rating and benefit the company in the long and short run by virtue of a consistent and competent treasury function.

### **Evaluation Criteria**

RCG/SCG LLC applied the following evaluation criteria to the Treasury, Corporate Finance and Capital Structure review:

- Does the treasury function utilize appropriate staffing, systems and processes to ensure good cash management practices, liquidity, risk avoidance, and effective results reporting?
- Is their current Treasury organization appropriate and does it provide clarity to the functional activities?
- Does the overall financial management function provide a competent, effective, and efficient approach to meet the fiduciary responsibilities of a regulated utility and its executive management with reasonable results?
- Does the parent company add extra and inappropriate financial burdens on the Company and have a negative impact of the performance of the regulated utility?
- Does the company have adequate financial strength, credit ratings and access to financing?

### **Conclusions**

**Conclusion 5.2.1:** *RCG/SCG LLC found that the management process and systems used within the firm's Treasury function is reasonable yielding effective results even with an unclear organizational alignment.*

### **Analysis**

The Director of Treasury, D Bernardi covering CNG manages cash for UIL Holdings, and all companies in Connecticut and Massachusetts including non regulated companies.

Both CNG and its sister company SCG are managed separately but by this same Treasury area. Organizationally the Director of Treasury reports to and is directed by the Avangrid Service Company VP and Treasurer, Howard Coon. Steve Favuzza's role in Treasury is limited to signature authority on loans, debt compliance certificates, and bank accounts. Despite this unclear alignment, no impediments to performance were found.

The specific roles for this treasury function under the Director of Treasury include:

- Manage cash and Cash forecasting,
- Deal with and assure liquidity,
- Manage borrowing programs including pool arrangements, and
- Implement short and long term financing while complying with allowed capital structure requirements (for CNG the Equity ratio is 52.52%).

CNG was party, along with their affiliated utilities in Connecticut and Massachusetts and UIL Holdings Corporation, to a revolving credit agreement (UIL Holdings Credit Facility) that was terminated on April 5, 2016 and replaced with a new credit agreement called the AVANGRID Credit Facility.<sup>297</sup>

- The parties to the AVANGRID Credit Facility include CNG, along with their utility affiliates in Connecticut, Massachusetts, New York, Maine, and AVANGRID.
- The borrowing limit for each of CNG and SCG under the UIL Holdings Credit Facility was \$150 million and remains the same with this new credit facility.
- The terms and conditions applicable to CNG under the UIL Holdings Credit Facility and AVANGRID Credit Facility are the same in all material respects. Neither CNG nor its sister company SCG have borrowed under the AVANGRID Credit Facility.

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<sup>297</sup> Response to Data Request FIN013

In 2012 UIL Holdings Corporation established the UIL Money Pool, an arrangement under which CNG and their Connecticut and Massachusetts utility affiliates may borrow funds from, and lend funds to, each other at rates that are lower than the rates as determined under the Credit Facilities described above. In April 2016, CNG executed a Virtual Money Pool agreement with their Connecticut, Massachusetts, New York, and Maine utility affiliates under which each utility affiliate may borrow from, and lend to, each other at the A2 / P2 commercial paper rates published by the Federal Reserve.

- These rates are lower than rates available to the borrowing company under the AVANGRID Credit Facility and competitive with or higher than the rates of return on liquid marketable securities available to the investing company.
- There have been no borrowings or loans made between CNG or with their utility affiliates under the Virtual Money Pool.

Also, in April 2016, each of CNG and SCG executed a separate bi lateral Loan Agreement with AVANGRID. CNG and SCG may borrow from AVANGRID at the A2 / P2 commercial paper rate published by the Federal Reserve, which is lower than the rates applicable under the AVANGRID Credit Facility.

It is CNG's intent to first use the excess cash available amongst their utility affiliates that are parties to the Virtual Money Pool and then to borrow under their respective Loan Agreements with AVANGRID. CNG will use the AVANGRID Credit Facility to the extent that those internal sources of funds are unavailable.

Treasury operates under a well defined and appropriate Treasury & Cash Management Process.<sup>298</sup> **(Confidential Begins)** [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**(Confidential Ends)**

Among the areas described in the Treasury & Cash Management Process are:  
**(Confidential Begins)**

[REDACTED]

[REDACTED]

[REDACTED]

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<sup>298</sup> [REDACTED]

CONFIDENTIAL



- **(Confidential Ends)**

Recently a new system was put in place to support the Treasury function. This system, treasury workstation, allows Treasury to determine and manage cash positions more easily and communicates with their bank and uploads info into the system.

- The treasury workstation is a treasury management solution used by many organizations.
- It focuses on illuminating a treasury's liquidity by centralizing all incoming and outgoing banking activities.
- It enables tracking of all financial instrument activities, providing users real time insight and access into their liquidity.
- According to the Director of Treasury<sup>299</sup> this system does not help with forecasting which must be done manually.
- Further the upgraded SAP, currently used by AVANGRID but not UIL Holdings, has a Treasury module. It is felt by the Treasurer at UIL Holdings that this upgraded SAP system, if and when installed, would be far more efficient and would eventually replace treasury workstation.

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<sup>299</sup> Interview with Bernardi June 14, 2016

### **Conclusions**

**Conclusion 5.2.2:** RCG/SCG LLC found that while the full write off of the Customer Rate Credits in 2015 skewed the numbers, CNG's corporate finance function and its financial statistics are reasonable and in some cases better than the norms in its industry.

### **Analysis**

During this management audit the following Exhibit covering the past three years shows both key financial ratios and a balance sheet summary for CNG.

## Management Audit of Connecticut Natural Gas

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<u>Financial Ratios</u>		<u>2015</u>	<u>2014</u>	<u>2013</u>
<b>Year</b>				
Gross Profit Margin		50.8%	46.1%	42.4%
Working Capital		\$30,294,394	\$57,999,320	\$75,225,849
Current Ratio		1.42	1.75	2.01
Quick Ratio		1.02	1.24	1.46
Inventory Turnover		10.64	9.36	9.25
Inventory to Net Working Capital		0.95	0.68	0.54
Account Receivables Turnover		7.06	6.51	6.59
Total Debt to Equity (Per books, no regulatory adjustments)		0.43	0.41	0.44
Long Term Debt to Equity (Per books, no regulatory adjustments)		0.41	0.40	0.42
Dividend Payout Ratio (note 1)		195%	104%	86%
<b>DATA TABLE</b>				
(data source = Annual report filed with PURA)				
		<u>2015</u>	<u>2014</u>	<u>2013</u>
<b>Total Assets</b>		797,611,218	790,460,217	746,386,159
Customer Account Receivables		43,480,362	57,001,795	57,503,867
Inventories(Gas Stored Underground & LNG)		28,836,523	39,626,787	40,950,703
Other Current Assets		29,431,169	38,326,654	51,434,587
Subtotal Current Assets		101,748,054	134,955,236	149,889,157
Long term Assets		695,863,164	655,504,981	596,497,002
<b>Total Liabilities</b>		452,306,571	436,777,389	391,571,640
Notes Payable & Current Portion of L/T Debt		8,246,000	1,616,000	6,924,000
Other Current Liabilities(Ind. Deferred Credits)		63,207,660	75,339,916	67,739,308
Subtotal Current Liabilities		71,453,660	76,955,916	74,663,308
Long Term Debt		141,527,000	141,773,000	149,693,000
Other Non-Current Liabilities		239,325,911	218,048,473	167,215,332
<b>Total Equity</b>		345,304,647	353,682,828	354,814,519
Revenue		306,845,738	370,921,374	378,994,689
Natural Gas Purchased		151,055,402	200,096,834	218,444,503
Gross Margin		155,790,336	170,824,540	160,550,186
Operating Expenses		138,524,109	139,885,108	131,371,013
Operating Income		17,266,629	30,939,266	29,179,173
Net Income		8,993,949	20,984,737	17,632,715
Total Dividends		17,527,000	21,860,000	15,151,801
<b>Note 1 - Financial results for the twelve months ended December 31, 2015 include customer rate credits of \$18.84 million pre-tax (\$11.1 million after-tax) associated with the change of control transaction per Docket 15-07-38.</b>				

### Exhibit 43 - Three-Year Ratio and Balance Sheet Results for CNG

Given the ratios shown, we noted the fall in the Quick Ratio ([Current Assets – Inventory]/Current Liabilities) and the rather dramatic increase in the Dividend Payout Ratio (Total Dividends/Net Income) to 195% coupled with a large fall in Net Income and Revenue.

Quick Ratios is an indicator of a company's Financial Strength. It measures amount of cash and other current assets to company's current liabilities. Hence the ability to pay current liabilities with the cash and other short term assets is demonstrated. The higher the ratio, the more financially secure a company is in the short term. A common rule of thumb is that companies with a quick ratio of greater than 1.0 are sufficiently able to meet their short term liabilities. While the fall in CNG QR to 1.02 may raise some eyebrows, the fact that its ratio is above one should ease any concern.

More importantly the Utility sector typically has a far lower ratio. An average of .17 for the utilities industry is reported by industry analysts.<sup>300</sup> For AVANGRID as of June 2016 their Quick ratio is .99. AGR's Quick Ratio is ranked higher than 51% of the 629 Companies in the Global Utilities Regulated Electric industry. The industry medium is .97.<sup>301</sup>

Further the Dividend Payout to 195% is quite high even when compared to the rather high Dividend Payout ratios within the Electric utility industry, where that sector averaged 169.53%.<sup>302</sup> The basic reason for the dramatic change from their historical levels has to do with the company deciding to absorb all of the Customer Rate Credits, agreed upon during the acquisition, at the end of 2015.

Other values of note include rising total liabilities which is indicative of CNG's current expansion and Capital Program. The decreasing revenue and an improved gross profit margin are both due to the fall of commodity prices. In addition, CNG had a significant reduction in Net Income as it was heavily burdened by the full write off of the Customer Rate Credits agreed upon with the acquisition.

### **Recommendations**

**Recommendation 5.2.1:** *RCG/SCG LLC recommends the current UIL Holdings Treasury and Cash Management Process be reviewed and revised as needed and expanded to include the Virtual Money pool, the AVANGRID Credit Facility, and the bi lateral Loan Agreement procedures.*

Note: See prior Recommendation 6.1.4: RCG/SCG LLC recommends that a detailed needs analysis be performed regarding upgrading to the SAP System currently being used by

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<sup>300</sup> <http://www.csimarket.com/screening/index.php?s=qrw>

<sup>301</sup> [http://www.gurufocus.com/term/rank\\_profitability/NYSE:AGR/Profitability-Rank/Avangrid-Inc](http://www.gurufocus.com/term/rank_profitability/NYSE:AGR/Profitability-Rank/Avangrid-Inc)

<sup>302</sup> <http://www.csimarket.com/screening/index.php?s=dpr>

AVANGRID, to ensure this particular upgrade and timing are justified; a cost benefit analysis should be performed, and if warranted, coupled with a formal implementation plan.

*Capital Structure, Short & Long term Debt Facilities, and CNG Financial Strength*

### **Overall Assessment**

**CNG EXHIBITS ADEQUATE FINANCIAL STRENGTH AS EVIDENCED BY THEIR STRONG BALANCE SHEETS, ACCESS TO FINANCING AND SOLID CREDIT RATINGS. BOTH, HOWEVER, HAVE EXPANDED CAPITAL SPENDING SIGNIFICANTLY OVER THE PAST FEW YEARS TO FUND NEW BUSINESS AND ACCELERATE THE REPLACEMENT OF CAST IRON AND BARE STEEL MAINS. THESE LARGER CAPITAL REQUIREMENTS WILL RESULT IN GROWING CAPITAL NEEDS AND ADDITIONAL RATE RELIEF IN THE FUTURE FOR CNG.**

Even though AVANGRID, Inc. (NYSE: AGR) was spun off from Iberdrola S.A. in December 2015, Iberdrola S.A. (Madrid: IBE), a major European utility based in Spain, still owns 81.5% of AVANGRID. Accordingly, the major credit ratings agencies still consider Iberdrola's corporate credit quality in establishing AVANGRID, Inc. and its major subsidiaries' credit ratings.

### **Conclusions**

**Conclusion 5.2.3: RCG/SCG LLC found CNG has and plans to maintain an appropriate capital structure to optimize the cost of capital for ratepayers while still preserving adequate financial strength and ready access to additional capital as needed. However, rate relief will have to be approved over the next few years to fund the companies' growing capital spending programs.**

### **Analysis**

The Exhibit below shows the capital structure that was allowed in CNG's most recent rate case in 2013. (Docket No. 13 06 08).<sup>303</sup>

Component	13-Month Average (\$000s)	Percent of Total	Cost in Percent	Weighted Average Cost of Capital
Short-Term Debt	5,619	1.74%	5.28%	0.09%
Long-Term Debt	146,979	45.63%	6.38%	2.96%
Preferred Stock	340	0.11%	8.00%	0.01%
Common Equity	169,138	52.52%	9.18%	4.82%
<b>Total Capitalization</b>	<b>\$322,076</b>	<b>100.00%</b>		<b>7.88%</b>

**Exhibit 44 - CNG Capital Structure**

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<sup>303</sup> Response to Data Request Fin063 SCG-CNG Attachment 1.

CNG was allowed a capital structure featuring common equity as a percent of total capitalization of 52.52%. This is on the higher side of similar utilities, and should provide CNG with ample financial flexibility and strength to support its growing capital program.

CNG's rates are established by PURA. The allowed return on equity established by PURA is 9.18%. This is lower than the average within the utility industry.

Additionally, CNG has a purchased gas adjustment clause, approved by PURA, which enables them to pass their reasonably incurred cost of gas purchases through to customers. This clause allows CNG to recover costs associated with changes in the market price of purchased natural gas, substantially eliminating exposure to natural gas price risk.

For the US Gas and Electric industry the average return on equity was 9.48% in 2015<sup>304</sup>

CNG has adopted a dividend policy that seeks to maintain the target capital structure of 52.52%.<sup>305,306</sup>

CNG still has a very small portion of preferred stock outstanding. The \$3.125 Par Preferred Stock was the subject of a cash tender offer in February 2014 to purchase all outstanding shares at \$7.50 per share. At the time, there were 108,706 shares of preferred stock outstanding.<sup>307</sup> Not all of the outstanding shares were tendered for sale by holders. Accordingly, an even smaller portion of these shares are still outstanding. The existence of these preferred shares is a surmountable impediment to combining SCG with CNG if desired in the future.

CNG's use of short term debt is appropriate in terms of both application and magnitude.<sup>308</sup> CNG uses short term financing to:

- Fund working capital account variations across the year. For example, accounts receivable grow proportionally with higher customer bills during the winter. Eventually, this cycle reverses in the spring. Short term financing helps meet these swings in cash usage and receipt across winter heating season.<sup>309</sup>

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<sup>304</sup> <http://ceadvisors.com/wp-content/uploads/2015/10/ROENewsletterVolumeIII.pdf>

<sup>305</sup> Response to Data Request Fin010 SCG-CNG.

<sup>306</sup> Response to Data Request Fin018 CNG-SCG.

<sup>307</sup> UIL Holdings Corporation release titled UIL Holdings Announces Offer to Purchase \$3.125 Par Preferred Stock of its Subsidiary, Connecticut Natural Gas Corporation, on February 3, 2014.

<sup>308</sup> Response to Data Request Fin013 CNG-SCG.

<sup>309</sup> Response to Data Request Fin015 CNG-SCG.

- Supplant a small percentage of long term debt by substituting short term financing which is generally low cost except when the yield curve inverts for a usually limited period.<sup>310</sup>
- Fund permanent capital needs prior to the periodic execution of long term debt issuances.<sup>311</sup>

As mentioned, CNG's target return on common equity (ROE) is on the lower side of allowed returns, but CNG enjoys a mechanism whereby returns above this level are shared with its ratepayers.<sup>312</sup>

CNG does not currently use any off balance sheet financing vehicles.<sup>313</sup>

For perspective, the following Exhibit shows the composite capitalization of the electric utility industry at the end of the past three years.<sup>314</sup>

Component	2013	2014	2015
<b>Common Equity %</b>	42.70%	42.30%	41.40%
<b>Preferred %</b>	0.60%	0.90%	1.00%
<b>Long-Term Debt %</b>	56.70%	56.90%	57.60%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

**Exhibit 45 - Composite Electric Utility Capital Structure**

The typical electric utility uses more leverage than a gas utility like CNG.<sup>315</sup>

The Exhibit below shows the trend in average allowed return on equity in the U.S. electric utility sector.

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<sup>310</sup> Various studies over the years have concluded that an inverted yield curve generally predicts or coincides with an economic recession. In any case, an inverted yield curve has only prevailed about 15 percent of the time since the 1950s. Accordingly, utility treasurers will generally use a small percentage to help reduce the overall cost of capital for ratepayers. See the following Federal Reserve Bank of New York study for additional detail. [https://www.newyorkfed.org/medialibrary/media/research/current\\_issues/ci12-5.pdf](https://www.newyorkfed.org/medialibrary/media/research/current_issues/ci12-5.pdf)

<sup>311</sup> Response to Data Request Fin012 CNG-SCG

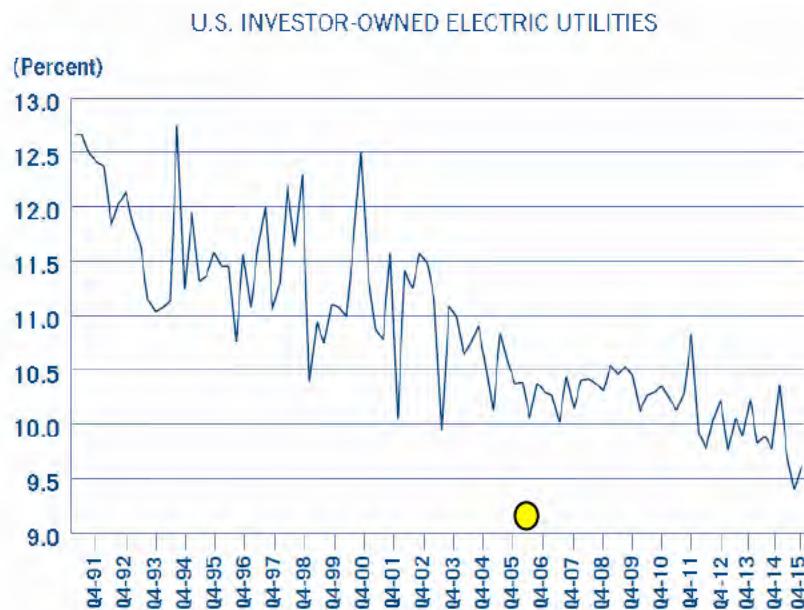
<sup>312</sup> <http://www.ct.gov/pura/cwp/view.asp?Q=538526&A=4144>

<sup>313</sup> Response to Data Request Fin022 CNG-SCG.

<sup>314</sup> Chart excerpted from Edison Electric Institute (EEI) 2015 Financial Review, Annual Report of the U.S. Investor-Owned Electric Utility industry. Note that the figures may not add to 100.0% because of rounding.

<sup>315</sup> Note that many of the electric utilities covered by Edison Electric Institute (EEI) composite statistics are combination electric and gas utilities such as Con Edison, Consumers Energy, DTE Energy, Eversource Energy, PG&E, PSEG, Sempra and AVANGRID among others.

- As overall interest rates have declined since the early 1990s, allowed returns on equity have moved downward as well.
- However, the return on equity allowed to CNG in 2013 is below the 9.48% average for US utilities.
- This tendency is generally balanced by a higher than average of common equity in the overall target capital structure.
- The yellow dot represents CNG's allowed rate of return.



**Exhibit 46 - Trend in Allowed Return on Equity**

The Consolidated Balance Sheet<sup>316</sup> for CNG for years ending 2014 and 2015 is shown below. The auditor, PricewaterhouseCoopers, expressed an opinion that the financial statements present fairly, in all material respects, the financial position of Connecticut Natural Gas Corporation at December 31, 2015 and December 31, 2014, and the results of its operations and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

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<sup>316</sup>Response to Data Request FIN 033 Attachment 23

## Management Audit of Connecticut Natural Gas

CONNECTICUT NATURAL GAS CORPORATION BALANCE SHEET December 31, 2015 and 2014			
ASSETS (In Thousands)	2015	2014	
Cu e Asse s			
U es c ed cas a d empo a y cas ves me s	\$2,835	\$7,074	
Accou s ece vab e ess a owa ce of \$ ,800 a d \$3,300, espec ve y	50,404	64,266	
U b ed eve ues	6,904	2 ,402	
Cu e egua o y asse s (No e A)	7,090	3,76	
Na u a gas s o age, a ave age cos	28,837	39,627	
Ma e a s a d supp es, a ave age cos	,395	,252	
Refu dab e axes	-	,5 0	
epayme s	963	,02	
O e	<u>75</u>	<u>75</u>	
<b>Total Current Assets</b>	<u>8 603</u>	<u>50 088</u>	
O e ves me s	<u>527</u>	<u>556</u>	
To a ope y, a a d Equ pme	794,780	736,860	
Less accumu a ed dep ec a o	<u>265,758</u>	<u>252,50</u>	
	529,022	484,7 0	
Co s uc o wo k p og ess	<u>9 286</u>	<u>6 587</u>	
Ne ope y, a a d Equ pme	548,308	50 ,297	
Regu a o y Asse s (No e A)	<u>07,5 5</u>	<u>5,930</u>	
Defe ed C a ges a d O e Asse s			
U amo zed deb ssua ce expes es	25	249	
Goodw (No e A)	79,34	79,34	
O e	<u>230</u>	<u>-</u>	
To a Defe ed C a ges a d O e Asse s	<u>79 696</u>	<u>79 590</u>	
<b>Total Assets</b>	<u>\$855,649</u>	<u>\$847,46</u>	
LIABILITIES AND CAPITALIZATION (In Thousands)			
	2015	2014	
Cu e Lab es			
Cu e po o of o g- e m deb (No e B)	\$ ,527	\$ ,6 6	
Accou s payab e	4 ,236	59,5 5	
Acc ued ab es	2,3 2	,62	
Cu e egua o y ab es (No e A)	8,764	4,346	
e es acc ued	2,064	2,098	
e compa y payab e	8,000	-	
Taxes acc ued	<u>7 595</u>	<u>3 6 5</u>	
To a Cu e Lab es	<u>0 ,498</u>	<u>82,8</u>	
Defe ed come Taxes (No e E)	<u>0 705</u>	<u>6 322</u>	
Regu a o y Lab es (No e A)	<u>92 774</u>	<u>7 596</u>	
O e No cu e Lab es			
e so acc ued (No e G)	56,368	6 ,024	
O e pos - e eme be ef s acc ued (No e G)	2,06	3,390	
O e	<u>7,200</u>	<u>7,338</u>	
To a O e No cu e Lab es	<u>75 629</u>	<u>8 752</u>	
Comm me s a d Co ge c es (No e J)			
Cap a za o (No e B)			
Lo g- e m deb , e ofu amo zed p em um	29,738	4 ,297	
efe ed Sock, o sub ec o ma da o y edemp o	340	340	
Commo Sock Equ y			
Commo s ock	33,233	33,233	
a d- cap a	3 5,304	3 5,304	
Re a ed ea gs (Accumu a ed def c )	-3,673	4,833	
Accumu a ed o e comp e e s ve come (oss)	<u>0</u>	<u>-27</u>	
Ne Commo Sock Equ y	344,965	353,343	
To a Cap a za o	<u>475 043</u>	<u>494 980</u>	
<b>Total Liabilities and Capitalization</b>	<u>\$855,649</u>	<u>\$847,46</u>	

### Exhibit 47 - Consolidated Balance Sheet for CNG, 2014, 2015

**Conclusion 5.2.4:** *RCG/SCG LLC found that CNG has and maintains appropriate credit ratings that enable them to access additional capital at reasonable rates and terms. The Connecticut Public Utilities Regulatory Authority (PURA) has been supportive of CNG by supporting an equity component that is higher than industry average.*

### **Analysis**

The following Exhibit below summarizes the current credit ratings of both CNG and its sister company SCG.<sup>317,318</sup> Both Standard & Poor's and Moody's Investor Service review the credit quality of CNG periodically.<sup>319</sup> All three major credit rating agencies review AVANGRID's credit quality. Ratings from Fitch for CNG are pending.

Company	Standard and Poor's	Moody's	Fitch
<b>AVANGRID</b>	BBB+/Stable	Baa1/Positive	BBB+/Stable
<b>Connecticut Natural Gas</b>	BBB+/Stable	A3/Stable	Rating Pending
<b>Southern Connecticut Gas</b>	BBB+/Stable	Baa1/Positive	Rating Pending

**Exhibit 48 - Credit Ratings**

S&P's Credit rating of BBB+ for CNG indicates that the company is investment grade with an adequate ability to repay debt. Moody's grade for CNG, A3, is an upper medium grade with low credit risk. CNG's parent is rated as medium grade and subject to medium risk.

CNG expects<sup>320</sup> to maintain a credit rating that is considered investment grade, which is at least: (1) Baa3 from Moody's; (2) BBB from S&P; or (3) BBB from Fitch. There are factors outside of SCG's and CNG's control that rating agencies consider in their credit rating assessment including regulatory risk; accordingly, SCG and CNG cannot target any particular credit rating. For ratemaking purposes, SCG's allowed regulatory equity ratio is 52%,

The following Exhibit below shows a summary of the credit ratings of U.S. investor owned electric utilities (Gas company data was not available) on December 31, 2015.<sup>321</sup> The average credit rating across the U.S. electric utility industry was BBB+ for the second straight year after a 10 year prior period where it averaged BBB. Since the amount of capital supporting the electric utility industry is significantly larger than that supporting the natural gas

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<sup>317</sup> AVANGRID investor presentation at the AGA Investor Forum on May 16, 2016.

<sup>318</sup> Response to Data Request Fin016 CNG-SCG.

<sup>319</sup> Response to Data Request Fin016 CNG-SCG.

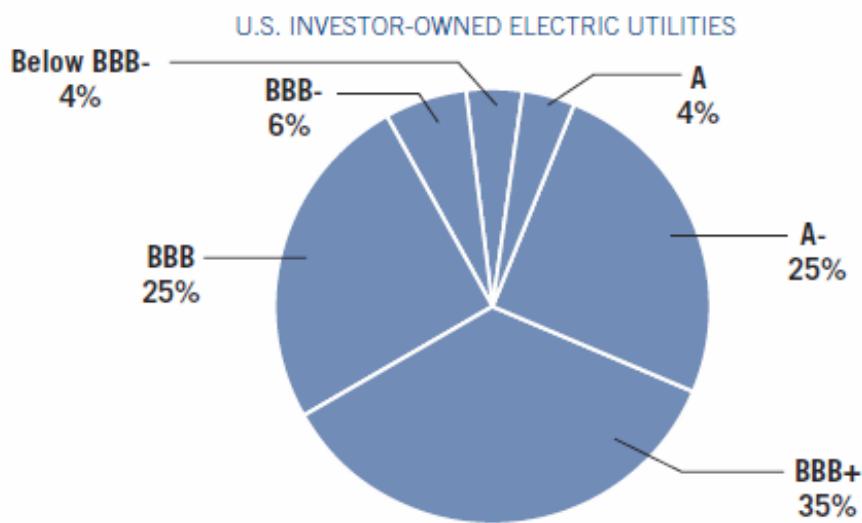
<sup>320</sup> Response to Data Request FIN 018

<sup>321</sup> Chart excerpted from Edison Electric Institute (EEI) 2015 Financial Review, Annual Report of the U.S. Investor-Owned Electric Utility industry.

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distribution industry, the electric sector provides an excellent benchmark for comparison of credit quality.

A number of state regulatory commissions have concluded that a target credit rating of BBB to BBB+ represents a good balance between acceptable risk and the overall cost of capital. Some state regulatory bodies even specify a target capital structure for regulated utilities in their jurisdiction.



**Exhibit 49 - Distribution of Utility Credit Ratings in 2015**

As mentioned earlier, CNG has a Moody's credit rating of A3 and a BBB+ from Standard & Poor's. This places it close to the top quartile of electric utilities at the end of 2015.

The major credit rating agencies employ their own unique methodologies, but their overall guidance typically converges on a comparable rating. In late 2013, Moody's disclosed the factors and associated weighting that it uses for regulated gas and electric utilities.<sup>322</sup> The Exhibit below summarizes the factors.

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<sup>322</sup> Moody's Investor Service presentation titled Electric & Gas Utilities, Assessing Their Credit Quality and Outlook. North American Power Credit Organization Conference, January 18, 2013.

Key Factor	Weight	Considerations
<b>Regulatory Framework</b>	25%	<ul style="list-style-type: none"> <li>• Consistency (all three regulatory framework considerations specific to the state(s) where the utility has regulated operations)</li> <li>• Predictability</li> <li>• Supportiveness (such as Connecticut's support for to recover the cost of replacing cast iron and bare steel main)</li> </ul>
<b>Ability to Recover Costs and Earn Returns</b>	25%	<ul style="list-style-type: none"> <li>• Rate/Tariff Reviews</li> <li>• Outcomes (allowed returns, etc.)</li> <li>• Timeliness (or rate cases)</li> </ul>
<b>Diversification</b>	10%	<ul style="list-style-type: none"> <li>• Market Position (for local distribution companies (LDCs) the key consideration is typically exposure to large industrial customers)</li> <li>• Generation and Fuel Diversity (not a factor for gas LDCs)</li> </ul>
<b>Key Credit Metrics</b>	40%	<ul style="list-style-type: none"> <li>• Liquidity</li> <li>• Cash Flow from Operations (Moody's uses three different measures of CFO)<sup>323</sup></li> <li>• Debt / Capitalization or Debt / Regulated Asset Value</li> </ul>

**Exhibit 50 - Moody's Key Factors**

Certain of the ratings are based on considerations that are driven heavily by the local regulatory environment. The Connecticut PURA has demonstrated ample support by enabling CNG a strong equity component and supporting the new business initiatives and 20 year main replacement programs.

**Conclusion 5.2.5:** *RCG/SCG LLC found that because AVANGRID, Inc. is still 81.5 percent owned by Iberdrola S.A. of Spain, its credit rating is still influenced significantly by the credit rating and outlook of Iberdrola.*

### Analysis

AVANGRID, Inc. began trading separately on the New York Stock Exchange (NYSE) under the trading symbol AGR on December 17, 2016. On December 22, 2016, AVANGRID indicated in an investor presentation that:

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<sup>323</sup> In 2013, Moody's used three different Cash Flow from Operations (CFO) measures to evaluate credit quality: (CFO pre-Working Capital (WC) + Interest) / Interest, CFO pre-WC/Adjusted Debt, and (CFO pre-WC – Dividends) / Adjusted Debt. All of these Cash Flow from Operations measures reflect different ways of determining whether utilities can meet their debt service requirements.

"AVANGRID, Inc. is a diversified energy and utility company with \$30 billion in assets and operations in 23 states. The company operates regulated utilities, electricity generation, and natural gas storage through three primary lines of business. Iberdrola USA Networks includes eight electric and natural gas utilities serving 3.1 million customers in New York and New England. Iberdrola Renewables operates 6.5 gigawatts of electricity capacity, primarily through wind power, in states across the U.S. Iberdrola Energy Holdings operates 120 Bcf of owned or contracted natural gas storage and hub service facilities in the South and West. AVANGRID employs 7,000 people. The company was formed as a business combination between Iberdrola USA and UIL Holdings in 2015. AVANGRID *remains an affiliate of the Iberdrola Group* (emphasis added), a worldwide leader in the energy industry."<sup>324</sup>

The key statement is that AVANGRID, Inc. is an affiliate of Iberdrola, which is still the dominant shareholder. The following Exhibit lists the current Board of Directors of AVANGRID, Inc.<sup>325</sup>

Individual	Title	Independence
Ignacio Sanchez Galán	Chairman	No
John Elias Baldacci	Vice Chairman	No
James P. Torgerson	Chief Executive Officer	No
Arnold L. Chase	Member	No
Felipe de Jesús Calderón Hinojosa	Member	Yes
Alfredo Elías Ayub	Member	Yes
Pedro Azagra Blazquez	Member	No
Carol Lynn Folt	Member	Yes
John L. Lahey	Member	Yes
Santiago Martinez Garrido	Member	No
Juan Carlos Rebollo	Member	No
José Sainz Armada	Member	No
Alan D. Solomont	Member	Yes
Elizabeth Timm	Member	Yes

Exhibit 51 - Board of Directors Affiliation

<sup>324</sup> AVANGRID, Inc. investor communication titled AVANGRID Update, December 22, 2015.

<sup>325</sup> As disclosed on AVANGRID's website on September 4, 2016.

While AVANGRID, Inc. has a very impressive Board of Directors, it is not fully independent in the traditional sense and is still controlled by Iberdrola, S.A. The Chief Executive Officer of Iberdrola S.A. is the Chairman of the AVANGRID, Inc. Board of Directors. As currently constituted and disclosed, AVANGRID, Inc. considers six of the 14 members of its Board of Directors to be Non Executive and Independent. The other eight members are considered Non Independent and therefore apt to act in the best interests of Iberdrola, S.A. This is appropriate given that Iberdrola S.A. holds 81.5% of AVANGRID's common equity.

As provided by Article Three, Section 3.1 of the By Laws, the Board of Directors has fixed the number of Directors at fourteen (14) Directors. A minimum of three (3) Directors must be independent directors.

### *5.3 Accounting*

#### **Objective and Scope**

The main purpose of the Accounting function for CNG is to provide for accurate and timely financial record keeping reflecting the results of CNG's operations on an ongoing basis. To accomplish its requirements, the Accounting function needs a competent staff rigorously applying a clear set of policies and procedures along with internal controls coupled with systems and processes that are responsive to the variety of tasks. The Accounting function requires meticulous record keeping, and data and information to be available to CNG and its affiliated or Parent company for internal use for forward looking planning and financially sound decision making (management accounting) and for external use for backward looking, precise information on the firm's past or current financial position (financial accounting). This requires conforming to generally accepted accounting principles. Financial accounting is used by investors, debt holders, ratings agencies, and government bodies to determine the financial health or value of the firm. For CNG, that requirement means that both domestic and international requirements must be met.

#### **Evaluation Criteria**

- Does the accounting function have systems, processes, staffing, and procedures that are rigorously followed to yield accurate financial statements, supportive of an appropriate capital structure, proper cost control and tax reporting, and reasonable ratio results determinations and reporting?
- Are the systems and processes used supportive of all current and future needs including international requirements?
- Are the accounts payable processes reasonable, efficient and effective?

### **Conclusions**

**Conclusion 5.3.1:** *RCG/SCG LLC found that the while not benchmarked or having a Best Practice Review, accounting systems, processes, and staffing in support of CNG's accounting, tax, and reporting needs are effective, yielding reasonable results for the time being but, as concluded earlier, manual process and International requirements will require a system upgrade. Further the Accounts Payable area is well managed but does not have a Priority Vendor program in place.*

### **Analysis**

The Accounting function requires meticulous record keeping, and data and information to be available to CNG and its affiliated or Parent company for internal use for forward looking planning and financially sound decision making (management accounting) and for external use for backward looking, precise information on the firm's past or current financial position (financial accounting). This requires conforming to generally accepted accounting principles. Financial accounting is used by investors, debt holders, ratings agencies, and government bodies to determine the financial health or value of the firm. For CNG, that requirement means that both domestic and international requirements must be met.

For CNG the accounting function is performed by the UIL Holdings Shared Services organization under the Director of General Accounting and Financial Reporting and reporting to the Controller. This group's responsibility includes the General Ledger both Gas and Electric. An individual within this organization has the specific responsibility for CNG's and its sister company SCG's accounting activity. Some related activity is performed by other organizational components but verified and reported within the Accounting function. This includes:

- Customer Billing and Accounts receivables performed by Customer Services,
- Collections performed by Customer Services, and
- Payroll performed by Human resources.

In addition, another part of the Controller's organization handles Transactions including Accounts Payable, Fixed Asset Accounting, Systems Administration, and Work Order close outs and Reconciliations.

The staffing in terms of both size and competence appears reasonable.

- While there has been increased activity following the merger, the staff size remains adequate with no unfilled position except for one open position under the Assistant Controller.

- The Director of General Accounting and Financial reporting came here 10 years ago focused on Financial reporting and after having worked at Arthur Andersen along with retail and pharmaceutical companies. He does not have a CPA but has a strong accounting and financial background.
- The Director covering Transactions is a CPA with an MBA from the University of New Haven.
- The Assistant Controller covering the Connecticut gas companies, including CNG, also works closely with Accounting and is a CMA with an MBA and a strong financial background. His CNG activities includes efforts involving the month end closings, reporting, O&M and capital budgeting, rate and regulatory support, variance analysis, and compliance filing support.
- All personnel costs are allocated to CNG and other affiliates by applying the Massachusetts formula.

A well developed and defined process is used to close the books every month.<sup>326</sup> The monthly closing process consists of both system and manual transactions in sequential order and over a clearly defined period of time. CNG's closing schedule is over a period of six business days. The closing sequence includes, but is not limited to:

- A pre closing activity before the end of the day on the last day of the month consisting of processing recurring journal entries, processing reversing entries, posting of correction entries from the prior month, and updating rate tables for overhead or fleet allocations.
- Six days of closings related to AR, WBS, and PMO line item submission into SAP, business analysis, internal order settlement, monthly journal entries, final adjustments, management sign off, process/validations within SAP, all ending with the Books being turned over to the Tax Department for the Tax Closing. AP, Credit and Collection, and inventory are closed as well.
- Once the consolidation process is complete, the closing team performs the reporting and account analysis effort.

The Accounting function also develops many of the required financial documents including the CNG Balance Sheet, Income Statement, and Cash Flow Statement, and they support the development of the 10k and 10Q which is now done by AVANGRID. Bank reporting is performed by the accounting group as well. In addition, the Accounting group supports the IFRS (International Accounting Standards Board) accounting requirements

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<sup>326</sup> Response to Data Request FIN029 Attachment 1

manually using an excel spreadsheet since their SAP system does not support IFRS. IFRS requirements differ from GAAP.

GAAP is rule based but IFRS is principle based. This results in a differing treatment of some similar transactions. For example, regarding inventory, GAAP allows either last in, first out (LIFO) or First in, first out (FIFO) in calculating inventory costs but IFRS does not allow LIFO. In addition, intangibles such as R&D and Write downs are handled differently.

While there is a move to converge accounting standards into a single set of accounting standards to be used internationally by some countries, this has been taking place for decades and world wide convergence may never be finalized.

The use of an excel spread sheet is not overwhelming for the accounting group and no new staffing needs have been requirement at the current time. The group's Director said that they are "still feeling there way at this time."<sup>327</sup>

The Accounts Payable process has numerous controls and automation. Any future SAP upgrade, if performed, will result in far more automated controls with fewer manual activities.

AP is transaction oriented with a high volume of about 80k invoices/year for gas and electric and close to half for CNG and its sister company SCG.

The key to this is setting up the purchase requisition, PO number, and Vendor Setup. The more automated the process, with fewer hands, the better. However, many vendors cannot meet the utility's automation standards. They try to leverage technology but many current vendors cannot accept electronic payment.

- Currently there is no program established focused on identifying and using vendors capable of automation.
- For CNG there were 25,162 payments with 14,908 (59.24%) made using direct deposit and 10,254 (40.75%) done by check.<sup>328</sup>
- Their KPI include days to post (often the approval process slows them down), volume, dollars, and number of invoices done fully automated. Overall the Director explained the following:<sup>329</sup>
  - Currently invoices automated are a 79% but they want higher, and
  - They are also only do 51% electronic payments.

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<sup>327</sup> Interview A Danner, July 11, 2016

<sup>328</sup> Response to Data Request FIN041 Sheet 1 of 2

<sup>329</sup> Interview J Caffery June 14, 2016

They have done benchmarking with EEI and the company strategy team is said to do Best Practice searches.

The AP Invoice process<sup>330</sup> is well designed, given the current state of their ability to do automated and manual processing.

Currently the Accounting function's major system is SAP. As we discussed in Section 5.1.4 covering Financial Policies, Procedures, Performance Reporting, and Systems, the SAP system used by the UIL Shared Services financial group is not the upgraded SAP system used by AVANGRID and has some disadvantages which would be eliminated with the use of the AVANGRID SAP version. These disadvantages include:

- A large number of manual processes,
- Built in controls are not included (for example if an expenditure over budget were attempted, the upgraded system would automatically prevent it while the UIL system does not do so automatically),
- Financial reporting support is not as strong,
- It does not support organizational alignment when multiple systems are used,
- Unlike the SAP system used by AVANGRID it does not contain a Treasury module, and
- International requirements are not supported.

Another major system, the Power Plan system, is used for Fixed Asset Management. This system receives information from SAP. Power Plan brings Fixed Assets in when complete, deals with AFUDC, closes our Work Orders, deals with retirements, sets up for depreciation, and is part of the monthly close. The benefits of Power Plan:

- Allows utilities to create and manage capital assets in enough detail to support decision making, balance financial constraints, risk tolerance, and performance obligations.<sup>331</sup>
- Combines financial, operational, and regulatory with automated workflows, what if scenarios, and operational risks.
- Ensures visibility into detailed asset data at each phase of the asset life cycle, better decisions are enabled along with improved financial performance.

The annual Independent Accounting Audits, now being performed by E&Y taking over from PWC, have not resulted in any negative findings over the past several years.

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<sup>330</sup> Response to Data Request Fin026

<sup>331</sup> [www.powerplan.com](http://www.powerplan.com)

Finally, there have been no benchmarking or Best Practice efforts performed within this function. In addition, there have been no internal audits of the overall controller function. In addition, it appears that overall corporate communication is too limited with some key individuals knowing little or nothing about AVANGRID, the role of the Corporate CFO, the Ring Fence agreement, or UI Group.<sup>332</sup>

### **Recommendations**

**Recommendation 5.3.1:** *RCG/SCG LLC recommends that consideration be given to performing a CNG Best Practices and Benchmarking effort, perhaps by the Strategy Team, focused on the Shared Services Accounting function.*

**Recommendation 5.3.2:** *RCG/SCG LLC recommends that a Priority Vendor program be established within CNG and its sister SCG to increase the number of vendors capable of working within guidelines developed regarding Vendor Automation requirements.*

Note: SEE Prior Recommendation 5.1.4: RCG/SCG LLC recommends that a detailed needs analysis regarding upgrading to the SAP System currently being used by AVANGRID. To ensure that this particular upgrade and timing are justified, a cost benefit analysis performed, and if warranted, coupled with a formal implementation plan.

## **5.4 TAX**

### **Objective and Scope**

We reviewed the in light of its role in this organization. The Tax Department in any corporation has the role of implementing company tax policy, making appropriate tax filings and enables the company to be current regarding tax and technical issues, and doing their job in an effective and efficient manner and remaining aware of improvement opportunities.

### **Overall Assessment**

**THE CONNECTICUT NATURAL GAS TAX FUNCTION IS WELL MANAGED AND EFFECTIVE AND CONSISTENT WITH THE NEEDS OF THE UTILITY. THIS HAS RESULTED IN A CULTURE OF PROVIDING CONTINUOUS IMPROVEMENT, AND ACCURATE AND TIMELY FILINGS WITH A REASONABLY TRAINED STAFF.**

### **Evaluation Criteria**

We reviewed the tax function focused on several important criteria:

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<sup>332</sup> Interview J Earley, May 5, 2016

- Are the Tax Department staffing, training, and processes consistent with the needs of the function they serve?
- Are Tax filings performed on a timely basis and accurately with minimal adverse audit findings?
- Are steps taken to seek and implement continuous improvement and increased efficiency?

### **Conclusions**

**Conclusion 5.4.1:** *RCG/SCG LLC found that the Tax Department supporting CNG operates efficiently, takes steps to continuously add value and improve; it has adequate and trained staff has generally performed well without either tax filing issues or negative Audit Results.*

### **Analysis**

The Tax Department, under the direction of the Director of Corporate Tax, is part of the UIL Shared Services group reporting to the Controller. The Director has 31 years of work experience including 26 years with utilities; 3 years at UIL and 23 years at Northeast Utilities, now Eversource Energy.

- The director is a CPA with a Master's Degree in Tax from the University of Hartford.
- The Department's responsibilities include all non payroll tax; sales, use, property, income tax, (Federal, State and local).
- In addition to the Director there are 5 staff members; a gas tax manager with an assistant, a manager with an assistant covering UI and consolidated filings, and an analyst focusing on the current SCG Gross Earnings Tax audit.
- The group believes their important focus is to add value and always strive for process improvement. Filings have been shortened and process changes were said to have been made to result in increased efficiency,<sup>333</sup>
- As a result of the new AVANGRID structure, this Tax department will now just add information to the Consolidated 1120 filing by AVANGRID. The essentially will now become a column on the tax filing.
- There are numerous tax returns that are filed by this group. These include those shown in the Exhibit<sup>334,335</sup> below:

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<sup>333</sup> Interview D Beber, Director of Corporate Tax, June 14, 2016

Form/ Declaration	Tax Type	Jurisdiction	Filing Frequency	Taxpayers
<b>OS-114</b>	Sales and Use	CT	Monthly	CNG/SCG
<b>UCT 212</b>	Gross Receipts	CT	Quarterly	CNG/SCG
<b>OP-216</b>	Special Fuels	CT	Monthly	CNG/SCG
<b>Various</b>	Income	CT, MA, PA, MS, WV	Annual	CNG/SCG
<b>1120</b>	Income	Federal	Annual	CNG/SCG
<b>720</b>	Excise	Federal	Quarterly	CNG/SCG
<b>Various</b>	Property Tax Declaration	Multiple	Annual	CNG/SCG
<b>T2</b>	Income	Canada	Annual	CNG/SCG

**Exhibit 52 - Tax Filings for CNG and SCG**

The system, including for CNG, used is OneSource, version 15.15.41.34A to prepare its significant income tax returns. For other tax returns, the system in use is RIA E Forms, version 15.0.0.1. Both systems are generally acceptable in their corporate environment.

The group and its activities are still in transition; while core requirements will remain unchanged they will have added activities to support International requirements. They could not yet define the extent of that and other potential changes.

Over the past five years a number of tax audits were conducted. The Exhibit below summarizes the audits that were conducted for both CNG and its sister company SCG. No substantial changes were made and the IRS accepted a modest refund claim made by the firm:<sup>336, 337</sup>

<sup>334</sup> CNG annually submits declarations for each of the towns within its service territory and MS; currently 32 filings. Similarly, SCG annually submits declarations for each town within its service territory; currently 26.

<sup>335</sup> CNG, but not SCG, files in Mississippi.

<sup>336</sup> Response to Data Request FIN048 Attachment 1 & 2

<sup>337</sup> Response to Data Request FIN047

Tax Authority	Tax	Period Audited	Audit Initiated	Date Closed
IRS	Income	2010-2012	Jul-13	Nov. 2015
IRS	Excise – SCG	Jan. 2012 – Dec. 2013	Jan-15	Aug. 2015
IRS	Excise – CNG	Apr. 2012 – Dec. 2013	Jan-15	Sep. 2015
CT Depart. of Revenue Services	Income	2010-2012	May-16	N/A - Audit in progress
CT Depart. of Revenue Services	Gross Receipts	July 2011 – June 2014	Jun-14	N/A - Audit in progress
CT Depart. of Revenue Services	Sales and Use	Nov. 2010 –Oct. 2013	Jan-14	N/A - Audit in progress

**Exhibit 53 - Tax Audit Summary for CNG and SCG for Last 5 Years**

**Conclusion 5.4.2:** *RCG/SCG LLC found the process used to ensure accurate and timely submission of tax returns was reasonable and effective.*

**Analysis**

The Company uses a process to ensure the accurate preparation and timely submission of tax returns.<sup>338</sup>

- **Personnel Assignment** Personnel with appropriate levels of experience are assigned tax provision preparation and review roles.
- **Officer oversight and review** General tax department oversight and review of significant tax returns provided by designated corporate officer.
- **Monitoring of changes in accounting and tax law** – Personnel involved in tax return preparation receive and review material from subscription services and other sources to maintain current compliance and accounting knowledge.
- **Monitoring of changes in business** – Personnel involved in the tax return process attend accounting meetings to learn of new business developments. Information obtained by individuals is then shared with other appropriate personnel.
- **Control estimates** Unless insignificant or otherwise impractical, tax liabilities are accrued prior to payment.
- **Actual to Estimate Analysis** Tax return preparers and reviewers compare calculated return liabilities to the accrued liabilities for reasonableness.

