Witness: Andrew J. Bazinet

Question Middlebury-1:

List the names and addresses of all individuals with more than 5% ownership interest in the certificate holder CPV Towantic LLC as of November 3, 2014.

Response:

No individuals currently hold more than a 5% ownership interest in CPV Towantic, LLC.

Witness: **D. Lynn Gresock**
Danielle S. Powers

Question Middlebury-2:

List the names, addresses, and qualifications including the number of any vocational or professional license issued by the State of Connecticut, if any, to those individuals that contributed to Exhibit 1 and Exhibit 2 referenced by and made a part of submission of the Petition to Reopen and Modify of CPV Towantic LLC filed November 3, 2014.

Response:

The primary author of Exhibit 1, *Environmental Overview in Support of Petition for Changed Conditions*, is Lynn Gresock, Vice President of the Energy Program at Tetra Tech, Inc. Ms. Gresock's address is 238 Littleton Road, Suite 201B, Westford, MA 01886. Other individuals that substantively contributed to Exhibit 1 include:

(1) Erik J. Kalapinski, Consulting Engineer – Acoustics at Tetra Tech, Inc., 160 Federal Street, Third Floor, Boston, MA 02110 (Noise);

(2) Frederick Sellars, Program Manager at Tetra Tech, Inc., 238 Littleton Road, Suite 201B, Westford, MA 01886 (Air);

(3) Steven J. Babcock, Environmental Engineer at Tetra Tech, Inc., 160 Federal Street, Third Floor, Boston, MA 02110 (Air);

(4) Andrew J. Bazinet, Director, Development at Competitive Power Ventures, Inc., 50 Braintree Hill Office Park, Suite 300, Braintree, MA 02184;

(5) Dean Gustafson, Professional Soil Scientist and Senior Wetlands Scientists at All-Points Technology Corporation, P.C., 3 Saddlebrook Drive, Killingworth, CT 06419 (Stormwater, wetlands, cultural resources, and threatened and endangered species);

(6) Curtis C. Jones, President, Owner, and Founder at Civil 1, 43 Sherman Hill Road, Suite D-101 Woodbury, CT 06798 (Stormwater, wetlands, and site layout). Mr. Jones is a licensed professional engineer in Connecticut; and

(7) Cliff Crosman, Principal Engineer, Power Engineers/Burn and Roe, 800 Kinderkamack Road, Oradell, New Jersey 07649 (Wastewater).

The primary author of Exhibit 2, *New England Wholesale Power Market Changes 1999-Present*, is Danielle S. Powers, Vice President at Concentric Energy Advisors, Inc. Ms. Powers' address is 293 Boston Post Rd. W, Suite 500 Marlborough, MA 01752. Other individuals who substantively contributed to Exhibit 2 include:

Tanya Bodell, Executive Director at Energyzt, PO Box 174, Cohasset, MA 02025, Section 6 of Exhibit 2.

Simon Carr, Vice President of Power Markets, Managing Director, at Energyzt, 4922 Westway Drive, Bethesda, MD 20816, Section 6 of Exhibit 2.

Resumes for each individual are attached to this response.

Experience Summary

Ms. Gresock has over 30 years of experience in regulatory issues as they relate to environmental permitting and compliance for a wide range of projects. For most of her career, she has specialized in permitting and due diligence activities for projects in the energy sector. Her project experience includes obtaining environmental approvals for around 20,000 megawatts (MW) of electric generation capacity. Ms. Gresock has provided development permitting and support for a wide range of facilities, including fossil-fuel fired power facilities, renewable energy facilities, natural gas pipelines, electric transmission lines, and LNG facilities. She has supported project development from early definition phases, through obtaining licensing approvals, construction oversight and operational compliance support. She has represented clients on environmental matters at public hearings and has spoken at seminars on environmental issues. Her knowledge of energy project issues, based on her consulting experience and experience working within the industrial sector, brings practical consulting advice to successfully develop and implement environmental strategies that meet project operational needs and regulatory requirements.

Education

BS, Environmental Design, University of Massachusetts, 1984

Representative Power Plant Permitting Experience

CPV Towantic, LLC, CPV Towantic Energy Center, Oxford, Connecticut

Project manager and lead environmental consultant for permitting of the CPV Towantic Energy Center, an approximately 800-MW combined cycle electric generating facility in Oxford, Connecticut. Responsibilities have included environmental documentation associated with a Petition for Changed Conditions before the Connecticut Siting Council and a Permit Application for Stationary Sources of Air Pollution, as well as providing outreach support and focus on the full range of considered environmental and community issues.

International Power America, Expansion and Development Site Review, Connecticut and Massachusetts

Provided critical issues assessment documentation to review five potential sites in Connecticut and Massachusetts for potential new development or expansion projects. Detailed regulatory and issue review, development of milestone scheduling to demonstrate the potential for licensing feasibility in a timely manner, and identification of key tasks were provided to support the client's selection of projects for development. Several sites included consideration of historic site contamination issues. Environmental permitting support was provided for two projects selected for development.

Elemental Power Group, Fuel Cell Feasibility Assessment and Permitting, Bridgeport and Danbury, Connecticut

Supported site evaluation and selection, feasibility assessment, and permit plan development associated with two proposed fuel cell development projects. Provided inputs toward obtaining funding for project development, and prepared initial permitting documentation.

Power Development Company, Milford Power Project, Milford, Connecticut

Managed full-service environmental permitting for a two-unit 540-MW electric generating facility located in the coastal zone proximate to the Housatonic River. As one of the first merchant power proposals in Connecticut, coordination with regulatory agencies was necessary to define appropriate levels of assessment to facilitate an expedient review. The use of wastewater treatment plant effluent for demand reduction on the public water supply, the use of a single stack of lower than good engineering practice (GEP) height to minimize visual intrusion on