<sup>338</sup> Response to Data Request FIN044

- **Control Calendar** – Return preparers maintain a control list with compliance responsibilities and required completion dates. Tax Management likewise monitors due dates.

**Conclusion 5.4.3:** *RCG/SCG LLC found that the training of the Tax staff was adequate to ensure that the skills and awareness of current and pending tax regulation changes.*

### **Analysis**

A number of options are made available to the tax staff members that prepare the variety of tax returns to help maintain or improve technical return preparation.<sup>339</sup> This includes attending graduate level tax courses, reviewing daily updates from tax and accounting subscription services including RIA, attending webcasts and specialized training programs, and reviewing practice alerts from accounting and law firms. In addition, and an example of the Departments commitment to training, the following Exhibit provides additional details related to programs attended or expected to be attended this year and those attended in 2015.

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<sup>339</sup> Response to Data Request FIN045

## Management Audit of Connecticut Natural Gas

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<b>-Year 2016-</b>			
<b>Attendee</b>	<b>Course/Program Title</b>	<b>Course Date</b>	<b>Program Sponsor</b>
Marzena Brzostowska-Komorek	Domestic Tax Conference	Apr-16	Ernst and Young
Jawe He	Federal Income Tax Review Course	May-16	Troutman Sanders
David Beber	Tax Committee meeting	Jun-16	Amer. Gas Association
Marzena Brzostowska-Komorek	Power and Utilities Income tax accounting training	Jun-16	PriceWaterhouseCoopers

<b>-Year 2015-</b>			
<b>Attendee</b>	<b>Course/Program Title</b>	<b>Course Date</b>	<b>Program Sponsor</b>
Jawe He	Advanced Corporate Income Tax	Apr.-July 2015	University of New Haven
David Beber	Q1y Fed. Tax Roundup: A Pass through Update	May-15	Deloitte
	Mergers & Acquisitions (Tax) Seminar	Jun-15	Tax Executives Institute
	Year-end, annual disclosures, and updates: Hot topics for 2015	Sep-15	Deloitte
	Key Tax Developments Affecting the Power and Utilities Industry – Series August 2015	Sep-15	KPMG

### **Exhibit 54 - Tax Department Training 2015 & 2016 Planned**

*Cost Control Functions (Covered In Sections 3.5, 3.6, & 10.1)*

## 6. HUMAN RESOURCES

### Objectives and Scope

The Human Resources (HR) assessment covers a variety of areas, compensation practices and programs; benefits; succession planning and employee development and evaluation; employee training; labor and employee relations; staffing; diversity and Equal Opportunity Employment and Affirmative Action (EEO/AA); and employee safety and health. Simply put, Human Resources encompass employment and employee relations support services. The identification of employee services, the effective design of these services, and the efficient and cost effective delivery of these services are critical to AVANGRID's ability to compete in the marketplace for talent and to retain their high performing employees. Additionally, through effective labor relations, AVANGRID can partner with labor leadership to deliver their customer focused services safely, efficiently, and cost effectively.

Today's utility HR function also plays an essential role in the cost of delivery and the quality of service. The cost of labor (both employee and contractor labor) represents one of the largest components in both O&M expense and capital costs. If the employee to contractor mix is not optimized for the workload variations, employee labor will automatically inflate expense costs and increase customer rates. Further, as the baby boomer generation retires, there will be an unprecedented experience drain that will not be filled easily through normal hiring practices. Effective leadership identification and development programs along with employee training must, therefore, be in place to address the effect of this loss of knowledge and to provide for the future leadership requirements.

To determine the effectiveness and improvement opportunities associated with the utility work force that will benefit the Connecticut utility customers, in addition to PURA criteria, RCG/SCG LLC will focus on the following: compensation and benefits benchmarking; labor contract barriers to flexibility and contracting; employee to contractor mix; EEO and affirmative action plans; and succession planning. This chapter is divided into the following sub sections:

- Human Resources Organization,
- Compensation policies, practices, and programs,
- Employee Benefits including Pension Plan, 401K and OPEBs,
- Succession Planning, Leadership Identification, Employee Development and Evaluation,
- Employee Training,
- Labor and Employee Relations,
- Workforce Planning and Staffing,
- EEO/AA,
- Employee Safety, and

- Payroll Practices.

## Overall Assessment

**THE HUMAN RESOURCES ORGANIZATION STRUCTURE AT AVANGRID IS CONSISTENT WITH INDUSTRY PRACTICES. IT IS STRUCTURED TO SUPPORT THE AVANGRID BUSINESS STRATEGY. IT USES HR SPECIALISTS AT CNG HEADQUARTERS AND IS CONSISTENT WITH HR BEST PRACTICES. EMPLOYEE SAFETY PERFORMANCE, DIVERSITY AND INCLUSION PROGRAMS, THE VARIABLE COMPENSATION PROGRAMS, THE NUMBER OF LABOR AGREEMENTS, TALENT DRAIN AND SUCCESSION PLANNING, AND THE HR LEADERSHIP TRANSITION ARE HR'S CURRENT CHALLENGES.**

The HR team follows industry standard policies and practices and develops specific programs to address the strategic and tactical needs of the business. The majority of the work completed by the Human Resources department is of best practice level.

Compensation strategies, policies, practices, and programs for CNG's executives, salaried and hourly employees are consistent with standard industry practices. AVANGRID handles these practices with impartiality, expertise, and a high level of integrity. The Total Rewards organization and the independent outside compensation consultants have designed and appropriately monitor all the compensation components. However, the target level of variable compensation for non officer salaried employees is lower than industry practice.

The Employee Benefits (including pensions, 401k Plans and OPEBs) offer a wide range of benefits that provides flexibility in meeting the changing and demanding needs of the diverse workforce marketplace. The benefit programs are integrated within an overall total rewards strategy. The AVANGRID's Rewards organization manages the benefits programs well. It has changed most of its benefit programs to be consistent across AVANGRID and consistent with the marketplace in an effort to control its benefit cost.

The succession planning, leadership identification, and employee development strategy focuses on developing and promoting from within. Hiring is used to fill skills gaps identified in the annual succession planning assessment. In this assessment, high potential employees are identified, their associated development gaps are detailed, and a development plan is established. This process has not yet been completed below the executive level and expects to be completed by year end for CNG and other business units of AVANGRID.

Training is comprised of five main components: management, leadership, and professional development programs; gas technical training; customer care training; IT and business system training; and safety, regulatory, and compliance training. All provide an adequate array of programs for specific populations. Operations delivered compliance training recordkeeping needs to be improved.

Labor and Employee Relations is staffed with experienced professionals who handle their responsibilities effectively while maintaining a good working relationship with the two major bargaining units (three labor contracts) covering the union employees of CNG. However, AVANGRID does not have a long term strategy to combine the labor unions.

The Workforce Planning and Staffing function of the organization implements the staffing strategy and develops the hiring strategy consistent with these strategies and the organizational current and future needs. The Recruiting function supports the diversity to the point where they will hold a position open if the candidate pool isn't deemed to be sufficiently diverse. AVANGRID takes a proactive approach to manpower planning by analyzing their workforce and anticipating their current and future staffing needs, taking into account leadership needs, skills gaps, and diversity goals. Their practice utilizes a comprehensive assessment of future needs, such as detailed turn over analysis, early identification of high potential employees, identifying future talent needs and either developing those talents internally or specifically targeting hiring to address that need. However, their planning does not have a link to any work management activities.

Equal Employment Opportunity (EEO) compliance and Affirmative Action (AA) planning is accomplished in conjunction with corporate compliance activities associated with the Code of Conduct. AVANGRID complies with both the letter law regarding ethics, EEO compliance, and AA planning. However, there are very few, if any, diversity or inclusion programs currently being conducted at the AVANGRID but they said they are working on re instituting a focus on diversity and inclusion in 2017.

CNG's employee safety performance has not met AVANGRID's management expectations and most of the safety goals for the last five years. However, executive and management's stated business priorities, reinforced by the safety metrics established for management, demonstrated that improving employee safety performance is no longer a concern.

The Payroll practices are consistent with industry standards. The use of paper timesheets for AVANGRID's gas field employees is consistent with limited computer availability for these employees.

## **Evaluation Criteria**

The following evaluation criteria focused our investigation and foundation for this assessment.

- To what extent did CNG implement the 2010 audit recommendations?
- Are salary, wage and compensation, benefits package and pension/OPEB/401K practices in line with those of other Connecticut utilities?

- Are CNG's executive compensation packages reasonable for the industry and region?
- Are the development, training, and evaluation techniques effective?
- Are the current labor relations status and methodology appropriate for a company the size of CNG?
- Are the productivity and utilization level of the workforces appropriate?
- Is the human resources department's capability to access personnel information and perform their assigned duties reasonable?
- Are the affirmative action and equal employment opportunity (AA/EEO) policies, procedures, and functions effective and reasonable?
- Is the utility effectively using benchmarking for its total compensation for executives, supervisors, and professional and hourly workers?
- How does the utility determine what training it undertakes? Is the training effective?
- Does the utility have a formalized succession planning process? Does the utility have a process to identify high potential employees and the associated development process to address the "brain drain" associated with baby boomer retirements? Does the utility hire experienced personnel or develop from within or both?
- Do current labor agreements contain barriers to increased productivity, increased work flexibility, and increased use of contractors?
- Is the utility effectively benchmarking its employee safety statistics and measuring the effectiveness of its safety programs?
- What role does the Pension Plan, OPEBs and 401K play in the employment strategy?
- What are the pension plan/OPEB/401K provisions? Are they consistent with other utility offerings? Are they consistent with the various labor marketplaces? Have these provisions been benchmarked to verify consistency?
- What are the various plan objectives and what support services are used to analyze performance and effectiveness in achieving these objectives?

#### *6.1 HR Organization*

### **Objectives and Scope**

RCG/SCG LLC reviewed data responses and studied the Human Resources organization to determine what functions and roles are included and how the functions were organized. The

analysis included reviewing annual plans, processes, policies and procedures, department goals and objectives, and the contents of the online employee handbook.

The audit also covered department performance measures to evaluate the performance management system. Benchmarking studies of human resource functions and HRIS were reviewed, and budgets, cost savings, and containment methods were studied.

RCG/SCG LLC also analyzed processes and actions that impact employees' well being and employment status. Interviews were completed with all levels of HR leadership and staff.

## **Overall Assessment**

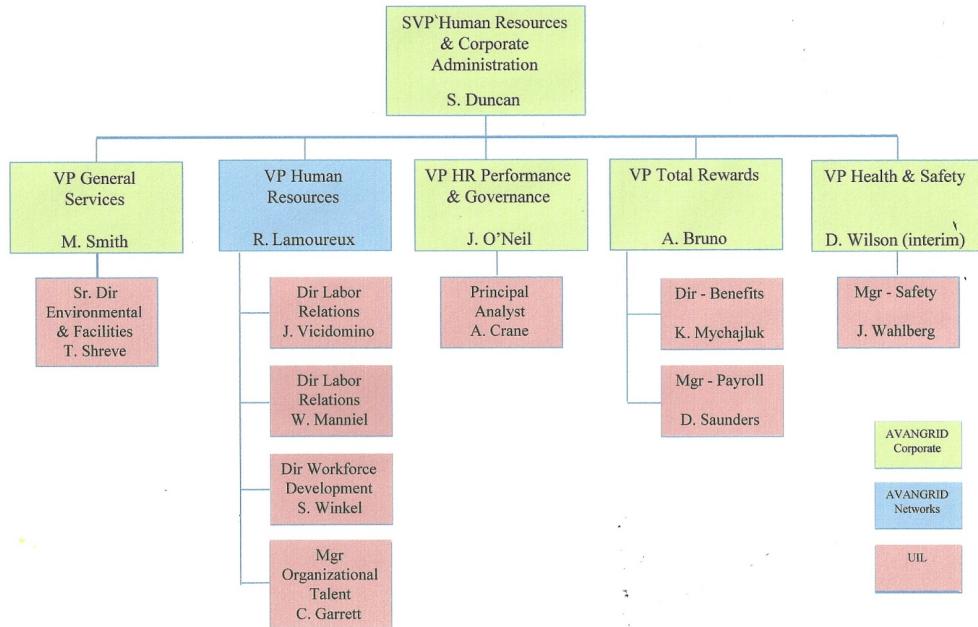
**THE HR TEAM FOLLOWS INDUSTRY STANDARD POLICIES AND PRACTICES AND DEVELOPS SPECIFIC PROGRAMS TO ADDRESS THE STRATEGIC AND TACTICAL NEEDS OF THE BUSINESS. ITS USE OF HR SPECIALISTS AT CNG IS CONSISTENT WITH HR BEST PRACTICES. CONTRACT SERVICES ARE USED CONSISTENTLY WITH INDUSTRY PRACTICES. THE MAJORITY OF THE WORK COMPLETED BY THE HR ORGANIZATION IS AT THE LEVEL OF BEST PRACTICES. THERE IS NO HR LEADERSHIP DEDICATED TO UIL, BUT THE SENIOR DIRECTOR POSITION IS EXPECTED TO BE FILLED IN THE NEXT SEVERAL MONTHS.**

### **Conclusions**

**Conclusion 6.1.1: RCG/SCG LLC found that the HR organization thinks, plans, and acts strategically and is organized to meet to support these efforts. However, implementation of HR policies and programs are impacted by the lack of HR leadership focused on UIL and CNG.**

### **Analysis**

As a centralized shared service, Human Resources delivers the HR services to AVANGRID and its employees. Localized HR support is provided through the HR Specialist located at CNG's headquarters. The following Exhibit reflects the AVANGRID's Human Resources organization.



**Exhibit 55 - AVANGRID's Human Resources Organization**

In 2015, Human Resources organization was integrated into the AVANGRID HR organization. Subsequently, the HR leader responsible for UIL resigned/retired; this position is still vacant. This has resulted in a slow HR transition to the AVANGRID HR organizational model. The local leadership is currently provided by the AVANGRID Vice President HR.<sup>340</sup>

This organizational structure centralizes core services, allowing experts to focus on specific disciplines and core skills rather than spreading them throughout the organization. Locating the HR Specialist at CNG is consistent with leading HR practices.<sup>341</sup> The HR Specialist is charged with the responsibility to translate a business unit's HR needs, to expedite HR service delivery, and to address the specific business requirements while maintaining consistency with AVANGRID practices. Additionally, it provides for individualized HR needs evaluation, while keeping the HR service menu consistent throughout AVANGRID.

At AVANGRID, Human Resources created several Centers of Excellence: Health and Safety; Leadership and Talent Development; HR Governance and Performance; Total Rewards (Compensation and Benefits); and Avangrid Networks HR. This structure promotes consistency across all BUs, allowed HR to specialize and results in economies of scale by handling the work from all of AVANGRID. This organizational construct is consistent with industry best practice.

<sup>340</sup> Interviews Sheila Duncan 06/24/2016 and Sheri Lamoureux 06/21/2016

<sup>341</sup> Response to Data Request HR037

**Conclusion 6.1.2:** *RCG/SCG LLC found that the HR team is strategic, expert, passionate, and committed. They employ industry standard HR practices and procedures. In spite of the lack of local leadership and a strong emphasis on labor relations at the HR Specialist level, they provide creative, legal, and good results.*

### **Analysis**

HR has clear, written policies and procedures and delivers its services consistent with these documents. HR ensures that all new policies, procedures, and plans comply with applicable federal and state laws and guidelines, and are legally defensible if challenged.

HR has a mission, goals, and objectives that align with those of the UIL business and were communicated to employees. These items have not been updated as a result of the transition and are being developed.<sup>342</sup>

HR has systems to handle workforce planning, hiring, talent management, competencies, and performance.

The Straight Talk Employee Survey prevails as the major means to assess how well employees' perceptions align with the business strategy and the effectiveness of the various HR initiatives regarding employee engagement.<sup>343</sup> The survey was completed for CNG in 2013 and 2015.

The HR organization uses metrics that track performance of key HR initiatives and various HR processes and activities. The HR Balanced Scorecard contains the key HR metrics: Financial (O&M Budget and Facility Capital); Customer (Time to Fill, Wellness, and Safety Team Goal); Operations (Facilities, Security, Environmental, and Real Estate); and Capability (Technical training and Workforce Planning & Development).<sup>344</sup> These metrics cover the full spectrum of typical HR activities and for the most part are consistent with industry practices. However, the metrics do not include any targets for Diversity or Inclusion program development or improvement efforts.

### **Recommendations**

**Recommendation 6.1.1:** *RCG/SCG LLC recommends that the UIL HR leadership position be filled as soon as practicable and a set of HR directed operational objectives be targeted for completion within the first 90 days.*

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<sup>342</sup> Interview Sheri Lamoureux 06/21/2016

<sup>343</sup> Response to Data Request HR051

<sup>344</sup> [REDACTED]

CONFIDENTIAL

**Recommendation 6.1.2:** *RCG/SCG LLC recommends that the HR Balanced Scorecard contain a Diversity/Inclusion metric.*

## *6.2 Compensation Policies, Practices and Programs*

### **Objectives and Scope**

The assessment in this Area will focus on the compensation strategy, policies and practices, and the resulting compensation programs.

### **Overall Assessment**

**COMPENSATION STRATEGIES, POLICIES, PRACTICES AND PROGRAMS FOR AVANGRID'S GAS EXECUTIVES, SALARIED, AND HOURLY EMPLOYEES ARE CONSISTENT WITH STANDARD INDUSTRY PRACTICES. AVANGRID HANDLES THESE PRACTICES WITH IMPARTIALITY, EXPERTISE, AND A HIGH LEVEL OF INTEGRITY. THE TOTAL REWARDS ORGANIZATION AND THE INDEPENDENT OUTSIDE COMPENSATION CONSULTANTS HAVE DESIGNED AND APPROPRIATELY MONITOR ALL THE COMPENSATION COMPONENTS. HOWEVER, THE TARGET LEVEL OF VARIABLE COMPENSATION FOR NON-OFFICER SALARIED EMPLOYEES IS LOWER THAN INDUSTRY PRACTICE.**

### **Evaluation Criteria**

RCG/SCG LLC applied the following criteria to the HR policies, practices, and programs.

- Are they applied consistently to all business units of AVANGRID, including CNG?
- Are they integrated with the benefit programs to form a consistent focus on total rewards?
- Are they appropriately guided by the need to remain competitive in attracting and retaining competent executives, management, and professional and hourly employees?

### **Conclusions**

**Conclusion 6.2.1:** *RCG/SCG LLC concluded that AVANGRID HR Rewards function and CNG met the intent of the 2010 CNG Management Audit recommendation.*

### **Analysis**

The 2010 Management Audit specified one recommendation that impacted the Compensation function serving CNG.

*Item # 32, Chapter #13, Human Resources, Recommendation 13.2 Compensation – Compare CNG's employee compensation levels to market on at least*

*a bi annual basis. In 2006 and 2007 Towers Perrin (now Towers Watson) performed studies comparing Energy East's union and non union salaries and total cash compensation to market compensation for equivalent positions. The redacted information provided from the 2007 study showed salary and total cash compensation for Energy East's and CNG's non union employees were below market levels, and union workers were compensated above market for Energy East as a whole. CNG's non union compensation was further below market than Energy East's. Unless CNG withheld the requested information, it appears no market comparisons (other than for executives) were prepared in 2008 or 2009. To ensure that CNG's compensation does not significantly deviate from market, we recommend performing market compensation comparisons at least bi annually, if not annually.*<sup>345</sup>

RCG/SCG LLC believes that the actions taken by CT AVANGRID Compensation function and CNG in completing salary surveys for both union and non union employees (managerial and professionals) has met the intent of this recommendation.<sup>346</sup>

**Conclusion 6.2.2:** *RCG/SCG LLC found that AVANGRID's compensation strategy, policies, components, and procedures are consistent with industry experience and practice.*

### **Analysis**

AVANGRID Total Rewards (Compensation and Benefits responsibility) organization is centralized under the AVANGRID Chief HR Officer. The Director of Total Rewards is located and directly responsible for the compensation and benefit strategies at CNG. The execution of the compensation strategy is the responsibility of the Director of Compensation.

The compensation strategy is focused on "Total Rewards," or total compensation<sup>347</sup> that includes base and variable compensation and the value of employee benefits. AVANGRID has consolidated all management and salaried employee compensation under one approach and uses benchmarking with the other Connecticut utilities and similarly sized utilities to ensure their pay practices are consistent with the marketplace in which they expect to find and attract future employees. All CNG executives are part of the AVANGRID's executive compensation system and salaries are determined based on market data.<sup>348</sup>

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<sup>345</sup> Response to Data Request GEN012 CNG Attachment 1

<sup>346</sup> [REDACTED] **CONFIDENTIAL**

<sup>347</sup> Response to Data Request HR067

<sup>348</sup> Response to Data Request HR016

Regular and periodic compensation studies are performed every two years for all non union positions.<sup>349</sup> The union position studies are completed prior to each contract's negotiations.<sup>350</sup>

There is a compensation strategy and associated polices in place and used to direct the compensation practices.<sup>351</sup>

The leadership responsible for the compensation programs is very experienced and well grounded in all aspects of compensation practices, data analysis, and the delivery of compensation advice. The leadership is included in all strategic compensation discussions and has full access to the Board's compensation committee and the CEO in regard to compensation.<sup>352</sup>

**Conclusion 6.2.3:** *RCG/SCG LLC found the utility is effectively using benchmarking for its total compensation for executives, supervisors, professional, and hourly workers.*

#### Analysis

AVANGRID uses appropriate compensation consultants, surveys, and databases to support the various compensation recommendations. Regular and periodic compensation studies are performed every two years for all non union positions.<sup>353</sup> The union position studies are completed prior to each contract's negotiations.<sup>354</sup> AVANGRID uses this benchmarking to verify market competitiveness of their compensation programs and to verify the salary ranges for the 3 Band levels of compensation for management and salaried employees. Additionally, the benchmarking is used to support placement of each salaried position within the Band.<sup>355</sup>

**Conclusion 6.2.4:** *RCG/SCG LLC found AVANGRID's compensation practices to be mostly consistent with good business and utility practices with the exception of the short term incentive target levels for non officer salaried employees.*

#### Analysis

AVANGRID uses a 3 Band approach to compensation of the non officer salaried employees. The market range for each level is updated bi annually. The latest Compensation

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<sup>349</sup> [REDACTED] CONFIDENTIAL

<sup>350</sup> Interview A. Bruno 06/06 and 07/11/2016

<sup>351</sup> Response to Data Request HR016

<sup>352</sup> Interview A. Bruno 06/06 and 07/11/2016

<sup>353</sup> [REDACTED] CONFIDENTIAL

<sup>354</sup> Interview A. Bruno 06/06 and 07/11/2016

<sup>355</sup> Response to Data Request HR016

benchmarking of all positions shows that AVANGRID's total cash compensation was at [REDACTED] [REDACTED]<sup>356</sup> of market for their salaried non officer positions. The level of compensation within each band is based on the employee's performance against previously determined goals, metrics, and competencies. This data however is not broken down between base and variable target compensation.

Based on the experience of RCG/SCG LLC, the components of compensation (base salary and variable compensation or incentive pay) for AVANGRID non officer salaried employees are inconsistent with utility industry practices. The variable pay opportunity or target payout varies between 2.0 and 15% depending on the position pay grade.<sup>357</sup> The targeted payout for the 329 eligible participants in 2015 was 5.9%. The actual payout was 5.6% based on the achievement of the previously identified metrics.<sup>358</sup> Current compensation strategies in the industry typically target a minimum of 10% of base compensation for the value to be sufficiently meaningful to motivate employee behavior. Additionally, AVANGRID's benchmarking does not breakdown the data into its base and variable components so that the variable component can be compared to their current offerings.<sup>359</sup>

AVANGRID has in place the appropriate approval process for all compensation decisions.

**Conclusion 6.2.5** *RCG/SCG LLC found HR's management and control of the performance evaluation is consistent with industry practices.*

### **Analysis**

Employee evaluations for non union employees are completed annually and become the source document for identifying high potential talent and development needs of individuals included in the succession plan.

The performance evaluation process is completed on line in the SAP system. The evaluation compares performance against personal goals and job competencies. The performance assessment is completed prior to and is input for the annual merit compensation process.<sup>360</sup>

### **Recommendations**

**Recommendation 6.2.1:** *RCG/SCG LLC recommends that the short term incentive (variable compensation) component target of the total cash compensation for all non officer salaried*

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<sup>356</sup> [REDACTED] CONFIDENTIAL

<sup>357</sup> Response to Data Request HR067 Attachment 1a

<sup>358</sup> Response to Data Request HR067

<sup>359</sup> [REDACTED] CONFIDENTIAL

<sup>360</sup> Interview A. Bruno 07/11/2016

*employees be increased consistent with benchmark variable compensation data and with maintaining a competitive range of total cash compensation.*

### *6.3 Employee Benefits Including Pension Plan, 401K, and OPEBs*

#### **Objectives and Scope**

This section focuses on the health and welfare benefit programs and retirement programs, including the pension plan, 401k plan, and OPEBs (other post employment benefits). These benefits are available to executives, management, professional, hourly, and bargaining unit employees.

#### **Overall Assessment**

**AVANGRID TOTAL REWARDS (COMPENSATION AND BENEFITS RESPONSIBILITY) ORGANIZATION IS CENTRALIZED UNDER THE AVANGRID CHIEF HR OFFICER. THE DIRECTOR OF TOTAL REWARDS IS DIRECTLY RESPONSIBLE FOR THE COMPENSATION AND BENEFIT STRATEGIES AT AVANGRID NETWORKS. THE EXECUTION OF THE BENEFITS STRATEGY IS THE RESPONSIBILITY OF THE DIRECTOR OF BENEFITS.**

**AVANGRID'S EMPLOYEE BENEFIT OFFERINGS FOR HEALTH, WELFARE, AND RETIREMENT PLANS ARE CONSISTENT WITH INDUSTRY PRACTICES AND COMPETITIVE WITH THE MARKETPLACE TO ATTRACT AND RETAIN CURRENT AND FUTURE TALENT. NEGOTIATIONS WITH THE UNION LOCALS HAVE BEEN COMPLETED TO BRING THE BENEFIT PLAN INTO ALIGNMENT AND REDUCE THE OVERALL COST OF PROVIDING BENEFITS INTO THE FUTURE.**

#### **Conclusions**

**Conclusion 6.3.1: RCG/SCG LLC found AVANGRID's benefits packages for current employees of CNG and the associated pension/OPEB/401k practices are in line with those of other Connecticut utilities and industry practices.**

#### **Analysis**

The Employee Benefits (including Pensions, 401k, and OPEB) need to include a wide range of benefits that provides flexibility in meeting the changing and demanding needs of the diverse workforce marketplace. The benefit programs are integrated within an overall total rewards strategy needed to compete for talent in the regional employment marketplace. AVANGRID manages its benefits programs well. It has changed most of its benefit programs to be consistent throughout AVANGRID and consistent with the marketplace to control its benefit cost.

All non union employees hired at CNG prior to January 1, 2004 are eligible for the traditional defined benefit pension plan. Those hired on or after this date are only eligible for a Cash Balance Pension Benefit. All non union employees also are eligible to participate in the 401k Plan.<sup>361</sup> Benefit levels in these Plans are consistent with industry practices.

AVANGRID Rewards organization utilizes a periodic BENVAL survey to compare the benefit value provided to CNG union employees to those provided to other industry companies.<sup>362</sup>

The benefit offerings, the OPEBs, the retirement plan offerings (traditional pension, cash balance, and the 401k) and the health and welfare offerings are all consistent with the industry practices.

**Conclusion 6.3.2:** *RCG/SCG LLC found that AVANGRID has been proactive in seeking opportunities to reduce the overall cost of their benefit offerings and the cost impact of the Pension, 401k, and OPEB Plans serving CNG employees.*

### Analysis

AVANGRID Rewards organization regularly reviews vendors and benefit Plan(s) and consults with its insurance broker (for Health & Welfare Plans), references national surveys, such as those developed by EAP Data Information Solutions, LLC, Segal, recognized consulting groups, and internal committees, such as the Retirement Benefits and Investment Committee and the Benefits Advisory Committee.<sup>363</sup>

Since 2011, the UIL's goal was to streamline and align benefit offerings where possible across all CT companies to maximize cost effectiveness. The following is a summary of what they have accomplished:<sup>364</sup>

- For active employees:
  - Moved medical plans to self insured ASO model for 2013 and marketed to several self insured carriers. Secured a multi year cap for self insured costs. Negotiated a "hold" of medical admin fees for 2016 and marketed stop loss for 2016. Marketed medical stop loss to several carriers for 2014.
  - Consolidated medical vendors and coverage from 5 vendors to 3 vendors. All the non union groups have the same medical offerings. The union populations have similar medical offerings where possible. Re evaluated the cost share structure for

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<sup>361</sup> Response to Data Request HR059

<sup>362</sup> [REDACTED] CONFIDENTIAL

<sup>363</sup> Response to Data Request HR013

<sup>364</sup> Interview A. Bruno 06/06 and 07/11/16 and Response to Data Request HR013 and HR060

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the active population so as to make it similar across all companies. 20% cost share for active employee coverage remained the same and added dependent coverage to 23% cost share to the employee for the non union population commencing 1/1/2014. Union cost shares were calculated based upon the current union contract agreements.

- Introduced a High Deductible Health Plan to the CNG and SCG non union groups. This increased employee participation in the High Deductible Health Plan.
- Consolidated vision coverage to one vendor – Eye Med for all groups.
- Consolidated dental coverage to 3 offerings with one vendor for all the groups – Delta Dental.
- Wellness Programs offered to employees.
- Consolidated life coverage offerings for all the groups – The Hartford.
- Marketed Life and Disability plans as they came off prior rate guarantee. Remained with the Hartford. Marketed medical stop loss to several carriers for 2015.
- Effective 1/1/2012, contracted with BuckHRSolutions/Xerox to manage the Health and Welfare benefits for all CNG's active and retiree populations.
- OPEBs: Offered the private medical exchanges to the over 65 non union retirees for all companies commencing in 2015. This includes a subsidy given to each participant into a Health Reimbursement Account (HRA) at Benefit Wallet. This created better offerings to the retiree and cost savings to both AVANGRID and retiree.
- 401k Plans: As a result of the acquisition of the gas companies by UIL Holdings, the 401k plans were restated in 2012 and consolidated to one 401k vendor – Vanguard in July 2013. Also, consistent with industry best practices, AVANGRID continues to review investment offerings in the plans. These types of changes resulted in cost savings to both AVANGRID and employees. As a result of the consolidation to one vendor, they have also combined and simplified the non union 401k plans.

UIL undertook an assumptions experience study in 2014. Based on that study, the actuarial assumptions were updated for the retiree welfare valuation, such as termination rates, retirement rates, spousal coverage assumption and participant rates. The update of assumptions resulted in a decrease of plan obligation for the CNG and SCG plans as shown below. Please note that these numbers have been rounded to the nearest \$0.1 million.

	CNG	SCG Salaried	SCG Union	Total
Impact of experience study assumptions on 12/31/2014 APBO <sup>365</sup>	\$4.1 Million	\$1.2 Million	\$2.6 Million	\$7.9 Million

**Exhibit 56 – Retiree-Welfare Plan Valuation Assumption Change Impact**

### **Recommendations**

RCG/SCG LLC has no recommendations for this audit item.

#### ***6.4 Succession Planning, Leadership Identification, Employee Development and Evaluation***

### **Objectives and Scope**

Succession Planning, Leadership Identification, and Employee Development strategy is to develop and promote from within. Hiring is used to fill skills gaps identified in the Talent Cycle.

In AVANGRID's annual Succession Planning, Leadership Identification, and Employee Development process, high potential employees are identified, their associated development gaps are detailed, and a development plan is established.

### **Overall Assessment**

RCG/SCG-LLC BELIEVES THE AVANGRID SUCCESSION PLANNING, LEADERSHIP IDENTIFICATION, AND EMPLOYEE DEVELOPMENT PROCESS IS CONSISTENT WITH INDUSTRY BEST PRACTICES. HOWEVER, IMPLEMENTATION AT AVANGRID HAS NOT BEEN COMPLETED BELOW THE EXECUTIVE LEVEL. AS A RESULT OF THE RETIREMENT AND RESIGNATIONS ASSOCIATED WITH THE RECENT MERGER, AVANGRID IS FINDING IT NECESSARY TO SEEK EXTERNAL CANDIDATES TO FILL KEY SENIOR LEVEL POSITION, SUCH AS THE DIRECTOR OF HR IN CT.

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<sup>365</sup> Response to Data Request HR060

### **Conclusions**

**Conclusion 6.4.1:** *RCG/SCG LLC concluded that AVANGRID and CNG met the intent of the 2010CNG Management Audit recommendation.*

### **Analysis**

The 2010 Management Audit specified one recommendation that impacted the Succession Planning function serving CNG.

*Item # 31, Chapter #13, Human Resources, Recommendation 13 2 Workforce Management – Implement a workforce management system to help manage organizational change and the transfer of critical skills. According to CNG’s response to OC 92, the company does not have a centralized database of employee skills and education or a system to manage employee knowledge and skills. Such a system would help ensure that critical skills are not lost when employees retire and help manage organizational change, such as the Business Transformation Process that the company stated it is implementing in 2010.<sup>366</sup>*

RCG/SCG LLC believes that the actions taken by AVANGRID and CNG to implement an on line performance evaluation system meet the intent of this recommendation.

**Conclusion 6.4.2:** *RCG/SCG LLC found AVANGRID has a well defined formal succession planning process (Talent Cycle) that integrates talent identification and employee development. The approach is consistent with best practices. The process includes the identification of key positions, of high potential employees and the associated development process to address the “brain drain” associated with baby boomer retirements. However, RCG/SCG LLC found succession planning and associated development planning and implementation has not been communicated and therefore very few management employees are aware of the succession plan for their position.*

### **Analysis**

Succession planning, leadership identification, and employee development are a well defined process; see the following flow chart Exhibit.<sup>367</sup>

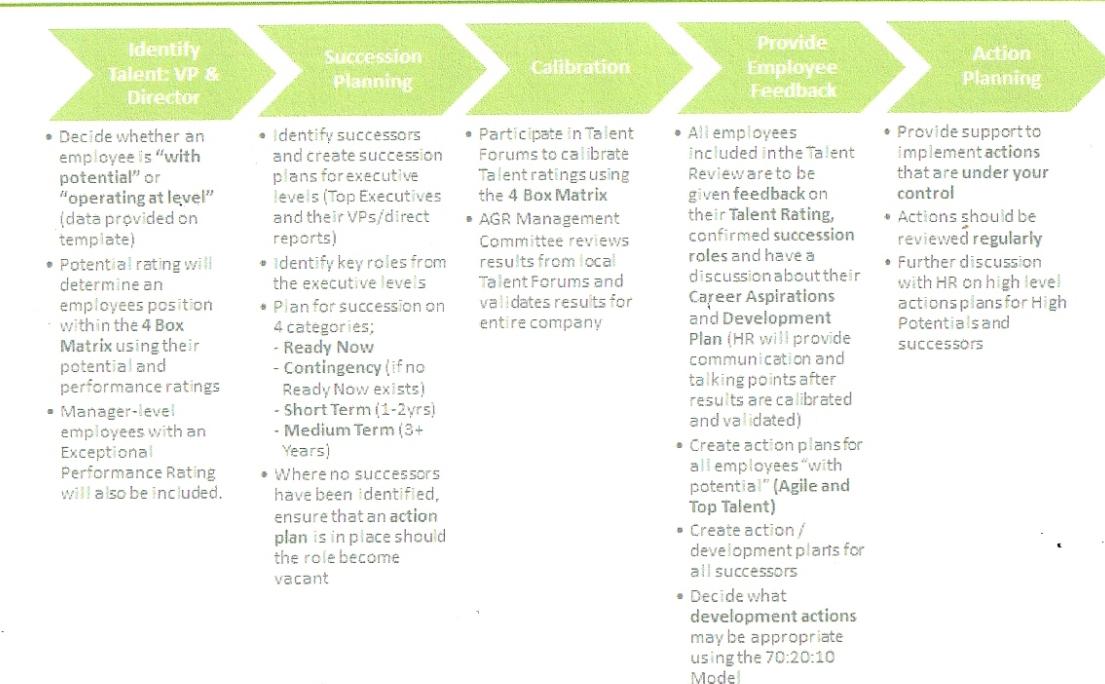
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<sup>366</sup> Response to Data Request GEN012 CNG Attachment 1

<sup>367</sup> Response to Data Request HR065 and 066.

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**2016 Talent Review Process**



**Exhibit 57 – Talent Review Process**

AVANGRID Networks is in the process of completing the first succession planning exercise since the merger. They initially focused on the top executives and senior leaders reporting to them across the organization during the more formal annual talent review conducted in the month of June. They focus succession planning for AVANGRID, not just a specific focus for CNG. However, later this fall, they will be looking to drive succession planning deeper into CNG, at a minimum, looking at directors and managers and any other key roles identified. Moving forward in subsequent years, the plan would be to incorporate succession planning deeper into the organization during the annual talent review process, instead of an additional one off exercise.

An integral part of AVANGRID's focus is on their "Talent Cycle." Through this approach they utilize a consistent and common approach to identifying key positions and key people for further development and succession planning. They seek to identify:

- Key positions in the organization,
- Successors to Key and other Leadership Positions (Succession Planning),
- Individuals with Potential, and
- Action Plans for Successors and High Potential.

The Talent Review process that supports the Talent Cycle is planned to be undertaken annually. It has yet to be completed.

The Director – Talent & Leadership reports to the Chief Human Resources Officer. The Director is responsible for the strategic planning of talent management programs related to: talent assessments, succession planning, key role identification and risk mitigation, executive and other leadership development programs, and coaching. The Director is also responsible for the execution of the annual talent review process across the enterprise to identify top talent, succession plans, and key development areas for targeted population.

The process has not been implemented fully over the last several years. As such, RCG/SCG LLC found many of the individuals interviewed during this audit were neither consulted regarding a successor for their position nor aware that there was an identified successor.

### **Recommendations**

**Recommendation 6.4.1:** *RCG/SCG LLC recommends that AVANGRID complete the Talent Cycle process as planned for year 2017, update it annually thereafter, and communicate to the management organization that the process has been complete and succession candidates have been identified for key positions.*

## **6.5 Training**

### **Objectives and Scope**

Training assessment focused on the responsibilities for training, the breadth of the programs offered, and the delivery of the required training.

Employee training responsibility is divided into three areas: enterprise training, compliance training, and technical or on the job training. HR is responsible for both enterprise and compliance training. Each business unit is responsible for their specific technical training.

### **Overall Assessment**

**EMPLOYEE TRAINING WAS COORDINATED, DEVELOPED, AND/OR DELIVERED EFFECTIVELY. HOWEVER, THE TRAINING PAPER RECORDKEEPING PROCESS NEEDS TO BE UPDATED TO AN ELECTRONIC PROCESS CONSISTENT WITH INDUSTRY PRACTICES.**

### **Conclusions**

**Conclusion 6.5.1:** *RCG/SCG LLC concluded that the enterprise training is developed and conducted using industry practice techniques.*

### **Analysis**

Training is comprised of five main components: management, leadership and professional development programs; gas technical training; customer care training; IT and business system training; and safety, regulatory, and compliance training. HR is responsible for the content and delivery of all training in the first four components.

Corporate Safety personnel are responsible for all safety compliance training. HR assists with some scheduling and program delivery. Operations is responsible for all training regarding operator qualification/certifications and standards. HR is responsible for sexual harassment prevention and Code of Business Conduct training.

Union leadership has recently been involved with the gas technical training needs assessment. This assisted in developing the focus of such training to be delivered by the HR staff at the new training facility.<sup>368</sup>

**Conclusion 6.5.2:** *RCG/SCG LLC found the Compliance training is completed annually. The paper based recordkeeping of completed operations compliance training, however, is inconsistent with leading industry practices.*

### **Analysis**

Compliance training, including operator qualifications/certification, sexual harassment and business conduct, has been completed annually, as required.<sup>369</sup> Operations reports back to HR the completion of the compliance training that they conduct by mailing the attendance sheet to HR.

### **Recommendations**

**Recommendation 6.5.1:** RCG/SCG LLC recommends that the compliance training completion records for training completed by CNG be entered into the centralized recordkeeping system immediately following such training.

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<sup>368</sup> Response to Data Request HR021

<sup>369</sup> Interview S. Winkle 06/06/2016.

## *6.6 Labor and Employee Relations*

### **Objectives and Scope**

The assessment of Labor and Employee Relations examined each of the critical components: employee and union relations, negotiations, grievance processing, company wide disciplinary actions, and position vacancy analysis. Has Labor Relations focused labor negotiations on negotiating changes in compensation, benefits, and work rules to bring the union programs in line with the marketplace? Have labor discussions focused on delivering customer natural gas services safely, reliably, and at a reasonable cost?

### **Overall Assessment**

**LABOR AND EMPLOYEE RELATIONS IS STAFFED WITH EXPERIENCED PROFESSIONALS WHO HANDLE THEIR RESPONSIBILITIES EFFECTIVELY WHILE MAINTAINING A GOOD WORKING RELATIONSHIP WITH THE TWO MAJOR BARGAINING UNITS (THREE LABOR CONTRACTS) COVERING THE UNION EMPLOYEES OF CNG. HOWEVER, AVANGRID DOES NOT HAVE A LONG-TERM STRATEGY TO COMBINE THE LABOR UNIONS.**

### **Conclusions**

**Conclusion 6.6.1:** *RCG/SCG LLC concluded that CNG's Labor Relations and management have met the intent of the 2010 CNG Management Audit recommendation.*

### **Analysis**

The 2010 Management Audit specified one recommendation that impacted the Labor Relations function serving CNG.

*Item # 30, Chapter #13, Human Resources, Recommendation 13 1 Labor Relations Provide a forum, similar to what was requested in the letter sent to Mr. Becker by union representatives in 2009, for the unions to discuss their concerns about matters that affect their members' employment and compensation. This could take the form of a meeting, perhaps annually, prior to the completion of the budget for the upcoming fiscal period. It would give Iberdrola a chance to explain its thinking and the unions a chance to express their concerns, without binding Iberdrola to anything. In the longer term this is likely to lead to a better relationship between Iberdrola and its union represented employees in the U.S.<sup>370</sup>*

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<sup>370</sup> Response to Data Request GEN012 CNG Attachment 1

RCG/SCG LLC believes that the actions taken by CNG to meet with the union leadership through both the Managers Safety meeting and the Employee Relations Committee has reached to the intent of this recommendation.<sup>371</sup>

**Conclusion 6.6.2:** *RCG/SCG LLC determined that the AVANGRID labor relations organization is appropriately staffed with experienced professionals, provides a dedicated labor professional to handle the CNG's three labor contracts, and has completed work stoppage planning.*

### **Analysis**

Labor and Employee Relations handle employee union relations, negotiations, grievance processing, company wide disciplinary actions and position vacancy analysis. Labor Relations has a critical role in negotiating changes in compensation, benefits, and work rules to bring the union programs in line with the marketplace and deliver customer natural gas services safely, reliably, and at a reasonable cost.

The Director of Employee and Labor Relations is responsible for relations with the Steelworkers local union and the two contracts (SCG), CT Independent Utility Workers local union and the two contracts (CNG) and the Utility Workers local union and the one contract (Greenwich).<sup>372</sup> CNG has an HR Generalist assigned to its headquarters. This HR Generalists deliver the employee and labor relations support activities on a day to day basis.<sup>373</sup>

There have been a minimum number of grievances that have gone to the third step or arbitration. These results are better than those of utilities of similar size.<sup>374</sup>

Based on discussions with both management and union members, relations with the unions' leadership have been good and these relationships meet the needs of both parties.<sup>375</sup> However, consistent with industry practices, CNG has in place work stoppage planning.<sup>376</sup>

**Conclusion 6.6.3:** *RCG/SCG LLC found that the labor agreements do not contain barriers to increased productivity, increased work flexibility, and increased use of contractors.*

### **Analysis**

The labor contracts have no barriers to productivity, staffing, or the use of contractors and the contracting out of work previously performed by union employees. The labor

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<sup>371</sup> Response to Data Request HR027

<sup>372</sup> Response to Data Request HR009

<sup>373</sup> Interview J. Vicedomino 06/02/2016

<sup>374</sup> Response to Data Request HR026

<sup>375</sup> Interviews C. Malone 05/12/2016, CNG union employees 06/7/16

<sup>376</sup> [REDACTED] **CONFIDENTIAL**

agreements contain very few work rules and limits to the selective use of contractors and no barriers to productivity and improvements in work methods. Management has full rights to decide the number and mix of employees needed to perform the work. This is unusual in utility labor agreements and should contribute to lower costs for the same quality of work.

Standardization of the benefit plans and getting all union employees on one benefit platform has been a major focus of recent labor negotiations. For the most part, this strategy has been accomplished.

**Conclusion 6.6.4:** *RCG/SCG LLC found the number of labor relations contracts and local unions is not consistent with companies the size of CNG and may pose a future barrier to management's potential effort to consolidate the operations of CNG and SCG.*

### **Analysis**

The CT Independent Utility Workers local union and the two labor contracts cover the 260 union employees at CNG.<sup>377</sup> AVANGRID has assigned a dedicated HR Specialist to each local, thus providing consistency in dealing with the respective union leadership. The result of this activity is a relatively low number of grievances, all being settled in third step or arbitration.

Management has been consolidating operations management at CNG and SCG. However, the number of local labor unions and labor contracts may be a barrier to further consolidation. Future negotiation will need to address any barriers this situation may present. Management does not have any current plans or a long term strategy to consolidate the union employees under one local union.<sup>378</sup> Industry practices and RCG/SCG LLC experience has shown that such consolidation of labor locals and contracts results in reduced costs.

**Conclusion 6.6.5:** *RCG/SCG LLC found that all filling of vacancies are reviewed and approved by HR to determine the need for a replacement and the most effective way to meet the need.*

### **Analysis**

The Director of Employee and Labor Relations, personally, reviews all recommendations to fill a vacancy at CNG. He then determines whether the position needs to be filled and what resource (internal transfer or external hire) will be utilized to meet the need.

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<sup>377</sup> Interview Y. Crespo 07/11/2016

<sup>378</sup> Response to Data Request HR040

### **Recommendations**

**Recommendation 6.6.1:** *RCG/SCG LLC recommends that the AVANGRID develop a long term strategy to consolidate the union employees of CNG and SCG into one labor union and contract.*

#### *6.7 Workforce Planning and Staffing*

### **Objectives and Scope**

In today's utility, the cost of labor (both employee and contractor labor) represents one of the largest components in both O&M expense and capital costs. If the employee to contractor mix is not optimized for the workload variations, employee labor will automatically inflate expense costs and increase customer rates. Further, as the baby boomer generation retires, an unprecedented experience drain will not be filled easily through normal hiring practices.

### **Overall Assessment**

**AVANGRID TAKES A PROACTIVE APPROACH TO MANPOWER PLANNING BY ANALYZING THEIR WORKFORCE AND ANTICIPATING THEIR CURRENT AND FUTURE STAFFING NEEDS, TAKING INTO ACCOUNT LEADERSHIP NEEDS, SKILLS GAPS, AND DIVERSITY GOALS. THEIR PRACTICE UTILIZES A COMPREHENSIVE ASSESSMENT OF FUTURE NEEDS, SUCH AS DETAILED TURN-OVER ANALYSIS, EARLY IDENTIFICATION OF HIGH-POTENTIAL EMPLOYEES, IDENTIFYING FUTURE TALENT NEEDS, AND EITHER DEVELOPING THOSE TALENTS INTERNALLY OR SPECIFICALLY TARGETING HIRING TO ADDRESS THE NEED. HOWEVER, THEIR PLANNING DOES NOT HAVE A LINK TO ANY WORK MANAGEMENT ACTIVITIES.**

### **Conclusions**

**Conclusion 6.7.1:** *RCG/SCG LLC found that AVANGRID's Human Resources Strategic Workforce Plan and the associated processes to be comprehensive and consistent with the employment environment utilities are currently encountering.*

### **Analysis**

Workforce planning at AVANGRID includes extensive analysis of potential future employees which includes a review of potential retirements, a review of the "age bands" of their employee mix, and input from the Business Partners feedback on each business unit's anticipated needs. This assessment is rolled up into the Human Resources Strategic Workforce Plan. From this assessment, potential sources of talent are identified, such as college recruiting

for professional positions or community colleges or trade schools for entry level technical or hourly worker positions. Non traditional sources, such as persons with disabilities, have been targeted this past year.<sup>379</sup> The EEO/AA needs are also factored in to the recruiting requirements and positions are held open if a sufficiently diverse candidate pool has not been identified. Their staffing strategy is to promote from within and hire from outside when the talent need is identified.

The “time to fill” a vacancy is an established metric. The metric is reported out annually. The days “time to fill” results<sup>380</sup> against the established target ranges for the past three years are as follows:

Year	Threshold	Target	Maximum	Actual
2015	31	28	26	44
2014	31	28	26	44
2013	40	36	30	28

**Exhibit 58 - Time-To-Fill metrics**

With the recent merger, the succession planning and talent assessment work has been a limiting factor in their manpower planning effort. They are in the process of identifying the leadership needs to manage the new organization and selecting the individuals internally to fill these positions or recruiting the talent where gaps exist. In several cases, such as the AVANGRID’s Sr. Director of HR and the AVANGRID Officer responsible for Safety and Health, no internal candidate was identified and outside hiring is being pursued.

**Conclusion 6.7.2:** *RCG/SCG LLC found that AVANGRID’s staffing budget process is focused on current headcount and future turnover and does not integrate with any work management or project management forecasts and/or programs.*

### **Analysis**

The Staffing Budget process has been decentralized within each AVANGRID company. Each budget recommendation has been approved by the VP responsible for that organization. The recommendation then has been rolled up into the overall BU’s budget.

At the end of 2015, TM1 was installed as the AVANGRID budgeting system. This system, however, is not used by the rest of AVANGRID Networks. SAP staffing data is downloaded into TM1 as the budget starting point. In 2016, HR was given the additional responsibility to approve any request to fill a vacancy and identify the source, if a vacancy is to be filled. Additionally, the

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<sup>379</sup> Interview C. Garrett 06/09/2016

<sup>380</sup> Response to Data Request HR055

AVANGRID HR Governance organization monitors the budget process and compares the results to the targets set by the AVANGRID senior leadership.<sup>381</sup>

In discussions with leadership in Fleet and CNG management, RCG/SCG LLC did not find any evidence that any work management or project management staffing requirements and forecasts were formally incorporated into the staffing budget process.<sup>382,383</sup> As a result, RCG/SCG LLC could not determine if the employee to contractor mix was appropriate.

### **Recommendations**

**Recommendation 6.7.1:** *RCG/SCG LLC recommends that CNG integrate their work management and project management staffing requirements and forecasts formally into the staffing budgeting process.*

### **6.8 EEO/AA**

#### **Objectives and Scope**

Compliance with EEO laws and the development and maintenance of an effective AA Plan is the minimum requirement of any Diversity/Inclusion Strategy. Workforce or Manpower Planning must take into account the goals of any such strategy. In this section, RCG/SCG LLC determines:

- If the equal employment opportunity and affirmative action (EEO/AA) policies, plans, procedures, and functions are effective and reasonable?
- Do the Diversity and Inclusion programs reach to address cultural barriers to full employment opportunities for all qualified candidates and employees?

#### **Overall Assessment**

**AT AVANGRID, EQUAL EMPLOYMENT OPPORTUNITY (EEO) COMPLIANCE AND AFFIRMATIVE ACTION (AA) PLANNING IS ACCOMPLISHED IN CONJUNCTION WITH CORPORATE COMPLIANCE ACTIVITIES ASSOCIATED WITH THE CODE OF CONDUCT. AVANGRID COMPLIES WITH THE LETTER OF THE LAW REGARDING ETHICS, EEO COMPLIANCE, AND AA PLANNING. SENIOR MANAGEMENT IS NOTIFIED BY E-MAIL ON THE ANNUAL PERFORMANCE OF THE AA PLAN. WHILE NO DIVERSITY OR INCLUSION PROGRAMS ARE CURRENTLY IMPLEMENTED AT AVANGRID, THEY HAVE SAID THEY ARE WORKING ON RE-INSTITUTING A FOCUS ON DIVERSITY AND INCLUSION IN 2017.**

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<sup>381</sup> Interview A. Crane 07/11/2016 and J. O'Neil 06/21/2016

<sup>382</sup> Interview M. Smith 06/02/2016

<sup>383</sup> Response to Data Request OPS042

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### **Conclusions**

**Conclusion 6.8.1:** *RCG/SCG LLC found that AVANGRID's EEO/AA policies and procedures comply with the letter of the law. However, it is lacking any programs directed at Diversity or Inclusion which is necessary to reach to best practices.*

### **Analysis**

EEO/AA compliance and reporting and Code of Conduct compliance is centralized under the Manager of Corporate Compliance and Organizational Alignment. The organization's results are reported under three EEO reports.<sup>384</sup> Several of the 2014 AA Plan goals or minorities were not met<sup>385</sup>

AVANGRID complies with both the letter of the law regarding ethics, EEO Compliance, and AA planning.<sup>386</sup> 2014 goal attainment information was provided to the executive and management team of CNG.<sup>387</sup> The 2015 AA Plan goal attainment analysis has not been completed but is expected to be completed later in 2016 due to an SAP HR data extraction issue. No formal presentations to senior executive regarding AA performance are planned.

RCG/SCG LLC found that the AVANGRID do not have any on going Diversity or Inclusion targeted programs. All of the efforts in this regard are focused on EEO compliance and associated recordkeeping and the annual updating of the AA Plan. They have an established a cross functional Culture Champion Team with representatives across the full organizational spectrum of AVANGRID. The Team Charter is:

*“The purpose of the Culture Champions team is to reinforce and apply the culture shaping concepts using simple activities and to support their respective business leaders in this effort throughout the organization.”<sup>388</sup>*

However, this does not reach to a true focus on diversity and inclusion. This has been cited by CNG employees in the 2015 Straight Talk Employee Survey<sup>389</sup>: *Overarching Themes – UIL: “While employees acknowledge efforts related to UIL’s diversity initiative, it is notable that the belief/confidence in the level of commitment from senior leadership is less strong than it was in 2013.”* Best in class companies have moved well beyond compliance and even diversity alone

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<sup>384</sup> Response to Data Request HR010

<sup>385</sup> Response to Data Request HR049 CNG-SCG Attachment 1

<sup>386</sup> M. Bissell Interview 06/03/16

<sup>387</sup> Response to Data Request HR049 CNG-SCG Attachment 1

<sup>388</sup> Response to Data Request HR048

<sup>389</sup> Response to Data Request HR051

(A focus on who gets invited to the party). They are now additionally focusing on Inclusion (A focus on asking an individual to dance).

Their Ethics Hotline continues to be operational and has received calls annually from approximately 2% of the CNG and SCG employees over the past three years.<sup>390</sup> These complaints have been investigated promptly by the Manager of Corporate Compliance.<sup>391</sup>

The Recruiting area supports the diversity to the point where they will hold a position open if the candidate pool isn't deemed to be sufficiently diverse.

### **Recommendations**

**Recommendation 6.8.1:** *RCG/SCG LLC recommends that AVANGRID develop a Diversity and Inclusion program consistent with Best in Class Companies that reaches well beyond compliance and addresses any cultural barriers to full inclusion in employment for all qualified candidates and employees. Such Program must include an annual formal presentation to the senior leaders of AVANGRID and a report back to all employees.*

### **6.9 Employee Safety**

#### **Objectives and Scope**

This audit reviewed the employee safety performance against the AVANGRID's internal safety performance targets and any benchmarking of performance against other utilities. We looked at whether the utility is effectively benchmarking its employee safety statistics and measuring the effectiveness of its safety programs. Are the roles and responsibilities clearly identified and are these responsibilities executed effectively? Does the historical safety performance reflect an environment of continued improvement?

#### **Overall Assessment**

**CNG'S EMPLOYEE SAFETY PERFORMANCE HAS NOT MET AVANGRID'S MANAGEMENT EXPECTATIONS AND GOALS FOR THE LAST FIVE YEARS. HOWEVER, EXECUTIVE AND MANAGEMENT'S STATED BUSINESS PRIORITIES, REINFORCED BY THE SAFETY METRICS ESTABLISHED FOR MANAGEMENT, DEMONSTRATED THAT IMPROVING EMPLOYEE SAFETY PERFORMANCE IS NO LONGER A CONCERN.**

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<sup>390</sup> Response to Data Request HR050 CNG-SCG Attachment 1

<sup>391</sup>

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## **Conclusions**

**Conclusion 6.9.1:** *RCG/SCG LLC concluded that the AVANGRID has the strategies, policies, and procedures in place and consistent with industry practices; the roles and responsibilities are clearly delineated; and the safety personnel are executing their responsibilities. However, in some of the functional areas at CNG, operational management is not executing their responsibilities effectively as reflected in the safety results.*

## **Analysis**

The “Safety Roles & Responsibilities” document<sup>392</sup> clearly states AVANGRID’s safety strategy and the role and responsibilities of the Safety personnel, Division management, local supervision, and each employee. Consistent with industry practices, AVANGRID’s safety performance is audited and operation’s safety management is supported by the Safety Specialist assigned to CNG and the Manager of Safety. The Safety organization is part of the AVANGRID Health and Safety organization reporting to the AVANGRID Chief HR Officer.

The Responsibility document lays out the safety strategy as follows (excerpted):

### **SAFETY PHILOSOPHY<sup>393</sup>**

The following safety principles govern UIL’s approach toward safety and are used in all decisions regarding safety. To achieve continuous safety improvement, all employees, from management to hourly workers, will need to know, understand, and accept these principles as the standard reference for a safe work environment.

#### **All injuries can be prevented**

- Be ~~ef~~s cornerstone of our safety approach
- Governs our attitude to unsafe acts and conditions
- Establishes responsibility for reporting unsafe conditions
- Causes us to investigate incidents that could have caused injury

#### **Management is responsible for preventing injuries**

- Provides tools and equipment and PPE
- Provides safety training
- Holds employees accountable for working safely

#### **Working safely is a condition of employment**

- Applies to all employees
- Important aspect for assessing employee’s work
- Impacts chances for promotions and raises
- Persistent disregard can lead to dismissal

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<sup>392</sup> Response to Data Request HR038 CNG-SCG Attachment 1

<sup>393</sup> Response to Data Request HR038 CNG-SCG Attachment 1, p2

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All operating exposures can be safeguarded

- UIL Safety Manual
- OSHA Regulations
- Operating procedures
- Best practices of gas/electric utility trade organizations

Training employees to work safely is essential

- OJT
- Enhanced Skills Training
- Continuous refresher training

Prevention of personal injuries is good business

- Take away from work
- Costs of injuries to the business
- More

#### **Exhibit 59 - SAFETY PHILOSOPHY**

This Philosophy clearly rests the responsibility for injury prevention on management and the employees performing the work. Recognition of this responsibility by management in CNG was not evident. Employees expressed concern regarding management's responsiveness to safety issues brought forth by union employees.<sup>394</sup> A recent field safety audit<sup>395</sup> reflects a lack of safety discussions when a supervisor visits a job site and there wasn't any reinforcement of the need for crew tailboard safety discussions. The union leadership, however, does participate in the monthly Manager's Safety meetings.

The Safety organization is well focused on their specific responsibilities to audit safety performance in the field and issuing safety guidance both at safety meetings and in regular communications with management and employees. There are safety related metrics included in the HR Balance Scorecard. [REDACTED] This Safety Team Goal<sup>396</sup> was:

##### *Safety Team Goal:*

*1. Provide Job Hazard Analysis (JHA) training for all field supervisors so that they can more effectively recognize and understand the risks associated with their field work, and communicate those risks to their direct reports / associates in the field. This will help to lower our injury rates and reduce workers' compensation costs.*

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<sup>394</sup> Interview CNG union employees 06/7/16

<sup>395</sup> [REDACTED]

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<sup>396</sup> [REDACTED]

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*2. Review the previously developed CNG matrix of OSHA required training topics and departments requiring training, develop twenty (20) lesson plans for the identified topics. Second, conduct the associated training for all affected departments and employees.*

*3. Update the safety section of the "Welcome to UIL" presentation, incorporating content from the newly revised safety "Roles and Responsibilities" booklet.*

RCG/SCG LLC recognizes that the Safety Team Goal is consistent with the safety personnel's roles and responsibilities; however, industry practices and our experience find that this Goal should also include an employee safety performance improvement metric. This practice encourages Safety leadership to work in partnership with operations management to drive improvements in safety performance.

**Conclusion 6.9.2:** *RCG/SCG LLC concluded that improving employee safety performance is no longer a concern of AVANGRID's gas executive team and CNG.*

### **Analysis**

The employee safety performance at CNG has not met HR management's expectations over the past five years. Gas Operations management has not set improving employee safety performance as a priority in either 2016 High Level Priorities included in the Management Audit Kickoff Presentation<sup>397</sup> nor in any 2016 performance metrics for CNG management. They had one annual safety performance metric in 2011 thru 2014: Combined Safety Index below 5.0. In 2015, four safety metrics were established: Dart Rate, MVAs, Investigations on time, and Safety Initiatives.<sup>398</sup> Exhibit shows the performance against the safety metrics.

	Combined Safety Index		CNG Metrics	Safety
	Metric	Actual		Actual
2011	5.0	7.5		
2012	5.0	5.44		
2013	5.0	2.83		
2014	5.0	6.11		
2015			DART below 6.07	5.01
2015			MVA below 3.31	3.59
2015			Investigations Completed on Time	95%

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<sup>397</sup> Audit Kickoff Meeting 05/10/2016

<sup>398</sup> Response to Data Request EXE020

			better than 75%	
2015			Safety Initiatives started: 2	3
2016	None		None	

*OSHA DART Rates are the number of employee injuries requiring restricted duty or days away from work per 100 employees. PMVA is Preventable Motor Vehicle Accidents.*

#### **Exhibit 60 - CNG Safety Metrics Performance**

The following Exhibit reflects CNG's safety performance for employee injuries and motor vehicle accident. As can be seen, the performance varies year over year without any trend toward improving performance.

Year	Combined Safety Index Metric	Actual	CNG Safety Metrics	Actual
2011	5	7.5		
2012	5	5.44		
2013	5	2.83		
2014	5	6.11		
2015			DART below 6.07	5.01
2015			MVA below 3.31	3.59
2015			Investigations Completed on Time better than 75%	95%
2015			Safety Initiatives started: 2	3
2016	None		None	

*OSHA DART Rates are the number of employee injuries requiring restricted duty or days away from work per 100 employees. PMVA is Preventable Motor Vehicle Accidents.*

#### **Exhibit 61 - CNG Safety Performance**

AVANGRID does use periodic safety benchmarking to identify companies with best in class performance. The results of such benchmarking provide an excellent summary of the poor safety performance at both CNG and SCG (see Exhibit below).<sup>399</sup>

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<sup>399</sup> Response to Data Request HR024 CNG-SCG Attachment 1

2011 - April 2016 Benchmarks								
Operating Company	Date	LTA Rate	DART Rate	DART Severity Rate	Recordable Rate	Reportable MVA Rate	Preventable MVA Rate	
CNG	2011	4th Quartile	4th Quartile	4th Quartile	4th Quartile	3rd Quartile	3rd Quartile	
	2012	3rd Quartile	4th Quartile	No-Data	4th Quartile	3rd Quartile	3rd Quartile	
	2013	3rd Quartile	4th Quartile	4th Quartile	4th Quartile	2nd Quartile	2nd Quartile	
	2014	4th Quartile	4th Quartile	4th Quartile	4th Quartile	3rd Quartile	3rd Quartile	
	2015	4th Quartile	4th Quartile	4th Quartile	4th Quartile	4th Quartile	4th Quartile	
	April 2016 Ytd	3rd Quartile	3rd Quartile	3rd Quartile	3rd Quartile	1st Quartile	1st Quartile	
SCG	2011	4th Quartile	4th Quartile	4th Quartile	4th Quartile	4th Quartile	4th Quartile	
	2012	4th Quartile	4th Quartile	No Data	4th Quartile	4th Quartile	4th Quartile	
	2013	3rd Quartile	3rd Quartile	3rd Quartile	3rd Quartile	4th Quartile	4th Quartile	
	2014	4th Quartile	4th Quartile	4th Quartile	4th Quartile	4th Quartile	4th Quartile	
	2015	4th Quartile	4th Quartile	2nd Quartile	3rd Quartile	4th Quartile	4th Quartile	
	April 2016 Ytd	4th Quartile	4th Quartile	4th Quartile	4th Quartile	3rd Quartile	4th Quartile	

CNG,SCG Benchmarked against AGA Data.

### Exhibit 62 – Benchmarking Safety Performance

As can be seen above, with limited exception, safety performance, in terms of both employee injuries and motor vehicle accidents, is also poor when compared to other gas companies.

AVANGRID's executive team and the AVANGRID HR executives<sup>400</sup> expressed concern over the poor employee safety performance. They described the problem is an aging workforce and issues associated with strains and sprains. The Safety Dept. performs periodic and focused safety audits.<sup>401</sup> AVANGRID parent company,<sup>402</sup> AVANGRID's insurance carrier, AEGIS<sup>403</sup> and OSHA and CT state safety inspectors<sup>404</sup> have all performed safety reviews. Additionally, the Manager of Safety investigates all safety incidents and near misses along with the operations Manager.

CNG uses limited duty assignments for injured employees to reduce the impact of the injury on operations and get the employee back to work sooner. The daily tailboard discussions must include a safety review and are documented and reviewed by supervision. The agenda for safety meetings varies between CNG and SCG. There is very limited posting of safety related results and proactive safety messages at CNG.

<sup>400</sup> Interviews D. Wilson 07/11/2016 and S. Duncan 06/24/2016,

<sup>401</sup> [REDACTED] CONFIDENTIAL

<sup>402</sup> [REDACTED] CONFIDENTIAL

<sup>403</sup> Response to Data Request HR046 CNG-SCG Attachment 1

<sup>404</sup> Response to Data Request HR025

In spite of these expressed concerns and the above noted actions, none of the metrics established for the management of CNG from 2011 through 2015 seeks to move the targeted safety performance to the 1st or even the 2<sup>nd</sup> Quartile of performance. Combine that with the fact that there isn't any 2016 safety metric for operations management. RCG/SCG LLC can only conclude that employee safety performance improvement is no longer a management concern

### **Recommendations**

**Recommendation 6.9.1:** *RCG/SCG LLC recommends that AVANGRID HR Safety Team Goal include a metric tied to improving safety performance at CNG. Such a metric target should be safety performance at a level that is at least in the 2<sup>nd</sup> Quartile of AGA Gas Company benchmarking companies.*

**Recommendation 6.9.2:** *RCG/SCG LLC recommends that CNG's executive and management scorecards used in their performance appraisal system and variable compensation include a metric tied to improving safety performance at CNG. Such metric target should be safety performance at a level that is in at least the 2<sup>nd</sup> Quartile of AGA Gas Company benchmarking companies.*

## **6.10 Payroll Practices**

### **Objectives and Scope**

In this section, RCG/SCG LLC reviews the Payroll practices for CNG and how these practices compare to those of other companies. This review was Special Topic 16 in the Audit RFP.

### **Background**

Payroll processing is provided through the AVANGRID HR Organization. Within this organization, the Payroll Dept. reports to the VP of Rewards. The Payroll Dept. in CT processes payrolls for UI, CNG, SCG, and other AVANGRID organizational units in CT.

Time and attendance data is captured in "WorkForce" software. This product has the capability to model the payroll rules associated with the various labor contracts. Once the time data is processed in WorkForce, it is downloaded to SAP to calculate the net payroll and issue any paper payroll advice summaries. ADP then processes the payroll checks or direct deposits.

### **Overall Assessment**

**AVANGRID'S PAYROLL PRACTICES ARE CONSISTENT WITH INDUSTRY STANDARDS. THE PROCESS HAS FEW MANUAL STEPS AND IS NOT VERY LABOR INTENSIVE. THE TIME AND ATTENDANCE SYSTEM WAS REPLACED TWO YEARS AGO WITH WORKFORCE SOFTWARE THAT**

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**HAS THE CAPABILITY TO HANDLE ALL THE PAYROLL RULES ASSOCIATED WITH THE LABOR UNION CONTRACT. THIS CHANGE HAS IMPROVED THE PROCESS AND REDUCED THE NUMBER OF OVERTIME PAYMENT ERRORS ASSOCIATED WITH LABOR CONTRACT INTERPRETATION BY THE EMPLOYEES.**

THE PAYROLL PROCESSING PRACTICES ARE CONSISTENT WITH UTILITY PROCESSES WITH LIMITED FIELD FORCE ACCESS TO COMPUTERS. ALTHOUGH AVANGRID IS ROLLING OUT MOBILE DEVICES AND ASSOCIATED APPLICATIONS IT DOES NOT HAVE ANY PLANS TO UPGRADE TO THE MOBILE WORKFORCE SOFTWARE APPLICATION. THIS WILL CONTINUE THE PRACTICE OF FIELD FORCE TIME BEING ENTERED BY OFFICE PERSONNEL.

### **Conclusions**

**Conclusion 6.10.1:** *RCG/SCG LLC found the time and attendance collection and processing practices are consistent with those of utilities having similar penetration of computers in their field operations. The time and attendance process has few manual steps.*

### **Analysis**

Employees with either handheld or personal computer access input their time directly into WorkForce. The remaining employees, mostly field union employees, complete a paper timesheet. This timesheet is input into Workforce by designated time keepers in the local headquarters. Three FTEs in the Payroll Dept. process the payroll for 1900 employees.

Once OEI is implemented at CNG, employees will have the capability of entering their own time and submitting the transaction for supervisory approval.<sup>405</sup>

**Conclusion 6.10.2:** *RCG/SCG LLC found that supervisory review and approval process is working well and has kept the payroll errors to a minimum.*

### **Analysis**

All time sheets are required to be reviewed and approved electronically by the supervisor. The few errors being experienced in the payroll processing are input data errors.

Management did not express any concerns with supervisory oversight and approval of time sheets in either accuracy of the time and attendance data or contributing to a delay in time sheet processing.

**Conclusion 6.10.3:** *RCG/SCG LLC determined that payroll processing of time data requires a minimum amount of data checking and correction.*

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<sup>405</sup> Response to Data Request HR068

### **Analysis**

The Manager of Payroll is responsible for the accuracy of the payroll and the timely delivery of all employee payments. She has the authority to stop or delay the process if she feels there is an accuracy problem. RCG/SCG LLC found that the payroll process produced a limited level of errors that required corrections.

**Conclusion 6.10.4:** *RCG/SCG LLC found the use of payroll direct deposits is high for an organization that does not require all employees to use it. However, the printing of payroll advice summaries for union employees enrolled in direct deposit is inconsistent with industry practices.*

### **Analysis**

Approximately 95% of employees have elected direct deposit.<sup>406</sup> Electronic payroll advice summaries are issued to management and non union employees who have elected this option. Paper payroll advice is issued for all union employees including those who have elected direct deposit. Due to CT laws, employees must elect to direct deposit their pay. The union employees must elect electronic payroll advice summaries. The election of direct deposit and electronic payroll advice options are selected separately through the Employee Self Service intranet site.<sup>407</sup> The Payroll Dept. conducts periodic reminders of the electronic options to encourage employees to select this option.

### **Recommendations**

RCG/SCG LLC has no recommendations for this audit item.

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<sup>406</sup> Response to Data Request HR069

<sup>407</sup> Response to Data Request HR069

## 7. CUSTOMER SERVICE

### Objectives and Scope

From a customer's perspective, Customer Service is the utility. The customer's satisfaction is generally driven by the credibility of employees and the quality of their results in reading the meters, rendering bills, and answering the customer's inquiries. Therefore, a review of the utility's processes and policies for meter reading, collections, call center, billing, and new business services – and the management of its employees in these areas – is necessary. During major emergency events, such as 2012's Super Storm Sandy, Customer Service must coordinate its information on a near real time basis, with the Incident Command Center (ICC) or Emergency Operations Center (EOC), to provide useful, appropriate, and consistent responses to customer inquiries.

Customer focused target, aspirational initiatives include the following:

- Customer satisfaction needs to keep pace with the current day's highly informed and demanding customers.
- Financial support programs must be adequate for poverty level customers.
- Call center service and credit and collection policies need to be aligned with the realities of the current Connecticut economy.
- Meter reading and billing accuracy need to be virtually error free.
- Customer self service technologies (telephone, IVR, mobile, web/internet, social media and "push" SMS technologies) must be incorporated into the customer experience strategy in order to manage costs better and satisfy customer preferences.

To address these concerns, this chapter is divided into the following sections:

- Call Center Operations,
- Credit and Collections and Low Income Programs,
- Billing Practices,
- Meter Reading and AMR,
- Service Theft,
- Customer Complaints and Inquiries,
- Customer Satisfaction, and
- Customer Self Service Technologies.

## Overall Assessment

### **CNG RESPONDS EFFICIENTLY TO CUSTOMER REQUESTS, ISSUES ACCURATE AND TIMELY BILLS, RECEIVES PAYMENTS AND ADMINISTERS LOW-INCOME PROGRAMS THROUGH MULTIPLE CHANNELS IN A PROFESSIONAL, COST-EFFECTIVE MANNER.**

CNG handles customer requests through their call center infrastructure in a professional, cost effective manner and should continue to expand leading edge self service options for their customers desiring to handle their requests in this fashion.

CNG's credit and collections group are well staffed and managed, demonstrating progress over recent years in reducing write offs while working within the state regulations in place for families in hardship and enduring a difficult Connecticut economy.

The CNG billing processes are using leading practices that result in timely and accurate billing and remittance processing while also continuing to seek ways to improve the operation by leveraging external service partners.

CNG's meter reading is completed on a timely basis with highly accurate cost effective readings, and continues to improve the operation wherever possible.

CNG does an effective job in pursuing and prosecuting service theft identified through field personnel but continues to rely on reactive techniques for discovery and hasn't effectively used customer messaging for deterrence.

CNG does an effective job tracking and resolving customer complaints and inquiries.

CNG has multiple customer survey instruments in place to provide customer feedback; however, they provide little actionable feedback that can be used to plan and invest in customer satisfaction improvement initiatives.

CNG is continually looking for ways to expand customer use of self service technologies to keep pace with the evolving preferences of various customer groups.

## Evaluation Criteria

The following evaluation criteria are the principal areas of investigation and the foundation for this chapter.

- To what extent did the Company implement the 2010 audit recommendations?
- Are call center performance statistics on par with those of other CT utilities?
- How are customer satisfaction metrics trending?
- Where satisfaction is below the peer group, what are the major causes for deficiency, and are there plans in place to improve?

- Are there adequate financial support programs for poverty level customers?
- How has the current Connecticut economy impacted the Company's customer service and credit and collection policies?
- How have the company's AMR meters changed CNG performance in meter reading accuracy and billing?
- Are customer self service technologies (telephone and cell phone, the internet and web based, social media, and "push" technologies) being used?
- How effective are customer service and communications during major emergencies?
- How are the public messages being coordinated with other corporate functions responsible for speaking with the public?
- Does the Company have adequate systems for customer billing, accounts receivable, and collections in place to safeguard assets as well as to record, summarize, and report the financial results?

### **Conclusions**

**Conclusion 7.0.1:** *RCG/SCG LLC concluded that CNG has met the intent of the 2010 management audit recommendations. Four recommendations were made in the Customer Service Operations area of the audit.*

### **Analysis**

The auditing firm stated that CNG's office based Customer Service department includes customer relations (the CNG call center), customer billing, and credit and collection functions. The 2010 Management Audit included the following recommendations:

*11 1 CNG should integrate industry benchmark statistics and best practices into its operational planning and performance targeting.*

*Company Response as of 2Q 2011: Complete. Balanced Scorecards are completed for 2011. Regional and national utility statistics have been researched for e billing saturation and bad debt results. Additionally, performance metrics will continue to be evaluated as part of the SAP conversion project and Call Center technology review project with UI.<sup>408</sup>*

RCG/SCG LLC agrees that CNG has begun to compare their scorecard targets to industry benchmarks, but in only a limited fashion. Further benchmarks (in addition to AVANGRID

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<sup>408</sup> Response to Data Request GEN012 Attachment 1

companies) are available for the region and across the country for gas and/or electric utilities in areas such as the cost of customer contact, customer satisfaction trends, and credit & collections performance that will challenge the organization and compare them to industry leaders.

*11 2 CNG should set its customer service performance targets at “stretch” (aspirational) levels.*

Company Status as of 2Q 2011: Complete. Balanced Scorecards are completed for 2011. Regional and national utility statistics have been researched for e billing saturation and bad debt results. Additionally, performance metrics will continue to be evaluated as part of the SAP conversion project and Call Center technology review project with UI.<sup>409</sup>

RCG/SCG LLC has reviewed customer service KPIs as part of the Corporate Scorecard and sees where key metrics such as customer satisfaction, average speed of answer, and customer complaints have progressively raised targets in most cases.

*11 3 CNG should add first call resolution to its internal performance objectives.*

*Company Response: Complete. As of April 2016, UIL has the following in place to track first contact resolution:*

- Customer surveys conducted by an external vendor,
- Post call surveys, and
- Quality Assurance Monitoring.

*The surveys ask the customer whether when they contact the company things are taken care of the first time. The QA program tracks if the customer will need to call back to have their issue resolved. In 2016, the company will continue to benchmark with other companies to assess additional methods for measurement.*

RCG/SCG LLC agrees that CNG has put First Call Resolution tracking in place. This is an extremely challenging measure to capture due to many variables that determine if the customer's request was handled on the first call. They are moving in the right direction and should continue to refine their measurement through internal measures to complement their post call surveys.

**11-4 BEGIN CONFIDENTIAL** 

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<sup>409</sup> Response to Data Request Gen012, Attachment 1.

**END CONFIDENTIAL**

*Company Response as of April 2016: Complete. UIL/AVANGRID is evaluating initiatives designed to assist with peak volumes, including virtual sharing of calls across centers. UIL has completed the implementation of the same customer information system and the same call center technology across all CT and MA companies.*

RCG/SCG LLC agrees that CNG has evaluated these alternatives and has prepared the infrastructure to execute this type of deployment should the decision be made to proceed.

### *7.1 Call Center Operations*

#### **Objectives and Scope**

The Call Center must be positioned to handle a wide variety of customer inquiries efficiently and effectively. Call centers must be staffed with trained customer service representatives (CSR) who understand the company policies and can offer the right level of empathy for customers. Further, there needs to be a clear balance among call time, the time spent on a call with a customer, and ensuring that the customer's issue is resolved to the customer's satisfaction, as much as possible on the first call. For a number of years CSRs were heavily incented to complete calls in less than three minutes. As a result of this efficiency policy, however, customers were making repeated calls to get the answers they needed. Enlightened utilities realized that setting an artificial efficiency time limit on calls just created more calls, so they revised their policy to more of a "one call resolution."

Today's call centers rely on multiple means of handling customer inquiries, specifically, CSRs, interactive voice recognition (IVR), email, mobile applications, and even social media. Well established call center operations drive a significant level of their calls through the automated solutions, but offer an easy way to get to a CSR, when necessary, especially for customer requests that are more advice than transactional. Also, these operations have a means to escalate "problematic" calls to a higher level.

CSRs receive on going training to ensure they possess the level of knowledge to address any customer issue and situation effectively. Management has the ability to monitor CSR performance to ensure the level of responses meets their quality standards.

During times of emergencies, the Call Center has the means to expand its call handling ability through both automated and additional CSRs.

## Overall Assessment

**CNG HANDLES CUSTOMER REQUESTS THROUGH THEIR CALL CENTER INFRASTRUCTURE IN A PROFESSIONAL, COST-EFFECTIVE MANNER, AND SHOULD CONTINUE TO EXPAND LEADING-EDGE SELF SERVICE OPTIONS FOR THEIR CUSTOMERS DESIRING TO HANDLE THEIR REQUESTS IN THIS FASHION.**

### Evaluation Criteria

The following evaluation criteria focused on the call center:

- To what extent did the Company implement the 2010 audit recommendations?
- Are call center performance statistics on par with those of other CT utilities?

CNG currently operates a customer call center in East Hartford, CT with approximately 20 call takers that handle calls for requests that include billing, service, general topics, and leak calls. The CNG agents or CSR's are well trained and professional, operating in a well designed and modern center. Annually, roughly half of the agent handled calls are routed to and addressed by iQor agents, an outsourced business partner.<sup>410</sup> Their agents handle calls for credit, to administer turn on's to collect, and move ins/move outs. The call center also has an Interactive Voice Response (IVR) system that is available for customer requests that can be self served. Over the last five years, more than half of all calls received are handled by the IVR system.<sup>411</sup>

Calls received have averaged approximately 6 minutes per call for the prior two years, budgets are down since 2012 by over 10%, and inbound volumes have remained flat for the years 2013 2015 and are down by 20% for the first four months of 2016.<sup>412</sup> Over the same period of analysis, the cost per voice call has dropped from approximately \$4.30 per call to \$3.54.<sup>413</sup>

Customer Service leadership shared that since the acquisition by Iberdrola and formation of Avangrid Networks, there have been no substantial changes for the CNG Customer Services organization. Leadership is also optimistic that AVANGRID takes a well balanced approach to evaluating investments and/or changes by decision making based on a combination of cost reduction and customer experience impact.<sup>414</sup>

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<sup>410</sup> Interview: B. Reis 05/12/16.

<sup>411</sup> Response to Data Request CS001.

<sup>412</sup> Interview: B. Reis 05/12/16.

<sup>413</sup> Response to Data Request CS001.

<sup>414</sup> Interview: B. Reis 05/12/16.

### **Conclusions**

**Conclusion 7.1.1** RCS/SCG LLC has identified how CNG addressed the 2010 audit recommendations regarding the call center in the beginning of the Customer Service chapter above.

**Conclusion 7.1.2** RCS/SCG LLC found that CNG's Call Center effectively handles customer calls and continues to investigate and apply leading practices to improve service.

### **Analysis**

As CNG's call volumes have remained flat and the budget has been reduced, they have reduced the abandoned call rate from a high of 17% in 2013 to a rate of 8.3% for 2015. At the same time, the Average Speed of Answer (ASA) without technology has fallen to 238 seconds from a high, also in 2013, of 542 seconds (nearly 10 minutes). 2013 was also the year a large SAP conversion took place, which lengthened CSR's call and wait times. The Exhibit below shows the improving performance.<sup>415</sup>

While this is a substantial improvement, there is still more to be done to bring abandonment rates (leading practices are in the low single digits) and ASA rates (leading practices are less than 60 seconds) closer to leading practices in the industry. Surprisingly, call center transactional customer satisfaction surveys have only slipped mildly during this same period of lagging service levels, from 88.5% satisfied in 2012 to 86.3% satisfied in 2015.<sup>416</sup>

Increasing budgets can help to improve these critical customer dissatisfiers, but with a pool of only 20 agents, it's difficult to accommodate the normal seasonal and weekly peaks. In addition, better analytics may provide improved staffing models with the budget that is in place.

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<sup>415</sup> Response to Data Request CS001.

<sup>416</sup> Response to Data Request CS003, Attachment 1.

Year	Call Statistics - CNG						
	Total Calls	Handled by IVR	Calls Handled - Live Rep	Abandoned Calls	% Abandoned Calls	Average Speed of Answer - Without Technology - seconds	Average Speed of Answer - With Technology - seconds
2011	827,600	379,694	403,940	43,966	5.3%	157	65
2012	764,874	339,118	327,818	97,938	12.8%	372	139
2013	946,380	465,040	318,820	162,520	17.2%	542	156
2014	953,616	491,815	370,851	90,950	9.5%	314	135
2015	959,970	455,347	424,732	79,891	8.3%	238	111
Jan Apr 2016	264,991	135,051	122,026	7,914	3.0%	73	35

### Exhibit 63 - CNG Call Center Performance Statistics

**Conclusion 7.1.3** RCS/SCG LLC has concluded that CNG has put in place reliable technology to provide customers with self service options for many of their requests, helping to offload voice calls to agents in order for customers to handle their requests via self service options.

#### Analysis

Accommodating customers' desires to "self cure" or handle their own requests, if offered in a simple and straightforward way, is more satisfying to customers and reduces costs on the utility and its ratepayers. CNG has seen calls handled by the IVR grow from 44% in 2012 to 51% in the first four months of 2016.<sup>417</sup> Additionally, payments made through the website or IVR have grown by over 150% since 2012, an increase that is keeping up with leading utilities and customer preferences in most industries.

#### Recommendations

**Recommendation 7.1.1** RCG/SCG LLC recommends analysis be conducted to evaluate consolidation of call centers, perhaps initially in a virtual manner across gas and/or electric companies in Connecticut or across Avangrid Networks companies and then evaluate physical consolidation of centers across the Avangrid Networks business, insure the ring fence of commitment remains. Potential benefits include economies of scale across staffing models, deeper competencies across major business functions, and better leverage of strategic technologies. As part of the analysis, customer feedback on service functions they might have an interest in that aren't currently available with smaller, individual company budgets, should be identified along with a pro forma financial model of the economic differences in distributed,

<sup>417</sup> Response to Data Request CS001.

*virtually consolidated, and physically consolidated (multiple centers for back up and overflow). Challenges to consolidation will continue to involve multiple unions and other corporate issues that will need to be addressed.*

**Recommendation 7.1.2** *RCG/SCG LLC recommends enhancements to existing technology platforms and delivery of additional functions will enhance the customer experience with the utility, improve service delivery, offload calls to self service, and lower overall costs for customer support. Recommendations include improving the corporate web site to provide more personalized information and enable functions on the web site and/or mobile platform for service requests including self service move in/move out, appointment scheduling, payment arrangements, and payment extensions. Through ongoing customer dialogue, identification of what's important to customers should be carried out and how they want to be informed of, potentially proactively, areas such as alerts or notifications that a bill is due or past due, the ability to make a payment on a mobile device, or awareness of field work in a customer's neighborhood that will impact their service.*

## *7.2 Credit & Collections and Low Income Programs*

### **Objectives and Scope**

RCG/SCG LLC's review of Credit & Collections and Low Income programs focused on the activities and results of the department's activities. The team reviewed whether there is a clear definition of roles and responsibilities and well documented policies and procedures that captured institutional knowledge of current practices. Further, each area (as discussed below) had specific measurements or tests that the Team evaluated to determine if the specific function is operating effectively, efficiently, and (where necessary) coordinates well with other functions.

The review included organization and management functions and their contributions to the effectiveness of the group and adherence to the State of Connecticut Regulatory policies for Credit and Collections and Low Income assistance programs.

The following evaluation criteria focused our investigation and served as a foundation for this assessment:

### **Overall Assessment**

**CNG'S CREDIT AND COLLECTIONS GROUP IS WELL STAFFED AND MANAGED, DEMONSTRATING PROGRESS OVER RECENT YEARS IN REDUCING WRITE-OFFS WHILE**

## WORKING WITHIN THE STATE REGULATIONS IN PLACE FOR FAMILIES IN HARDSHIP ENDURING A DIFFICULT CONNECTICUT ECONOMY.

A collections staff of 14 (including a few shared with its sister company SCG), including a supervisor, focus on the collection of delinquent accounts and on the development of new programs and procedures that aid in the collection of arrears in order to mitigate potential write offs.<sup>418</sup> Recently, a new role has been added, a hardship administrator, to work specifically on hardship cases for customers.<sup>419</sup> The staff is split between office workers and field workers. The office staff is responsible for coordinating activities related to theft of service; acting as a liaison between the company credit outsourcing contracts, Community Action Agencies, the Department of Social Services and field workers; and managing bankruptcy activity and hardship coding for low income programs. The field personnel support field collection of payments.<sup>420</sup>

When an account goes delinquent, CNG follows the prescribed regulatory process and begins dunning at five days via a mailed letter, and then a courtesy call before the next 13 15 days are up should the account still be delinquent. Shut off follows this if there is still no payment received, and extension may be provided if payment arrangements are agreed upon. The exception to this would be if this falls during the moratorium period of November 1<sup>st</sup> through May 1<sup>st</sup> and the customer has qualified as a hardship financial case.<sup>421,422</sup>

RCG/SCG LLC found CNG is using a wide range of collection practices—outsourced call center agents, in house personnel, credit bureau reporting of delinquent accounts, a legal firm which handles escalated collection efforts on accounts with delinquent balances of \$1,000 or more or greater than sixty days delinquent, collection agencies for inactive accounts, and automated resources—to address the increased number of delinquent accounts.<sup>423</sup>

All in bound customer collection calls are handled by a third party call center (iQor)<sup>424</sup> or by using the interactive voice response (IVR) to make a payment.

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<sup>418</sup> Response to Data Request CS050.

<sup>419</sup> Interview: B. Reis 05/12/16.

<sup>420</sup> Interview: L. Gonzalez 06/07/16.

<sup>421</sup> Interview: L. Gonzalez 06/07/16.

<sup>422</sup> "The Winter Moratorium is the time period from November 1 through May 1 when customers who are deemed a "hardship case" (because of income or illness) cannot have their utility service terminated if they lack the financial ability to pay their entire bill for gas or electric service. The customer is required to apply to the company with proof of hardship, at which time if the requirements are met, the customer's account is put into protected status." See: <http://www.ct.gov/pura/cwp/view.asp?a=3352&q=404054>.

<sup>423</sup> Response to Data Request CS006.

<sup>424</sup> iQor is a large outsourcing company that "provides customer service, third-party collections and accounts receivable management". See: <https://www.iqor.com/>.

The Company provides a dedicated credit and collections team to collect past due balances and assist customers with options to pay arrearages via payment plans and an arrearage forgiveness program.

Security deposits may be requested and collected, based on the evaluation of customers' ability to pay, from both residential and commercial customers to mitigate the impact of bad debt. At account initiation, commercial customers may be required to pay a security deposit. Both commercial customers and residential customers may be required to pay a security deposit as terms of a credit reconnection of service. Customers may also be required to pay a security deposit when they have had payment issues in the past. All deposits may be held until the customer demonstrates twelve consecutive months of good payment history. Residential customers that have verified financial hardship or an inability to pay may have their deposit waived or refunded. Students are not required to use guarantors on their accounts.<sup>425</sup>

The Company provides outreach to customers via bill inserts, letters, calling campaigns, events, inbound phone calls, and referrals to Community Action Agencies (CAA)<sup>426</sup> to educate customers on additional resources available to them, to code the customer's account hardship, and to enroll the customer into an arrearage forgiveness program.

Accounts that meet the criteria established in the 2014 Connecticut General Statutes, CT Title 16, Sec. Chapter 283, 16 262c "Termination of utility service for nonpayment" are routed through the Company's disconnect process which uses both a disconnect notice, next bill notification of delinquency, and outbound calls to attempt customer notification of the potential for disconnect due to nonpayment and to allow the customer to make payment on their account. Currently, SMS/Text messaging is not utilized for slow paying or delinquent customers to notify them of unpaid balances or upcoming shut offs. Customers who do not make the required payment, or are ineligible for a payment plan, or decline a payment plan or participation in the Matching Payment Program, and continue to meet the requirements for service termination set in Sec.16 262c, may have their gas service interrupted.

In cases where the regulations do not permit the termination of service due to nonpayment, the Company may pursue legal action to remedy the arrearage. In cases where access to the Company's equipment may not permit the termination of service due to nonpayment, the Company may attempt to terminate service at the street, if applicable, or move Company equipment to a location where it is accessible.

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<sup>425</sup> Interview: L. Gonzalez 06/07/16.

<sup>426</sup> There are Community Action Agencies such as Action for Bridgeport Community Development, Inc. (see: <http://www.abcd.org/>), Community Action Agency of New Haven (see: <http://www.caanh.net/>), and Community Renewal Team, Inc. (<http://www.crtct.org/en/>), among others that help low income customers access energy assistance programs.

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In recent years, the company has begun to prioritize the shut offs to be executed based on factors involved to optimize productivity and influence customer behavior in a positive way. In past years, the goal was focused on the number of total shut offs. This was heavily influenced by the ability to easily access a meter. Now, through expanded analytics software (DebtNext), other factors are reviewed including weather, the age of outstanding balance, dollars in arrears, and location of the meter (inside vs. outside). One area where additional analytics are applied is to forecast, when a customer is late with payment, is the customer most likely to pay and become current. If so, these customers should not be put on a shut off list and induce an expensive truck roll to disconnect service. The goal has now transitioned more to outstanding dollars and to achieve 80% collectibles current and 20% delinquent. Currently, CNG is at 41% delinquent.<sup>427</sup>

When a customer does call with a delinquent account, all efforts are made to have a partial payment provided to demonstrate progress. If the customer can't pay the full amount, they are asked initially to pay 75%, but the company agent is able to move down to a minimum of 20% to maintain service. Regulations allow for a onetime 20% payment arrangement with an agreement and/or budget plan going forward.

Pursuant to 2014 Connecticut General Statutes section 16-262c, paragraph b (5), all Connecticut utilities file an annual joint Arrearage Forgiveness Program. This regulation allows those customers that qualify (an income of 60% or less of the State average income) are deemed hardship and can participate in an arrearage forgiveness program as well as being protected from any interruption to service during the moratorium period of November 1<sup>st</sup> through May 1<sup>st</sup>. Customers have to demonstrate income (initially) through one of the community action agencies. In the past, customers had to reapply each year, but now they are "auto enrolled" for another season, even if they didn't complete the prior program successfully.<sup>428</sup> Until the customer's financial situation improves, they remain in the financial hardship category and balances have generally grown season to season and year over year.

At the end of 2015, CNG had approximately 14,000 customers participating in the plan and receiving energy assistance (EA). Of these roughly 50% completed the plan successfully. The group of customers enrolled represents 93% of the customers that were eligible for the program. This is up from a 56% participation rate as recently as 2013.<sup>429</sup> In addition to the customers qualifying for financial hardship, another approximately 1,100 or 6% of hardship customers were medical hardship cases.<sup>430</sup> There are no criteria for being deemed a medical

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<sup>427</sup> Interview: L. Gonzalez 06/07/16.

<sup>428</sup> Interview: L. Gonzalez 07/13/16

<sup>429</sup> Response to Data Request CS024.

<sup>430</sup> Response to Data Request CS023.

hardship except for a physician completing an approved PURA form.<sup>431</sup> These customers are also protected from shutoffs during the heating season moratorium. There is currently no financial review of medical hardship customers.

When a customer's service ends or there is a move out, the Company issues a final bill to the customer. Should the account remain unpaid, an outbound call is placed that enables customers to make their payment through the Company's IVR either during or subsequent to the call. If these attempts to secure payment are unsuccessful, after 45 days, the final billed account is transmitted to Nair & Levin P.C.,<sup>432</sup> a legal firm, for resolution or final collection.

If after persistent attempts, these accounts aren't settled, the accounts are turned over to a more traditional collection agency. The use of collection agencies and credit bureau reporting started in the 2012 2013 timeframe.<sup>433</sup>

RCG/SCG LLC found that CNG is continuously seeking innovative and reasonable methods to improve its credit and collection effectiveness. Over the last few years, the Credit and Collections organization has taken actions to improve collections performance through enhanced processes, analytics initiatives, and strategic staffing with the overall goal of reducing bad debt expense.

In addition to the activities mentioned above, since the last audit, CNG began a series of initiatives and actions to improve collections performance in the following ways:<sup>434</sup>

*Expanded leverage of partner resources:* The Company has expanded its efforts around collections through the use of partner resources to extend its capabilities. These include continued reporting of delinquent accounts to credit bureaus, working with a legal firm for early stage collections activities, partnering with a collection agency for later stage and ongoing close collaboration with the iQor contracted call center. Additionally, the company is now able to receive bankruptcy notices online, enabling them to make more timely adjustments to accounts and make decision for charge offs.<sup>435</sup>

*Movement to more aggressive shut off activities:* As mentioned above, since 2013 when the company's shut off activities due to an SAP information technology conversion were severely hindered, shut off actions have risen by 60% in the 2013 2015

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<sup>431</sup> Interview: L. Gonzalez 07/13/16

<sup>432</sup> See: <http://www.nairlevin.com/areas-of-practice>.

<sup>433</sup> Interview: L. Gonzalez 06/07/16.

<sup>434</sup> Response to Data Request CS006.

<sup>435</sup> Response to Data Request CS008

period.<sup>436</sup> The company is now utilizing CAD mobile technology to complete field disconnections versus an older, slower manual process.

*Review of documentation and key metrics on a regular basis:* Over the last few years, the Credit & Collections team has begun to set specific targets, capture progress, and track results for key collections information. Below is a sample of the Credit & Collections of the CNG Customer Service Dashboard.

CNG -Customer Service - Credit and Collections								
Credit and Collections data input: R.Rodriguez		monthly results		YTD results	Projected Year End "Results"	threshold	target	maximum
June	Dashboard performance							
<b>Goal 1: Uncollectible Factor</b>								
		Monthly results	YTD results	Projected Year End "Results"	threshold	target	maximum	weights
	Uncollectible Factor*				1.70%	1.59%	1.48%	5%
<b>Goal 2: Improve Operational Performance</b>								
Greater than 60 improvement for year end 2016 over year end 2015**					-5%	-7%	-10%	20%
Percent greater than 60 days (60+ buckets)					35%	30%	25%	20%
Collection Efficiency (Benchmark with PSEG & AGA participants)					40%	50%	60%	15%
Budget Reduction in Uncollectible Expense (NHS Charge Offs and Amortization)					5%	0%	-5%	20%
Recover Rate - Year End % of dollars recovered by 3rd party					20%	25%	30%	20%

Exhibit 64 - Credit and Collections Dashboard<sup>437</sup>

## Evaluation Criteria

- Are there adequate financial support programs for poverty level customers?
- How has the current Connecticut economy impacted the Company's credit and collection policies?
- Are the company's credit and collection policies effective in minimizing customer account write offs?
- Does the Company have adequate systems for customer billing, accounts receivable, and collections in place to safeguard assets as well as to record, summarize, and report the financial results?

<sup>436</sup> Response to Data Request CS026

<sup>437</sup> Response to Data Request CS021.

### **Conclusions**

**Conclusion 7.2.1:** RCG/SCG LLC did not find any recommendations for Credit & Collections/ Low Income programs resulting from the 2010 CNG Company audit.

**Conclusion 7.2.2:** RCG/SCG LLC concluded that the CNG Credit & Collections team has reduced write offs in recent years while working in a challenging regulatory and economic environment, but it's difficult to project how performance will be going forward.

### **Analysis**

RCG/SCG LLC concluded a mixed set of influences have combined to affect CNG's Credit and Collections performance over the last few years. From a Connecticut economy point of view, the home energy affordability gap has increased by 7% over the last 4 years and existing sources of energy assistance continue to be insufficient to address the gap.

While the gap has expanded from an economic point of view, at the same time the delivered price of natural gas has dropped by 15% from 2013 through 2015.<sup>438</sup> Additionally, the weather over the most recent 2 3 years has not been out of the ordinary.

During this period, CNG has undertaken the initiatives and programs described in the above section, such as more aggressive shut off activity, leveraging additional external resources to more aggressively pursue delinquent accounts, and conducting better analytics to optimize the dollars spent and collected.

The results show that in 2015, the uncollectible expense for CNG was [REDACTED] and when amortization was added of \$2.6 million totaled [REDACTED] that was 2.73% of sales.<sup>439</sup> In 2014, the uncollectible expense including amortization was \$9.45 million and 2.55% of revenues;<sup>440</sup> although the percentage rose from 2014 to 2015, revenues dropped by 20% in the same period. In 2014, looking at the New England (gas only) region as a benchmark<sup>441</sup> (the only year CNG had as a reference), the average uncollectible expense was 2.28% and also in 2014, Yankee Gas' uncollectible expense as a percent of revenues was 2.61%.

In 2016, the target set on the AVANGRID Networks Performance Scorecard was increased to \$6.8 million from the 2015 result of [REDACTED] (not including amortization expense that may be added).<sup>442</sup> It is unclear how the collections efforts will trend over the coming years with the

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<sup>438</sup> The Home Energy Affordability Gap Report for 2015 in Connecticut – Published by Fisher, Sheehan & Colton

<sup>439</sup> 2015 FERC Form 2, Pages 26 for 2015 revenue and page 133, for Account 904, 2015 uncollectibles.

<sup>440</sup> 2015 FERC Form 2, Pages 26 for 2014 revenue and page 133, for Account 904, 2014 uncollectibles.

<sup>441</sup> [REDACTED] CONFIDENTIAL

<sup>442</sup> Response to Data Request Exe003, Attachment 1.

uncontrollable influences of weather severity, gas prices, Connecticut regulatory policies, the Connecticut economy performance, and federal/local funding for energy assistance.

**Conclusion 7.2.3:** *RCG/SCG LLC concluded that Low Income programs are administered properly by CNG but contribute to the difficulty in experiencing a higher collections success rate.*

**Analysis**

RCG/SCG LLC has found that there is good customer awareness of the low income programs offered in the state of Connecticut and good coordination with community action agencies and other sources of information to facilitate to the greatest degree possible the administration and enrollment of qualified customers.

The participation rate has increased over the last two years while the number eligible has dropped, due to better awareness programs from the utility and other entities participating in the energy economy.<sup>443</sup>

There are some challenges from the existing regulatory environment that the company continues to work through but they can have a negative impact on collections. The combined influences described in the above section have increased CNG's receivables situation with the percentage of hardship receivables moving from 21% of the total up to 30% in 2015.<sup>444</sup> These are generally more difficult and take longer to collect.

**Conclusion 7.2.4:** *RCG/SCG LLC concluded that accounts receivable for CNG's non hardship customers have grown longer and larger in recent years than might have been anticipated.*

**Analysis**

RCG/SCG LLC observed that total receivables for non hardship customers saw a reduction of 30%, from \$61.6 million in 2013 to \$43 million in 2015. As shown in the Exhibit below, however, for non hardship customers, during this same 2013 2015 period, 90 day and 60 day receivables grew by 14%.<sup>445</sup> It will be important to maintain the programs put in place for dunning, communicating and proactively responding each and every year. Non hardship uncollectibles made up 70% of total uncollectibles for 2015.<sup>446</sup>

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<sup>443</sup> Response to Data Request CS024.

<sup>444</sup> Response to Data Request CS025.

<sup>445</sup> Response to Data Request CS025, Attachment 1 – CNG tab.

<sup>446</sup> Response to Data Request CS025, Attachment 1 – CNG tab.

CS025 CNG-SCG Attachment 1									
Management Audit of Connecticut Natural Gas Corporation Southern Connecticut Gas Company				Witness: Laura Gonzlez Page 1 of 2					
<b>CONNECTICUT NATURAL GAS</b>									
COMBINED	CURRENT	30 DAYS	60 DAYS	90 DAYS	TOTAL				
2015	\$36,798,720	\$1,301,873	\$620,983	\$23,489,131	\$62,210,707				
2014	\$50,758,552	\$1,506,747	\$1,475,183	\$24,587,940	\$78,328,423				
2013	\$51,605,900	\$2,895,557	\$784,868	\$22,337,058	\$77,623,383				
Tota	\$139,163,172	\$5,704,177	\$2,881,035	\$70,414,129	\$218,162,513				
HARDSHIP	CURRENT	30 DAYS	60 DAYS	90 DAYS	TOTAL	%Hardship of Combined			
2015	\$6,918,320	\$496,620	\$10,671	\$11,513,839	\$18,939,450	30%			
2014	\$9,288,196	\$621,994	\$638,174	\$12,453,215	\$23,001,580	29%			
2013	\$2,959,122	\$1,031,347	\$259,140	\$11,813,015	\$16,062,625	21%			
Tota	\$19,165,638	\$2,149,961	\$907,985	\$35,780,070	\$58,003,655	27%			
NON-HARDSHIP	CURRENT	30 DAYS	60 DAYS	90 DAYS	TOTAL	% non-hardship of combined			
2015	\$29,880,400	\$805,253	\$610,313	\$11,975,292	\$43,271,257	70%			
2014	\$41,470,356	\$884,753	\$837,009	\$12,134,725	\$55,326,843	71%			
2013	\$48,646,778	\$1,864,210	\$525,728	\$10,524,043	\$61,560,758	79%			
Tota	\$119,997,534	\$3,554,216	\$1,973,049	\$34,634,060	\$160,158,859	73%			

#### Exhibit 65 - CNG Accounts Receivable by hardship & non-hardship customers

#### Recommendations

**Recommendation 7.2.1:** RCG/SCG LLC recommends that CNG should continue to pursue the identified collection improvement initiatives as well as benchmark other gas and non energy consumer based industries to refine best practices in the activities of notifying customers, analyzing which customers to pursue, and reducing write offs. CNG needs to maintain focus on non hardship financial customers to reverse the trend of longer accounts receivables for this segment.

**Recommendation 7.2.2:** RCG/SCG LLC recommends, without regulatory change to Connecticut's low income programs, CNG evaluate and conduct a thorough analysis to identify initiatives and evaluate the cost/benefits of various proactive and innovative programs to lessen the financial burden on the utility and its ratepayers by reducing expected losses from uncollectible expenses of hardship customers and/or reducing extended accounts receivables.

The analysis, prior to identifying solutions, should evaluate results based on areas such as sub categories of customers that struggle, their usage patterns, home environment energy efficiency, customer knowledge of and/or participation in conservation activities, predictive events that might indicate delinquency, and alternative guarantor programs, etc.

*Some of these programs might include:*

- Means testing for medical hardship;
- Leveraging digital channels, especially with low income customers, as many don't have home phones any more, with proactive alerts that might include SMS/text notifications for balance due, minimum balance due, apply for an extension, balance past due, shut off notifications rather than paper (opt in that can be gained through waiving fees at some earlier point);
- Reviewing deposit program, especially for students, to include a parental or guardian guarantor after determining how many students from financially stable families have their accounts end up delinquent and/or written off;
- Conducting analytics to better understand customer situations to identify early warning signals that might indicate that something more definitive should be done by the utility earlier;
- Conduct an ongoing analysis to review those customer accounts that have been in hardship status for more than one year to better understand how long they've participated, success rates, and total outstanding balance averages for this group;
- Modifying the regulatory reimbursement levels for the utility and potentially float with fuel charges or price of natural gas to change the levels of reimbursement; and
- Conducting analyses of customer profiles that are in financial hardship status evaluating their home (age, vintage of furnace and/or water heater, size, usage of gas vs. other similar homes), income levels, etc. and develop a program to retro fit a certain number of homes per year to reduce their wasted energy usage and lower the home's future bills.<sup>447</sup>

### 7.3 Billing Practices

#### Objectives and Scope

The three components to billing practices are billing generation, bill presentment, and remittance processing. CNG's customer billing is done through SAP's enterprise platform Version ECC 6.0 Enhancement Pack 6. Billing performs the bill calculation and produces the

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<sup>447</sup> For example, CNG might develop a special energy conservation program directed solely at hardship customers that might include the installation of additional insulation in attics and/or walls, insulating hot water heaters, furnace "tune up," minor weather stripping, etc. Such a program would have the added benefits of creating jobs in the energy service sector, reducing greenhouse gases, and reducing peak loads on the CNG system as well as reducing overall uncollectible expenses.

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billing data after receiving periodic meter readings. Bill printing or eBill presentment processes ensure the bills are delivered on time and accurately. Remittance processing advances the customer payments and associated deposits of this cash to the utility's bank account.

There are currently 9 people in the CNG billing department that work on billing exceptions on a daily basis for the 18 billing cycles run each month. This team works on high low edits and tracks "kick outs" of bills falling outside of billing boundaries. Additionally, the department focuses on vendor efficiencies and continuing to pursue innovations through other vendor offerings to improve bill presentment or remittance processing options.

## **Overall Assessment**

**RCG/SCG-LLC CONCLUDED THAT THE CNG BILLING PROCESSES ARE USING LEADING PRACTICES THAT RESULT IN TIMELY AND ACCURATE BILLING AND REMITTANCE PROCESSING WHILE ALSO CONTINUING TO SEEK WAYS TO IMPROVE THE OPERATION BY LEVERAGING EXTERNAL SERVICE PARTNERS.**

## **Evaluation Criteria**

The following evaluation criterion focused on meter reading and AMR:

- How have the Company's AMR meters changed CNG performance in meter reading accuracy and billing?

## **Conclusions**

**Conclusion 7.3.1:** *RCG/SCG LLC concluded that CNG has completed the recommendation from the 2010 audit related to billing by migrating the customer billing system to SAP enterprise platform.<sup>448</sup> The recommendation was from section 18 1 Information Technology – "Iberdrola should begin the process of replacing CNG's Customer One billing system with an SAP based system which the New York utilities are already using or demonstrate that such a change is not beneficial."*

**Conclusion 7.3.2:** *RCG/SCG LLC concluded that billing generation is done in a timely and accurate manner.*

## **Analysis**

CNG's billing generation process begins each day a meter reading cycle is run. Meter readings are entered in to the billing system within 24 hours after meters are read. Bills are

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<sup>448</sup> Response to Data Request CS032

then produced, posted electronically, and mailed within 48 hours after readings are entered into the billing system.<sup>449</sup>

The bills are printed and inserted for mailing, as well as eBills posted by Kubra (<http://kubra.com/>), a print based, customer interaction management provider, at their processing center in New Jersey. All service level agreements with CNG have been met to date.<sup>450</sup>

The key metrics to determine billing accuracy and timeliness are the number of estimated bills that need to be done and erroneous billing amounts produced based on incorrect input. Estimated bills are a good gauge at billing accuracy and timing. CNG has continued to reduce their estimated bills each year. In 2015, they estimated less than .2% of all bills.<sup>451</sup> CNG also runs edits of the bills generated and reviews those exceptions by billing clerk inspection to make sure they are accurate. On average, 16% of the bills generated have an exception and less than 1% require a cancel and rebill.<sup>452</sup> Auditing reviews these high low checks on a regular basis to determine whether adjustments are needed. The last review was June 2015.<sup>453</sup>

**Conclusion 7.3.3:** *RCG/SCG LLC found that CNG remittance processing is using industry leading practices, resulting in timely and accurate customer payment processing. They also offer payment options comparable to leading industry participants.*

### **Analysis**

CNG uses three methods to receive customers' payments: lock boxes for check payments; online or IVR programs for payments using credit cards, ACH, and EFT; and approximately 50 walk in centers for customer cash payments. Third party contractors, including Kubra and Century Bank,<sup>454</sup> provide all of these methods.<sup>455</sup> In a recent survey, over 85% of customers expressed satisfaction for electronic bill payment methods that CNG offers.<sup>456</sup> Currently, approximately 25% of customers subscribe to eBilling, which is in the upper quartile of American utilities. The billing team continues to focus on increasing the eBill adoption rate and optimizing vendor performance for costs and customer service quality.

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<sup>449</sup> Response to Data Request CS030

<sup>450</sup> Response to Data Request CS031

<sup>451</sup> Response to Data Request CS011

<sup>452</sup> Response to Data Request CS038

<sup>453</sup> Response to Data Request CS039

<sup>454</sup> Interview: B. Reis 05/12/16.

<sup>455</sup> Response to Data Request CS015 – Attachment 1

<sup>456</sup> Response to Data Request Com015- 2016 CNG Residential Survey

### **Recommendations**

**Recommendation 7.3.1:** *RCG/SCG LLC recommends redesigning the bill, including sister company's bills with the appropriate variety of individual company logos, to personalize messaging to customers whether they receive paper or eBills. Additionally, enhancing the eBill, potentially an interactive bill delivered via email or SMS, and offering a different experience may drive more customers to higher adoption rates. Recently, eBill adoption has stagnated and even reversed.<sup>457</sup> Customers constantly seek new information and innovative vehicles for reviewing information and satisfying requests. Messaging on the bills can drive eBill adoption, other utility programs, safety, seasonal or storm planning, etc. Additionally, where possible, offering electronic payments for customers who don't adopt eBills will help drive more electronic payments for customers. Currently, only eBill subscribed customers are able to make recurring payments electronically. Online and/or regular payments have proven to reduce delinquent payments for some customers.*

**Recommendation 7.3.2:** *RCG/SCG LLC recommends evaluating a consolidation of the billing clerks across gas and/or electric companies to gain economies of scale.*

#### **7.4 Meter Reading and AMR**

### **Objectives and Scope**

CNG's Meter Reading department reports through the Senior Director of Operations for the company and provides regular meter readings as input to the billing department. They installed a drive by automated meter reading system in 2008, consisting of a transmitter on the meter and specially equipped vehicles that drive by the meters to collect the reads used for billing customers each month.<sup>458</sup>

The following evaluation criteria were used as the focus of the review:

- To what extent did the Company implement the 2010 audit recommendations?
- How have the company's AMR meters changed CNG performance in meter reading accuracy and billing?

### **Overall Assessment**

**CNG's METER READING IS COMPLETED ON A TIMELY BASIS WITH HIGHLY ACCURATE READINGS IN A COST-EFFECTIVE MANNER, AND CONTINUES TO IMPROVE THE OPERATION WHENEVER POSSIBLE.**

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<sup>457</sup> Response to Data Request CS015, page 34.

<sup>458</sup> Response to Data Request, CS010.

Currently, there are five people meter reading at CNG, two of them drive two routes each for the 17 cycles each month and two of them do appointments. This is down from a high of 23 meter readers and 23 routes prior to deployment of the AMR meters.<sup>459</sup>

As of May 2016, there were 180,277 meters installed at CNG. Included in that number are 117 meters that do not have an automated meter reading module (.06%) because CNG has not been allowed access to the meters. 71 of those accounts are inactive accounts with many boarded up and condemned buildings. All new meter installations and meter exchanges are completed with meters equipped with the new automated meter reading modules.<sup>460</sup>

The Meter Services employee annual goals include an objective to reduce the number of non automated meter locations. This objective will continue until all meters are equipped with an automated meter reading module and reading through the drive by system.

The year to date percentage of customer bills based on actual reads is 99.9%. Out of nearly two million meter reads in 2015, there were only 4,322<sup>461</sup> estimated bills due to lack of access and/or a failing component or a meter change out during reading cycles.<sup>462</sup>

### **Conclusions**

**Conclusion 7.4.1:** *There was no 2010 audit recommendation made for the meter reading area.*

**Conclusion 7.4.2:** *RCG/SCG LLC concluded that the meter reading function accurately reads the vast majority of meters each month in a timely and accurate manner.*

### **Recommendations**

RCG/SCG LLC has no recommendations for the meter reading operation.

## **7.5 Service Theft**

### **Objectives and Scope**

Theft of service is the physical act of modifying, bypassing, or tampering with Company owned piping or metering with the intent to use gas without payment. Locked Meter Using Gas (LMUG) are accounts which have been physically locked off by the Company and the lock is subsequently broken or removed without Company authorization.<sup>463</sup>

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<sup>459</sup> Interview: R. Cunningham, 07/14/16.

<sup>460</sup> Response to Data Request, CS010.

<sup>461</sup> Response to Data Request, CS011.

<sup>462</sup> Interview: R. Cunningham, 07/14/16.

<sup>463</sup> Response to Data Request GS061 CNG-SCG Attachment

RCG/SCG LLC's review of Service Theft assessed the activities and results of the department's efforts. The team reviewed how the company identified potential theft, investigated these cases, and the results over recent years. The following evaluation criterion was used as the focus of the review:

- How effective is the company in identifying potential service theft and recovering lost revenues due to this?

## Overall Assessment

### **CNG DOES AN EFFECTIVE JOB IN PURSUING AND PROSECUTING SERVICE THEFT INCIDENTS IDENTIFIED THROUGH FIELD PERSONNEL BUT CONTINUES TO RELY ON REACTIVE TECHNIQUES FOR DISCOVERY AND HASN'T EFFECTIVELY USED CUSTOMER MESSAGING FOR DETERRANCE.**

Initial identification of potential theft is most often provided by field personnel who notice something wrong on a customer premise and are then eligible for a \$100 bonus award.<sup>464</sup> Investigations are handled by the Credit & Collections Supervisor on an ongoing basis. They receive and follow up on two to three referrals/week requiring 20% of their time. Approximately 65 cases have been confirmed as thefts for CNG since the beginning of 2011.<sup>465</sup>

Once a referral is made, the supervisors research the address using the SAP Customer Information System to better understand the premise type, property owner, meter usage, and service order history.<sup>466</sup> If warranted, a field visit is conducted to evaluate or validate theft and gather additional information. Field investigations include the following:

- Crossed meter issues,
- Illegal taps,
- Locked Meter Using Gas,
- Padlocked meters,
- Stolen gas meters,
- Bypasses,
- Company by passes,
- Underground illegal gas line taps, and
- Tampered shut off valves.<sup>467</sup>

Depending what is discovered, the supervisor will then contact the owner and possibly the residents with police present with them for an interview. If after reviewing the occupancy

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<sup>464</sup> Response to Data Request CS045

<sup>465</sup> Response to Data Request CS049

<sup>466</sup> Response to Data Request CS042

<sup>467</sup> Response to Data Request CS049

period from property records or leases, theft is confirmed, a police report is filed and the details are submitted to the Company for back billing on estimated usage.

### **Conclusions**

**Conclusion 7.5.1:** *RCG/SCG LLC did not find any recommendations for Service Theft resulting from the 2010 audit.*

**Conclusion 7.5.2:** *RCG/SCG LLC concluded that CNG has a reasonable process and adequately staffed function within Credit & Collections for pursuing and stopping identified service theft.*

### **Analysis**

It is CNG's policy to investigate and prosecute to the fullest extent of the Law all reported and verified incidents of Gas Theft. In accordance with Section 53a 127c of the Connecticut General Statutes, tampering is a Class D Felony and is grounds for termination of service and prosecution under the law.

CNG's Credit and Collections supervisor has a sound set of steps in place and good information to pursue and ultimately convict and/or collect revenues lost to gas theft. One in ten referrals received is verified to be theft and roughly 30% of these cases result in prosecution and/or restitution decisions made by the Judicial Courts.<sup>468</sup> The Company will also bill the customer for equipment theft or damage as well as any associated costs with the investigation will be included in the police report.<sup>469</sup> The company does not track the level of lost revenues, fines, or jail time.<sup>470</sup>

The Company consistently applies an approach to investigating all potential thefts and verifying them. Their field personnel are well trained and incented to report any discrepancies that might be theft.

A 30% conviction rate appears to be low once a case is identified and verified with the steps described. Additionally, by not tracking the level of lost revenues, fines, and/or jail time, it is difficult to assess progress or learn from prior period efforts.

**Conclusion 7.5.3:** *RCG/SCG LLC concluded that many of CNG's practices for identifying service theft are traditional and reactive in nature, highly dependent on field employees in the course of their field activities to come across, evidence of theft. As AMI/AMR meters in place have now limited the amount of time Company employees are exposed to the meters,*

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<sup>468</sup> Response to Data Request CS043

<sup>469</sup> Response to Data Request CS044

<sup>470</sup> Response to Data Request CS043

*alternative and complementary methods for identification may make the process more effective and deliver better results.*

### **Analysis**

In Docket 16 04 13, the document estimated LUF Gas due to theft for 2015 as \$26,138. In the same year, Yankee gas had over \$200,000 of service theft identified and SCG also had the same amount estimated at \$26, 138.<sup>471</sup> This estimate is based on an analysis conducted in 2005 for the SCG Company and the methodology used continues for both gas companies. In any given year, there is no way of knowing how accurate this is as no estimates from the identified cases are tracked.

In 2005, the identified theft cases for the prior five years were a total of 152.<sup>472</sup> For the prior five years, from 2011 through 2015, there were 59 verified theft cases or roughly half of the five year period, 2001 2005 with more customers and a more challenging economy.

These are only estimates for the Company and many cases could be overlooked. In the past, there was a high dependence on field personnel to report potential theft and there was a large amount of “eyes on the ground,” especially with regular meter readers. As CNG now has meters not requiring an individual reading, many of these homes don’t have the same physical visitation they did in the past. As the number of cases identified has fallen, this might be because fewer are occurring, fewer are being identified, or a combination of both.

CIS technology as well as other public databases (housing, ownership), are vastly improved, so investigations of theft are more quickly done within the corporate office. This provides an opportunity to set smarter analytics up from these systems to proactively identify potential theft without an employee or other customers having to report it.

RCG/SCG LLC was not able to identify consistent CNG public messages around customer theft or the consequences that might act as a deterrent for other customers. The only ones found in recent Google searches were two articles and one television spot about electricity theft regarding the sister company, United Illuminating (*Utility Crime Doesn’t Pay*, May 20, 2013, [http://wtnh.com/2013/05/20/utility\\_crime\\_doesnt\\_pay/](http://wtnh.com/2013/05/20/utility_crime_doesnt_pay/)). Many utilities regularly build public awareness of cases through various mediums, including local radio, TV, social media, and corporate websites. In these stories, the consequences, including fines and jail time, are often publicized effectively. The audit team also couldn’t find on the CNG corporate website a function for a customer to report potential theft or a specific phone number to call for reporting someone.

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<sup>471</sup> Response to Data Request GS061 Attachment 2

<sup>472</sup> Response to Data Request GS061 Attachment 1

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### **Recommendations**

**Recommendation 7.5.1:** *RCG/SCG LLC recommends CNG develop a program to coordinate with local media and regularly publicize through social media, billing messages, the corporate website and other forums stories about gas service theft to serve as a deterrent due to the chances of being caught, legal consequences, and safety issues. In parallel messages, it is important to make potential customers aware of assistance programs that may be available to them if having trouble paying their bill.*

**Recommendation 7.5.2:** *RCG/SCG LLC recommends preemptive research and sophisticated analytics be developed and used to identify potential theft that is unidentified by field personnel.*

**Recommendation 7.5.3:** *RCG/SCG LLC recommends CNG put in place more thorough tracking of not only activities but also the results of service theft investigations, including final outcomes, revenues lost, and re captured.*

### *7.6 Customer Complaints and Inquiry Handling*

#### **Objectives and Scope**

In addition to reading the meters, rendering bills, and answering the customer's inquiries, utilities must capture, track, and handle in a timely manner customer complaints and/or inquiries that are received by the utility. These can be a key indicator of how customer satisfaction is trending and also serve as an early warning sign to avoid future customer problems by performing root cause analysis on complaints as they are grouped together and indicate an area that needs to be addressed.

RCG/SCG LLC's review of Customer Complaints assessed the activities and results of the department's efforts. The team reviewed how the company identified captured complaints, responded to, and endeavored to avoid future complaints. The following evaluation criterion was used as the focus of the review:

- How are customer satisfaction metrics (specifically, complaints logged) trending?

#### **Overall Assessment**

**CNG DOES AN EFFECTIVE JOB TRACKING AND RESOLVING CUSTOMER COMPLAINTS AND INQUIRIES.**

Complaints are defined as anything received, even an inquiry, that is referred from corporate, the Connecticut Attorney General's office, or from PURA. These are logged and investigated by one of three Review Officers (RO) that cover all three companies (UI, CNG, and

SCG) within Connecticut. They follow a well defined and documented process to resolve the complaints and/or identify root cause analysis in other parts of the corporation.<sup>473</sup> The review officer is a new role for CNG that was put in place in the fall of 2015. Previously, complaints were spread across customer service agents. The RO role and process ensure better capture, tracking, investigation, and resolution of complaints across the corporation.

### **Conclusions**

**Conclusion 7.6.1:** *RCG/SCG LLC found one recommendation from the 2010 Audit that has yet to be addressed, the institution of a gas marketer Complaint Log.*

### **Analysis**

Item 50 19 2 Gas Marketers The Company should maintain a gas marketer complaint log. However, the Company's Manager of Customer Complaints stated that only if complaints about Gas Marketers were logged with PURA would they capture these. There have only been 2 to 4 complaints over recent years.<sup>474</sup>

**Conclusion 7.6.2:** *RCG/SCG LLC concluded that CNG handles customer complaints and inquiries in a manner consistent with leading industry practices.*

### **Analysis**

Overall complaints have begun to come down since the institution of the Review Officer role that was initiated within UIL over recent years. Benefits have included a more accurate capture of all complaints, the ability to quantify types of complaints, the ability to do more robust root cause analysis, and the capability to drill down to address and communicate complaint status more quickly.<sup>475</sup>

Complaints logged have risen over recent years as the number of shut offs has been increased. The company's 2015 complaints also increased to do a better capture of the complaints offered. In prior years, CNG had multiple people logging complaints and the process was not as disciplined at capturing all complaints. For 2016, year to date, complaints are down by 50% over the target set which was below 2015 results.<sup>476</sup> The team also has put in a place a monthly Complaints scorecard for tracking results against targets.<sup>477</sup>

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<sup>473</sup> Response to Data Request CS027.

<sup>474</sup> Interview: J. Thomas 07/14/16.

<sup>475</sup> Interview: J. Thomas 07/14/16.

<sup>476</sup> Response to Data Request CS005.

<sup>477</sup> Response to Data Request CS025.

### **Recommendations**

**Recommendation 7.6.1:** *RCG/SCG LLC recommends that CNG continue to drive down complaint sources across the corporation through root cause analysis. Additionally, there is no common tracking/follow up system that is used by the company across the immediate Complaint team that others can view, such as call center supervisors. RCG/SCG LLC recommends deploying a complaints management system that creates follow up actions, reports progress, and notifies owners of pending actions to be taken.*

## *7.7 Customer Satisfaction and Customer Experience*

### **Objectives and Scope**

Customer satisfaction is a key performance indicator for many utilities when combined with safety, profitability, and ROE. Many gas utilities use the J.D. Power company survey for gas utilities. The survey has now been used in the industry for fifteen years. This survey tests six aspects of a customer's experiences, including billing & payment, price, corporate citizenship, communications, customer service, and field service.

According to J.D. Power, satisfaction with residential gas utilities has improved year over year:

*Customer satisfaction with residential gas utilities (calculated on a 1,000 point scale) ... the current industry wide average score represents a 17 point overall increase from 2015. This increase is driven primarily by customer satisfaction with price—as the cost of natural gas has remained low—and communications.<sup>478</sup>*

Customer Experience can be defined as the sum of all interactions, perceptions, and feelings evoked between a company and a customer over the duration of their relationship. The customer's experiences can begin with a customer's attraction, awareness, discovery, cultivation, advocacy, and purchase and throughout the use of a service.

Many other industries have begun to intentionally design their customers' experiences based on the ongoing capture of deep customer insight to understand what problem they are trying to solve, what their expectations are for the request, and other important preferences. In fact, many of the leading companies collaboratively design new experiences (products, processes, technology, and employee experiences) with their customers in an iterative fashion. Once launched, they will continually enhance the experience, as customer expectations are dynamic based on expectations set by other industry and company experiences.

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<sup>478</sup> JD Power Gas Utility 2016 Results

## Overall Assessment

**CNG HAS MULTIPLE CUSTOMER SURVEY INSTRUMENTS IN PLACE TO PROVIDE CUSTOMER FEEDBACK, BUT THEY PROVIDE LITTLE ACTIONABLE FEEDBACK THAT CAN BE USED IN PLAN AND INVEST IN CUSTOMER SATISFACTION IMPROVEMENT INITIATIVES.**

### Evaluation Criteria

RCG/SGC LLC applied the following evaluation criteria to the customer satisfaction and customer experience review:

- How are customer satisfaction metrics trending?
- Where satisfaction is below that of the peer group, what are the major causes of deficiency and are there plans in place to improve?
- How effective are customer service and communications during major emergencies?
- How are the public messages being coordinated with other corporate functions responsible for speaking with the public?

### Conclusions

**Conclusion 7.7.1:** *RCG/SCG LLC concluded that CNG has contradictory satisfaction research that is also inadequate for identifying what customers want in areas identified for improvement since there is an insufficient level of details on findings to prescribe what and how to change.*

### Analysis

CNG does an annual survey of residential and commercial customers on various topics conducted by GreatBlue<sup>479</sup>. Additionally, our audit team found 2015 and 2016 JD Power results on the JD Power website for CNG. GreatBlue showed a drop in the Customer Satisfaction Index (CSI) to 84.4% in 2016 over 2015 by 3.1 percentage points.<sup>480</sup> The report stated that these were driven by decreases in the average ratings of the company characteristics ( 3.5 percentage points) and office personnel ( 5.0 percentage points). Over the last four years, a similar survey has been conducted with CSI ratings slipping each year (see the following Exhibit).

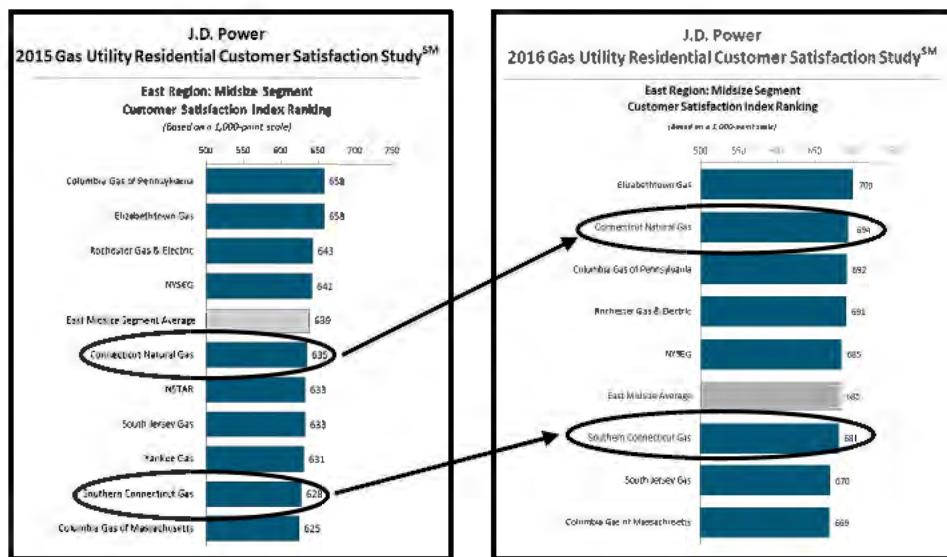
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<sup>479</sup> GreatBlue is a market research firm See <http://www.greatblueresearch.com/about/>.

<sup>480</sup> Response to Data Request COM015, Attachment 1.



**Exhibit 66 - CNG 2016 Residential Customer Survey Customer Satisfaction Index<sup>481</sup>**



**Exhibit 67 - JD Power 2015 and 2016 Gas Utility Report – East Region<sup>482</sup>**

For the prior three years, a JD Power survey was conducted and CNG was compared against other mid sized gas companies in the East Region showing improvements from year to year and against other gas utilities in the same category. In 2016, CNG showed an improvement

<sup>481</sup> Response to Data Request COM015, Attachment 1.

<sup>482</sup> Website articles for summary 2015 and 2016 reports: <http://www.jdpower.com/press-releases/2015-gas-utility-residential-customer-satisfaction-study> and <http://www.jdpower.com/press-releases/2016-gas-utility-residential-customer-satisfaction-study>

of nearly 60 points over 2015 (this after an improvement of 23 points from 2014<sup>483</sup>) and moved from the 3<sup>rd</sup> Quartile up the 1<sup>st</sup> Quartile. The detailed findings were unavailable for this audit.

It is unclear what caused these two extensive surveys to move in opposite directions. The call center also runs transactional surveys after calls received. Over the timeframe of 2011 through 2015, the satisfaction results also slipped from 90% to 86.3%.

Without more detailed information about what customers are dissatisfied with and want to change, it is challenging for CNG leadership to identify and invest in appropriate initiatives that will reliably improve customer satisfaction with the Company.

**Conclusion 7.7.2:** *RCG/SCG LLC concluded that CNG does not have effective instruments in place to track customer satisfaction on an ongoing basis versus once a year, preventing them from discerning trends or reactions to events or intentional changes in service offerings or delivered.*

### **Analysis**

The annual GreatBlue survey is completed by 500 customers via the telephone. There may be some customers whose opinions are not expressed because they prefer to interact with the utility digitally. Some segments of customers, especially those targeted for self service enhancements, may not be given the opportunity to provide their input.

Additionally, without regular (monthly, at least) surveys of customers and/or customer panels providing feedback on new channels, programs, or communications, it is challenging for CNG leadership to identify and invest in appropriate initiatives that will reliably improve customer satisfaction with the Company.

The customer operations team shared a copy of the Customer Experience Vision which includes a high level plan or Digital Roadmap<sup>484</sup> that focuses on continually improving the customer experience and moving the organization from one that is reactive to one that is proactive. The report is high level and directional but begins to provide a vision for where the utility might need to invest. However, without engaged customers providing both collaborative insights to innovations and constant feedback, the investments may be ineffective.

**Conclusion 7.7.3:** *While RCG/SCG LLC was not aware of any major emergencies in recent years. CNG appears well positioned to communicate effectively both internally and externally during any such event.*

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<sup>483</sup> Response to Data Request CS003, Attachment 1.

<sup>484</sup> Response to Data Request CS019, Attachment 1.

### **Analysis**

RCG/SCG LLC conducted multiple interviews within the Corporate Relations and Customer Operations groups and heard of no reason for concern regarding emergency customer service or communications. Discussions conducted and documents reviewed demonstrated effective planning<sup>485</sup> and well considered external communications channels including IVR, media, social media, and the web<sup>486</sup> sufficient for supporting a major gas event.

**Conclusion 7.7.4:** *RCG/SCG LLC found that CNG coordinates across functions in speaking with the public in the areas of public events, corporate activities, energy conservation, and safety.*

### **Analysis**

Corporate Communications coordinates message development and delivery (see External Relations chapter) across the corporation by working with the customer facing groups, such as customer service, Conservation and Load Management (CLM), governmental relations, gas operations, and marketing. Promotions and public announcements posted by the Company were reviewed for the recent past and are clear and timely. As some customers (a subset choosing unsatisfied on survey instruments such as J.D. Power or GreatBlue annual survey) appear to be unaware of CNG/AVANGRID programs in which they have an interest, the Company needs more focus on where customers may go to get information and when they are most likely to see it.

### **Recommendations**

**Recommendation 7.7.1:** *RCG/SCG LLC recommends that CNG conduct deeper research to gain customer insight into where their customer base gets information about Company programs and status. Additionally, this insight should offer deeper understanding to how and where customers would like to satisfy requests such as starting service, paying bills, and reviewing consumption. As enhancements are made to existing processes in the call center or self service channels, it's important to gauge regular and ongoing feedback from customers to discern how changes were received and if adjustments are necessary.*

**Recommendation 7.7.2:** *RCG/SCG LLC recommends that for the annual customer satisfaction surveys conducted, more dialogue and detail analysis be added in order to better understand why customers feel more or less satisfied with specific offerings, interactions, and messages. Without more detailed clarity, it will be difficult to improve specific and overall satisfaction levels or understand what moves the needle up or down.*

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<sup>485</sup> Response to Data Request COM003.

<sup>486</sup> Response to Data Request COM004.

## 8. EXTERNAL RELATIONS

### Background

External relations has seen an unprecedented change in just the last five years as new channels of communications, such as social media, have moved from being an amusing diversion to a requisite for communicating with the Company's external stakeholders. Customers, policymakers, investors, and even employees have come to expect highly accurate and consistent information instantly when critical events occur, and utilities now need to provide near real time information to their customers, vendors, investors, and policymakers. Providing real time information goes well beyond the external relations function and now touches every operating unit in the company. Disasters like 2012's Super Storm Sandy highlight the importance for continually updating the various public and governmental agencies. Additionally, the current nature of much heavier proactive communications and promotions with customers includes taking into consideration areas such as energy efficiency programs, how/where to pay bills, and corporate citizenship. These types of messages and promotions are prime candidates for leveraging multi faceted media campaigns along with the more traditional awareness building methods of billing inserts, web pages, local meetings, and call center interactions.

### Objectives and Scope

RCG/SCG LLC's review of external relations focused on the effect of CNG's management and the methods by which CNG relates to its various external stakeholders (i.e., customers, regulators, communities, media, and investors) in the fulfillment of corporate goals and objectives. The review included organizations and management functions and their contributions to the effectiveness of external relations, including:

- Corporate Communications,
- CES, Sales & Marketing,
- Account and Municipalities Management,
- Government Relations,
- Regulatory Affairs, and
- Conservation and Load Management.

The RCG/SCG LLC team reviewed whether each area listed above has a clear definition of role and responsibilities and includes well documented policies and procedures that

captured institutional knowledge of current practices. Further, each area (as discussed below) had a specific set of evaluation criteria or tests that the Team evaluated to determine if the specific function is operating effectively, efficiently, and where necessary coordinates well with other functions to accomplish broader External Relations objectives.

External Relations for CNG has no responsibilities directed to Investor Relations. CNG is a wholly owned subsidiary of UIL Holdings, operating under the Avangrid Networks brand, a component of AVANGRID, Inc. (NYSE symbol: AGR) and shared ownership with Iberdrola. CNG's financing is derived from equity contributions from the parent, a revolving credit facility, intercompany loans/payments, and long term debt agreements. Investor Relations on behalf of CNG concentrates on maintaining access to the financial markets for commercial paper and the placement of long term debt and is, therefore, largely focused on the rating agencies. The Finance chapter of this report addresses the Treasury group's relationship with rating agencies. Other than the shares owned by the parent, CNG has no other investors with whom it must maintain solid investor relations.

## **Overall Assessment**

**CNG DEMONSTRATES EFFECTIVE MANAGEMENT OF TIMELY MESSAGE DEVELOPMENT, ADMINISTRATION, AND DISTRIBUTION BOTH EXTERNALLY AND TO EMPLOYEES.**

### **Evaluation Criteria**

RCG SGC/LLC applied the following evaluation criteria to the external relations review:

- Does the media strategy address all channels of communications and are they tied to specific external stakeholders?
- Does the Company make adequate use of social media tools to keep its investors, customers, and policy makers informed?
- How are non external relations business operations incorporated into the external relations strategic plan?
- Are employees fully aware of the significance of providing near real time information and properly incented to do this as part of their jobs?

AVANGRID's **Corporate Communications** organization supports each of the operating companies within Avangrid Networks (electric and gas) and Renewables from a corporate group of approximately 18 people. This team was brought together from the operating companies and was undergoing transition planning while RCG/SCG LLC was conducting the 2016 audit. Corporate Communications manages message distribution across many of the traditional channels of communications, such as the call center, physical documents, and mass media.

Through coordination, participating in standing meetings with various groups, such as Marketing and Conservation & Load Management (e.g. managing the EnergizeCT conservation program), messages are crafted and Corporate Communications take the message to the targeted channel for distribution.

They are organized around functions including graphic design, digital strategy, brand protection, media relations, and employee and customer communications. Going forward, they will be consolidating activities and gaining efficiencies. One example, the team conducted an internal employee contest for a newsletter name and consolidated all employee newsletters and regular magazines.<sup>487</sup> They have also made the decision to maintain individual brands for operating companies, while at the same time gaining more recognition of the AVANGRID brand.

Corporate Communications creates and delivers messages or campaigns to multiple external constituents via traditional channels including, print, TV, radio, billing inserts, special mailers, monthly customer newsletters, and through media partnerships (web banner ads and digital messages on TV). Most of the company's social media have been focused on the electric operating companies as leadership believes it is more relevant for the electric industry to communicate in situations like outages. The group expects to put in place a new social media plan in the second half of 2016.

Messages include traditional ones about safety, call before you dig, company trucks in the area, and that gas is domestic, cost effective, and clean.<sup>488</sup> Messages are planned throughout the year in an editorial calendar in coordination with other company departments.<sup>489</sup> During major outages, the team also works as part of the emergency response team to craft and place messages based on what the situation demands.<sup>490</sup>

The **Sales and Marketing** team manages the new business program and is part of the Client & Business Services organization. The team has responsibility for generating qualified and quality leads to expand the use of the gas distribution system and maximize system profitability<sup>491</sup> for the four UIL operating companies: UI, CNG, SCG, and Berkshire Gas. There are approximately 68 employees in the organization that provides sales, marketing, and business development to residential and business customers in the operating territories of the companies.

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<sup>487</sup> Interview M. West 05/18/16

<sup>488</sup> Interview M. West 05/18/16

<sup>489</sup> Response to Data Request Com010.

<sup>490</sup> Response to Data Request Com003

<sup>491</sup> Response to Data Request Com006

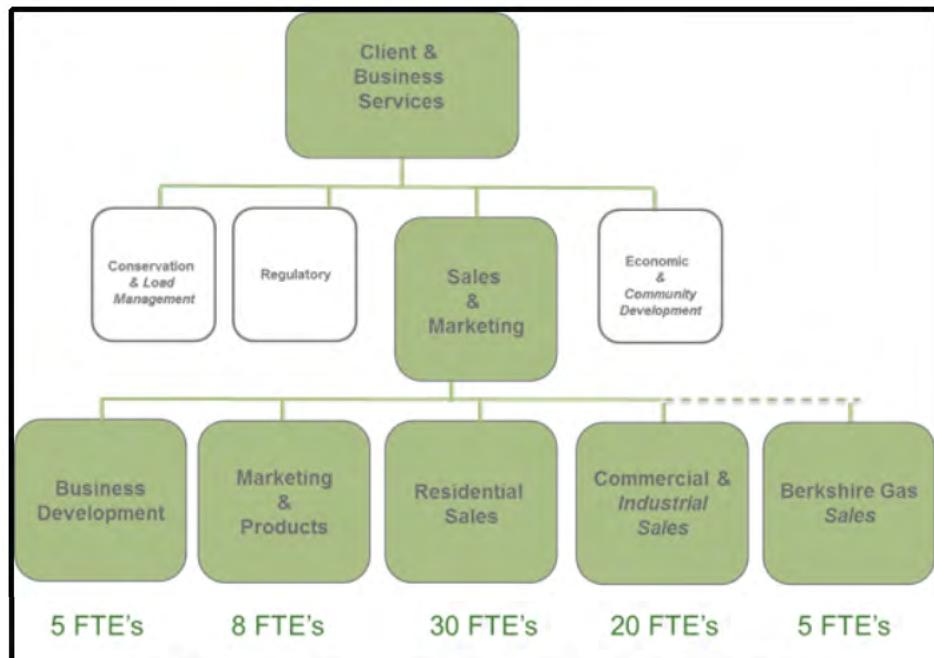


Exhibit 68 - Client & Services Business Unit Organization

The two gas companies in Connecticut, CNG, and their sister company, SCG, prepare a joint marketing plan on an annual basis to optimize results based on market conditions and historical results. The budget associated with the annual marketing plan is supported by both recoverable Comprehensive Energy Strategy (CES) spend and below the line shareholder dollars.<sup>492</sup> The CES plan states:

*"It is important to make customers who can cost effectively switch to natural gas aware of both the opportunity to reduce heating costs by converting to natural gas and financing options for doing so for those that don't have sufficient capital to cover the upfront costs. Greater Customer awareness will help customers plan for conversion, rather than waiting until a furnace failure when a conversion is unlikely to be feasible."*<sup>493</sup>

To plan for building awareness, the team conducted customer research in 2015 to better understand how customers think and what the key drivers are for making decisions.<sup>494</sup> Prospects were asked the top three benefits of heating with natural gas. They indicated price factors 70%, environmentally friendly/cleaner 53%, easy to maintain 49%, and reliability of the supply was chosen 31% of the time.<sup>495</sup> New homeowners and homeowners with a furnace at

<sup>492</sup> Response to Data Request Com007.

<sup>493</sup> CES Plan, page 149.

<sup>494</sup> Interview J Lano, 07/13/16

<sup>495</sup> Response to Data Request Com007.

the end of its life are the best candidates for conversion from an oil furnace to natural gas. The team has segmented their customers into three segments:

- Segment A: customers “on main,”
- Segment B: pipeline in the customer’s vicinity, and
- Segment C: not close, refer them to energy efficiency programs.<sup>496</sup>

Within the top two segments above, there are a variety of messages that are constructed and delivered focusing on topics such as cleaner fuel, lower cost fuel and/or the timing of furnace replacement. Focus for Segment B would also be predicated on geographic investments to expand the pipeline as well.

The 2016 marketing budget is \$600,000 mostly for residential, and an additional \$229,400 is budgeted to cover expansion opportunism via CES funds. Proactive marketing is to build awareness and also to solicit commitments from customers to convert to natural gas. In 2015 tests were conducted using various messages and channels in different targeted neighborhoods. Channels included robotic telemarketing, direct mail, sales canvassing, and community meetings for larger projects. As of October 2015, those campaigns involved nearly 3,000 prospective customers and resulted in over 1,100 signed sales contracts for 2015.<sup>497</sup> In the last year, they have deployed a new CRM system, Salesforce.com, to capture prospect information for continuous marketing, set up future milestones, and track campaign effectiveness.

As part of the CRM deployment, they have nearly completed the digitization of documents and inter departmental notifications to cover the entire new business process from marketing through planning and installation to billing. These have been and continue to be collaborative efforts across the Company beginning with a CES steering committee that meets monthly to make decisions about direction and also to focus on various anchors and/or municipal relationships.<sup>498</sup>

The 2016 marketing plan includes these tactics as well as radio, web banner advertisements, and door hangers. Incentives are available through CES funding, Conservation & Load Management (C&LM) incentives, manufacturers’ rebates and even low rate of interest financing. These are important mechanisms to fund the biggest barrier to conversion: the upfront cost of a new furnace. They have also put up a gas locator on the corporate web site for customers to enter their address and identify whether they are on the main or close to one.<sup>499</sup>

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<sup>496</sup> Interview T. Marone and R. Diotalevi, 05/10/16

<sup>497</sup> Response to Data Request Com007, Attachment 3.

<sup>498</sup> Interview Marone/Diotelvi 05/10/16.

<sup>499</sup> Interview R Diotalevi 06/06/16.

Through research, the team has discovered that 30% of the non customers on the main are not yet aware of natural gas availability. This provides a great deal of near term opportunity as demonstrated in the Exhibit below.<sup>517</sup>

CNG CONVERSION PROSPECTS 2015	Within 150 Feet	151 Feet to Quarter Mile	Quarter Mile to Half Mile	Half Mile to One Mile	One Mile +	LOW USE
	41,210	35,822	11,912	10,002	16,091	11,764*
SCG CONVERSION PROSPECTS 2015	Within 150 Feet	151 Feet to Quarter Mile	Quarter Mile to Half Mile	Half Mile to One Mile	One Mile +	LOW USE
	61,502	60,678	13,694	11,550	22,130	19,647*

**Exhibit 69 - Overall Market Potential for Gas Conversion**

*\*Low use data per SAP customers on RSG rate as of July 2015.*

Results for the first two years of the program have been solid, exceeding or meeting targets. For 2016 and going forward these targets will be harder to achieve as the price of oil has dropped. With the price of oil moving from \$4 to \$2, it causes the customer breakeven point for a natural gas furnace over oil to elongate and go from roughly four years to ten years.<sup>500</sup>

CNG manages their relationships with C&I, small and mid sized businesses, and municipalities across Connecticut gas and electric companies through dedicated Strategic Account Managers (SAMs). There are 12 SAMs that focus on sales, selling of franchise jobs, and serve as liaisons with municipalities during storms or focus on the expansion of gas or electric capacity.<sup>501</sup>

CNG's **Governmental Relations** resources are shared across the three Connecticut companies (CNG, SCG, and UIL). There is a single full time employee that also directs three contract lobbyists in the state. There is ongoing coordination (weekly meetings, annual planning events, ongoing reports of activities across the state in the Legislature<sup>502</sup>) with Regulatory Affairs, Sales & Marketing (predominantly about the CES program), Conservation & Load Management, Community Relations, and Corporate Communications. The team coordinates state legislative matters and changes, monitors legislative elections, works with the energy & technology committee in Connecticut on behalf of CNG business groups, and keeps legislators in the loop as Company complaints are lodged through them. The Review Officer concept recently put in place by the Customer Service organization has been very well received.<sup>503</sup>

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<sup>500</sup> Interview R Diotalevi 05/25/16.

<sup>501</sup> Interview R Diotalevi 06/06/16.

<sup>502</sup> Response to Data Requests Com011, Com012, Com013.

<sup>503</sup> Interview A Carbone, 06/06/16.

Energy has been a bi partisan issue in the state collaborating on moving to cleaner cheaper, more reliable energy across all groups of the population. Since the AVANGRID acquisition, there has been little change in the team's methods or operations. The team is getting exposed to more state proceedings and changes from New York and Maine offering a broader perspective of what may or may not be working. After the 2016 legislative session ended for elections later this year, the team is preparing for 2017 and working with Avangrid Networks to understand if there are any broader issues that need to be included in the Connecticut plans.

CNG receives **Regulatory Affairs** support from a shared organization across the Avangrid Network's Connecticut operating companies. They have responsibility in four areas:

- Traditional regulatory services (coordination of filings, maintaining compliance, dockets, audits, etc. , and load forecasting),
- Electric pricing rate design,
- Wholesale power procurement on electric side, and
- Retail supplier choice/relations, and ISO settlement.<sup>504</sup>

There are no distinctions between electric and gas, and key metrics include compliance deadlines (of which they have not missed any). Tracking is done through a shared software system, CS10. The group also participates in and supplies input into proposals that might come from elsewhere. Their major work efforts for 2016 and 2017 are the management audit and the UIL rate case. The team is a very effective and collaborative senior group that doesn't appear to have any backfill as team members may retire in the future.

**Conservation and Load Management (C&LM)** is the final organization reviewed within the External Relations chapter. It is also a shared group across the Connecticut operating companies within the Avangrid Network's company. They have 36 FTE's and spend most of their time managing many energy efficiency vendors for leads, intakes, performance, etc. across multiple operating companies<sup>505</sup> The team administers energy efficiency programs for gas and electric ratepayers based on the same C&LM plan issued by the state in conjunction with other Connecticut utilities, such as Eversource Energy. The key targets are to spend the budget and make the CCF gas savings targets. They work well with other CNG groups to coordinate messaging and capture leads, including Sales & Marketing and Corporate Communications, to promote the Energize CT.com brand for residential, business, and C&I customers. According to the American Council for an Energy Efficient Economy (ACEEE), in the

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<sup>504</sup> Interview M Coretto, 06/08/16.

<sup>505</sup> Interview McDonnell 06/06/16

most recent *State Energy Efficiency Scorecard*, Connecticut was tied for fifth place with New York.<sup>506</sup>

### **Conclusions**

**Conclusion 8.1.1:** *RCG/SCG LLC concluded that CNG has met the intent of the 2010 management audit recommendations. Five recommendations were made in the Marketing and sales area of the audit.*

### **Analysis**

The auditing firm that conducted the 2010 Audit for CNG stated that “the Marketing, Sales, and Public Affairs department markets gas service to new residential customers (conversions and new construction), works to expand transportation and gas sales to large customers, and works to maintain existing transportation customers. The department is also responsible for external relations (public and state governmental relations) and for conservation programs. Conservation programs are covered separately, elsewhere in the report.”<sup>507</sup>

*14 1 CNG / SCG should enhance the depth and quality of its market analysis in its annual marketing plan.*

*Company Response as of 1Q 2012: Complete. CNG completed an update of saturation data with CERC's assistance. The data has been used in creating the 2012 marketing plans and CNG is using this data for the system expansions.*

RCG/SCG LLC agrees that the depth and quality of the Company's market analysis have been significantly enhanced, especially through the initiation and expansion of CES marketing and sales efforts.

*14 2 CNG should develop, prioritize and establish the means to quantify marketing and sales objectives beyond the number of conversions and net margin added.*

*Company Response as of 1Q 2012: Complete. CNG completed an update of saturation data with CERC's assistance. The data has been used in creating the 2012 marketing plans and CNG is using this data for the system expansions.*

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<sup>506</sup> ACEEE State Energy Efficiency Scorecard, <http://aceee.org/state-policy/scorecard>

<sup>507</sup> Response to Data Request Gen012.

RCG/SCG LLC agrees with the company's position that this is complete. They now also track miles on main and monthly leads for two years, as well as marketing campaign effectiveness through the use of a new CRM system that has been implemented to track prospects and leads to a conclusion.<sup>508</sup>

*14 3 CNG should consider revamping and increasing the value of customer rebates in its residential incentive programs.*

*Company Response as of 1Q 2010: Complete. CNG has combined incentives with C&LM and offers \$2,500 for commercial and \$1,000 for residential new customers. CES allows this and now has put it into the rates, plus Gas C&LM programs (i.e. equipment manufacturer rebate matching).<sup>509</sup>*

RCG/SCG LLC agrees with the company's position that this is complete.

*14 4 CNG should obtain and utilize utility industry information to determine the extent to which it conforms to best practices or can implement them. CNG should also seek out and use available utility marketing benchmark data.*

*Company Response as of 1Q 2011: Complete. CNG has rejoined the AGA and is actively comparing data from other AGA and NGA members.*

RCG/SCG LLC is unsure as to whether they are still subscribing to benchmarking services that were subscribed to in 2011. They believe that NE Gas Association would be the best group to participate in since it is a unique market with the oil penetration that exists versus other geographies in the U.S. The audit team was told during the audit that the company had participated in a PSE&G benchmarking study but results were not yet available. We were also told the company planned to benchmark against other Avangrid Network companies in certain areas of the business.<sup>510</sup>

*15 1 The company should make conservation initiatives a component of the CNG Marketing Director's variable pay.*

*Company Response as of 2Q 2011: Complete. CNG will be integrating the majority of the CL&M functions under the electric company's staffs. Oversight will still be with CNG.*

**Conclusion 8.1.2:** RCG/SCG LLC found the groups comprising the External Affairs function (Sales & Marketing, Regulatory Affairs, Governmental Relations, Corporate Communications, and

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<sup>508</sup> Interview R. Diotalevi 06/06/16

<sup>509</sup> Interview R. Diotalevi 06/06/16

<sup>510</sup> Interview R. Diotalevi 06/06/16.

*C&LM) for the Company work in close conjunction with each other and other customer facing organizations preparing focused and effective messages, developing forward thinking messaging and promotions strategies, and delivering them through diverse mediums.*

### **Analysis**

On an ongoing and regular basis, teams gather for weekly, monthly or annual meetings to coordinate messaging to the company's external constituents as well as employees. Leverage is provided for media investments and coordination of messages is conducted to ensure there are no conflicting messages or unnecessary duplication. These topics range from traditional ones (such as safety, don't dig, and gas as a clean and reliable source of energy) to more actionable messages about conservation activities/investments or converting from oil to gas. The collective organizations continuously learn more about where their targeted customers go for information and what the best buy is for the invested dollars.

**Conclusion 8.1.3:** *RCG/SCG LLC found sales and marketing efforts around CES are outstanding and continue to influence results in the Company's gas territory and across the state through regulatory and legislative influence.*

### **Analysis**

Sales and Marketing within regulated utilities are generally a contradiction in terms. While the term sales might be used and marketing has gone on for years to promote programs, very seldom does a utility actually influence change in a customer's buying habits. The Sales & Marketing team for CNG has successfully influenced the State's CES program, continuing to influence it as the market has changed with the price of oil dropping. They have also developed effective sales and marketing competencies within the Company and even integrated a leading edge CRM system that will go end to end when finished from identifying a prospect through billing a new customer in a completely digital format. The greatest challenge may be avoiding diluting this resource and their success as Avangrid Networks wants for them to engage them to bring the New York and Maine utility teams up to the same standard.

**Conclusion 8.1.4:** *RCG/SCG LLC has concluded that even though many of the External Affairs' organizations are focused across Avangrid Network companies, little negative impact will be experienced by local customers and in fact, by leveraging deeper subject matter expertise across a larger group, such as corporate communications, the customer experience will be better and communications more effective.*

### **Analysis**

In many discussions with the heads of each of the departments that make up External Relations, RCG/SCG LLC has determined that cost allocations will be done in the same manner as prior to the merger, that access to specialized skills will continue, and important local decisions will still be made locally for each operating company. There will always be a conflict in managing the pull for efficiency versus the desire to personalize or localized messages or programs, but leadership is aware of this and we expect them to continue making fair decisions. On top of this, the exposure by individual groups to other U.S. states regulatory environments, programs, or conservation activities, as well as exposure to Spanish or English technology deployments or other programs should be a strong net positive.

### **Recommendations**

**Recommendation 8.1.1:** *RCG/SCG LLC recommends that the Company expand efforts to leverage more digital channels in the future. This includes more personalized messaging for Sales & Marketing to residential prospects or customers. It also includes expanding social media to increase the number of followers from hundreds to multiple thousands. This will provide more consistent and timelier communications to those customers choosing to follow, as this population continues to grow. This will also contribute to the improved awareness of what CNG and Avangrid Networks are doing in the community, and of conservation programs offered, and should contribute to overall customer satisfaction. This will require further analysis on how to and when to promote these channels in order to heighten adoption rates.*

## 9. SUPPORT SERVICES

### Objectives and Scope

In any major corporation, sound and effective business practices dictate that duplicated functions across various organizations should be centralized to minimize costs and redundancy. This centralization allows the organization to take advantage of shared synergies, buying power from vendors/suppliers, standardization of processes and practices, and other efficiencies. These support services form an essential core group of functions that can produce efficiencies on a large scale in a streamlined, centralized approach. But in providing these services care must be taken that the efficiencies are achieved, that the effectiveness of the service delivery is not impacted by the distance to the internal client (both in physical and organizational terms), and that service to either this client or the external customer (ratepayer) is not degraded.

RCG/SCG LLC's reviewed the Support Services functional area in the following sub categories:

- Risk Management,
- Legal,
- General Services,
  - Facilities Management,
  - Fleet,
  - Document Management,
- Materials Management, including procurement/supply chain and warehouse operations,
- Information Technology, and
- Security.

The RCG/SCG LLC team reviewed whether each of the above functions listed have clearly defined roles and responsibilities and includes well documented policies and procedures that are consistent with current practices. Further, each area (as discussed below) had a specific set of evaluation criteria guided the evaluation to determine if the specific function is operating effectively and efficiently.

### Overall Assessment

RCG/SCG LLC found that the AVANGRID's Support Services organizations generally provides support services in an appropriate manner consistent with utility practices, manages functions through policies and procedures, ensures knowledgeable management and

personnel are assigned, and develops and implements plans coordinated with Company goals and needs.

AVANGRID (the parent company) and AVANGRID Networks (or Networks) is doing a very credible job to facilitate the oversight of risk management within CNG. Senior executives are actively involved in risk management through risk committees, detailed procedures are in place to drive the steps to manage and mitigate risks, and metrics are in place to monitor performance in key risk areas. One missing component our team identified as critical to gas system safety risk mitigation was a Geospatial Information System (GIS) system for SCG. Especially given the extensive construction investments in new and replaced pipeline over the next ten years, accurately capturing system attributes is critically important. The Business continuity process is well planned and executed and the CNG's portion is reviewed and updated annually.

RCG/SCG LLC found that the Legal Department is generally well managed and serves CNG properly with a large portion of their activities outsourced. But it could be further strengthened with expansion of their written procedures, enhanced goal setting and the use of a periodic audit of outside counsel's guideline adherence.

The new UIL Environmental and General Services organization is responsible for delivery of Facility Management, Fleet, and Records Management services to AVANGRID. Facilities Management is well organized and has comprehensive operational documentation, experienced management, and appropriately utilizes contract services to meet the needs of CNG.

Based on our review of the Fleet services' guiding documentation, goals, objectives, and performance measurement, RCG/SCG LLC believes that AVANGRID manages its transportation services to meet the needs of CNG. Its management of inventory and maintenance records, however, needs improvement.

The Document Management responsibility is currently decentralized, but the responsibility is being centralized under the AVANGRID Environmental General Services organization. The current Records Management Policy will be aligned with AVANGRID Document Management requirement by the end of 2017.

The Materials Management (Purchasing and Stores) organization has established policies and procedures, and metrics that are consistent with industry norms, and warehouse operations that are well laid out and with appropriate controlled access. Some automation of current processes is warranted and continued evolution of the Purchasing function should be encouraged.

Information Technology (I/T) is organized appropriately and consistent with its strategy. It has access to senior leadership to ensure I/T solutions are consistent with

corporate strategies, and the strategic needs are receiving an appropriate priority of resources. However, the CNG I/T user community's I/T expectations and current I/T needs are different than those expressed by the I/T organization and this has resulted in a level of dissatisfaction in the delivery of I/T services.

Security at AVANGRID comprises physical security and cyber security. The responsibility for Security at AVANGRID is centralized. Leading cyber security measures have been implemented to protect against unauthorized access to sensitive information and/or systems. Periodic internal and external audits are performed to confirm the adequacy of the cyber security measures. Physical Security is consistent with industry best practices. However, termination of access control for former employees and contractors needs improvement.

## **Evaluation Criteria**

RCG/SCG LLC identified three main criteria for the evaluation of each of the Support Services area subcategories:

- Does AVANGRID have adequate departmental policies and procedures for each area?
- Are departmental goals and objectives clear, measurable, and realistic?
- Does AVANGRID review performance metrics for each of the departments within Support Services?

Conclusions regarding these criteria are noted in each of the sections that follow.

### *9.1 Risk Management*

## **Objective & Scope**

This section covers our assessment of the CNG Risk Management functions. It includes an assessment of the roles and responsibilities of the Risk Management organization and more generally the efforts undertaken by the companies to actively assess risks, develop mitigation strategies, and measure and monitor progress associated with those mitigation efforts.

## **Overall Assessment**

**AVANGRID AND AVANGRID NETWORKS (OR NETWORKS) IS DOING A VERY CREDIBLE JOB TO FACILITATE THE OVERSIGHT OF RISK MANAGEMENT WITHIN CNG. SENIOR EXECUTIVES ARE ACTIVELY INVOLVED IN RISK MANAGEMENT THROUGH RISK COMMITTEES, DETAILED PROCEDURES ARE IN PLACE TO DRIVE THE STEPS TO MANAGE AND MITIGATE RISKS, AND METRICS ARE IN PLACE TO MONITOR PERFORMANCE IN KEY RISK AREAS. ONE COMPONENT OUR TEAM IDENTIFIED AS CRITICAL TO GAS SYSTEM SAFETY RISK MITIGATION IS THE GEOSPATIAL INFORMATION SYSTEM (GIS) SYSTEM FOR CNG. ESPECIALLY GIVEN THE**

**EXTENSIVE CONSTRUCTION INVESTMENTS IN NEW AND REPLACED PIPELINE OVER THE NEXT TEN YEARS, ACCURATELY CAPTURING SYSTEM ATTRIBUTES IS CRITICALLY IMPORTANT. WE RECOMMEND IMPLEMENTING THE UPGRADES TO CNG'S GIS SYSTEM.**

### **Evaluation Criteria**

Risk Management as a corporate function is an evolving group across utility companies. Many organizations are “finding their ways” on the appropriate roles and responsibilities for the function. Risk Management personnel are likewise trying to determine how to best “embed” risk management thinking within the business units. It is under this evolving framework that we will assess the CNG Risk Management functions. The evaluation criteria for assessing Risk Management include:

- Development of risk management associated policies and procedures,
- Appropriate senior executive level attention to risk management,
- A formal process to identify risks,
- Development of steps to mitigate risks,
- Methodology to measure and monitor efforts to manage risks,
- Specific identification of risk thresholds to define the “risk appetites for business decisions,” and
- Reasonable efforts to “embed” risk management philosophies within the business units.

### **Conclusions:**

**Conclusion 9.1.1: RCG/SCG LLC concluded that the Risk Management group is organized to provide senior management attention to Risk Management.**

### **Analysis**

Risk Management is an AVANGRID Networks function. It is managed by a VP of Risk that reports to the Networks CFO. Reporting to the VP of Risk are two direct reports responsible for Risk Management Networks and Business Continuity. One individual is responsible for supporting the Connecticut gas companies while the other individual is responsible for the New York Networks companies.

Regarding the attention to risk by senior management, there is a Risk Oversight Committee comprised of the utility presidents and legal, regulatory, and other key executive leadership. AVANGRID has its own risk oversight committee that includes AVANGRID Networks

and other groups. AVANGRID Networks meets as a group as well just prior to the AVANGRID meetings.<sup>511</sup>

**Conclusion 9.1.2** *RCG/SCG LLC concluded that the Risk Management group has established extensive policies and procedures to support Risk Management for the AVANGRID companies. Further, the company has an excellent process for measuring and monitoring risk.*

### **Analysis**

Our understanding is Iberdrola brought a more robust risk management framework to the UIL companies. This is evident when reviewing the policies, procedures, and structure associated with managing risk. First the policies provide direction of which parts of the business require risk management policies, including corporate entities and operating units.<sup>512</sup> Then there are very specific guiding principles providing threshold level risks permitted within the business, including required metrics to support risk management. As the document is confidential, the details will not be provided in this report.<sup>513</sup>

One of the tools used to manage and assess risk is the Risk Register. The Risk Register contains a list of the risks and includes:<sup>514</sup>

- Priority (numerical),
- Class (Recurring or Singular),
- Evolution (Risk has increased, decreased, same, or new),
- Short term and long term impacts to financials and cash flow (H, M, L),
- Impact on Reputation (Yes or No),
- Likelihood of event (H, M, L),
- A description of the required mitigation action, and
- A listing of the business unit entity responsible for the action steps.

As a companion to the Risk Register, a Key Risk Reporting Framework document defines the criteria to be used to selecting H, M, or L or the numerical rankings for the items listed above.<sup>515</sup> Further, the document defines some level of specificity to documenting action steps and defining responsibilities for those actions in Mitigation Plans. For example, the procedure calls for the following information shown in the following Exhibit.

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<sup>511</sup> Interview with VP of Risk and Manager responsible for CT Gas utilities Risk Management on May 25, 2016

<sup>512</sup> Response to Data Request RM005 CNG-SCG Attachments 1, 2 and 3

<sup>513</sup> [REDACTED] CONFIDENTIAL

<sup>514</sup> [REDACTED] CONFIDENTIAL

<sup>515</sup> Response to Data Request RM012 CNG-SCG Attachment 1

The Risk Mitigation Plan should contain the following components:

- ✓ Risk Name, Risk Owner, Summary Description and ID as it appears on the Key Risk Register
- ✓ Scope of Mitigation Plan
- ✓ Major Activities, Project or Programs Mitigating the risk, include Historic and Forward looking activities with Timeline and Milestones
- ✓ Stakeholder Impacts
- ✓ Costs (incremental and non-incremental) and if fully budgeted
- ✓ Resources (personnel and other) and if fully committed
- ✓ Status of Mitigation Efforts

**Exhibit 70 - Risk Mitigation Plan Components**

We were told, however, that CNG has not yet taken their processes to the steps to providing more granularity to the action steps and action step assignments. They recognize this is a next step.<sup>516</sup>

Further, the procedures refer to additional risk categories such as Public/Environmental Impact, Employee/Contractor Impact, Reliability/Expectation of Service Impact, state of Risk Mitigation strategy, Legal and Compliance risk, and Controllability. We have not seen any evidence that the risk analysis has been carried yet to this level, but we agree with the direction of the companies.

Finally, there is a formula for determining risk scores based upon severity of risk and likelihood of occurrence. We have not seen risk scoring of this nature yet in place. We have seen this type of risk scoring mechanism used with other utilities but mostly for specific projects and programs. As part of the justification packages for discrete projects and programs, a risk score using this type of formula would be used to rank projects and be considered, at least as one factor, in prioritizing capital projects.

The risk committee's review designated metrics for risk management. Some of the metrics are in common with the overall corporate scorecard metrics. The selected metrics are focused particularly on risk issues such as Customer Service, Gas Safety, Employee Safety, Financial Risks, and Corporate Security.

As appropriate Gas Safety, there are metrics associated with leak management, emergency response, and third party damages to gas service and main. However, there is another risk mitigation strategy we recommend that does not appear in the company risk registers or metrics. Gas Safety is clearly one of the most important risks for a gas distribution company – due to the potential impacts to employees and the general public. These risks are largely what have driven the current Distribution Integrity Management Programs (DIMP). To support DIMP (and Transmission Integrity Management Programs for companies that have

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<sup>516</sup> Interview with VP of Risk and Manager responsible for CT Gas utilities Risk Management on May 25, 2016

transmission pipe), of prime importance is an understanding of which assets are where and capturing all of the required asset attributes. For leading utility companies, this role is assumed by the GIS, displacing paper records which attempt to achieve the same.

Currently CNG has a GIS system, although it is expected to be upgraded. At this time, SCG does not have a GIS system in place to track asset attributes. Especially considering the extensive investments incurring to install new pipe (New Business and Gas Expansion programs) and to replace old pipe (Pipeline Replacement programs) it is especially important to capture accurate asset attributes now, including precise (preferably GPS) locational data, and pipe asset descriptions include pipe type, sizes, and manufacturer information. Pipe type and manufacturer are often important to look for trends when there are failures. If there is a defect, it could exist everywhere this particular asset was installed.

We are told the GIS for SCG is slated for 2020. We recommend to both the companies and to the PURA that these investments in our opinion are prudent for acceleration and are in the best interests to CNG and SCG customers.

**Conclusion 9.1.3:** *RCG/SCG LLC concluded that the Risk Management is doing a good job in efforts to “embed” itself within the business units to help them manage risks.*

#### Analysis

Already described is how Risk Management works closely with the business units to help them manage and mitigate their risks. As a further role, and one we often recommend to our other clients, Risk Management participates in the business case justifications for large capital projects. In particular, Risk Management is part of the work flow and approval steps required for sign off before the project is approved to be included in the budget. One such example is with the Rocky Hill LNG Liquefaction Replacement.<sup>517</sup> Risk Management was required to review and sign off on this project.

**Conclusion 9.1.4:** *RCG/SCG LLC found that the AVANGRID Business Continuity Planning (BCP) has adequate policies, procedures, and processes. These policies and procedures are implemented and followed by the Companies.*

#### Analysis

The RCG/SCG LLC team reviewed the Business Continuity Planning policies and procedures.<sup>518</sup> The Business Continuity Plan is maintained in a corporate directory with each area having its own document. The BCP is updated annually based on the annual Business Impact Analysis (BIA) each business area completes. The BCP development is based on the

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<sup>517</sup> [REDACTED]

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<sup>518</sup> Response to Data Request FIN099 CNG-SCG Attachment 1

Disaster Recovery Institute International (DRII) methodology All Hazard Approach. What is necessary to recover each area of responsibility is focused on 4 losses:

- Access to personnel,
- Access to facilities,
- Access to systems and data, and
- Access to vendors {recently added to recognize the critical nature of the supply chain}).

There is a BCP process lead for Gas Operations. Each area has a BCP Representative. The BCP process lead maintains a process flow chart of the BCP development and keeps it updated. Each Area's Plan, including the CT Gas Companies', contains:

- Name of the Area's BCP Representative,
- Checklist for recovery,
- Summary of the overall approach to recovery, and
- Recovery structure.

The Area BCP has a limited amount of detail, since the details are determined by the specific disaster that drives the needed recovery.<sup>519</sup>

CNG annually prepares a BIA that forms the basis for the 2016 update. The planning for the CT Gas Companies was last reviewed and updated in June 2015 as required by the BCP process.<sup>520</sup>

#### **Recommendations:**

**Recommendation 9.1.1:** RCG/SCG LLC recommends that CNG provide more detailed risk mitigation action steps and assignments in its risk register tracking mechanism, consistent with company policy.

#### **9.2 Legal**

#### **Scope and Objective**

The legal function for CNG is the responsibility of a newly appointed UIL Holdings General Counsel Leonard Rodriguez; he covers SCG and UI as well. He also meets frequently with Scott Mahoney, the AVANGRID Senior Vice President and General Counsel. Most of the actual legal activities are outsourced to a number of outside legal firms. The utility's legal function supports a wide range of the regulatory and business functions of the utility. These

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<sup>519</sup> Interview C. Jones 07/13/16

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functions include General Counsel and Siting Council work; regulatory filings and issues at the local, state, and federal levels for the approval of rates; litigation for claims against the utility or against outside parties, collections, environmental permitting and compliance; construction support, financing support and financial reporting; business functions such as purchasing, contracting, union negotiations, human resources, corporate governance and compliance; and other issues as they may evolve.

RCG/SCG LLC's evaluation of the Legal function as it applies to CNG focused on the Legal Department's organizational structure and policies and procedures, responsibilities, experience and its ability to manage outside legal entities. Our criteria for the Legal function are as follows:

- Does the Company have adequate departmental policies and procedures for each area?
- Are departmental goals and objectives clear, measurable, and realistic?
- Are costs controlled effectively and are outsourced services managed appropriately?

## **Overall Assessment**

**THE LEGAL DEPARTMENT IS GENERALLY WELL MANAGED AND SERVES CNG PROPERLY WITH A LARGE PORTION OF THEIR ACTIVITIES OUTSOURCED. BUT IT COULD BE FURTHER STRENGTHENED WITH EXPANSION OF THEIR WRITTEN PROCEDURES, ENHANCED GOAL-SETTING, AND THE USE OF A PERIODIC AUDIT OF OUTSIDE COUNSEL'S GUIDELINE ADHERENCE.**

### **Conclusions:**

**Conclusion 9.2.1:** *RCG/SCG LLC found that, based on a review of the limited number of departmental policies and procedures, the legal process, and their outside counsel retention and billing guidelines, CNG's legal affairs are managed reasonably. But additional policies and procedures appear to be necessary to ensure the fundamental legal, ethical, and company supportable requirements are followed.*

### **Analysis**

The UIL Holdings Legal Department has several reasonable procedures for use in support of CNG. These include<sup>521</sup>:

1. Legal Department Orientation Plan
2. UIL Legal Department Data Breach Response Policy – (12/2015)

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<sup>521</sup> Response to Data Request SSL001

3. Notification Procedure Regarding Subpoena, Notice of Investigation or Violation, and other Legal or Administrative Documents, Processes or Requests Rev 2013\*
4. UIL “Traffic Light” Summary regarding Contract Review (2011)
5. First Point of Contact (2016)
6. Procedure LS 01: Legal Services (2016)
7. Insider Trading Policy (2014)
8. Policy for Disclosure of Material Information (2011)
9. Records Management Policy (12/2015)

\*An AVANGRID Procedure

There is also a UIL Holdings Retention and Billing Guidelines for Outside Counsel<sup>522</sup>, developed in 2015 because of the volume of legal activities covered by outsourcing to outside law firms.

While updates and new procedures are under review<sup>523</sup>, RCG/SCG LLC found that a number of procedures were apparently not available in written form, and there is only a limited current program to assess the completeness of their current procedures and policies. We acknowledge that some required procedures are available within other departments (e.g.: Procurement) but the Legal Department’s Legal Policies and Procedures need to be written and consolidated as an anytime reference. Some needed procedures or policies could include:

- Intellectual Property,
- Patent Policy,
- Problem or Dispute Resolution,
- Compliance related Policies,
- Personal Data Security Procedure,
- Privacy Policy,
- Business Ethics Policy,
- Business Interruption Policy,
- Procedure regarding ongoing notification to Key executives about the Status of Material litigation,
- Contracting Policies,
- Supplier Contract Management Policy,
- Vendor Selection Policy,

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<sup>522</sup> Response to Data Request SSL005

<sup>523</sup> Response to Data Request SSL001 Attachment 1 through 9

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- Vendor/Contractor Bankruptcy Procedure,
- Brand Usage Policy,
- Foreign Transfer of Information and Assets Policy & Procedure,
- Ring Fence Requirements and other PURA Commitments Policy, and
- Potentially others.

Several of the currently used procedures and policies appeared to have been recently revised but others require revision especially because CNG is newly acquired and the adjustments to the entire organization.

RCG/SCG LLC believes that policies and procedures should be easily referenced, such as on a company intranet or a well written manual. For Legal they are fundamental to the functioning of the Legal and Company organization. They provide a ready reference guideline with requirements clearly provided on how to conduct business in a legal, ethical, and company supported fashion.

**Conclusion 9.2.2:** *RCG/SCG LLC found that while clear goals were available in the past that were measurable and part of the balanced scorecard, they were not always challenging and often based on essentially doing their routine job and resulting in positive but easily achievable stretch targets even with a shortage of staff. In addition, as a result of the merger of UIL Holdings Corporation and Iberdrola USA (Now AVANGRID), the 2016 goals, objectives, and performance metrics still remain under development.*

**Analysis**





These balanced scorecards, however, result in payments that are not overly significant to the measured members. The payment percentage, while said to be small, is based on the level of the employee. In addition it does appear to provide a reasonable return for the utility. The details behind the categories and the specific goals are clear and reasonable. Each year the Objectives change in support of the same perspective categories; Financial, Customer, Operations, and Capabilities.

Improvement to the Balanced Scorecard design will be covered elsewhere in our audit report since it is a company wide improvement opportunity.

In addition, with the level of legal activity, there is only one in house attorney in addition to the General Counsel, and a paralegal available to support the UIL Connecticut companies. Hence a vast amount of the actual work is outsourced. Further, most of the Division's time is devoted to the electric company UI. Two positions are vacant; a senior in house regulatory attorney and, within Networks, a FERC attorney.

Beyond the annual objectives covered in the balanced scorecards, there are no formal performance metrics enabling the Legal Department to know how it is doing and keeping its management well informed about actual results. These metrics are necessary to support corporate strategies, provide the ability to re evaluate its course of action and are easily changed when they are no longer valid or worthy of the data collection and tracking time investment. There is however, through SAP, a Performance Evaluation program that is used throughout the company, including the Legal Department, where each employee enters goals into the system and then is evaluated at the end of the year. No management reports were produced in years 2013 to 2015.

**Conclusion 9.2.3:** *RCG/SCG LLC found that with the significant amount of legal outsourcing, the need to control outside firms is critical and the Legal department uses reasonable systems, guidelines, contracts, and oversight to effectively manage the outsourced services and control costs.*

### **Analysis**

Legal is a shared business unit. The internal costs (payroll only since benefit costs are not charged to the department budget) are shared by UIL subsidiaries based on the accepted Massachusetts formula. These internal costs incurred in 2013, 2014, and 2015 are shown in the Exhibit below<sup>525</sup>:

Year	Description	Total Spending
2013	<b>Total Internal Costs</b>	<b>\$3,612,015.39</b>
	<b>Board of Directors Expense</b>	<b>\$1,925,387.22</b>
	<b>Internal Costs less BOD</b>	<b>\$1,686,628.17</b>
2014	<b>Total Internal Costs</b>	<b>\$3,519,556.90</b>
	<b>Board of Directors Expense</b>	<b>\$2,022,561.43</b>
	<b>Internal Costs less BOD</b>	<b>\$1,496,995.47</b>
2015	<b>Total Internal Costs</b>	<b>\$7,008,856.46</b>
	<b>Board of Directors Expense</b>	<b>\$5,270,374.35</b>
	<b>Internal Costs less BOD</b>	<b>\$1,738,482.11</b>

**Exhibit 71- Internal Legal Costs Incurred in 2013, 2014, and 2015**

While the merger caused the BOD costs to be higher than normal in 2015, UIL will no longer incur these costs in the future. There were payouts to directors pursuant to the dissolution of this UIL Board.

The allocation of these internal costs to CNG and its sister SCG are shown in the following Exhibit<sup>526</sup>:

Year	CNG	SCG
2013	13.66%	16.75%
2014	14.33%	17.50%
2015	14.48%	18.14%

**Exhibit 72 - Internal Legal Cost Allocation**

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<sup>525</sup> Response to Data Request SSL007 Attachment 1

<sup>526</sup> Response to Data Request SSL007 Attachment 1

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Outside counsel spending has been reasonably significant but necessary. Among the areas that are currently outsourced are<sup>527</sup>:

- Litigation,
- Collections,
- FERC,
- Contracting (Complicated ones are outsourced),
- Construction, LNG,
- Union Negotiations,
- Claims: mostly outside,

There still is work done in house with:

- Most regulatory work stays in house,
- Most Contracting work stays in house, and
- SEC Filings stays in house.

For CNG itself the outside Counsel Fees and Expenses Incurred in 2013, 2014, and 2015 are shown in the Exhibit below<sup>528</sup>:

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<sup>527</sup> Interviews with L Rodriguez and C Gill

<sup>528</sup> Response to Data Request SSL007

<b>SUMMARY</b>			
<b>Area of Law - CNG</b>	<b>2015 Spending</b>	<b>2014 Spending</b>	<b>2013 Spending</b>
Total Bankruptcy	\$4,561.93 USD	\$0.00 USD	\$0.00 USD
Total Collections	\$615,065.60 USD	\$314,853.06 USD	\$76,995.16 USD
Total Contracts	\$922.50 USD	\$21,727.50 USD	\$46,368.73 USD
Total Corporate	\$5,384.88 USD	\$29,015.60 USD	\$1,750.00 USD
Total Debtor/Creditor	\$3,414.20 USD	\$2,575.00 USD	\$930.00 USD
Total Gas Easements	\$14,870.99 USD	\$2,000.00 USD	\$450.00 USD
Total Environmental	\$14,582.40 USD	\$1,623.60 USD	\$1,270.20 USD
Total Human Resources	\$6,572.00 USD	\$21,329.80 USD	\$23,289.45 USD
Total Intellectual Property	\$480.24 USD	\$0.00 USD	\$0.00 USD
Total Litigation	\$20,714.56 USD	\$36,865.64 USD	\$10,683.03 USD
Total HR Litigation	\$7,710.82 USD	\$49,246.28 USD	\$101,711.98 USD
Total Pension & Benefits	\$31,747.61 USD	\$19,609.88 USD	\$29,213.22 USD
Total Real Estate	\$3,225.00 USD	\$0.00 USD	\$0.00 USD
Total Regulatory > FERC	\$46,236.78 USD	\$49,386.42 USD	\$35,428.51 USD
Total Regulatory > State	\$0.00 USD	\$564.39 USD	\$715.80 USD
Total Tax	<u>\$5,460.00 USD</u>	<u>\$28,932.50 USD</u>	<u>\$52,149.83 USD</u>
<b>Total CNG</b>	<b>\$780,949.51 USD</b>	<b>\$577,729.67 USD</b>	<b>\$380,955.91 USD</b>

**Exhibit 73- CNG outside Counsel Fees 2013 to 2015**

UIL also incurs outside counsel expenditures which, in addition to the direct charges shown above, is also partially allocated to the Connecticut Gas Utilities using the Massachusetts formula<sup>529</sup>.

For UIL the Outside Counsel Fees and Expenses Incurred in 2013, 2014, and 2015 are provided in the following Exhibit<sup>530</sup>:

<sup>529</sup> Response to Data Request SSL007

<sup>530</sup> Response to Data Request SSL007

<b>SUMMARY</b>			
<b><u>Area of Law - UIL</u></b>	<b><u>2015 Spending</u></b>	<b><u>2014 Spending</u></b>	<b><u>2013 Spending</u></b>
Total Contracts	\$82,147.20 USD	\$147,713.66 USD	\$33,255.50 USD
Total Corporate	\$49,747.34 USD	\$39,470.37 USD	\$190,463.78 USD
Total Corporate less BOD	\$45,202.02 USD	\$35,093.40 USD	\$180,598.65 USD
Total Corporate Compliance	\$0.00 USD	\$226.04 USD	\$0.00 USD
Total Human Resources	\$47,591.64 USD	\$22,821.85 USD	\$60,926.71 USD
Total Immigration	\$8,206.71 USD	\$2,849.25 USD	\$27,843.73 USD
Total Intellectual Property	\$1,120.56 USD	\$0.00 USD	\$0.00 USD
Total Litigation/Claims	\$65,358.38 USD	\$149,371.01 USD	\$265,836.67 USD
Total HR Litigation	\$3,862.50 USD	\$16,098.85 USD	\$0.00 USD
Total Lobbying	\$269.27 USD	\$5,594.98 USD	\$0.00 USD
Total Pension & Benefits	\$9,740.09 USD	\$2,202.50 USD	\$3,134.20 USD
Total Real Estate	\$0.00 USD	\$0.00 USD	\$422.50 USD
Total Strategic Opportunities	\$6,071,130.54 USD	\$2,407,024.46 USD	\$0.00 USD
Total Tax	\$0.00 USD	\$0.00 USD	\$2,385.00 USD
Total Workers Compensation	\$155,204.59 USD	\$130,807.14 USD	\$50,914.96 USD
<b>Total UIL</b>	<b>\$6,494,378.82 USD</b>	<b>\$2,924,180.11 USD</b>	<b>\$635,183.05 USD</b>
<b>Total UIL less BOD</b>	<b>\$6,489,833.50 USD</b>	<b>\$2,919,803.14 USD</b>	<b>\$625,317.92 USD</b>
<b>Total UIL less BOD and Strategic</b>	<b>\$418,702.96 USD</b>	<b>\$512,778.68 USD</b>	<b>\$625,317.92 USD</b>

**Exhibit 74 - UIL the Outside Counsel Fees and Expenses Incurred in 2013 to 2015**

As with the Internal Costs, the UIL costs are allocated among the UIL CT companies according to the same Massachusetts as shown in the exhibit below.<sup>531</sup>

Year	CNG	SCG
2013	13.66%	16.75%
2014	14.33%	17.50%
2015	14.48%	18.14%

**Exhibit 75 -UIL Legal Cost Allocation of Outside Counsel Fees & Expenses**

<sup>531</sup>Response to Data Request SSL007



UIL Holdings has and applies Retention and Billing Guidelines for Outside Counsel that are designed to guide outside counsel firms and these guidelines supersede any terms contained in engagement letters that conflict with these guidelines except on a rare exception basis. Hence these guidelines form the basis for the engagement of outside counsel. They cover:

- Roles and responsibilities,
- Staffing,
- Communications,
- Charges,
- Billing Administration,
- Items not compensable,
- Budgets,

- Travel,
- Litigation,
- Pretension of experts and local counsel,
- Cyber security and data privacy,
- Business conduct guidelines,
- Conflict of interest,
- Media coverage, and
- Value added services.

Finally, a Paralegal is part of the UIL Holdings Legal Department. Her responsibilities<sup>533</sup> include the oversight, approval, and processing of outside counsel using the Serengeti Tracker e billing software (currently called Thomson Reuters Legal Tracker).

RCG/SCG LLC found that the level of legal expenditures both internally and for outside counsel were reasonable. In addition, the use of the Massachusetts formula to allocate costs is appropriate. The final revised budgets for outside legal work for years 2014 and 2014 closely matched the original budget.<sup>534</sup>

The Legal Department makes use of the Legal Tracker e billing software. This is the legal profession's most widely used and highest rated e billing and matter management platform with more than 950 leading corporate law departments and 250,000 users worldwide. Legal Tracker provides instant access to every aspect of every matter, automates tasks, increases visibility, reduces risk, and integrates seamlessly with the utilities outside firms. Legal Tracker also holds live rate analytics information, with detailed data on attorney performance that includes costs, staffing, duration, predictive accuracy, and evaluations by clients.

RCG/SCG LLC found the Retention and Billing Guidelines for Outside Counsel to be both comprehensive and well designed, providing adequate rules and direction for all outside counsel firms, strengthening control of time billing, and lessening the need for micro managing the outside firms especially when coupled with periodic internal audits of the outside counsel firm's adherence to the guidelines.

The use of a paralegal to focus on outside counsel oversight and cost reduction has been effective. The Paralegal prepares periodic reporting and analysis regarding outside counsel spending, develops the department budgets and compares spending to actuals, and prepares a detailed analysis on Collection invoices. In addition, recently the Paralegal

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<sup>533</sup> Response to Data Request SSL008 Position Description

<sup>534</sup> Response to Data Request and Extrapolated from SSL011, 0% deviation in 2014, +2.6% deviation in 2015

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negotiated WestlawNext contract<sup>535</sup> which resulted in 33% savings from original quote; incorporated Practical Law into the agreement and negotiated 2015 renewal down to 15% from 24%; locked in 3% increase for ensuing two years for both WestlawNext and Practical Law, substantially reducing UIL's exposure. The prior 2014 Practical Law renewal had resulted in increase of 30%. The paralegal and the in house lawyers appear to work hard to reduce rates charged by outside counsel.

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[REDACTED] Instead they rely on their knowledge of the work and of the firm itself. The paralegal was very positive of her internal lawyer's efforts to reduce rates.

Typically, their contracts are man hour based without time estimates. Some contracts use blended rates and there are no monthly retention contracts. If an effort needs another law firm (e.g., need for a local counsel firm) the newly needed counsel contracts with UIL separately and directly so that they do not get an added mark up charge. Some contracts such as easements are not to exceed or on a cap Fee basis, providing a limit on the total fee paid.

Over the past five years there has not been an audit of the actual application of the Retention and Billing Guidelines for Outside Counsel<sup>536</sup>. While the Guidelines are well done and comprehensive the actual use of these Guidelines has not been formerly tested.

**Recommendations:**

**Recommendation 9.2.1:** *RCG/SCG LLC recommends that the Legal Department conduct a comprehensive needs analysis to determine the need and appropriate wording for a comprehensive set of written procedures and policies, serving as a ready reference, reflecting today's requirements and providing clear legal, ethical, and company supported direction to the entire UIL organization and ensuring appropriate consistency throughout AVANGRID itself.*

**Recommendation 9.2.2:** *RCG/SCG LLC recommends that the Legal Department work to develop a set of performance metrics with executive buy in to trend and measure using a SMART (specific, measurable, achievable, relevant, and time based) methodology. These metrics can feed into the Balanced Scorecard program which will encourage continual performance improvement, progress reviews and management reporting.*

**Recommendation 9.2.3:** *RCG/SCG LLC recommends that in light of the Legal Department's dependency on outside legal counsel and its reliance on the Retention and Billing Guidelines for*

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<sup>535</sup> Response to Data Request SSL011

<sup>536</sup> Response to Data Request IA005

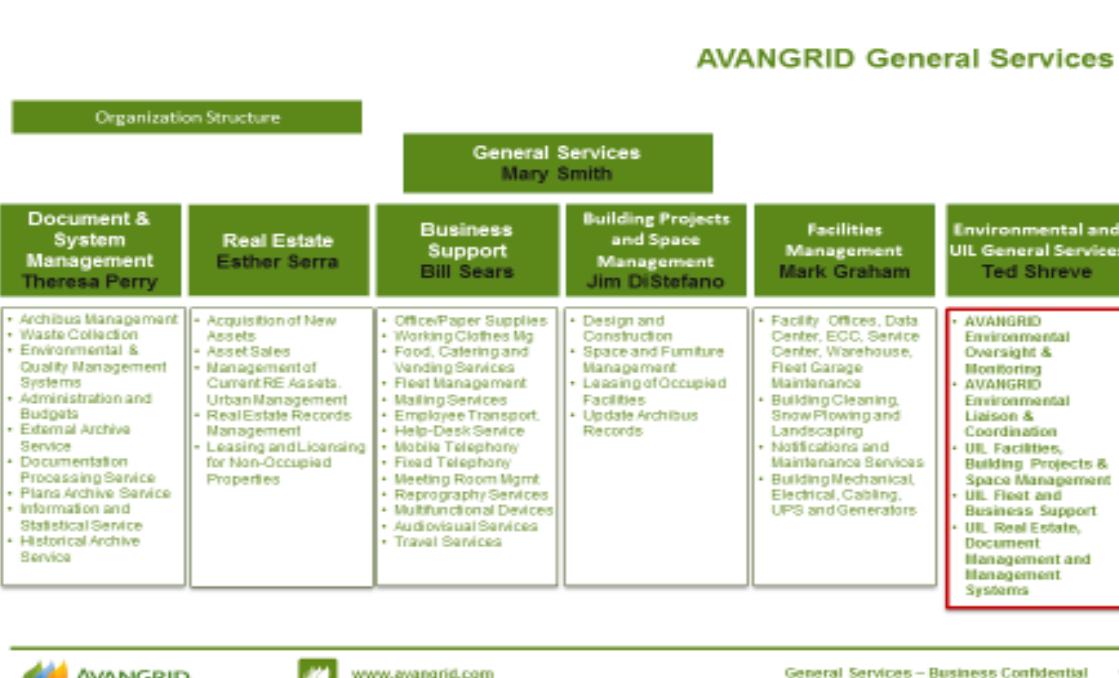
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*Outside Counsel, consideration be given to having an audit of the actual application of the Guidelines by at least two currently contracted firms.*

### General Services

### Background

Facilities Management, Fleet and Records Management are now part of the Environmental and UIL General Services organization. This organization reports up to AVANGRID General Services organization, see the following Exhibit.<sup>537</sup>



www.avangrid.com

General Services – Business Confidential 1

### Exhibit 76 – General Services Organization

### 9.3 Facilities Management

### Objectives and Scope

An effective facilities management process includes strategy development (focused on customer satisfaction and continuous improvement), the documenting of services, a resource plan to deliver the services, a system to monitor service delivery against expectations, and a

<sup>537</sup> Response to Data Request SST011 CNG-SCG Attachment 1

customer feedback process. The RCG/SCG LLC team reviewed the AVANGRID's Facility management and its impact on CNG's operation and facility needs.

## Overall Assessment

**BASED ON OUR REVIEW OF THE FACILITIES MANAGEMENT GUIDING DOCUMENTATION, GOALS, OBJECTIVES, AND PERFORMANCE MEASUREMENT, RCG/SCG-LLC BELIEVES THAT AVANGRID MANAGES ITS FACILITIES ADEQUATELY.**

### Conclusions

**Conclusion 9.3.1:** *RCG/SCG LLC concluded that AVANGRID Facilities function has met the intent of the 2010 CNG Management Audit recommendations.*

### Analysis

The 20109 Management Audit specified three recommendations that impacted the Facilities Management function serving CNG.

*Item # 38, Chapter #16, Facilities and Security, Recommendation 16 1: As conditions permit, CNG should consider contracting out building mechanical and janitorial services, as has been done at SCG, to take advantage of a cost savings. The Director – Facilities and Security estimated savings of approximately \$80,000 to \$90,000 annually could be achieved by outsourcing building and janitorial services at CNG, as has been done at SCG. It appears that approximately half of the available savings has been achieved with the elimination of one janitor position in early 2010. As a point of clarification, CNG notes that its ability to outsource union positions is severely limited.*

RCG/SCG LLC believes that the actions taken by CNG to negotiate with the local union the ability to contract out such services and their subsequent implementation of the appropriate contract services has met the intent of the recommendation.<sup>538</sup>

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<sup>538</sup> Response to Data Request GEN012 CNG Attachment 1

RCG/SCG LLC believes that the organizational changes completed by UIL and subsequently by AVANGRID regarding the Facility function's management have met the intent of the recommendation.<sup>539</sup>

*Item # 38, Chapter #16, Facilities and Security, Recommendation 16 3: Participate in the IFMA benchmarking survey and use the results to set internal performance targets. Opting out of the IFMA study to save a \$1,600 annual participation fee is penny wise and pound foolish. In addition to participating, CNG should take the time to ensure that it mines the results of the study to establish internal cost control and operational efficiency targets.*

RCG/SCG LLC believes that the use of the PSE&G survey and the planned internal benchmarking with AVANGRID Companies regarding the Facility functions operational costs has met and will continue to meet the intent of the recommendation.<sup>540</sup>

**Conclusion 9.3.2:** *RCG/SCG LLC found that the AVANGRID Facility organization is well qualified and appropriately organized to meet AVANGRID's facilities management needs.*

### **Analysis**

Facility Management is part of the Environmental and UIL General Services organization. The Facility Manager is responsible for monitoring and maintenance of the AVANGRID's service center and administration facilities. Two supervisors report to the Manager. One is responsible for UIL facilities and the other for the CT Gas (CNG and SCG) facilities. Three union employees with tech level skills maintain the CNG facilities. The supervisor deals directly with the CNG management and regularly attends their meetings to stay abreast of the current and future facility needs. Since they recently negotiated bringing the maintenance function in house, they have no current union barriers to getting their work completed.

They contract out landscaping, janitorial and specialized services. They use contract day porters to maintain and freshen up bathrooms during the day. They use in house personnel for all other facility maintenance and repair. The supervisors are also responsible for quality control of all maintenance contractors. They have developed a checklist to use for this quality review.

Recent additions of full generator back ups CNG's headquarters has resolved the major emergency issue.<sup>541</sup>

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<sup>539</sup> Interview T. Shreve 06/02/16 and Response to Data Request GEN012 CNG Attachment 1

<sup>540</sup> Interview T. Shreve 06/02/16

<sup>541</sup> Interview T. Shreve 06/02/16

Company Facilities are secured and monitored 24/7. Reference the Security Section, below.

**Conclusion 9.3.3:** *RCG/SCG LLC found that the AVANGRID Facility Management organization has adequate departmental policies and procedures, goals, objectives, and space planning guidelines, and regular internal client feedback to meet the facilities management needs of the CNG.*

### **Analysis**

The facilities management organization has specific list of goals and objectives<sup>542</sup> by which realization of its organizational goal could be reached:

- Improve internal customer satisfaction,
- Improve reactive vs. proactive work order ratio,
- Manage O&M expenditure to 2016 Budget, and
- Manage capital expenditure to 2016 Budget.

RCG/SCG LLC found that the goals and objectives adequately framed the facilities management responsibilities.

RCG/SCG LLC found that specific Building operating protocols are in place to guide facility management personnel. They also use a building management system to monitor in real time building HVAC and other critical systems.<sup>543</sup>

RCG/SCG LLC found their space planning process consistent with industry practices.<sup>544</sup> All office up fitting designs are standardized based on the type of occupancy. They have bi weekly meeting with I/T regarding space planning. They also meet with Security on an as needed basis to coordinate security requirements with future space planning. All facility project teams include I/T, Security, and Business Unit representatives.<sup>545</sup>

All facility budgets are targeted to rate base and rate case requirements. Charges are carefully assigned to the appropriate business unit.<sup>546</sup>

**Conclusion 9.3.4:** *RCG/SCG LLC found that AVANGRID has taken steps to reduce substantially its environmental impact at its facilities.*

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<sup>542</sup> Response to Data Request SSF002 and SSF003 CNG-SCG Att 1, SSF005 CNG-SCG Att 1

<sup>543</sup> Response to Data Request SSF001, SSF006

<sup>544</sup> Response to Data Request SSF008 and SSF009.

<sup>545</sup> Interview T. Shreve 06/02/06

<sup>546</sup> Response to Data Request SSF010

## **Analysis**

No environmental issues for CNG facilities were identified. The number and scope of incidents were all minor. A number of environmental compliance programs in place are audited periodically.<sup>547</sup>

The facilities do not have any fuel tanks or underground storage tanks, and they use city water and sewerage. Additionally, since the State of CT does not have any landfills, all refuse is recycled. New CT regulations require each headquarters to become a licensed recycling facility, which is in process.<sup>548</sup>

## **Recommendations**

RCG/SCG LLC has no recommendations for the Facility Management area of this audit.

### **9.4 Fleet Management**

#### **Objectives and Scope**

The objective of Fleet review is to evaluate the overall effectiveness of the management of fleet vehicles and equipment to ensure: minimum capital costs, minimum operating costs, maximum fleet utilization, maximum effectiveness of maintenance and repair, including preventive maintenance programs, and minimum impact on the CNG's operations.

#### **Overall Assessment**

**BASED ON OUR REVIEW OF THE FLEET OPERATIONS' STATED STRATEGY, GOALS, OBJECTIVES, AND PERFORMANCE MEASUREMENT, RCG/SCG-LLC BELIEVES THAT AVANGRID, FOR THE MOST PART, APPROPRIATELY MANAGES ITS TRANSPORTATION SERVICES AND EFFECTIVELY ADDRESSES THE CNG'S FLEET NEEDS. THE MANAGEMENT OF INVENTORY AND MAINTENANCE RECORDS, HOWEVER, NEEDS IMPROVEMENT.**

#### **Conclusions**

**Conclusion 9.4.1: RCG/SCG LLC concluded that the AVANGRID Fleet function is not addressing the intent of two of three of the 2010 CNG Management Audit recommendations.**

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<sup>547</sup> Response to Data Requests SSF011 and SSF012.

<sup>548</sup> Interview T. Shreve 06/02/06

## Analysis

The 2010 Management Audit specified three recommendations that impacted the Facilities Management function serving CNG.

*Item # 38, Chapter #17, Fleet & Stores Operations, Recommendation 17 1: CNG should develop performance objectives focused on fleet cost control and make them an objective in performance appraisals for the appropriate fleet and operations managers. Although management performance objectives included fleet availability, billable mechanic hours and synergy contract compliance, they apparently did not include cost per vehicle or cost per MRH, both of which rose substantially between 2006 and 2008. .... CNG should set an MRH target of achieving at least “average” industry performance (\$288 per MRH in 2009). A timeline (perhaps 3 years) for achieving “average” performance should be set, and progress toward meeting the target (one third each year if the timeline is 3 years) should be added to management performance objectives. Because CNG’s cost per MRH is near the worst in class level, this objective should be given at least some weight in performance appraisals. It is important to point out that some cost objectives may apply to operations managers, rather than fleet managers.*

AVANGRID reported that they completed implementation of this recommendation in the 2<sup>nd</sup> Quarter of 2011.<sup>549</sup> RCG/SCG LLC did find that Fleet has implemented a Scorecard of Fleet metrics that focus for 2016 on Fleet Availability, PM vs. Demand Repairs, PM % Completed on Time, Quality of Repair and Fleet Composition.<sup>550</sup> However, there is no focus on cost per vehicle. RCG/SCG LLC believes Fleet is not addressing the intent of this recommendation.

*Item # 38, Chapter #17, Fleet & Stores Operations, Recommendation 17 2: Configure the GPS system to help control fleet miles and fuel costs. One component of vehicle cost that rose substantially during the audit period was fuel..... With the proper configuration and software, GPS can be used to optimize routes and even monitor vehicle data, cutting down on miles driven and reducing fuel costs. A secondary benefit of driving fewer miles is reduced wear and tear, which should reduce maintenance and repair costs.... In upgrading CNG should also consider adding capability to optimize routing efficiency, with the objective of reducing miles driven.*

RCG/SCG LLC found the CNG has implemented UIL’s Trackstar AVL system<sup>551</sup> and believes CNG addressed the intent of this recommendation.

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<sup>549</sup> Response to Data Request GEN012 CNG Attachment 1

<sup>550</sup> Response to Data Request SST003 CNG-SCG Attachment 1

<sup>551</sup> Response to Data Request GEN012 CNG Attachment 1 and Interview M. Smith 06/02/16

*Item # 38, Chapter #17, Fleet & Stores Operations, Recommendation 17 3: CNG should set its fleet and stores performance targets at “stretch” (aspirational) levels. CNG easily met, and in most cases comfortably exceeded, all of its department level performance targets, including budgets, during the audit period. O&M budgets were met in all three years despite significantly rising fleet costs (which may say more about the budgeting process than performance targets). Performance is more likely to improve, and good performance is more likely to be maintained, when targets are set at levels that require effort to achieve. When possible, industry “best in class” performance levels should be used as benchmarks for performance targeting.*

AVANGRID reported that they completed implementation of this recommendation in the 3<sup>rd</sup> Quarter of 2011.<sup>552</sup> RCG/SCG LLC reviewed the Fleet Scorecard of metrics for 2016 and the targets and results for 2014 and 2015 and found that, in most cases, the results have exceeded the targets and in subsequent years the target remained the same.<sup>553</sup> In one case (PM % Completed on Time) the Target was reduced after it was not met in the previous year. RCG/SCG LLC believes Fleet is not addressing the intent of this recommendation.

**Conclusion 9.4.2:** *RCG/SCG LLC found that the Fleet operations have adequate policies and procedures. However, adherence to these procedures in the area of accounting control and data maintenance is lacking.*

### **Analysis**

AVANGRID provided documentation of the Fleet strategic direction, policies and procedures, and preventive maintenance programs. RCG/SCG LLC found these are consistent with industry standards.<sup>554</sup>

A March 2016 Audit Services report found that Fleet's implementation of some of their policies and procedures were lacking. These areas related to internal controls, data reconciliation, and accounting related matters. Fleet management has put in place an action plan to address these deficiencies.<sup>555</sup>

**Conclusion 9.4.3:** *RCG/SCG LLC found that Fleet is appropriately organized and logically located to meet CNG's requirements. However, Fleet does not use any workload driven staffing analysis.*

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<sup>552</sup> Response to Data Request GEN012 CNG Attachment 1

<sup>553</sup> Response to Data Request GEN012 CNG Attachment 1, SST003 CNG-SCG Attachment 1 and SST004 CNG-SCG Attachments 1 and 2

<sup>554</sup> Response to Data Request SST001 CNG-SCG Attachments 1-4 and SST002

<sup>555</sup> [REDACTED] CONFIDENTIAL

### **Analysis**

Fleet is part of the Environmental and UIL General Services organization. The Manager of Fleet Operations for CT is responsible for the Fleet services provided to AVANGRID. Fleet has a garage facility at each gas company location. Each garage is managed by a supervisor and staffed by 5 union mechanics at CNG and 6 union mechanics at SCG. Additionally, there is an Administrative Assistant at SCG that handles all of the Fleet clerical responsibilities.<sup>556</sup>

The staffing has not varied over the past several years. No workload analysis has been completed to tie staffing to work volumes. However, the other AVANGRID companies are using a work analysis tool to justify staffing levels and future staffing requirements.<sup>557</sup> RCG/SCG LLC believes staffing analysis based on workload projections is consistent with industry practices.

RCG/SCG LLC found that Fleet is looking to take advantage of the synergies of AVANGRID integration by AVANGRID having a person handle the light duty (LD) fleet and the procurement and services for the LD vehicles. AVANGRID has been transferring all maintenance and repair of LD vehicles to a Fleet Services Provider. They currently have an RFP out for a five year contract that covers just over 1300 vehicles. UIL Fleet will look at this model. However current staffing levels in the UIL garages includes all the light duty work done by the incumbent bargaining unit employees.<sup>558</sup>

**Conclusion 9.4.4:** *RCG/SCG LLC found that the Fleet has adequate departmental goals and objectives. However, cost per fleet unit and vehicle utilization additionally needs to be tracked and reported out to management.*

### **Analysis**

RCG/SCG LLC found that Fleet has implemented a Scorecard of Fleet metrics that in 2016 focuses on Fleet Availability, PM vs. Demand Repairs, PM % Completed on Time, Quality of Repair, and Fleet Composition.<sup>559</sup> However, as recommended in the 2010 CNG Management Audit, cost per fleet unit is still not being tracked. Additionally, fleet utilization is not being measured. Both of these metrics are consistent with industry practices and require that capital and expense budgets are used efficiently.

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<sup>556</sup> Response to Data Request SST 005 CNG-SCG Attachment 1 and Interview M. Smith 06/02/16

<sup>557</sup> Interview M. Smith 06/02/16

<sup>558</sup> Response to Data Request SST012 CNG-SCG Attachment 1

<sup>559</sup> Response to Data Request SST003 CNG-SCG Attachment 1

### **Recommendations**

**Recommendation 9.4.1:** *RCG/SCG LLC recommends that Fleet implement the AVANGRID staffing analysis process that calculates staffing requirement based on project work volumes.*

**Recommendation 9.4.2:** *RCG/SCG LLC recommends that Fleet add to their metrics a cost per unit measure and vehicle utilization measure.*

### ***9.5 Document Management***

#### **Objectives and Scope**

In the area of Document Management, RCG/SCG LLC reviewed AVANGRID's policies, procedures, and practices related to the protection of the critical documents and records. We will determine, consistent with the Evaluation Criteria below, whether CNG's document practices are consistent with industry practices and AVANGRID requirements.

#### **Overall Assessment**

**RCG/SCG-LLC HAS FOUND THAT THE AVANGRID'S DOCUMENT MANAGEMENT PRACTICES ARE CONSISTENT WITH THEIR CURRENT POLICY. HOWEVER, THE CURRENT POLICY AND PRACTICES ARE NOT IN ALIGNMENT WITH AVANGRID'S CENTRALIZED GOVERNANCE APPROACH.**

#### **Evaluation Criteria**

As mentioned at the beginning of this chapter, the evaluation criteria for all Support Services areas included the following:

- Does AVANGRID have adequate departmental policies and procedures for each area?
- Are departmental goals and objectives clear, measurable, and realistic?
- Does AVANGRID review performance metrics for each of the departments within Support Services?

#### **Conclusions**

**Conclusion 9.5.1:** *RCG/SCG LLC concluded that Records Management's policies and procedures are adequate.*

### **Analysis**

UIL Holdings Corporation maintains a Records Management and Vault Storage Policy (“Policy”)<sup>560</sup> to ensure the prudent maintenance and efficient disposition of records created, received, or transmitted by employees, its operating companies, and other subsidiaries during the normal course of business. The goal of the Policy is to provide specific guidance and detailed operating procedures for the proper management of records from their creation through their active use, retention, and disposition.

Proper records management requires a formalized retention system, which is set forth in the Record Retention Schedule. The Record Retention Schedule applies to all business units, and provides detailed procedures on how long a specific record should be retained in the office, when a record should be transferred to the corporate vault or an off site storage facility, and when an employee may nominate the Record for disposal.

**Conclusion 9.5.2** *RCG/SCG LLC concluded that Records Management policies and procedures are inconsistent with the AVANGRID centralized governance approach, and do not address electronic record creation and electronic conversion of paper records.*

### **Analysis**

Records Management is now the responsibility of the General Manager of Environmental and UIL General Services within the AVANGRID General Services organization. However, the policy controlling document management at AVANGRID continues to be the “UIL Holding Corporation Records Management and Vault Storage Policy.”<sup>561</sup> This Policy still states that the responsibility for Records Management is the “General Counsel or his or her designee.”

General Services, as part of their integration assessment, has concluded that records management activities at UIL “follow a different approach with functions and roles embedded in different areas of the organization.”<sup>562</sup> RCG/SCG LLC’s review of the above noted Policy supports this conclusion.

RCG/SCG LLC did not find any policy governing the electronic documents or the requirements to electronically scan existing paper documents.<sup>563</sup>

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<sup>560</sup> Response to Data Request SSF021

<sup>561</sup> Response to Data Request SSF021 Attachment 1

<sup>562</sup> Response to Data Request GEN016 CNG-SCG Attachment 1, p69

<sup>563</sup> J. Vicedomino Interview 06/02/2016

## **Recommendations**

**Recommendation 9.5.1:** *RCG/SCG LLC recommends that AVANGRID develop a policy to govern the maintenance of electronic documents and the electronic scanning of critical paper documents not housed in fire retardant waterproof storage within the AVANGRID facilities.*

### **9.6 Materials Management**

#### **Objectives and Scope**

An integral part of a natural gas utility's ability to provide safe and reliable service to its customers in an effective and efficient manner resides in its maintenance and capital programs. Additionally, CNG must respond promptly to and repair effectively gas odor complaints and customer requests for appliance service. Finally, AVANGRID must have in place a supply chain to support its natural gas system expansion programs.

In order to accomplish these objectives, Materials Management (Purchasing and Stores functions) process must procure the necessary materials and services, store, pre package, and issue the materials when needed and accurately process the associated transactions with all these steps following a controlled process. Customers, regulators, and shareholders expect a utility to cost effectively procure needed materials and services and stock only those materials that are of the type and quantity appropriate for the business needs. In order to adequately address all the key Material Management functions, AVANGRID must have formal policies and procedures to procure goods and services, manage strategic inventory and availability of materials, and ensure adequate stocking levels consistent with emergency response and future demands.

In this section, based on AVANGRID's organizational structure, it is appropriate to break down the Materials Management process into its two key component functions: Purchasing (or Procurement) and Logistics Supply Chain (Warehouse/Stores), including inventory management. Each area is reviewed below.

#### **Overall Assessment**

**OVERALL, AVANGRID'S MATERIAL MANAGEMENT ORGANIZATION (PURCHASING AND LOGISTICS) EFFECTIVELY AND EFFICIENTLY MANAGES ITS PURCHASING PROCESS. LOGISTICS EFFECTIVELY STORES AND MOVES MATERIALS AND SUPPLIES TO MEET THE CURRENT AND FUTURE EMERGENCY, MAINTENANCE, AND CAPITAL NEEDS OF GAS OPERATIONS AND THE CONTRACTORS SUPPORTING THE GAS SYSTEM EXPANSION EFFORT. THE KEY OPPORTUNITY FOR IMPROVEMENT AND COST-REDUCTION IS IN THE STANDARDIZATION OF STOCK CODES**

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**AND MATERIAL STANDARDS ACROSS CNG AND SCG AND THE AUTOMATION OF STOCK-OUT TRACKING AND REPORTING. ADDITIONALLY, SINCE NEITHER CNG NOR SCG UTILIZES BAR CODING AND/OR RFID TO IDENTIFY AND TRACK ITS MATERIALS, RCG/SCG-LLC BELIEVES A STUDY OF THIS TECHNOLOGY SHOULD BE UNDERTAKEN TO DETERMINE IT IF CAN BE COST-BENEFICIAL TO BE ADOPTED.**

### **Evaluation Criteria**

As mentioned at the outset of this chapter, three overall evaluation criteria exist for all sections of Support Services:

- Does AVANGRID have adequate departmental policies and procedures for each area?
- Are departmental goals and objectives clear, measureable, and realistic?
- Does AVANGRID review performance metrics for each of the departments within Support Services?

Materials Management review includes two additional evaluation criteria:

- Are purchasing approval levels, documentation, vendor selection and performance, and bid process compliant to established policies and procedures?
- Are the materials management warehouse facilities and space utilization, inventory turnover and stock levels, and reorder point determination, within expected norms?

### **Conclusions**

**Conclusion 9.6.1: RCG/SCG LLC concluded that the AVANGRID's Logistics Supply Chain (Stores) has addresses the intent of the one 2010 CNG Management Audit recommendations.**

### **Analysis**

The 2010 Management Audit specified one recommendation that impacted the Stores function serving CNG.

*Item # 44, Chapter #17, Fleet & Stores Operations, Recommendation 17 3: CNG should set its fleet and stores performance targets at "stretch" (aspirational) levels. CNG easily met, and in most cases comfortably exceeded, all of its department level performance targets, including budgets, during the audit period. O&M budgets were met in all three years despite significantly rising fleet costs (which may say more about the budgeting process than performance targets). Performance is more likely to improve, and good performance is more likely to be maintained, when targets are set at levels that require effort to achieve. When possible, industry "best in class" performance levels should be used as benchmarks for performance targeting.*

AVANGRID reported that they completed implementation of this recommendation in the 3<sup>rd</sup> Quarter of 2011.<sup>564</sup> RCG/SCG LLC reviewed the Logistics Supply Chain (Stores) Scorecard of metrics for 2015 and 16 and the targets and results for 2013 thru 2015 and found that the results against target varied year over year against a fixed target.<sup>565</sup> The target performance had never been met and therefore met the definition of a “stretch” target. RCG/SCG LLC concluded Logistics has addressed the intent of this recommendation.

**Conclusion 9.6.2:** *RCG/SCG LLC found that the AVANGRID has adequate policies and procedures for its procurement and materials processes. However, several IT opportunities have yet to be addressed.*

### **Analysis**

#### ***Purchasing***

CNG interacts with AVANGRID or its affiliates for inter company purchases and/or contract administration, whenever possible. Since they were purchased by UIL Holdings, Purchasing utilized this leverage to negotiate better pricing and services. Certain commodities that do not require unique specifications are perfect examples (i.e. landscaping, cleaning services and some inventory parts). For contracts, although utilizing the aforementioned leveraging opportunities, CNG has been kept independent of the other operating companies to limit liability. Some others (i.e. IT items) were purchased by UIL and allocated back to the businesses proportionally.<sup>566</sup>

The RCG/SCG LLC team reviewed AVANGRID’s Procurement Policy.<sup>567</sup> Since the Purchasing organization procures all materials and services for the AVANGRID, the Policy covers the purchasing for CNG. This Policy is reviewed periodically and was last updated on July 24, 2015.

The Policy includes the procedures and approval responsibilities covering procurement methods, procurement requirements, bid deviation requests, purchase order changes, purchasing agreements or contracts, and compliance. Additionally, they have in place process flow charts for the purchasing processes. The permitted procurement methods are purchase orders, P cards, and check requests. Procurement requirements set forth the need for a bid for all purchases over \$25,000. Where more than \$25,000 of goods or services is being procured from the same vendor in a given calendar year on a no bid basis, a bid deviation

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<sup>564</sup> Response to Data Request GEN012 CNG Attachment 1

<sup>565</sup> Response to Data Requests SSM002 – SSM006

<sup>566</sup> Response to Data Request SC018 CNG-SCG Attachment 1

<sup>567</sup> Response to Data Request SC003 CNG-SCG Attachment 1

request must be submitted and approved.<sup>568</sup> The bid deviation approval procedures, also establish the categories of exemptions from this procedure's requirements. RCG/SCG LLC reviewed the list of no bid for the past five years<sup>569</sup> and did not find any inconsistencies with the procedures.

The above contract procedures are further defined through the RFP Process Map, the Professional Services Agreements (PSAs) for CNG, the UIL Master Construction Agreement (MCA) and the Product Purchase Agreement.<sup>570</sup> Additionally, all potential contracts must complete three additional contractor requirement documents:<sup>571</sup> Pre qualification Documents, Contractor Safety Work Rules, and Recommended Standard Guidelines Minimum General Insurance Requirements. The Pre Qualifications Documents include the Safety & Health Questionnaire.

Requisition and contract approvals are made in accordance with the Grants of Authority maintained by the Legal organizations.<sup>572</sup> These authorizations are hardcoded into SAP, so there isn't any process path available to circumvent these requirements.

Periodic and regular training is provided to the purchasing staff through conference attendance, training courses, webinars, and seminars.<sup>573</sup>

Once a contract is awarded, the individual contract is monitored by the business and invoice verification is performed by the Accounts Payable organization following the Vendor Invoice management system (VIM).<sup>574</sup>

Several I/T initiatives and/or opportunities have been identified by purchasing management. The on line bidding tool is currently being rolled out as part of the Supply Relationship Management (SRM) module in SAP. Electronic facing EDI ordering, notice of potential stock outs, and automated lead time calculations has yet to be addressed in SAP.

### ***Logistics Supply Chain***

RCG/SCG LLC requested and reviewed AVANGRID Logistics function controlling Procedure Number OP L26: "SAP Materials Management Movement for all Material Types – Receipt, Issue, Credit, Transfer, Adjustment – Logistics," issued 05/19/2014. The stated purpose of this Procedure "is to sequentially describe the steps necessary to receive, issue, credit, and transfer any inventory material in SAP."<sup>575</sup>

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<sup>568</sup> Response to Data Request SC019

<sup>569</sup> Response to Data Request SC006

<sup>570</sup> Response to Data Request SC009 CNG-SCG Attachments 1- 7 and SC016

<sup>571</sup> Response to Data Request SC015 CNG-SCG Attachments 1- 3

<sup>572</sup> Response to Data Request SC013 and SC017

<sup>573</sup> Response to Data Request SC011 CNG-SCG Attachment 1

<sup>574</sup> Response to Data Request SC010 CNG-SCG Attachment 1

<sup>575</sup> Response to Data Request SSM001 CNG-SCG Attachment

These procedures provide detailed work steps the employee should take to complete the specific task in SAP. For example, with respect to Receiving Material, the procedures specify the following steps:

**“PROCEDURE DESCRIPTION:**

A. RECEIPTS

1. Goods Receipt with Purchase Order (*See attachment*)

MIGO transaction using movement 101

2. Goods Receipt without Purchase Order (*See attachment*)

MIGO transaction using movement 501

3. Cancel Goods Receipt (*See attachment*)

MIGO transaction using movement 102”<sup>576</sup>

Other areas within the procedures are equally detailed. RCG/SCG LLC found these procedures to be adequate to identify and stipulate what actions should be taken within the Logistics function.

**Conclusion 9.6.3:** *RCG/SCG LLC found that the AVANGRID Materials Management has appropriate department planning and uses appropriate means to monitor success in meeting the needs of CNG and performing beyond industry performance. However, there was little evidence of commitment to move beyond industry level performance.*

**Analysis**

***Purchasing***

The RCG/SCG LLC team reviewed the planning Purchasing utilizes to anticipate the CNG’s future construction needs. Once CNG completes their planning and budgets for the yearly construction, materials are forecasted by the Materials Planners in the Logistics group. If there is a new demand for a product/service that is not already under contract, the business will contact the Buyer to begin the RFP Process. If it applies to contracted services or materials, the business will work with a material planner to schedule the Purchase Requisition that is submitted into SAP and approved through the UIL Grants of Authority. The Buyer meets periodically with contracted suppliers to understand market conditions including lead times, trends, and Supplier capabilities. The Buyers keep a running list of lead times for all

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<sup>576</sup> Response to Data Request SSM001 CNG-SCG Attachment

materials.<sup>577</sup> Purchasing also meets to align resources with the internal customer on regular intervals and attends Gas Operations staff meetings and project reviews to assess the changes/increase in future demand.

AVANGRID Purchasing has extensively studied and benchmarked their processes over the past year. Gartner completed the United Illuminating Supply Management Maturity Self Assessment Study in July 2015. This study covered Focus, Organization and Talent Management, Capability, Technology, Management, Process, and Outcomes. The results showed that they are at the initial maturity level able to anticipate needs, but not yet reached corporate level supply management collaboration. The study recommends pursuing five key initiatives:<sup>578</sup>

1. Establish processes and governance that drive corporate level supply management collaboration, including use of centers of excellence (COEs).
2. Integrate source to settle (S2S) modules with your ERP supplier portal, including advanced shipment notification (ASN), evaluated receipt settlement/electronic fund transfers (ERS/EFTs), and contract life cycle management (CLM).
3. Focus on cost models that support lowest total cost of ownership (TCO).
4. Implement supplier segmentation with focus on criticality versus spending (and profit impact).
5. Expand supplier risk reduction efforts by increasing upstream visibility.

RCG/SCG LLC concurs with the study's next step, which is to "create a draft Roadmap" for the future direction of Supply Management.

Additionally, in January 2016, they completed the CEB Ignition Diagnostic for Procurement study in conjunction with the CEB Procurement Leadership Council.<sup>579</sup> CEB Ignition™ Diagnostic enables organizations to improve functional performance by assessing their performance across a broad set of functional activities. The diagnostic measures two primary dimensions: maturity and importance. It covers 24 functional activities across 6 functional objectives. AVANGRID's purchasing maturing was between 2 and 3 out of a scale of 5 and at the average for the 47 companies in the survey. It can be noted that this result is consistent with the Gartner self assessment discussed above.

The Diagnostic for Procurement study identified three high priority areas of below average maturity and high importance:

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<sup>577</sup> Response to Data Request SC014 CNG-SCG Attachments 1 - 3

<sup>578</sup> Response to Data Request SC012 CNG-SCG Attachment 2

<sup>579</sup> Response to Data Request SC012 CNG-SCG Attachment 1

- Identify and prioritize risk,
- Segment suppliers, and
- Monitor and report levels of risk exposure.

Each area has specific attributes that must be achieved to move average maturity (industry practices) up to High Maturity (best in class).

RCG/SCG LLC did not find any plans to address the recommendations of these two studies.

### ***Logistics Supply Chain***

RCG/SCG LLC found the Logistics Supply Chain followed a structured materials process from material receipt to material issue.<sup>580</sup>

Similar to its request for goals and objectives related to the purchasing functions, the RCG/SCG LLC team requested and reviewed the goals and objectives related to the Logistics Supply Chain function to determine if they are clear, measurable, and realistic.

AVANGRID provided a list of the goals and objectives and performance metrics. The 2016 goals, which are typical for the materials management function, include the following:<sup>581</sup>

#### **I. Financial Operate to Budget**

- Maintain target inventory turn ratio of (2 per year)
- Complete 100% of assigned Cycle Counts
- Perform yearly Obsolescence Analysis

#### **II. Participate in various Customer Focused Activities**

- Timely resolution of audit issues
- Visit other Utilities / Companies to participate in best practice sharing
- Conduct / participate in Monthly Operations meetings

#### **III. Improve Safety and Operational Efficiencies**

- Conduct Monthly Safety Meetings & Audits
- Complete Safety E Learnings
- Complete First Aid Course

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<sup>580</sup> Response to Data Request SSM008

<sup>581</sup> Response to Data Request SSM002

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#### IV. Staff Capabilities Improvements

- A. Participate in Employee Engagement Initiatives
- B. Conduct Monthly Staff Meetings and Team Building Event
- C. Complete Company and Off Site Skill Set improvement Trainings

RCG/SCG LLC reviewed several performance reports provided by AVANGRID, including inventory value,<sup>582</sup> inventory turns,<sup>583</sup> and inventory accuracy counts.<sup>584</sup> In addition, the Logistics Supply Chain management team demonstrated in interviews that they regularly monitor performance of materials management.<sup>585</sup>

RCG/SCG LLC's review of these performance metrics showed that AVANGRID has made certain improvements in these metrics (i.e., expanding metrics to go beyond inventory control). However, the metrics do not include a "stock out" metric which is typically tracked and is consistent with industry practices. At AVANGRID, they do track stock outs manually. This should be part of the SAP ECC system.

Inventory accuracy has been in the 90% range for the past four years.<sup>586</sup> Based on this, management believes they can cost justify the installation a bar coding or RFID system to track inventory.<sup>587</sup> Industry practice has demonstrated that these systems can be cost justified and add value beyond inventory accuracy, such as reduced labor cost associated with material picking and record keeping.

**Conclusion 9.6.4:** *RCG/SCG LLC found that materials management warehouse facilities and space utilization are within expected norms.*

#### Analysis

The RCG/SCG LLC team reviewed the CNG warehouses/storerooms operations and layout. Stock handlers have easy access to the areas and the process for completing pick lists for jobs is conveniently located within the space. There is adequate space for pre packaging without compromising access control to the store area. Finally, the field personnel did not spend any significant time in the morning waiting to obtain their material requirements.

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<sup>582</sup> Response to Data Request SSM007

<sup>583</sup> Response to Data Request SSM003

<sup>584</sup> Response to Data Request SC002

<sup>585</sup> Interview D. Hall 06/03/2016

<sup>586</sup> Response to Data Request SC002

<sup>587</sup> Interview D. Hall 06/03/2016

### **Recommendations**

**Recommendation 9.6.1:** *RCG/SCG LLC recommends that AVANGRID standardizing the gas material stock codes for similar materials and move to one stock code list for all gas materials.*

**Recommendation 9.6.2:** *RCG/SCG LLC recommends that AVANGRID automate the stock out tracking of gas materials.*

**Recommendation 9.6.3:** *RCG/SCG LLC recommends that AVANGRID re assess the cost benefit of implementing either Bar Coding or RFID material tracking for all gas materials.*

**Recommendation 9.6.4:** *RCG/SCG LLC recommends that AVANGRID take the recommended next steps to move its Purchasing function's maturity, specifically with regard to risk identification and communication, towards the best in class maturity level.*

## *9.7 Information Technology*

### **Objectives and Scope**

RCG/SCG LLC examined AVANGRID's information technology (I/T) function and its ability to meet the I/T needs of CNG. Additionally, this audit reviewed the I/T strategies, organization structure, policies, procedures, practices, and its project management of I/T systems impacting CNG to determine whether they were consistent with the business needs and industry practices.

### **Overall Assessment**

**AVANGRID'S I/T IS ORGANIZED APPROPRIATELY AND CONSISTENT WITH ITS STRATEGY. I/T HAS ACCESS TO SENIOR LEADERSHIP TO ENSURE I/T SOLUTIONS ARE CONSISTENT WITH CORPORATE STRATEGIES AND THE STRATEGIC NEEDS ARE RECEIVING APPROPRIATE PRIORITY OF RESOURCES. HOWEVER, THE CNG I/T USER COMMUNITY'S I/T EXPECTATIONS AND CURRENT I/T NEEDS ARE DIFFERENT THAN THOSE EXPRESSED BY THE I/T ORGANIZATION AND HAS RESULTED IN A LEVEL OF DISSATISFACTION IN THE DELIVERY OF I/T SERVICES.**

### **Evaluation Criteria**

The I/T review examined whether current systems applications allow AVANGRID to implement its strategic objectives effectively, whether AVANGRID's cyber security has been effective, and whether I/T systems are meeting the SARBOX general computer control requirements.

Besides the three major evaluation criteria for all sections of Support Services, one additional criterion relates to information technology:

- Are AVANGRID's I/T technology and major systems effective?

### **Conclusions**

**Conclusion 9.7.1:** *RCG/SCG LLC concluded that the AVANGRID I/T organization's policies, systems and procedures are consistent with industry practices and address the appropriate aspects of the business's I/T.*

### **Analysis**

AVANGRID's I/T strategy is focused exclusively on the I/T needs associated with the integration of the UIL companies into AVANGRID. The I/T Strategic Roadmap has been developed,<sup>588</sup> but requires updating to incorporate the integration requirements. This update will identify I/T hardware and software system changes that need to be completed to address the needs of the integration project.<sup>589</sup> A plan and schedule for the expected completion of these changes has been developed and is being worked currently.<sup>590</sup> Senior management is provided periodic status reports on progress against schedules.<sup>591</sup>

AVANGRID's I/T general computer control practices are consistent with SARBOX and no issues have been found by the external auditor.<sup>592</sup>

AVANGRID's I/T SAP Disaster Recovery Plan is consistent with industry standards,<sup>593</sup> is reviewed annually, and updated as needed. Disaster drills are also conducted periodically, last on April 19, 2016.

**Conclusion 9.7.2:** *RCG/SCG LLC concluded that I/T has in place operational KPIs and project management tracking consistent with industry practices. However, they do not periodically survey the satisfaction of their end users.*

### **Analysis**

AVANGRID's I/T operations has a system of dashboards monitoring various operational KPIs. I/T tracks the following KPIs on a monthly basis:<sup>594</sup>

- Customer Satisfaction,
- Support Center Calls,

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<sup>588</sup> Response to Data Request IT016

<sup>589</sup> Response to Data Request GEN016 CNG-SCG Attachment 1

<sup>590</sup> Response to Data Request IT021

<sup>591</sup> Response to Data Requests IT011 and IT012

<sup>592</sup> Response to Data Request IT007

<sup>593</sup> Response to Data Request IT008

<sup>594</sup> Response to Data Request IT018

- Application and Service Incidents,
- Critical System Availability,
- Standard System Availability, and
- Created vs. Closed Incidents.

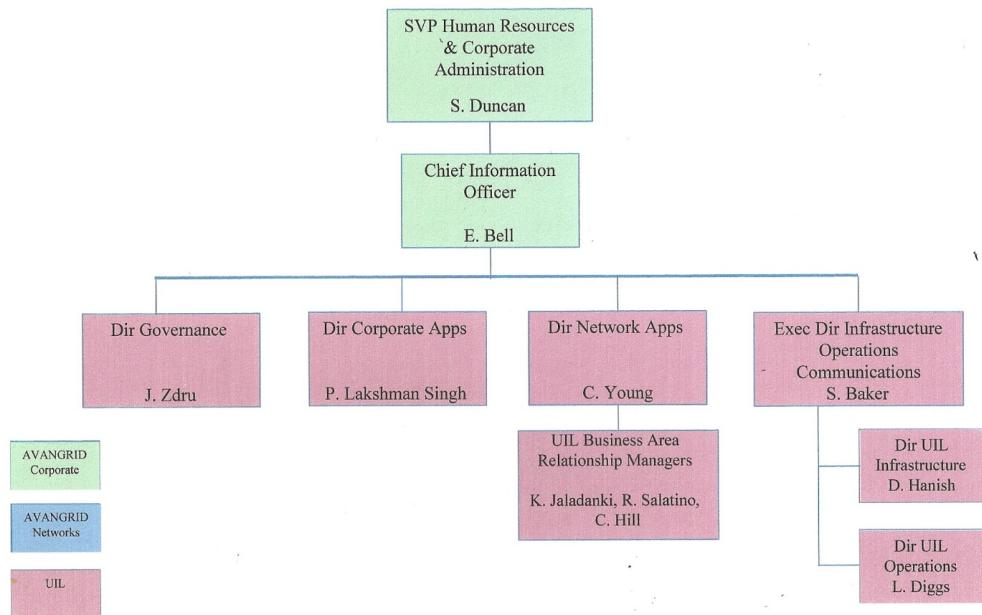
The project management monitoring is done on individual project basis against plans, schedules, and cost, consistent with industry practices.

I/T does not perform a periodic end user satisfaction survey. This is a practice consistent with industry best practices.

**Conclusion 9.7.3:** *RCG/SCG LLC concluded that the newly implemented AVANGRID I/T organizational structure is consistent with industry best practices and should improve I/T's ability to address project management needs associated with the long term projects while continuing to service the short term needs of current end users. However, the role of the I/T Business Relationship Manager for CNG needs to be better defined and his reporting location changed to better meet the needs of the gas businesses.*

### **Analysis**

The I/T organization is now part of the AVANGRID's HR & Administration organization. As such, all of CNG's I/T services are provided through this organization. The new AVANGRID I/T organizational structure was implemented mid year 2016, see the Exhibit below.



**Exhibit 77 - AVANGRID's I/T Organization**<sup>595</sup>

The responsibility of each area has been scoped out at a high level. Governance is nearly complete, but they are still working on budgeting and contracts, such as who are their common suppliers. For Applications, short term projects are defined, i.e., standard procurement tool rolled out. There are now weekly reports for project status updates. On the Networks side, AVANGRID just launched a deeper analysis to develop the roadmap of applications with a schedule driven by the pace at which business wants to move. Infrastructure and Operations is responsible for the AVANGRID's I/T system operations.<sup>596</sup>

CNG's I/T Business Relationship Manager<sup>597</sup> is in the Networks Applications organization. He resides at Berkshire Gas headquarters. The Manager's role as an interface between I/T and CNG's management team to identify and clarify the businesses' I/T needs is consistent with industry practices. However, RCG/SCG LLC found that the Manager does not play an active role in ongoing project roll outs and their post implementation utilization. Additionally, we found that, due to the Manager's assigned reporting location, his availability to be more proactive in this regard is limited.<sup>598</sup>

**Conclusion 9.7.4:** *RCG/SCG LLC concluded that the AVANGRID's I/T technology and major systems in place and under development/roll out should be effective in addressing the strategic*

<sup>595</sup> Response to Data Request GEN019 CNG-SCG Attachment 1 and IT013

<sup>596</sup> Interview E. Bell and J. Zdru 05/11/2016

<sup>597</sup> Response to Data Request IT017

<sup>598</sup> Interview R. Salatino 06/21/2016

*needs of CNG. However, the post roll out support from the user's perspective has been limited and affects the full utilization of the applications.*

### Analysis

There are several Tier 1 software applications used by the CNG, reference see the Exhibit<sup>599</sup> immediately below. These applications are delivered through an interconnection of key operational systems, see the following second Exhibit.

Application Name	Business Use	BU Served
Service Suite	Utility Computer Added Dispatch System Why under nes??	CNG, SCG Gas Operations
Automated Meter (MVRS tron)	SCG and CNG	SCG & CNG Gas Operations
Graphical Information Systems (GIS)	Spacial asset data This suite of applications allows for editing, viewing, managing, configuring and analyzing this data	CNG/U (SCG under assessment)
Interactive Intelligence	Call center	SCG,CNG Customer Care
SAP Business Warehouse (BW)	Historical financial data	SCG,CNG
Telephone System	Cisco Call Manager, Cisco Voicemail, Cisco Emergency Responder, and Cisco Meeting Place	SCG,CNG
TM1	Reporting/budgeting application	SCG,CNG Finance
TrackStar	Tracking automated vehicle location System (U, SCG, and CNG system)	SCG,CNG Gas Operations
Web Portal (PureApp)	External websites	SCG,CNG Corporate Communications
Workforce (Time and Labor)	Base salary can be processed manually from SAP payroll Detailed payroll calculations required through Workforce Management system	CNG, SCG – Time Entry
Microsoft Office 365	Hosted: Active Directory is the only URL on site element	SCG,CNG
SAP: Human Capital Management	Recruitment Performance Learning solutions Naksa (organizational management) OM/PA(Organization Management /Personnel Assessment) Payroll	SCG,CNG Human Resources
SAP: Finance and Accounting (FCO)	Project systems Open text vendor invoice management Consolidation (budget, planning, and consolidation)	SCG,CNG Finance
SAP: Supply Chain Management	Procurement and purchasing, Fleet inventory management, Contract lifecycle	SCG,CNG Supply Chain
SAP: Work Management	Plant maintenance	SCG,CNG

**Exhibit 78 - Tier 1 Applications**

<sup>599</sup> Response to Data Request IT001

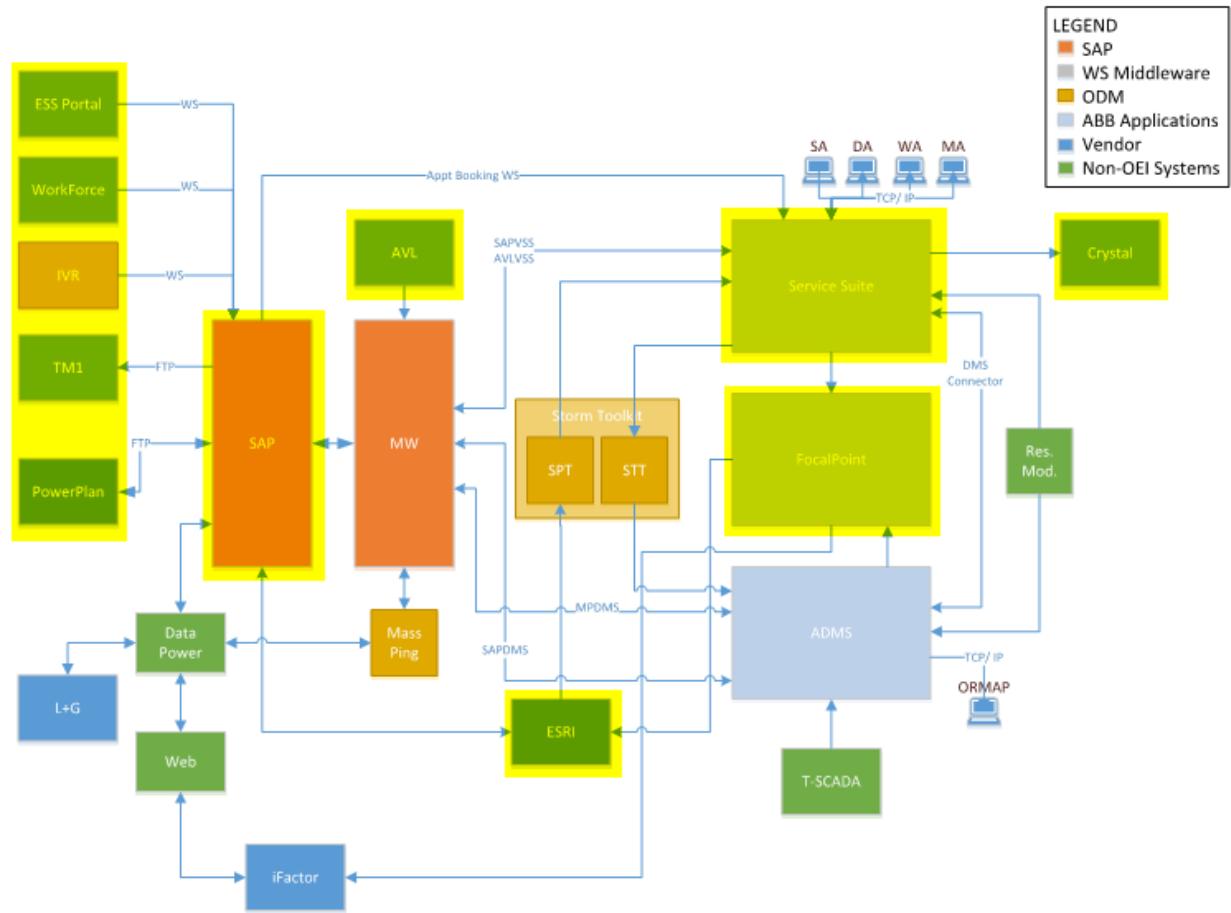


Exhibit 79 - I/T System Map

Note: The systems that are used by CNG are highlighted in yellow.<sup>600</sup>

Since the roll out of the latest OEI systems,<sup>601</sup> including Service Suite for short cycle work<sup>602</sup> and Focal Point, the gas operations organization's understanding of the future opportunities these systems will provide is very limited. As an example, Focal Point system, a Business Intelligence (BI) tool,<sup>603</sup> was rolled out to gas operations and the training completed by the end of June.<sup>604</sup> However, operations management did not express any awareness that this tool was available to them to monitor their organizations productivity.<sup>605</sup> There does not appear to have been an effective education of the operational units' user community. Additionally, operations requests for additional operational reports beyond those developed

<sup>600</sup> Response to Data Request IT014

<sup>601</sup> Response to Data Request IT020 and IT026

<sup>602</sup> Response to Data Request IT025

<sup>603</sup> Response to Data Request IT024

<sup>604</sup> Interview J. Rivard 08/09/2016 and Response to Data Request IT027

<sup>605</sup> Interviews CNG management 06/7/16

in the initial design have been difficult to obtain through the I/T organizational unit writing Crystal Reports.<sup>606</sup> The requirement for this type of reports to be generated by I/T is inconsistent with industry practices. Typically, such reports are generated by a “super user” in the organizational unit requesting the report.

**Conclusion 9.7.5:** *RCG/SCG LLC concluded that the CNG has access to I/T project funding and support.*

### **Analysis**

In the past, UIL’s Integrated Ten Year I/T Plan<sup>607</sup> included CNG’s future I/T needs. The AVANGRID’s I/T annual demand planning cycle, adopted in 2016 for application in 2017, will continue to provide CNG equal opportunity and access to I/T project funding as with any AVANGRID company.<sup>608</sup> This planning process includes VP prioritization by each area to limit the number of projects to the top 5 recommended by I/T. Projects submissions should include known integration projects, including best practice initiatives, roadmap initiatives, and should be submitted by the Project Sponsor/Owner. This process is depicted below.<sup>609</sup>

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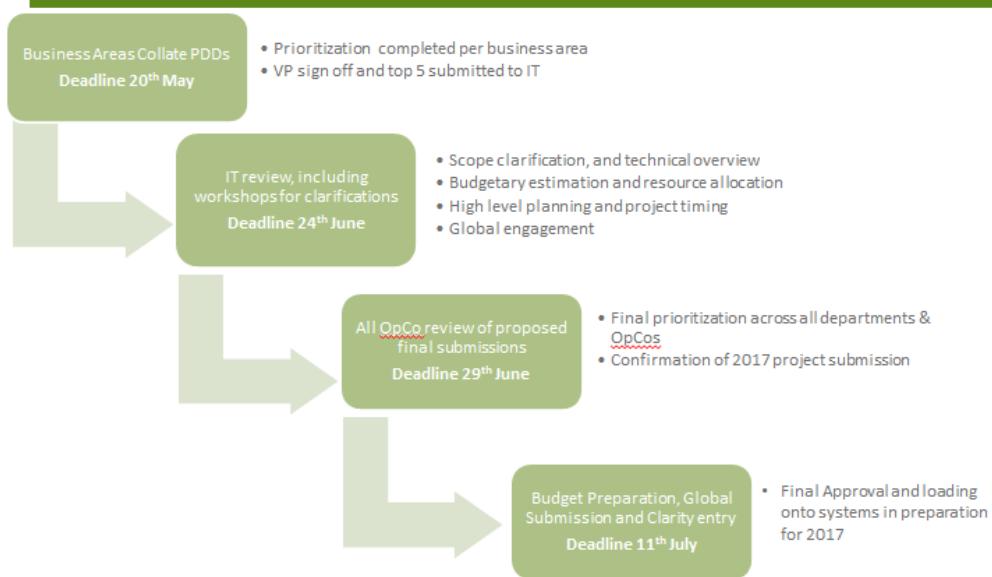
<sup>606</sup> Interview J. Zdru 06/21/2016, Interview P. Duncan and N. Kunt 07/12/2016, J. Curley 06/08/2016 and Response to Data Request IT019

<sup>607</sup> Response to Data Request IT009

<sup>608</sup> Interview E. Bell and J. Zdru 05/11/2016

<sup>609</sup> Response to Data Request IT015

## Demand planning process 2017



### Exhibit 80 - Demand Planning Process

CNG follows the I/T project prioritization and approval process as presented above. The I/T Business Relationship Manager brings the CNG's I/T needs to the attention of the appropriate area of I/T.<sup>610</sup> Then a project charter is developed. This includes a high level summary and includes the authorizations required for the project to be considered.<sup>611</sup>

CNG's I/T expenses and capital expenditures appropriately reflect the costs associated with the roll out of the OEI project beginning in 2015. The expenditures and the associated allocations factors are reflected in the following Exhibit:<sup>612</sup>

<sup>610</sup> Interview R. Salatino 06/21/2016

<sup>611</sup> Response to Data Request IT010

<sup>612</sup> Response to Data Request IT005

<b>OPEX (Expense)</b>						
	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	
<b>CNG</b>	\$2,768,077	\$4,326,396	\$4,556,365	\$5,097,594	\$4,467,815	
<b>SCG</b>	\$2,542,670	\$5,031,408	\$5,318,317	\$6,007,131	\$6,012,370	
<b>CAPITAL</b>						
	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	
<b>CNG</b>	\$895,797	\$59,941	\$180,690	\$0	\$1,065,501	
<b>SCG</b>	\$895,797	\$59,941	\$199,262	\$0	\$1,029,835	

\*Capital associated with hardware assets 100% owned by the gas companies, typically PC Purchases.

#### Exhibit 81 – I/T Expense & Capital

##### Standard Allocation Factor for OPEX and Corporate Capital Charge

To provide a standard allocation factor, AVANGRID utilizes the Massachusetts Formula. The MA formula factors are based on each operating company's relative salaries, revenues, and net plant including Construction Work in Progress. This allocation is used for OPEX for UI Distribution, UI Transmission, SCG and CNG.

The Corporate Capital Charge uses the MA formula, but also includes BGC (Berkshire Gas) in the allocation. The corporate capital charge is the method of recovering the revenue requirements for UIL Shared Services capital projects, mostly I/T projects, which benefit all the operating companies. The corporate capital charge is an OPEX charge to UI Distribution, UI Transmission, CNG, SCG, and BGC.

Company	OPEX	Capital Charge
CNG	14.96%	14.35%
SCG	18.02%	17.28%

#### Exhibit 82 - CNG/SCG's OPEX / Capital Charge Allocations

**Conclusion 9.7.6:** RCG/SCG LLC concluded that CNG use of mobile devices is inconsistent with industry practices and AVANGRID's Mobile Device Rule.

#### Analysis

RCG/SCG LLC observed CNG's management employees utilizing non company issued smart phone devices in lieu of the company issued Blackberry device.<sup>613</sup> They explained that

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<sup>613</sup> Headquarter visits: CNG 06/7/16

AVANGRID had standardized on this older technology. This practice is inconsistent with industry practices. Additionally, it is inconsistent with AVANGRID's Mobile Device Rule.<sup>614</sup>

The responsibility for mobile device management is planned to be transferred from I/T to General Services by the end of 2016. It is expected that following this transfer, CNG's mobile device practices will be brought in line with this Rule statement.

### **Recommendations**

**Recommendation 9.7.1:** *RCG/SCG LLC recommends that AVANGRID's I/T organization perform a periodic (bi annual) end user satisfaction survey.*

**Recommendation 9.7.2:** *RCG/SCG LLC recommends that the role of the I/T Business Relationship Manager for CNG be better defined and that his reporting location be changed to meet the I/T needs of the gas businesses.*

**Recommendation 9.7.3:** *RCG/SCG LLC recommends that each software system implemented at CNG have a designated super user to support the day to day utilization of the systems including the production of Crystal reports against the systems' database.*

**Recommendation 9.7.4:** *RCG/SCG LLC recommends CNG adopt the AVANGRID Mobile Device Rule.*

## **9.8 Security**

### **Objectives and Scope**

RCG/SCG LLC examined AVANGRID's Security function, which comprises physical security and cyber security. Security, including cyber security, at AVANGRID is centralized under the VP of Corporate Security. As such, all CNG's security services are provided through this organization.

### **Overall Assessment**

**AVANGRID'S SECURITY IS ORGANIZED APPROPRIATELY AND CONSISTENT WITH ITS STRATEGY. IT HAS ACCESS TO SENIOR LEADERSHIP TO ENSURE SECURITY SOLUTIONS ARE CONSISTENT WITH CORPORATE STRATEGIES AND THE STRATEGIC NEEDS ARE RECEIVING APPROPRIATE PRIORITY OF RESOURCES. LEADING I/T CYBER SECURITY MEASURES HAVE BEEN IMPLEMENTED TO PROTECT AGAINST UNAUTHORIZED ACCESS TO SENSITIVE INFORMATION AND/OR SYSTEMS. PERIODIC INTERNAL AND EXTERNAL AUDITS ARE PERFORMED TO CONFIRM THE ADEQUACY OF THE CYBER SECURITY AND PHYSICAL**

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<sup>614</sup> Response to Data Request SSF018

## **SECURITY MEASURES. REMOVAL OF PHYSICAL ACCESS FOR TERMINATED EMPLOYEES IS AN IMPROVEMENT OPPORTUNITY.**

### **Evaluation Criteria**

The Security review examined whether current security plans and procedures allow AVANGRID to implement its security strategic objectives effectively, whether AVANGRID's cyber security has been effective, and whether the physical security implementation at the CNG is effective.

### **Conclusions**

**Conclusion 9.8.1:** *RCG/SCG LLC concluded that AVANGRID's Security function has met the intent of the 2010 CNG Management Audit recommendations.*

### **Analysis**

The 2010 Management Audit specified one recommendation that impacted the Security function serving CNG.

*Item #41, #16 Facilities & Security, Recommendation 16 4: Security documentation could be improved by maintaining a log of all security incidents and by having someone outside the department, such as internal audit, periodically conduct an audit of the adequacy of security and operational compliance with documented security procedures and contingency plans. Among other purposes, a log documenting security incidents can be useful if it is necessary to go back and re investigate an incident, or determine whether a series of incidents points to a pattern of activity that might help resolve a security problem. Incident logs are standard security practice.*

RCG/SCG LLC believes that the actions taken by AVANGRID's Security organization have addressed this recommendation. They have developed and are maintaining a security log, which is periodically reviewed by Internal Auditing.<sup>615</sup>

**Conclusion 9.8.2:** *RCG/SCG LLC concluded that AVANGRID Security function has adequate departmental policies and procedures. These policies and procedures address the appropriate aspects of security, including extensive information on cyber security, physical security, and fire safety.*

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<sup>615</sup> Response to Data Request SSF016 Attachment 1

### **Analysis**

Cyber security at AVANGRID includes the industry leading components. They use multiple levels of firewall protection, providing isolation from Internet access to vital data. They limit internal access to data based on level in organization and job related needs. They require complex passwords and periodic password changes. They perform regularly scheduled penetration testing. Additionally, as a result of the integration with AVANGRID, CNG benefits from the additional NERC required cyber security. Lastly, AVANGRID reviewed the recently issued Privacy Shield certification requirements to meet the EU data security specifications and found that they do not have saved data that would trigger these new requirements.<sup>616</sup>

AVANGRID has 24/7 monitoring in place using a security service provider. CNG's systems are monitored as part of this effort. AVANGRID and CNG have not experienced any data breaches or compromise of their systems. Additionally, a third party does cyber penetration testing from the Internet annually. No issues have been identified.

AVANGRID's I/T systems have various hardware and software systems in place to monitor activity control and/or block access to sensitive information and the policies and procedures to guide daily I/T system operations use.

**Conclusion 9.8.3:** *RCG/SCG LLC concluded that AVANGRID Physical Security function is well planned and executed at CNG. However, the timely termination of access control for terminated employees' needs improvement.*

### **Analysis**

RCG/SCG LLC found that the Physical Security at the CNG operating headquarters and facilities included 24/7 contract guard services and/or security camera monitoring, key card access control, periodic penetration testing and on site security audits. All of these actions are consistent with industry best practices.

Security Policy requires an employee and contractor access control to be terminated upon notification of their termination, retirement, or resignation. Security has the responsibility to cross check the HR's monthly termination list against the access control employee/contractor list and identify any discrepancies. There were 12 instances over the past three years where the supervisors did not request this access be terminated within the one week period.<sup>617</sup> RCG/SCG LLC believes this access control crosscheck needs to be

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<sup>616</sup> Response to Data Request IT028.

<sup>617</sup> Response to Data Request SSF015

completed weekly to limit unauthorized access risk and to be consistent with Best in Class performance.<sup>618</sup>

**Recommendations**

**Recommendation 9.8.1:** *RCG/SCG LLC recommends AVANGRID Security compare the HR list of terminated employees/contractors regularly against the active access control listing to ensure the terminated employees/contractors do not have access control.*

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<sup>618</sup> Interview W. Wynne 06/06/16 and K. Glitch 06/24/16.

## 10. SPECIAL TOPICS

### Objectives and Scope

As mentioned in the Introduction chapter to this report, the RFP identified twenty seven special topics as special areas of focus to be examined in this audit. Of these, most were included in the seven chapters (report chapters 3 through 9) evaluating the interconnected study areas of Executive Management, System Operations, Finance, Human Resources, Customer Services, External Relations, and Support Services. However, RCG/SCG LLC selected several of the twenty seven special topics, grouped into two categories based on the correlation of their activity and assessment, to discuss separately in this chapter.

Further, the additional work regarding the treatment of CES and non CES customers coming on the CNG system is addressed in section 10.3.

### 10.1 Affiliate Transactions & Cost Allocation

#### Objectives and Scope

CNG is an indirect subsidiary of AVANGRID, Inc. (AVANGRID). AVANGRID has a complicated structure as shown in the following Exhibit (which depicts AVANGRID's structure<sup>619</sup> as of April 2016).<sup>620</sup> Costs for certain services provided at the UIL Holdings Corporation level and at United Illuminating Company (UI) are allocated from UIL Holdings Corporation and United Illuminating Company to CNG. There are also a few charges from AVANGRID back to CNG.<sup>621</sup> This section addresses whether there are appropriate controls governing costs from affiliates that are allocated to CNG.

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<sup>619</sup> According to AVANGRID's 2015 Form 10-K, the company expects "that UIL and its subsidiaries will be moved under Networks in the first half of 2016."

<sup>620</sup> AVANGRID, Inc. 2015 Form 10-K.

<sup>621</sup> Interview with Adam Danner and James Earley on July 13, 2016.

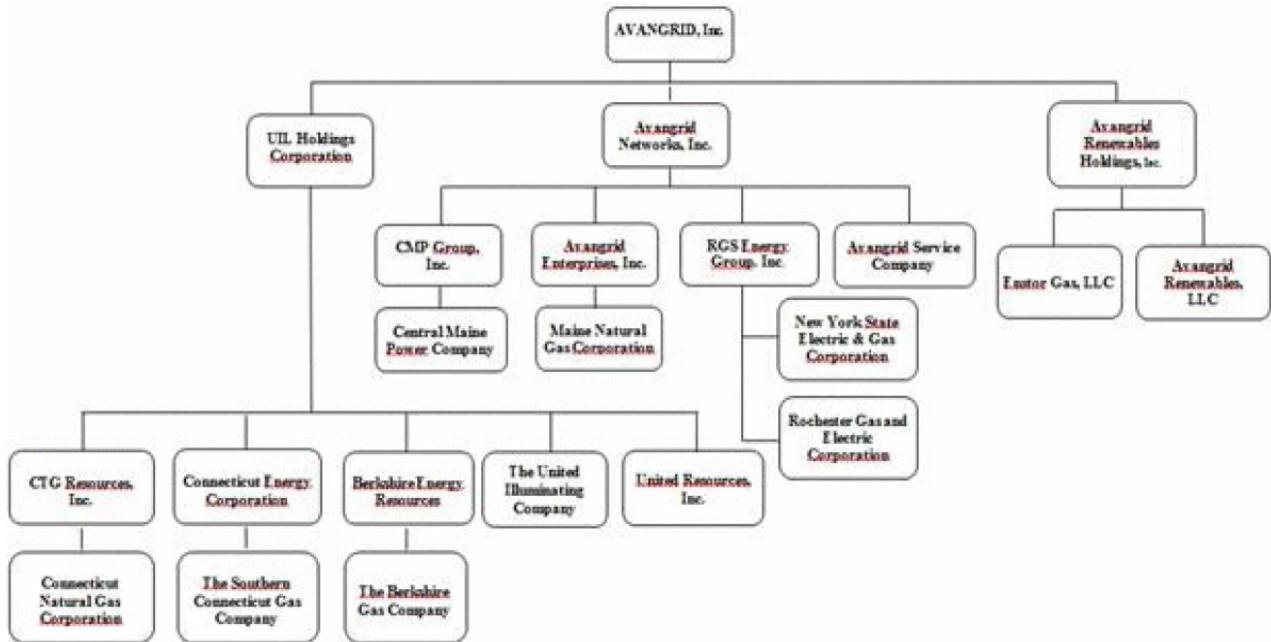


Exhibit 83 –AVANGRID, Inc. Corporate Structure

## Overall Assessment

THE COMPANY USES AN APPROPRIATE COST ALLOCATION PROCESS THAT EMPHASIZES DIRECT CHARGING AND INCLUDES A COST ALLOCATION WHERE DIRECT CHARGING IS IMPRACTICAL.<sup>622</sup> BASED ON OUR REVIEW OF AFFILIATE TRANSACTIONS, INCLUDING COST ALLOCATION, RCG/SCG-LLC BELIEVES THAT UIL HOLDINGS CORPORATION, AVANGRID, INC., AND OTHER AFFILIATES PROPERLY CHARGE FOR SERVICES PROVIDED TO CNG. NEVERTHELESS, WE BELIEVE THAT ENHANCEMENTS TO THE CURRENT COST ALLOCATION MECHANISM SHOULD BE CONSIDERED THAT MAY OFFER A MORE ACCURATE ALLOCATION OF CERTAIN COSTS.

## Evaluation Criteria

RCG/SCG LLC identified criteria for the evaluation of affiliate transactions and cost allocation:

- Does the Company have a cost allocation manual and does it comport with PURA rules and regulations?<sup>623</sup>

<sup>622</sup> EXE012 CNG-SCG Attachment 1.

<sup>623</sup> Chapter 277, Section 16-47a of the Connecticut General Statutes addresses the required code of conduct for gas company transactions with affiliate.

- Does the Company maintain formal and effective cost allocation policies, procedures, and related manuals that apply approved costing principles for transactions?
- What is the policy regarding the use of direct charges versus allocation for services obtained from or provided to affiliates?
- Are there adequate controls in place to prevent affiliate transaction abuses?
- What kind of affiliate transactions does AVANGRID, Inc., UIL Holdings Corporation, and other affiliates engage in with CNG and are these cost allocation factors reasonable and is associated pricing reasonable?
- Are methods of allocating overhead costs appropriate and reasonable?
- Do overhead charges align with the business unit's use of the service function?
- Are controls regarding cost allocation and assignment, and other affiliate transactions, effective?

### **Conclusions**

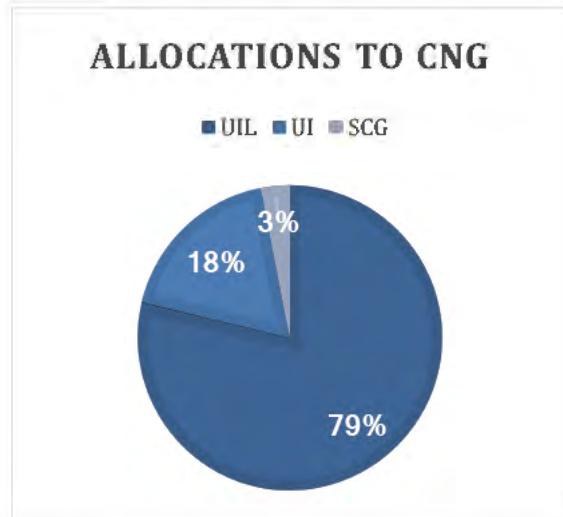
**Conclusion 10.1.1:** *RCG/SCG LLC concluded that the Company has an adequate cost allocation system and policies and procedures for affiliate transactions.*

### **Analysis**

UIL Holdings Corporation (UIL) and United Illuminating Company (UI) provide most of the shared services required by CNG. The percentage of cost allocations to CNG from other affiliates is shown in the following Exhibit pie chart.<sup>624</sup> Allocations from UIL and UI comprise 97 percent of the allocations

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<sup>624</sup> EXE015 CNG-SCG Attachment 1. In 2015, costs were allocated to CNG from UIL Holdings Corporation (UIL), United Illuminating Company (UI), The Southern Connecticut Gas Company (SCG), and an immaterial allocation from Berkshire Gas Company (BGC) which is not shown in the chart.



**Exhibit 84 - 2015 Cost Allocations to CNG**

The following Exhibit shows the magnitude and trend of costs allocated by the largest source of allocated costs<sup>625</sup>, UIL Holdings Corporation, to CNG from 2011 to 2015.



**Exhibit 85 - UIL Holdings Corporation Cost Allocations to CNG**

UIL Holdings Corporation acquired CNG and several other natural gas local distribution companies on November 16, 2010.<sup>626</sup> Accordingly, 2011 expenses did not reflect steady state conditions. From 2012 through 2015, shared services allocations from UIL Holdings Corporation

<sup>625</sup> BUD006 CNG-SCG Attachment 1 provides the sum of all UIL Holdings Corporation costs allocated to CNG.

<sup>626</sup> See Stamford Advocate article titled "UIL Holdings becomes parent of CNG, SCG," on November 17, 2010. UIL Holdings Corporation acquired Connecticut Natural Gas Corporation, The Southern Connecticut Gas Company, and the Berkshire Gas Company from a unit of Iberdrola S.A.

to CNG have increased from \$19.6 million to \$24.3 million, a compound annual growth rate (CAGR) of 7.4 percent which is far greater than the rate of inflation. However, the annual shared services cost from UIL Holdings Corporation per customer is slightly lower as shown in the graph below.<sup>627</sup>



**Exhibit 86- UIL Holdings Corporation Cost Allocations per CNG Customer**

Even when adjusting for customer growth since 2012 however, UIL Holdings Corporation's allocated costs to CNG grew at 5.9% CAGR between 2012 and 2015. This is significantly faster than the rate of inflation and suggests that UIL Holdings Corporation shared services costs are 1) rising significantly, 2) the cost allocation mechanism is reacting to greater relative capital spending and revenue from CNG, 3) more services have been consolidated centrally to extract scale economies, or 4) more probably, a combination of the first three.

As an example, Section 3.6 of this report, which contains a review of the capital budgeting process, clearly shows an increase in capital spending since 2012 for CNG. Accordingly, Plant in Service would increase which would drive higher shared service cost allocations. Additional revenue derived from CNG's new main extensions would also help drive the shared service allocation higher.

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<sup>627</sup> UIL Holdings Corporation allocated costs per customer per derived by dividing the total amount of shared services cost allocated to CNG in BUD006 CNG-SCG Attachment 1, and dividing this by the yearend total CNG customer count provided in GS035 CNG-SCG Attachment 1. December customer counts provided for CNG in GS035 CNG-SCG were deemed to be the same as yearend customer counts.

UIL Holdings Corporation is the service company of the UIL operating subsidiaries<sup>628</sup> that provides shared services to the various business units. Shared services include certain administrative, legal, accounting, purchasing, and other services for the benefit of the operating companies of UIL.<sup>629</sup>

The UIL Holding Corporation Cost Accounting Methodology Manual<sup>630</sup> provides the “methodology for cost accounting.” It assigns “costs on a direct, indirect, or overhead basis dependent on cost causation.” The Exhibit<sup>631</sup> below summarizes the approach:

Cost Category	General Approach
<b>Direct</b>	<ul style="list-style-type: none"> <li>Costs are charged on a project basis wherever possible.</li> <li>Costs that are related solely to an operating subsidiary are charged to that subsidiary.</li> <li>Used wherever practical.<sup>632</sup></li> <li>In UIL’s approach, a project number is unique to a single subsidiary.</li> <li>Labor costs are charged to projects directly via a time sheet. Time can be charged to a project on an hours or percentage basis.</li> </ul>
<b>Indirect</b>	<ul style="list-style-type: none"> <li>Costs that are impractical to track on a direct basis.</li> <li>Costs are indirectly assigned based on historical activity.</li> </ul>
<b>Shared Services Overhead Costs</b>	<ul style="list-style-type: none"> <li>Overhead costs that are incurred that benefit all operating companies and are allocated on a percentage basis.</li> <li>These remaining costs are allocated “based on each operating company’s pro rata weighted average share of total revenue, payroll, and net plant in service plus CWIP.”<sup>633</sup></li> </ul>

**Exhibit 87 - Cost Allocation Methodology**

The following shared services functions provided generally by UIL Holdings Corporation are allocated to CNG.

<sup>628</sup> The former UIL operating utility subsidiaries were Connecticut Natural Gas Corporation, The Berkshire Natural Gas Company, The Southern Connecticut Gas Company and The United Illuminating Company. AVANGRID, Inc. plans to move these operating companies underneath its Networks subsidiary in 2016.

<sup>629</sup> See footnote 7.

<sup>630</sup> EXE012 CNG-SCG Attachment 1.

<sup>631</sup> Fin102 CNG-SCG.

<sup>632</sup> Interview with Adam Danner and James Earley on July 13, 2016.

<sup>633</sup> EXE012 CNG-SCG Attachment 1. CWIP is an acronym for construction work in progress.

- **Finance:** Treasury, General Accounting, Audit Services and Compliance, Corporate Insurance, Corporate Tax, Investor Relations, Strategic Planning, and Budget and Financial Forecast.
- **Administration:** Purchasing, Fleet Services, Customer Services, and Credit and Collections.
- **General Counsel:** Legal.
- **Human Resources:** Human Resources, Facilities, Environmental, Real Estate, Safety, Security, Payroll, and Employee Benefits.
- **Corporate Charges:** Corporate capital charges, UIL Deferred Compensation and Long term Incentive Plans, Office of UIL CEO, and Office of Gas President.
- **Information Technology (IT):** All IT related departments such as Applications, Operations and Support, Infrastructure and Support, SCADA Systems Support, and Cyber Security.
- **Government Relations & Communications:** Corporate Communications, Public Affairs, and Federal Affairs.
- **Conservation Load Management:** Conservation. Note that certain of these services are provided by United Illuminating Company.<sup>634</sup>
- **Operations:** All gas operations related departments such as Construction and Maintenance, Gas Engineering, Meter Operations, and Dispatch.
- **Customer Services:** Customer Services and Credit and Collections.
- **Business Services:** Marketing and Business Development, Regulatory and Tariffs, Cost and Pricing, Regulatory Compliance, Economic Development, and Community Relations.
- **Transportation and Gas Supply:** Gas Supply, Supplier Services, and LNG.

The following Exhibit shows the total cost allocations from various affiliates to CNG in 2015.<sup>635</sup> Information Technology, Conservation, Business Services, Corporate Charges, Human Resources, and Finance represent the largest categories. The Conservation allocation of about \$5.0 million was from United Illuminating Company (UI).

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<sup>634</sup> EXE015 CNG-SCG Attachment 1.

<sup>635</sup> EXE015 CNG-SCG Attachment 1.

Function	UIL	UI	SCG	BCG	Total
Finance	\$2,111	\$715	\$365	\$13	\$3,204
General Counsel	1,777				\$1,777
Human Resources	4,360				\$4,360
Corporate Charges	4,764				\$4,764
Information Technology	5,586				\$5,586
Conservation		5,035			\$5,035
Business Services	5,117				\$5,117
Transportation, Gas Supply			133		\$133
Other	1,257	30	463		\$1,750
<b>Total</b>	<b>\$24,972</b>	<b>\$5,780</b>	<b>\$961</b>	<b>\$13</b>	<b>\$31,726</b>

Exhibit 88 - 2015 Cost Allocations to CNG (\$000)

**Conclusion 10.1.2:** *RCG/SCG LLC concluded that the Company's cost allocation methodology is appropriate for assigning shared services costs from UIL Holdings Corporation to the operating utilities.*

### Analysis

UIL Holdings Corporation uses the Massachusetts Formula to allocate shared services costs to its operating subsidiaries.<sup>636</sup> The Massachusetts Formula is a widely used cost allocation mechanism that is used and accepted in many different regulatory jurisdictions across the U.S.<sup>637</sup>

As adopted by CNG, the Massachusetts Formula uses three factors:

<sup>636</sup> Interview with Adam Danner and James Earley on July 13, 2016.

<sup>637</sup> The Massachusetts Formula is sometimes modified in different regulatory proceedings, but it is nevertheless widespread in its use including Colorado, Connecticut, Massachusetts, Michigan, Missouri, and Utah, among other states. It has also been accepted by the Federal Energy Regulatory Commission for oil and gas pipeline proceedings. It has even been used in certain Canadian rate case proceedings.

1. Net utility plant in service (plus construction work in progress (CWIP))
2. Revenue (excluding natural gas commodity costs), and
3. Direct labor.

Each one is equally weighted. Note that fuel, purchased power (not applicable to CNG), and purchased gas costs are excluded from revenues to avoid anomalies during periods of high commodity costs.

These factors are then used in the calculation. As an example, consider utility plant in service. For this factor, the sum of the utility plant in service (plus CWIP) for each operating company becomes the denominator. The numerator is the utility plant in service (plus CWIP) of the operating company under consideration.

The other two factors are treated in the same way. The final step is to then take the weighted average of all three factors, and then use this result to allocate all shared services costs that were not able to be directly charged to a specific operating company.

The following Exhibit illustrates how the Massachusetts Formula would be applied to a hypothetical company that had electric, water, and communications operations.<sup>638</sup> The example is illustrative.

Each of the three factors is a reasonable cost allocation basis. Direct labor costs, for example, are highly correlated with human resources and certain other shared services cost centers. Similarly, revenue is typically a good proxy for operating company size which is a reasonable way to allocate certain costs.

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<sup>638</sup> The example is excerpted from a Baker Tilly brochure titled “Shared services utility accounting – How using a service company can help with cost allocations for multiple utility departments.” Baker Tilly is a full service accounting and advisory firm that is headquartered in Chicago, IL.

**Common Admin and General Cost Allocations**Administrative and General Allocation

Utility Plant in Service:	<u>12.31.xx</u>	<u>%</u>
Electric	389,064,233	89.32
Water	20,577,617	4.72
Communications	25,954,952	5.96
<b>Total</b>	<b>\$435,596,802</b>	

Revenues:	<u>12.31xx</u>	<u>%</u>
Electric	43,002,531	75.71
Water	4,197,084	7.39
Communications	9,601,605	16.9
<b>Total</b>	<b>\$56,801,220</b>	

Direct Labor Distribution:	<u>12.31xx</u>	<u>%</u>
Electric	12,164,149	85.2
Water	870,336	6.1
Communications	1,242,348	8.7
<b>Total</b>	<b>\$14,276,833</b>	

Administrative and General Allocation:Based on weighted average of above

	<u>%</u>
Electric	83.41
Water	6.07
Communications	10.52

**Exhibit 89 - Illustrative Example of Massachusetts Formula**

However, RCG/SCG LLC has concluded that CNG could further develop the cost allocation process without much more work. There are allocation bases that can provide better correlation with actual cost causation as shown in the following Exhibit.

Function	Alternative Cost Allocation Basis	Rationale
Human Resources	Headcount	HR costs correlate closely with employee count
Accounts Payable	Invoices Processed	Invoices processed would be expected to correlate with accounts payables costs
Supply Chain	Purchase Order Line Items	Purchase order line items would be representative of costs to source and supply goods and services

Exhibit 90 - Other Potential Cost Allocation Bases

By gradually adopting this type of allocation methodology where practical, the overall amount of costs that needed to be allocated according to the Massachusetts formula would be lower and overall allocation would be more accurate. In addition, unit cost data can be developed and facilitate benchmarking with other gas distribution utilities as explained elsewhere in the report. A good place to start would be the larger of the cost categories currently covered under the Massachusetts Formula allocation.

**Conclusion 10.1.3:** *RCG/SCG LLC concluded that CNG does not have unregulated operations. Accordingly, there is no concern that ratepayers are unduly subsidizing an unregulated subsidiary.*

### Analysis

CNG does not have unregulated subsidiaries.<sup>639</sup> As such, the company's ratepayers are not subsidizing an unregulated business.

CNG has a unit that services its customers' gas appliances. CNG offers both annual service plans as well as diagnostic and repair service at hourly rates.<sup>640</sup>

CNG offers four different annual maintenance plans for residential customers:

- Basic Assurance – Coverage for one furnace or boiler and one standard thermostat.
- Water Heater Plan – coverage for one water heater.
- Natural Gas Piping Systems – Covers exposed and accessible natural gas piping, flexible appliance connectors and natural gas shut off valves.

<sup>639</sup> Interview with Adam Danner and James Earley on July 13, 2016.

<sup>640</sup> See [www.cngcorp.com](http://www.cngcorp.com) for additional detail. CNG provides such services to both residential and business customers.

- Select Comfort – Provides the same coverage as Basic Assurance Plan plus it includes a tune up of furnace or boiler and a visual inspection of natural gas equipment.<sup>641</sup>

The company does not install new gas appliances.<sup>642</sup>

All revenue derived from offering these diagnostic and repair services to CNG customers are applied as an offset to CNG's operation and maintenance (O&M) expenses. The graph below shows the revenue derived from this service over the past five years.

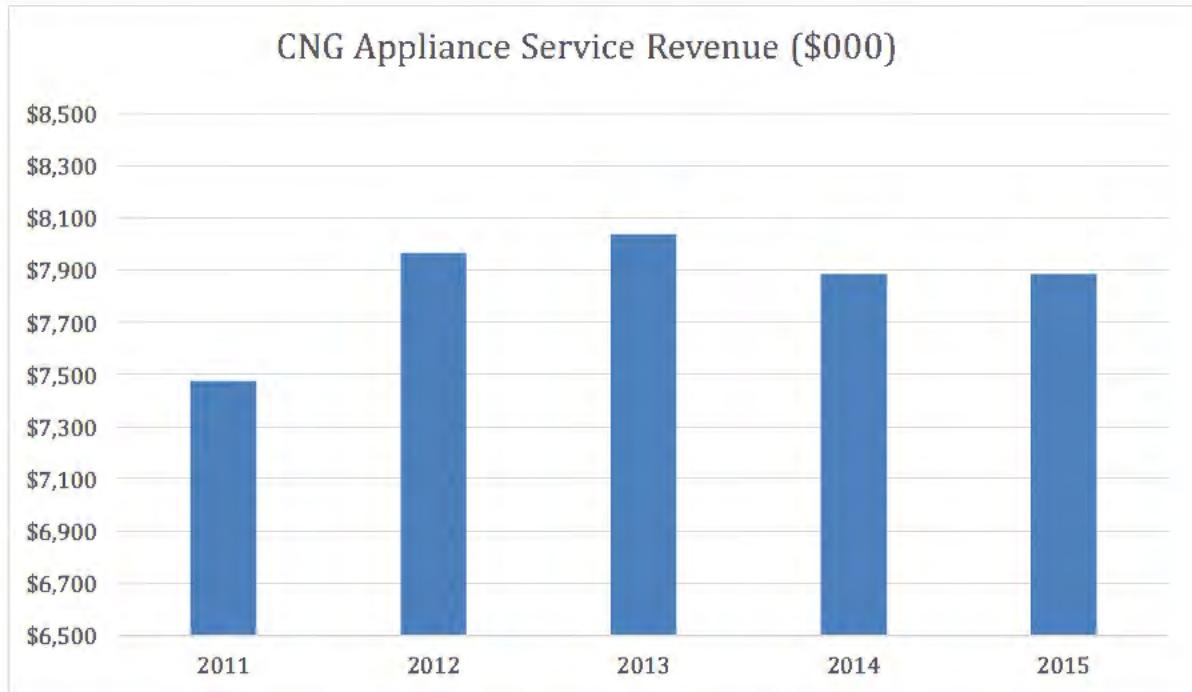


Exhibit 91 - CNG Appliance Service Revenue<sup>643</sup>

**Conclusion 10.1.4:** *CNG has employee codes of conduct that oblige employees to adhere to company affiliate transaction and cost allocation policies.*

#### Analysis

CNG has a written Code of Business Conduct. This code addresses:

- **Compliance with Other Laws and Regulations**

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<sup>641</sup> See [www.soconnegas.com](http://www.soconnegas.com).

<sup>642</sup> CNG does not compete with local private sector heating, ventilation, and air conditioning (HVAC) companies for either new construction or replacement work.

<sup>643</sup> BUD006 CNG-SCG Attachment 1.

- **Regulatory Codes of Conduct** (specifically the Gas Code of Conduct derived from Sections 16-47a.1 to 16-47a.12 of the Connecticut statute. The code “sets forth the standard of conduct for transactions, direct or indirect, between gas distribution companies and their affiliates.”<sup>644</sup>
- **Affiliate Transactions** which protect “against a regulated utility showing favoritism toward its affiliates, sharing certain information with affiliates, or applying inappropriate affiliate costs to the regulated utility.”<sup>645</sup>

In addition, there is a specific ethics line telephone number and website for additional information or questions.

**Conclusion 10.1.5:** *RCG/SCG LLC found that Internal Audit periodically reviews adherence to UIL Holdings Corporation Cost Accounting Methodology Manual.*

#### **Analysis**

Internal Audit periodically reviews cost allocations. It audited the UIL Holdings Corporation Cost Allocation Methodology Manual (CAMM) in January 2013 and again in March 2015.<sup>646,647</sup> These audits were done on a UIL Holdings Corporation wide basis.<sup>648</sup>

Accounting also reviews the cost allocations every six months. According to several interviews, very few issues are ever noted because the process is mechanistic and applied appropriately.

**Conclusion 10.1.6:** *RCG/SCG LLC concluded that the Company applies reasonable costs for services.*

#### **Analysis**

UIL Holdings Corporation and AVANGRID, Inc. allocate shared services and overhead expenses at cost. No margin or profit is added.<sup>649</sup> Accordingly, CNG is not channeling extra margin to a parent company at the expense of ratepayers.

RCG/SCG LLC did not examine the cost of shared services UIL Holdings Corporation provided to SCG and CNG, relative to the market rates of similar services. However, it is important to note that:

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<sup>644</sup> CA005 CNG-SCG Attachment 1.

<sup>645</sup> Ibid.

<sup>646</sup> Interview with Paul Rossi of Internal Audit.

<sup>647</sup> Interview with Sandra Boisvert.

<sup>648</sup> IA005 CNG-SCG

<sup>649</sup> Interview with Adam Danner and James Earley on July 13, 2016.

- The salaries and employee benefit packages of UIL Holdings Corporation employees are based on market conditions and evaluated periodically by outside compensation studies.
- Certain of the services provided feature economies of scale (e.g., an attorney that evaluates a new legal or regulatory requirement on the behalf of four operating utilities instead of only one) in the service company. Accordingly, all operating companies share in this scale economy.
- Outsourcing doesn't necessarily provide the expected savings when contract development and administrative costs are fully considered. In addition, complicated outsourcing arrangements are very time consuming to develop and administer effectively.
- Certain of the services provided reflect the cost of large enterprise wide information technology (IT) applications that aren't practical to deliver within a single operating company or by an outside provider.

### **Recommendations**

**Recommendation 10.1.1:** *RCG/SCG LLC recommends that the internal audit group schedule an audit every two years to review the cost allocation manual and process and other affiliate transactions to ensure (1) that actual practice does comply with the governing documentation and (2) that the documentation does indeed cover all current activity. In addition, the biennial internal audit should determine whether CNG has developed new cost allocation bases for certain shared service functions that are more accurate than the Massachusetts formula.*

**Recommendation 10.1.2:** *RCG/SCG LLC recommends that the Company continue to participate in additional industry studies or develop their own peer group analysis of shared services costs to ensure appropriate levels of service costs.*

**Recommendation 10.1.3:** *RCG/SCG LLC recommends CNG consider, where practical, other cost allocation bases besides the Massachusetts Formula to distribute certain costs more effectively.*

## **10.2 Special Topic – Hurdle Rate & CIAC**

### **Background**

This section of the report addresses the effectiveness of CNG in managing its new business and gas expansion programs in compliance with state and PURA rules and mandates, including acquiring customers under these programs, evaluating the economic feasibility of providing services to the new customers, executing projects under the programs, and providing the proper reports as mandated by the PURA. Our assessment of economic feasibility will incorporate the consideration of the hurdle rate models used by the companies, as well as a review of how Contributions in Aid of Construction (CIAC), are determined.

### **Overall Assessment**

**NEW BUSINESS AND GAS EXPANSION PROGRAMS ARE GENERALLY WELL MANAGED. ECONOMIC ANALYSIS MODELS AND THE ASSIGNMENT OF NON-FIRM MARGIN FUNDS TO SUPPORT THE PROGRAMS ARE ALSO APPROPRIATELY APPLIED. HOWEVER, DIFFICULTIES IN ESTIMATION OF CUSTOMER GAS USAGE AND CONSTRUCTION COSTS CREATE PROGRAM CHALLENGES.**

The Marketing Group supporting the CNG New Business and Gas Expansion Programs is very credible and very capable in managing these programs. They are further compelled to manage these programs well as they are under PURA scrutiny to comply with mandates related to Comprehensive Energy Strategy. Economic analysis models (known as Hurdle Rate models) are appropriately designed and appropriately applied. Further enabling the goals of the gas expansion programs is the use of Non Firm Margin funds to help offset customer contribution requirements derived from the Hurdle Rate models. The management and application of NFM funds are also appropriate. The area of concern is the estimation of customer gas usage and construction cost estimates used in the Hurdle Rate models. Difficulties estimating both of these factors lead to the possible acceptance of projects that would and should have been rejected. CNG and SCG should continue to monitor these results, identify root causes, and consider some of the recommendations provided in this section of the report and the Capital Budgeting Process section of the report.

### **Evaluation Criteria**

The evaluation criteria for assessing New Business and Gas Expansion Program Management include:

- Reasonableness of the efforts to forecast new business customer growth,

- Appropriate marketing programs to engage customers and partner vendor service providers to acquire new customers (covered in the External Relations portion of this audit report)
- Reasonableness of tools used to evaluate project feasibility including hurdle rate models and model assumptions,
- Effectiveness of estimation for project cost and customer usage as part of the economic modeling,
- Appropriate determination of CIAC and collection of CIAC at a time in the process that allows as close to full recovery of actual costs as possible, and
- Relevant for CNG, the proper application of Non Firm Margin (NFM) to offset CIAC requirements consistent with state and PURA mandates, including the determination of eligibility for NFM funding.

### **Conclusions**

**Conclusion 10.2.1:** *RCG/SCG LLC found that CNG efforts to forecast new customer growth are reasonable considering the conditions of market prices for oil and natural gas.*

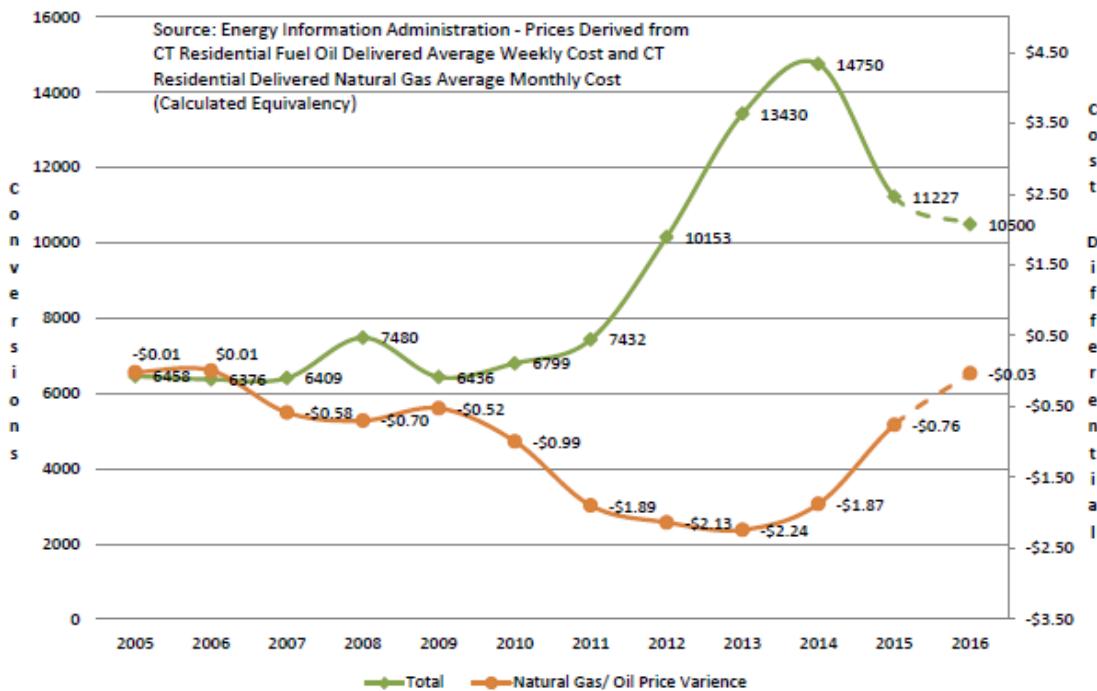
### **Analysis**

Overall historical budgets for the New Business program were provided in Section 3.6, Capital Budgeting Process. That section of the report discussed the challenges associated with budgeting overall dollars in New Business especially considering a dramatic drop in the price of oil and the gaps in pricing between these two fuel sources.

The following Exhibit was provided by the company to PURA in discussions to revise programmatic goals for gas conversion:<sup>650</sup>

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<sup>650</sup> CS017 CNG-SCG Attachment 1 Page 8



**Exhibit 92 - Gas Conversion/Oil Price Relationship**

As can be seen from this data, the variance in natural gas vs. oil prices has narrowed from over \$2 per gallon (on price equivalency basis) in 2012 and 2013 to \$0.76 in 2015, with even narrower gaps projected for 2016.

The New Business and Natural Gas Conversion programs are now driven by a state energy policy known as the Comprehensive Energy Strategy (CES). The Strategy was designed to encourage customers to switch from oil to natural gas. CNG and SCG jointly filed their plan for complying with CES in 2013. In that plan the companies, CNG and SCG, committed to a 10 year goal of 197,000 new customers<sup>651</sup> of the state wide 300,000 new customer goal.

As a result of the drop in oil prices and narrowing of the gap with natural gas prices, CNG and SCG requested a revision to the forecast for gas conversions and overall new customer growth as compared to the original commitments. The original forecast along with near term revisions to the forecast as requested by CNG and SCG is provided below:<sup>652</sup>

<sup>651</sup> As summarized in CS017 CNG-SCG Attachment 1 Page 5

<sup>652</sup> COM007 CNG-SCG Attachment 2

Sales Results			
Year	2013 CES Goal	Revised Goal	Actual
2014	14,200	n/a	14,750
2015	16,900	10,900	11,227
2016	20,100	10,300	2,583*
2017	20,100		
2018	20,100		
2019	20,100		
2020	20,100		
2021	22,000		
2022	22,000		
2023	22,000		

Exhibit 93 - CES Growth Goals

As can be seen, the original forecast called for 20,100 new customers per year by 2016 through 2020 and rising to 22,000 new customers per year through the end of the 10 year plan.

The new forecast is presented below, through 2020:<sup>653</sup>

Year	2014 Forecast	2014 Actual	2015 Forecast	2015 Actual	2016 Forecast	2017 Forecast	2018 Forecast	2019 Forecast	2020 Forecast
On Main Residential	8,500	7,812	6,156	5,507	5,953	6,850	7,000	7,150	6,900
Off Main Residential	3,800	1,818	1,444	2,318	1,397	5,000	6,750	8,750	11,445
Residential Sub Total	12,300	9,630	7,600	7,825	7,350	11,850	13,750	15,900	18,345
On Main C&I	1,800	4,954	2,757	2,653	2,632	1,980	1,430	1,280	1,180
Off Main C&I	100	166	543	749	518	400	420	485	575
C&I Sub Total	1,900	5,120	3,300	3,402	3,150	2,380	1,850	1,765	1,755
Total	14,200	14,750	10,900	11,227	10,500	14,230	15,600	17,665	20,100

Exhibit 94 - Revised CES Growth Goals

The forecast has been tapered to reflect a more moderate widening in the oil/natural gas price gap and thereby a more gradual growth in new customers.

The company has indicated their commitment to the overall CES goals but expect it will require more than 10 years to meet the conversion goals.

The process used by CNG to forecast new customer growth, including conversions, is based upon historical benchmarks and an analysis of specific customer segments. Historical sales are compared to the relative prices of oil and gas as part of the benchmarking effort. In the segment analysis, the companies review specific customer segments, conduct market research, and develop targeted forecasts.<sup>654</sup>

<sup>653</sup> FIN086 CNG-SCG Attachment 1

<sup>654</sup> FIN071

**Conclusion 10.2.2:** *RCG/SCG LLC found that the tool used by CNG to evaluate economic feasibility of new business projects (the Hurdle Rate Model) is reasonable and it is applied appropriately.*

### **Analysis**

At its core, the Hurdle Rate model used by CNG to evaluate the economic viability of new business projects is a discounted cash flow model. It incorporates the input of revenue, based upon estimated new customers and average customer usage, along with cost components, primarily construction costs but also including income and other taxes.

A 25 year evaluation period is used to conduct the analysis, as approved by the PURA. The outcome of the analysis is a project Net Present Value based upon the appropriate discount rate based upon the firm's after tax cost of capital. The company uses the allowed rate of return as approved by the PURA, for each company.<sup>655</sup> The after tax return is appropriate for this analysis as after tax cash flows are considered in the hurdle rate model. The discount rates for CNG as compared to SCG are as follows:

- CNG – 6.64%
- SCG – 6.76%

The net present value results derived from the analysis indicate whether a customer contribution is required to render the project feasible. The results of such an analysis is carefully reviewed by the Marketing group, recognizing as well that the results of the analyses are heavily scrutinized by the PURA in required filings known as Order 11 and Order 21 reports, to be discussed later. Our review of the model, as well as model outputs, indicate to us that the model is appropriate and is applied appropriately by the company.<sup>656</sup> While the application of the model is appropriate, the projections of construction cost and customer gas usage are and have been a problem, as will be discussed shortly.

**Conclusion 10.2.3:** *RCG/SCG LLC found that the application of the Non Firm Margin (NFM) program to encourage oil to gas conversion by CNG is appropriate including the selection process undertaken by the companies.*

### **Analysis**

In response to the Comprehensive Energy Strategy, and as outlined in agreements with state legislation and PURA, CNG and SCG are authorized to apply Non Firm Margin to offset customer requirements to contribute to a gas expansion project to render such a project economically feasible. The company procedures outline the specific rules under which NFM

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<sup>655</sup> Response to Data Requests FIN061 and FIN062

<sup>656</sup> The model is contained in FIN090 CNG-SCG Attachment 1

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can be applied to gas expansion projects.<sup>657</sup> Under the plan, the companies are permitted to apply 50% of NFM funds each year to the gas expansion program, subject to annual limits. The maximum allowed amounts for each company in 2015 were as:<sup>658</sup>

- CNG \$4,605,000
- SCG \$4,440,000.

According to the rules and outlined in the procedures, for any given project, up to 30% of construction costs can be covered by NFM funds if the project is less than \$1 million. For projects over \$1 million, NFM funds can be used to cover up to 50% of project costs.

The marketing teams for residential and commercial customers closely evaluate each of the prospect projects for eligibility for NFM funds. The company practices are not to apply the funds for “one off” customers, but rather to consider larger projects or areas where additional growth is anticipated. Many of these projects are associated with new franchise agreements working with municipalities. The Companies partner with municipalities for large main expansion or franchise expansion projects to provide flexible terms for a community contribution to help defray some of the project costs to facilitate project feasibility, such as a \$500,000 contribution from the Town of East Hampton in 2015, or \$250,000 from the Town of Deep River.<sup>659</sup>

CNG has found that many projects are rejected when CIAC is requested from the customer. For example, the companies cite an analysis of customer initiated requests for service from January through April of 2013 for SCG. Out of 609 such projects, 43 projects were rejected as unfeasible due to CIAC costs or no customer response.<sup>660</sup> The NFM funding has allowed many of these types of projects to be built. As shown below, a very small percentage of New Business spending, less than 2%, is funded through customer contributions:

	<b>CNG</b>	<b>SCG</b>
2015 Estimated New Business Budget	\$24,414,050	\$33,941,600
2015 Actual New Business Capital	\$18,356,135	\$23,699,442
2015 Non-Firm Margin Capital Offset	\$4,770,000	\$4,446,448
2015 Estimated Customer Contribution	\$488,281	\$678,832
2015 Actual Customer Contribution	\$168,438	\$700,767

**Exhibit 95 - Customer Contributions to New Business Projects**

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<sup>657</sup> Response to Data Request FIN065 CNG-SCG Attachment 1

<sup>658</sup> Response to Data Request FIN104

<sup>659</sup> Response to Data Request FIN069

<sup>660</sup> Response to Data Request COM007 CNG-SCG Attachment 1

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Due to the small number of projects involving CIAC, potential concerns over the timing of commitments made to customers on project cost are mitigated.

The marketing strategies associated with the gas conversion program are extensively outlined in the Joint Natural Gas Infrastructure Expansion Plans filed with the Department of Energy and Environment Projection in 2013 and later approved by PURA. Based upon a community by community plan, CNG has developed reactive and proactive strategies to meet the new customer goals. The plans are extensive and detailed. Aside from customer segment analysis and strategy development, programs are included related to contractor partner arrangements, to encourage vendors to promote gas conversion.

We believe the marketing organization is led by very capable leaders and the strategies are appropriate for the company efforts to meet programmatic goals.

**Conclusion 10.2.4:** *RCG/SCG LLC believes that Economic feasibility analyses for new business projects should be considered with caution due to estimating accuracy issues associated with customer gas usage and construction costs. As a consequence, there are risks that certain projects would have been rejected if estimates were more accurately reflected in the models.*

### **Analysis**

CNG and SCG are required to file monthly reports on the progress associated with the gas expansion program and specifically associated with off main projects. Order 11 reports provide an indication to the PURA of planned projects or projects underway and indicate primary assumptions associated with those projects including estimating customer gas usage, projected construction costs and any projected NFM funds to be applied.

Order 21 reports provide actual results for projects completed and at least one year after gas is flowing through the meter. While a number of projects demonstrate gas usage and construction cost actuals consistent with forecasts in Order 11 reports, there are likewise many cases, after the one year mark, where actual customer gas usage is below estimates and/or construction costs exceed estimates.

An example from the July 1, 2016 Order 21 filing is provided below:<sup>661</sup>

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<sup>661</sup>See

website

<http://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/483e6b961ac22dad85257fe30049a9d7?OpenDocument>

**Order 21 CNG-SCG Attachment 3**

**Company: Connecticut Natural Gas Corporation  
Southern Connecticut Gas Company**

**Page 1 of 1****Docket No. 13-06-02****Date Submitted: July 1, 2016****Apple Tree Ln. Hurdle Rate Comparison**

	<b>Order 11 (2014)</b>	<b>Order 21 (2016)</b>	<b>Variance</b>	<b>Percentage</b>
Number of Customers (Meters)	22	22	0	0%
Ccf Usage Per Meter	575	381	-194	-34%
Total Project Usage (Ccf)	12,650	8,391	-4,259	-34%
Total Project Revenue	\$14,855	\$12,743	-\$2,112	-14%
Main Cost	\$80,642	\$163,527	\$82,885	103%
Service Cost <sup>1</sup>	\$69,565	\$59,775	-\$9,790	-14%
Meter Cost	\$4,290	\$4,290	\$0	0%
<b>Interim Project Cost Variance<sup>2</sup></b>	<b>\$154,497</b>	<b>\$227,592</b>	<b>\$73,095</b>	<b>47%</b>
<b>Additional Project NFM<sup>3</sup></b>		<b>\$56,937</b>		
<b>Adjusted Project Cost Variance</b>	<b>\$154,497</b>	<b>\$170,655</b>	<b>\$16,158</b>	<b>10%</b>

Note 1: Actual number of services installed may be greater than the actual number of meters with gas flow.

Note 2: Pursuant to Section VI. B. of the Settlement Agreement, which requires a root cause analysis of the Interim Project Cost Variance; SCG has performed such analysis and found that restoration costs for this project were higher than expected.

Note 3: SCG originally applied 21.79% of the Estimated Project Cost or \$33,664 in Project NFM to this project. Based on the Actual Project Cost, the 30% NFM treatment is \$68,278. Less the original \$33,664 of Project NFM applied, SCG is applying an additional \$34,614 of Project NFM to offset the negative Project Cost Variance pursuant to Section VII. B. 1. of the Settlement Agreement. Also pursuant to Section VII. B. 1. of the Settlement Agreement, SCG is applying an additional \$22,323 of prioritized and subsequent allocations of Project NFM to cover the residual variance. The amount of NFM being applied is equal to the Actual Hurdle Rate CIAC.

**Exhibit 96 - Order 21 Filing**

This project, known as Apple Tree Lane, shows total project Ccf usage at 34% below the estimate in the Order 11 filing. Further, construction costs exceeded estimates by 47%. To meet the difference in cost, additional NFM funds were provided to the project. The issues associated with this practice will be discussed shortly.

Very typically in these reports explanations are provided for construction cost estimate variances, as can be seen in Note 2 above. In this case, the explanation was that restoration costs exceeded estimates. This is also a common theme, and is discussed further in Section 3.6 of this report on Capital Budgeting Processes.

Regarding the underestimate on customer gas usage, the company indicated that customer adoption rates are not fully realized. In some cases while certain customers have gas flowing through their meters for at least one year, other customers started their gas service less than a year ago. Therefore, the actual usage has not been fully realized. This explanation can be assessed to accuracy after another 6 to 12 months have passed. While notations are provided in Order 21 reports for construction cost variances, no such notations are provided for customer usage variances. We recommend these notations be added to Order 21 reports. Importantly, according to program requirements, the final test of estimating accuracy is made at the end of five years. Project feasibility must be affirmed at the five year mark otherwise certain funds may be required to be returned to customers.

A detailed discussion of issues associated with accuracy of estimating construction cost was provided in the Capital Budgeting Processes section of this report. The PURA not only has recognized the problems associated with CNG construction cost estimation processes but has also noted the same issues for estimation of customer gas usage.

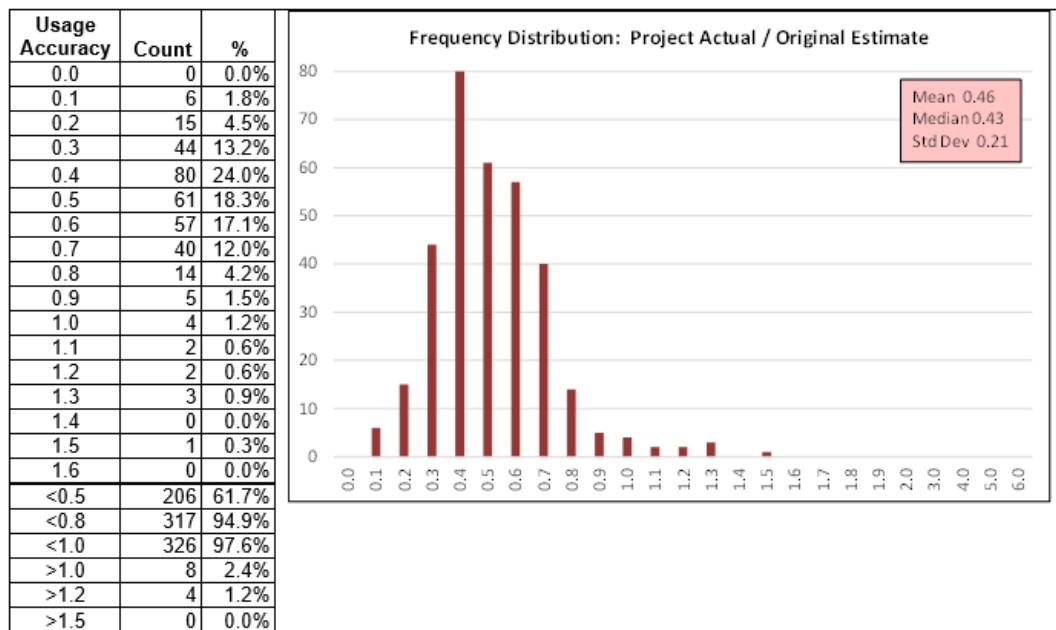
The Capital Budgeting Processes section of the report discussed how CNG was instructed to engage a consultant to help evaluate reasons for poor construction cost estimating practices. The consultant was also asked to look at estimating problems associated with customer gas usage. Concentric Energy Advisors conducted the study.

The Concentric report found significant overestimates of customer usage on a project basis as shown below:<sup>662</sup>

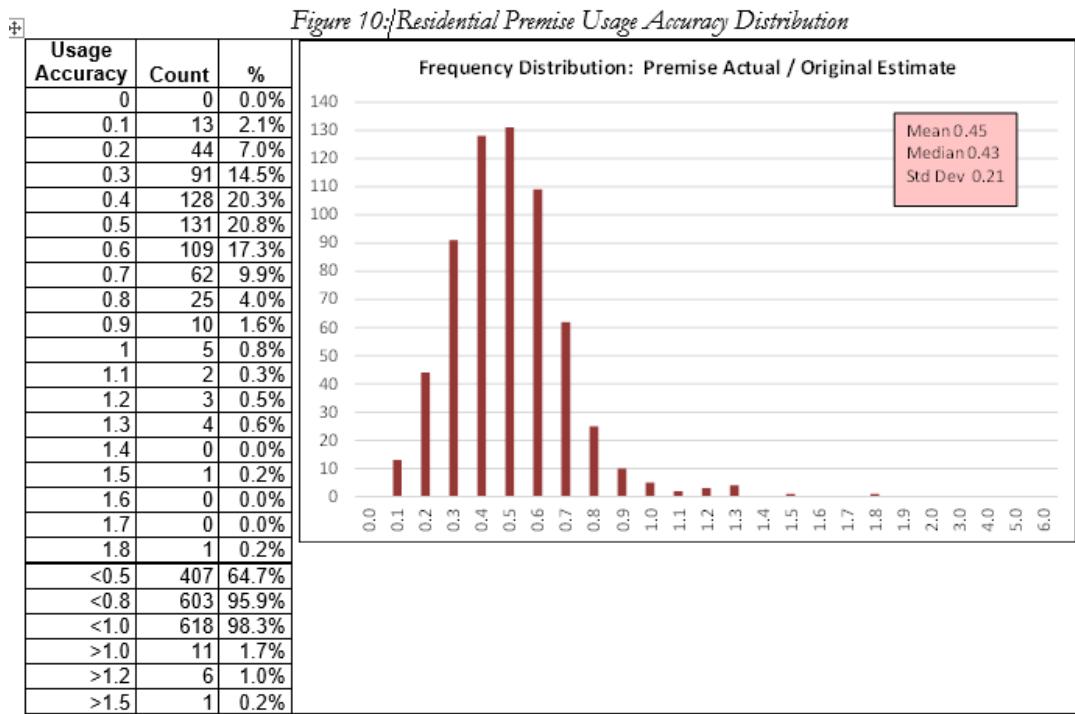
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<sup>662</sup> Response to Data Request GS085 CNG-SCG Attachment 1

Figure 9: Residential Project Usage Accuracy Distribution


**Exhibit 97 - Concentric Customer Usage Estimation Analysis on Project Basis**

Similar results are found when viewed on a premise basis, again from the Concentric report:


**Exhibit 98 - Concentric Customer Usage Estimation Analysis on Premise Basis**

Therefore, historical results indicate the issues associated with overestimation of gas usage may be more than simply a matter of waiting for customer adoption to be realized.

The Concentric report provides an explanation of some of the practices the company was using to address the overestimation of customer gas usage. This includes a conservative approach to only consider heating and gas water heater usage for residential customers, and no other possible gas uses such as gas cooking, clothes drying, and fireplaces. From the Concentric report:<sup>663</sup>

*The revised residential consumption methodology is more formulaic, and based only on the expected consumption of heating and hot water equipment. The Companies' revised residential consumption estimate procedure is as follows:*

- *Hot water use is estimated to be 185 Therms per year.*
- *Heating consumption (for furnaces and boilers separately) is calculated based on the age and square footage of the home using the assumptions and calculations contained in the Connecticut Programs Savings Document: 8<sup>th</sup> Edition for 2013 Program Year (February 21, 2013).*
- *Furnaces are assumed to have a 0.90 annual fuel utilization efficiency ("AFUE"), and boilers are assumed to have a 0.82 AFUE.*
- *The consumption calculation is locked; only managers can override the results.*

When Concentric applied the new rules to the historical database in their analysis, the number of projects overestimated for gas usage was reduced. However, while the distribution of overestimates and underestimates was more balanced, the estimating variances on both sides were still fairly large, leading to distortions on the application of CIAC, NFM funds, or the rejection of projects that should have been adopted.

According to Concentric, similar variations occur at the C&I level, especially as there is more of a dependence on customer indications of the equipment that will be used to support their businesses. However, Concentric found the variations to be less dramatic than those found for residential customers.

In the end, Concentric recommended continuing attempts to revise the gas usage estimating algorithms to reduce the variations in estimates. On the C&I side, Concentric recommended:

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<sup>663</sup> Response to Data Request OPS036 CNG-SCG Attachment 1

- Modifications to sales contracts requesting enhanced details from customers on equipment and associated usage, and having CNG and SCG verify that proposed equipment was in fact installed by the customer.
- Gathering additional information from customers to better translate historical use with oil to estimates of gas consumption.
- Enhance database systems to gather actual customer usage across business types based upon billing system data to help improve future estimates.
- Additional root cause analyses to further improve estimating practices.

Importantly, and of additional concern, is how estimating challenges for CNG impact hurdle rate analyses and the application of NFM funds. Referring again to the Apple Tree Lane project provided as an example above, in order to address the construction cost overruns addition NFM funds were applied, in particular \$56,937. As stated earlier, according to the rules, NFM funding is limited to 30% of project costs for projects under \$1 million and % of project costs for projects over \$5 million. Under this rule, the 30% limit for the Apple Tree Lane project was \$22,323 short of the required CIAC for this project to be economical, as described in Note 3.

Again, according to the rules, this application of NFM funds to cover the overrun, even if over the 30% and 50% limits, are permitted as long as the revenues by year 5 are high enough to overcome the higher construction costs bringing the economic analysis back in compliance with the rules.

As provided below, there are a number of projects where NFM has been applied exceeding the 5 year allowed threshold:<sup>664</sup>

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<sup>664</sup> Response to Data Request FIN108 CNG-SCG Attachment 1

Projects with a Year 1 Order 21 Filing Reflecting Final NFM as a Percentage of Actual Cost Greater than the Year 5 Allowed Threshold				
Order 21 Filing Date	Project Name	Total NFM Applied	Article IV, Section C Maximum NFM in Year 5	Final NFM Percent Based on Actual Cost
Q1 2016	CNG Cu ver Street - New ngton	\$28,023	30%	48%
Q1 2016	CNG Harvard Street - Wethersf e d	\$18,392	30%	33%
Q1 2016	CNG Westmont Street - West Hartford	\$112,789	30%	43%
Q4 2015	SCG Ca v n Leete - Gu ford	\$377,058	30%	53%
Q1 2016	SCG Broad R ver Lane - Southport	\$21,831	30%	35%
Q1 2016	SCG Caccamo Lane - Westport	\$40,727	30%	44%
Q1 2016	SCG Sy van Road - Mad son	\$17,938	30%	33%
Q1 2016	SCG Woodcock Lane - Westport	\$91,662	30%	45%
Q2 2016	SCG Hyatt - Westport	\$29,350	30%	36%
Q2 2016	SCG L ac - M ford	\$52,063	30%	51%
Q2 2016	SCG Pemburn - Fa rf e d	\$101,216	30%	43%
Q2 2016	SCG Spr ng - M ford	\$71,359	30%	50%
Q2 2016	SCG W ow - Branford	\$24,515	30%	44%

#### Exhibit 99 - NFM Funds Applied as Percentage of Actual Cost

According to company practice, and as permitted by the program, NFM funds accumulated from one year can be applied to another year. For example, NFM funds earned in 2014 were primarily applied to 2015 projects. NFM earned in 2015 were applied to some 2015 projects and are supporting some 2016 projects.<sup>665</sup> The company is expected to spend or allocate the entire earned 2015 NFM funds on eligible projects or to cover interim cost variances.

At the end of year 5, if the final NFM percentage exceeds the maximum percentage (either 30% or 50%) then funds would be returned to customers through a credit in the next System Expansion Rate reconciliation hearing. There are several consequences associated with issues of cost estimation. First, depending upon whether the construction cost variances are

<sup>665</sup> Response to Data Request FIN104

due to estimating problems or project execution issues, it is possible for some projects to be rejected because of unavailable NFM funds. We recognize that situation has not yet occurred. Further, if accurate construction cost estimates, and customer gas usage estimates were applied at the start of the analysis, perhaps some projects would and should have been rejected. These projects would not have passed the hurdle rate model, and customers very likely would have rejected the required CIAC. Since the beginning of the gas expansion program, a number of projects were rejected either because the necessary demand needed to construct the project was not obtained or the customer rejected the required CIAC. In particular, six commercial and industrial projects and 155 of 347 residential projects were rejected for these reasons.<sup>666</sup>

In summary, by the second or third interim year CNG should be able to see whether the customer gas usage estimates will begin to recover. While customer adoption into each project will progress each year, the accuracy of the *per customer* gas usage should be apparent by the second or third interim year. The impact of partial year new entrants should be mitigated. Therefore, the companies and PURA are sure to look closely at these second and third year Order 21 reports.

### **Recommendations**

**Recommendation 10.2.1:** *RCG/SCG LLC recommends that, as suggested by Concentric Energy Advisors, CNG continue to pursue root cause analyses to determine reasons for missing estimates both on the customer gas usage side and on construction cost estimates. On the latter, recommendations were provided in the Capital Budgeting Processes section of this report. Regarding the estimation of customer gas usage, we recommend the consideration of using a professional econometrician, perhaps a professor at a local college, to explore other models and algorithms to better predict customer gas usage. While the focus would be on the residential side, perhaps additional modeling can be done as well on the C&I side.*

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<sup>666</sup> Response to Data Request FIN105

## **10.3 Treatment of New Customers for System Expansion Programs**

### **Background**

This section provides an assessment by RCG/SCG LLC of the policies and procedures used by CNG to measure progress towards committed goals to make gas service more available to CNG customers and applying appropriate rate schedules to customers in compliance with PURA Orders implementing the Comprehensive Energy Strategy (CES). The original plan was implemented as defined in the Decision of November 2013 in Docket 13 06 02, as well as in follow up settlement agreements. A subsequent docket (16 04 10) was opened to specifically address how these policies were implemented by CNG and SCG including the consideration of customers that began discussions with the companies prior to the implementation of the new program on January 1, 2014 but had their services installed subsequent to that date. RCG/SCG LLC's assessment will only focus on the reasonableness of the "going forward" policies and practices of CNG to implement these plans. Since we are rendering our opinion on CNG's interpretation of the requirements outlined in the PURA Orders and subsequent agreements, the evaluation criteria is simply:

- Has CNG developed and applied reasonable policies and procedures to implement the CES program to appropriately determine applicable rates, and count customers relative to the CNG performance goals, with proper regard to the *intent* of the CES to encourage the conversion of oil fired equipment to gas and otherwise make gas service more readily available to new customers?

### **Overall Assessment**

**THE POLICIES IMPLEMENTED BY CNG IN SELECTING THE SERVICE RATES FOR NEW CUSTOMERS UNDER THE SYSTEM EXPANSION PROGRAM ARE APPROPRIATE. WE BELIEVE CLARITY SHOULD BE PROVIDED FOR COMPANY EMPLOYEES AND THROUGH SALESFORCE SYSTEM ENHANCEMENTS TO ADEQUATELY CAPTURE THE VARIOUS SCENARIOS UNDER WHICH A CUSTOMER MAY CHANGE THEIR SERVICE REQUIREMENTS.**

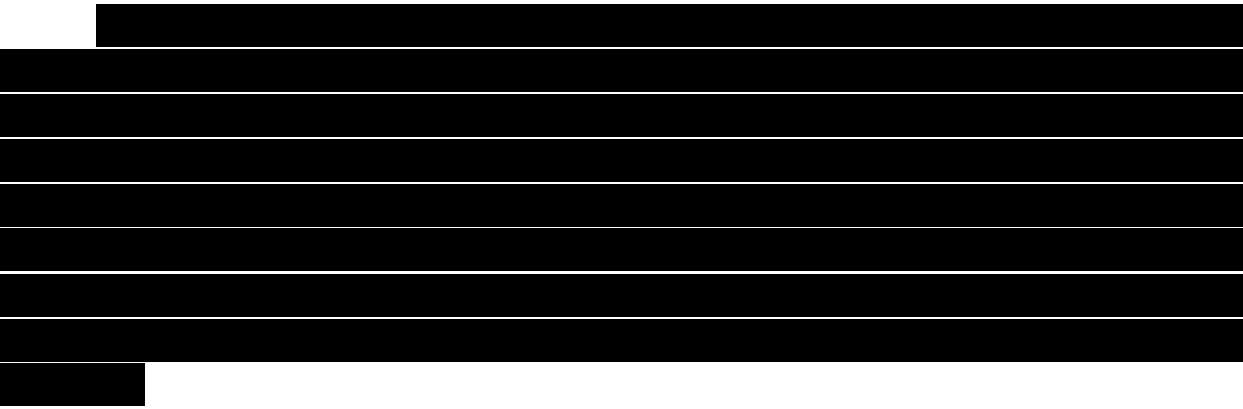
CNG responses to the PURA eleven scenarios does not adequately cover all of the nuances, especially with regard to customer changes in load requirements, capital investments being incurred by CNG to serve new customer requirements, and services being inactive for

more than a year. Distinctions between “organic growth<sup>667</sup>” and new customer service requirements driven by CES Programs should be made clear.

We believe the classification of customers as “system expansion” customers for the purposes of measuring progress by CNG in meeting the ten year goals under CES should follow similar policies to those used to determine the appropriate rate schedule for the customer, which is not current company practice. We recognize, however, that this designation has no impact to the converted customer or to CNG ratepayers as a whole.

**Conclusion 10.3.1:** *RCG/SCG LLC concluded that the CNG company policies and procedures to select the appropriate rate schedules for gas expansion customers and classifying those customers for meeting ten year gas conversion goals are mostly appropriate, but we recommend clarity and change of policy in a few instances.*

**Analysis**



[REDACTED]

- The response to PURA information request EN 001, and
- A transcript of the hearings associated with Docket 16 04 10 on June 22, 2016.

For information request EN 001, the PURA identified 11 scenarios for new customer additions. For each scenario, the information requested of CNG was to explain if:<sup>668</sup>

- A new customer Service Agreement or Construction Agreement would be executed,
- A new account number would be created,
- A standard rate or System Expansion Rate SE (Rate SE) would be applied, and if
- A new/existing customer is counted/reported as an expansion customer.

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<sup>667</sup> “Organic growth” is defined in this Section to represent customer or gas usage growth that would likely have occurred absent the CES programs.

<sup>668</sup> Response to Data Request EN-001 in Docket No. 16-04-10

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The scenarios are described below:<sup>669</sup>

- **Age change:** A meter change out for an existing customer because of a meter age change requirement.
- **Leak repair:** A new meter/bar/riser installed as a part of a partial service renewal motivated by a leak investigation/repair.
- **Third-party damage:** A new meter/bar/riser installed as a result of third party damage when a vehicle backs into the meter.
- **Move-in/out – existing meter:** An existing meter is turned on after a move in move out of a residential or commercial space to accommodate a new customer.
- **Move-in/out - new meter:** A new meter is installed or “hung” at an existing riser/bar after a move in move out of a residential or commercial space to accommodate a new customer.
- **Added load – existing meter:** An existing meter measures more consumption as a result of increased gas use or additional gas equipment is connected by an existing commercial or multi family residential customer.
- **Added load – new meter:** A new meter is installed or “up sized” as a result of increased gas use or added load by an existing commercial or multi family residential customer.
- **Branch service:** A new branch service/meter is installed to an existing customer as a result of a building addition/modification activity. [CNG interpreted this scenario as a service relocation request by the customer.]
- **Added meter:** A new service/meter is installed to provide another point of service to an existing customer facility.
- **On main customer addition:** A new service/meter is installed to provide service to a site/premise and customer that has not had gas service previously.
- **Franchise expansion project customer:** A new gas main, service and meter are installed to provide service to a premise and customer that has not had gas service previously.

Our review in this section is focused on two of the four questions posed by the PURA with respect to the eleven detailed scenarios. Specifically, what rate plan is appropriate for the customer, and in the case of a new customer, are they counted as a system expansion customer?

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<sup>669</sup> Response to Data Request EN-001 in Docket No. 16-04-10

The first of the two questions clearly has a direct impact on the customer, as it defines the applicable rate. In general terms, the customer would either stay on their existing, non system expansion rate, or they would be placed on a System Expansion (SE) rate requiring a 10% premium if the premise is “on main” and a 30% premium if the premise is “off main.<sup>670</sup>” A premise is “on main” if there was existing main in the street in front of the premise as of January 1, 2014. A premise is off main if the installation of new main is required to serve the new customer.

Regarding the second question, whether the new customer is considered a system expansion customer, there is no impact to the customer or CNG ratepayers as a whole. We have been told this count is not used in the annual SE reconciliation proceedings to determine revenue requirements. Only customers on the SE rate are considered during the SE reconciliation proceedings. The consideration of whether the new customer is counted as a system expansion customer is only relevant to the measurement of progress to meeting the ten year goals or commitments associated with the gas conversion/system expansion program. Therefore, while we will comment on the policies associated with classifying new customers as system expansion customers, in the end it does not have a cost impact to customers, new or existing.

One of the factors our team considered in assessing the CNG policies and procedures is whether the change in the customer requirement is considered “organic” growth or whether the change may have been impacted by efforts of CNG to influence the selection of gas service consistent with CES objectives. In our opinion, changes in customer requirements driven by organic growth would not in isolation be a trigger for placing customers on a system expansion or SE rate schedule.

The responses by CNG to the eleven scenarios are provided below, along with our assessment of the policies:

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<sup>670</sup> CES Decision dated November 22, 2013 in Docket 13-06-02, on page 43

Gas Customer Connection Scenarios	Standard Rate or System Expansion Rate SE	Recorded as Expansion Customer	RCG/SCG LLC Comments
<b>Age Change</b>	Existing rate whether non-SER or SER tariff	No	Agree
<b>Leak Repair</b>	Existing rate whether non-SER or SER tariff	No	Agree
<b>Third Party Damage</b>	Existing rate whether non-SER or SER tariff	No	Agree
<b>Move-in/out -- Existing Meter</b>	Existing rate at premise whether non-SER or SER tariff	Yes, if prior account inactive for one year	Agree on the rate question. Do not agree on designation as expansion customer
<b>Move-in/out -- New Meter --</b>	Existing rate at premise whether non-SER or SER tariff	Yes, if prior account inactive for one year	Agree on the rate question. Do not agree on designation as expansion customer
<b>Added Load -- Existing Meter</b>	Existing rate whether non-SER or SER tariff*	Yes if additional load >150 Mcf or more per year	Agree on the rate question. Do not agree on designation as expansion customer
<b>Added Load -- New Meter</b>	Existing rate whether non-SER or SER tariff*	Yes if additional load >150 Mcf or more per year	Agree on the rate question. Do not agree on designation as expansion customer
<b>Branch Service</b>	Existing rate at premise whether non-SER or SER tariff	No	Agree
<b>Added Meter</b>	Customer placed on On-Main SER tariff	Yes	Agree
<b>On Main Customer Addition</b>	Customer placed on On-Main SER tariff	Yes	Agree
<b>Franchise Expansion Project Customer</b>	Customer placed on Off-Main SER tariff	Yes	Agree
* Unless move to higher rate class			

#### Exhibit 100 - Evaluation of Company Responses to "Eleven Scenarios"

In our assessment, most scenarios are pretty straightforward and logical. We believe some clarity is required on selection of the appropriate rate plan under these scenarios. We believe the policy should apply:

- If a premise is on main, and at the time of the change described in the scenario the premise was served under the standard rate plan, that rate would still apply for the new or existing customer.
- If the premise is on main, and at the time of the change described in the scenario the premise was served under the SE on main tariff, that rate would still apply for the new

or existing customer (usually a premise that became served by gas after January 1, 2014).

- If the premise is on main, but was not served by CNG, the new customer would be subject to the on main SE tariff.
- If new main had to be installed to serve the new customer, it would logically be covered by the off main SE tariff.

Company policy is consistent with these statements.<sup>671</sup> However, clarity is required because there are some other factors that may impact the selection of the appropriate rate schedule to the customer. Three factors for consideration are:

- Increase in customer load (e.g., residential non heating customer becomes a heating customer, or the energy needs of a commercial customer increases),
- Additional capital investment required by CNG to serve the customer, and
- Premise has been inactive for at least one year.

#### **Added Load**

Some of the scenarios above involve added load (either with an existing or new meter). The footnote in the CNG response to the scenario analysis indicates the customer may be placed on alternative rate schedule if their increased usage causes them to be placed in a higher rate class (e.g., Small General Service to Medium General Service). Importantly, the increase in gas usage, which can be represented as *organic growth*, is not a trigger for placing the customer into the SE rate if the premise was not already served by the SE rate. If the premise was served on a main installed prior to January 1, 2014 and was on a standard non SE rate, the customer would remain on a standard non SE rate, even if moved to a higher rate class. The company has concurred that this is the current policy.<sup>672</sup> However, CNG *does* count the customer as a system expansion customer if the load increase is above 150 Mcf per year. We disagree with this treatment, and will discuss this issue later.

#### **Additional Capital Investment**

The next consideration is the addition of capital investment to serve the customer. In fact there was considerable discussion in the hearings earlier this year in Docket 16 04 10 regarding both the need for additional capital investment as well as the impact of a premise being inactive for at least one year. Reviewing the transcript from June 22, 2016, the question was asked of Mr. Diotalevi, Senior Director of Business Services, whether “The decision of rate SE or non rate SE would be driven by specific factors, the amount of time it has or has not been

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<sup>671</sup> As confirmed in telephone interview with Roddy Diotalevi on September 30, 2016

<sup>672</sup> Ibid.

inactive, as well as the capital expenditure associated with that particular premise.”<sup>673</sup> Mr. Diotalevi’s response was:

“We believe that the premise dictates the rate that the customer would be on in this situation. We’re specific in the decision of the original docket that a new customer charge, either our SER 10 percent or SER 30 percent, is dictated on whether there was main installed at that premise on January 1, 2014. So regardless of a new customer who’s in or out, what was the situation of the main in relation to that premise on 1/1/14 would dictate whether they’d be on a system expansion 10 percent or 30 percent rate.”<sup>674</sup>

While there are instances upon which capital spending may impact the selection of the appropriate rate schedule, clarity on the capital investment scenarios is warranted. The policy, as confirmed with CNG,<sup>675</sup> is as follows:

- **Meter only addition** – if the extent of capital investment was only to install a new meter, this investment would be irrelevant to the selection of the rate schedule. If the premise was served by a standard non SE rate, it would continue to do so, even with the addition of or change in meter. If the premise was served by an SE rate, it would continue to do so.
- **Service line installed** – There are various examples under which a new service line would be installed or an existing line modified.
  - The most obvious is the addition of a new service for a customer that was not previously served by CNG as a gas customer. This customer would be placed on an SE rate schedule.
  - Similarly, if a customer requests a new point of service on an existing facility, and a new service line is installed, the added point of service would be placed on an SE rate schedule.
  - In the case of the branch service scenario while CNG capital investment is required, CNG has interpreted this scenario as a service relocation. In this instance, the customer would pay for the service relocation yet this action would not result in placing the customer on the SE rate if the customer was not already on the SE rate.
  - As a final example, if the customer requires a load increase, it is possible that load increase will require investments to modify the service line to accommodate the increase in load. However, as this scenario represents *organic*

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<sup>673</sup> Transcript from Docket 16-04-10 on June 22, 2016, page 47 line 15

<sup>674</sup> Ibid., page 47 starting on line 20

<sup>675</sup> Telephone interview with Roddy Diotalevi on September 30, 2016

*growth* by the customer, the customer would not be placed on the SE rate if they were not already on the SE rate. A hurdle rate analysis would be completed to determine if any customer contribution was required. As indicated by CNG,<sup>676</sup>

"For existing customers, we would not place them on a SE rate if they were on a standard rate. We would run a Cap model and if the load growth was enough to require a larger service, most often the load would cover that investment and no CIAC would be required. We don't believe making them pay a premium via a SE rate was the intent of the new SE rates." Should footnote 10 be here?

- **Main expansion for system planning reasons** – CNG may decide to incur investments to better manage system capacity or performance triggered by customer expansion in a region. Such investments for system planning reasons would not cause a customer to be placed on an SE rate.

We concur with these practices and believe it is consistent with the intent of CES, as expressed in the PURA Final Order defining the rules associated with implementing CES.<sup>677</sup>

"The Authority hereby approves a new set of rates for new customers to offset the incremental costs of expanding natural gas infrastructure pursuant to the Plan."

However, we recommend providing additional clarity to these policies through the published rate tariffs, clarifying what events might trigger placing a customer on an SE rate.

- **Premise Inactive for More than One Year**

In consideration of whether a premise was inactive for one year or more, as described in the move out/in scenarios, CNG policy is that the premise having been inactive for one year or more is irrelevant to the selection of the appropriate rate for the new customer. The new customer would receive the standard non SE rate or the SE rate depending upon whether the premise was previously served by one rate or the other. However, once again CNG does use the period of inactive status to trigger consideration of the new customer as a system expansion customer.

CNG logic is as follows:<sup>678</sup>

"We choose, as Mr. Michelson said, to count a customer as a new CES customer if that meter has been inactive for a year or longer because we believe

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<sup>676</sup> Email from Roddy Diotalevi to Morris Jacobs on October 1, 2016

<sup>677</sup> Docket No. 13-06-02 Final Order Page 41

<sup>678</sup> Transcript from Docket 16-04-10 on June 22, 2016, page 48 line 8

that at the time we've eliminated the short term transience and we're going to a new customer that has the decision of whether to go with gas or oil or other fuel source at that premise. And so that's why we've chosen a one year inactive status on whether to count a new customer or not."

While counting new customers to track CNG performance relative to meeting ten year goals for converting customers from oil to gas has no cost impact to customers, existing or new, we believe this tracking mechanism should be consistent with the policies associated with selecting the proper rate schedules for customers and premises. That is, if a new customer was placed on an SE rate (and was not prior to the actions described in the eleven scenarios) that customer should be counted as a system expansion customer. If the customer would be placed on a standard, non SE rate, they should not be counted as a system expansion customer. The distinctions of adding load beyond 150 Mcf per year or a premise having been inactive for a year or more should not be considered, just as they are irrelevant to the selection of rate schedules.

In response to the justification provided in the transcript excerpt above, we believe it is unlikely that in an existing premise, where there is a gas main in the street and a gas furnace in the premise, a new customer would consider replacing the gas furnace with a new oil burning furnace. More likely, if the gas furnace required replacement, it would be replaced with another more efficient gas furnace.

Finally, applying a rule for counting system expansion customers that is consistent with the application of rate schedule for new customers would provide ease in revenue requirements determination in subsequent rate cases. Distinguishing between system expansion and other customers would be considered during revenue requirements determinations (and in reviews by PURA staff) and counting customers in a manner consistent with rate schedule selection would limit confusion during rate case proceedings.

As stated earlier, in the end the designation of a new customer as a system expansion customer is only a question of how CNG is performing relative to their goals and commitments to PURA and the state. More important, in our opinion, is clarification of the rate plans for the new customer, especially to be sure company employees apply the policies appropriately.

Fortunately, CNG has implemented a new technology, Salesforce CRM, which employs algorithms to help "hard wire" the decisions regarding the placement of new customers on the proper rate,<sup>679</sup> as long as the proper inputs are provided. We believe these algorithms should be reviewed to be sure they follow the policy recommendations described above.

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<sup>679</sup> Response to Data Request FIN109 CNG-SCG Attachment 1

### **Recommendations**

**Recommendation 10.3.1:** *RCG/SCG LLC recommends that CNG provide clarity on the application of standard versus SE rates to new customers as part of the system expansion program. The “eleven scenarios” do not adequately capture all of the nuances of customer changes in service requirements. Clarity on these rules would minimize errors in application of these rates.*

With regard to the changes in customer service requirements, “organic growth” should not be a consideration in applying an SE rate when the customer or premise is not already on an SE rate.

With regard to classifying customers as system expansion customers, we believe rules should be followed similar to the decision framework used for determining applicable rate schedules, and that an inactive meter beyond one year is not a distinction of importance. As well, customers that experience increases in load beyond 150 Mcf per year should not be counted as system expansion customers.

To assist with the clarity of policies, the following steps should be taken:

- Salesforce CRM should be configured to follow the company policies including the nuances described in this report. Questions should be posed in the application to trigger the proper treatment.
- Rate schedules should be modified to include adequate descriptions to fit these rules regarding when an SE rate would apply (and when it would not apply).
- The policies described in this report should be periodically reviewed by Internal Audit to assess compliance.

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## Appendix 1- Abbreviations and Acronyms

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*Abbreviations and Acronyms*

AA	Affirmative Action
ACD	Automated Call Distributor
ACH	Automated Clearing House
AE	Account Executive
AFUDC	Allowance for Funds Used During Construction
AGA	American Gas Association
AIP	Annual Incentive Program
AMI	Advanced Metering Infrastructure
AMR	Automated Meter Reading
AMS	Asset Management System
ANI	Adjusted Net Income
ANSI	American National Standards Institute
APM	Accident Prevention Manual
BACG	Business Area Control Group
BSC	Business Solutions Center
C&I	Commercial and Industrial
C&LM	Conservation and Load Management
CAM	Cost (or Corporate) Allocation Manual
CaPP	Capital Project Approval Policy and Procedures
CAU	Charge Accounting Unit
CBA	Collective Bargaining Agreement
CBM	Condition Based Maintenance
CCC	Cost Control Center
CCM	Connecticut Conference of Municipalities
CCNC	Completed Construction Not Classified
CDPUC	Connecticut Department of Public Utility Control
CE	Customer Experience
CEAB	Connecticut Energy Advisory Board
CEAP	Connecticut Energy Assistance Program
CEEF	Connecticut Energy Efficiency Fund
CEO	Chief Executive Officer
CFM	Corporate Financial Model
CFO	Chief Financial Officer
CHRO	Connecticut Human Rights Organization
CIA	Certified Internal Auditor
CIS	Customer Information System

CLE	Continuing Legal Education
CM	Circuit Manager
CNG	Connecticut Natural Gas Corporation
COE	Center of Excellence
COLT	Corporate Online Time
CONVEX	Connecticut Valley Exchange
COO	Chief Operations Officer
CPA	Certified Public Accountant
CPM	Corporate Performance Management
CRM	Customer Relationship Management
CRMS	Corporate Records Management System
CSR	Customer Service Representative
CTA	Call to Action
CWIP	Construction Work In Progress
D&I	Diversity and Inclusion
DA	Decision Analysis
DART	Days Away Restricted Transferred
DDI	Development Dimensions International
Department	Department of Public Utility Control
DIF	Difficulty/Importance/Frequency
DOE	Department of Energy
DOT	Department of Transportation
DPUC	Department of Public Utility Control
DRM	Department Records Manager
DSCADA	Distribution Supervisory Control and Data Acquisition System
DSEM	Distribution System Engineering Manual
EAP	Employee Assistance Program
EBE	Economic and Business Development
ECMB	Energy Conservation Management Board
EDI	Electronic Data Interchange
EDS	Electronic Dispatch System
EEO	Equal Employment Opportunity
EIA	Energy Independence Act
EOC	Emergency Operations Center
ERM	Enterprise Risk Management
ERMC	Executive Risk Management Council
ERP	Enterprise Resource Planning
ERP	Emergency Restoration Program

ERT	Electronic Receiver Transmitter
FASB	Financial Accounting Standards Board
FD	Fair Disclosure
FERC	Federal Energy Regulatory Commission
FFO	Funds from Operations
FTE	Full Time Equivalent
G/L	General Ledger
GAAP	Generally Accepted Accounting Principles
GIS	Geographic Information System
GIS	Graphical Inventory System
HIPAA	Health Insurance Portability and Accountability Act
HR	Human Resources
HRA	Health Reimbursement Account
HRIT	Human Resources Information Technology
IA	Internal Audit
IAD	Internal Auditing Department
IBEW	International Brotherhood of Electrical Workers
IIA	Institute of Internal Auditors
IM	Instant Messaging
IR	Investor Relations
ISACA	Information Systems Audit and Control Association
ISO	Independent System Operator
I/T	Information Technology
ITIL	Information Technology Infrastructure Library
IVR	Interactive Voice Response
JIT	Just in Time Training
KPI	Key Performance Indicators
KRA	Key Result Area
LIHEAP	Low Income Home Energy Assistance Program
LTIC	Long term Incentive Compensation
MARC	Management Associated Results Company, Inc.
MDS	Mobile Dispatch System
MIBS	Management Information and Budget System
MIMS	Materials Information Management System
MIS	Management Information System
MPP	Matching Payment Program
MVRS	Multi Vendor Reading System
NARUC	National Association of Regulatory Utility Commissioners

NEO	Named Executive Officers
NFM	Non Firm Margin
O&M	Operation and Maintenance
OCCap	Operating Companies Capital Program
OCRC	Operating Company Review Committee
OJT	On the Job Training
OPEB	Other Post Employment (Retirement) Benefits
OSHA	Occupational Safety and Health Administration
OTD	On Time Delivery
PCB	Polychlorinated biphenyls
PES	Performance Enhancement System
PMVA	Preventable Motor Vehicle Accident
PTMS	Performance and Talent Management System
RaCC	Risk and Capital Committee
RCG	River Consulting Group, Inc.
RCM	Reliability Centered Maintenance
RCRC	Regulated Company Review Committee
RFP	Request for Proposal
RIM	Records and Information Management
RM	Records Manager
RMC	Risk Management Council
RMS	Route Mean Square
ROW	Rights of Way
RSU	Restricted Share Units
RTO	Recovery Time Objective
S&P	Standard & Poor's
SAT	Systematic Approach to Training
SAU	Source Accounting Unit
SBC	Standards of Business Conduct
SCADA	Supervisory Control and Data Acquisition
SCG	Southern Connecticut Gas Company
SCG LLC	Raymond G Saleeby, LLC d/b/a Saleeby Consulting Group, LLC
SEC	Securities and Exchange Commission
SERP	Supplemental Executive Retirement Plan
SERT	Skills Enhancement Refresher Training
SIRS	Safety Incidence Report System
SLA	Service Level Agreement
SOC	System Operations Center

SOX	Sarbanes Oxley
SPCC	Spill Prevention, Control, and Countermeasure
SSR	Shared Services Roundtable
STORMS	Severn Trent Operational Resource Management System
T&D	Transmission and Distribution
T2F	Time to Fill
TDRP	Transmission and Distribution Reliability Performance
TOU	Time of Use
TRACS	Tracking Regulated Activities and Calendar System
UGCap	Utility Group Capital Program
UIL	UIL Holdings Corporation
UOMA	Utilities Operations and Management Analysis
UPIS	Utility Plant in Service
UTG	Utility Group
VOC	Voice of the Customer
VP	Vice President
WMS	Work Management System
WPP	Winter Protection Program
WRAP	Weatherization Residential Assistance Partnership
YGS	Yankee Gas Services (now Eversource Energy)
YTD	Year to Date
ZIP	Zero Incident Program

## Appendix 2 – CNG Comments

The following are the specific comments that SCG had on the report. Each comment is included at its respective position within the report along with the RCG/SCG LLC reply. Editorial comments provided by the Company were incorporated in the draft to the extent that the only clarified the statement(s) and did not alter the findings, conclusions or recommendations.

### COMMENTS ON CONLUSIONS (Proposed Format)

Conclusion 4.3.12 *RCG/SCG LLC found that SCG.....*

Management Response: The Company disagrees ....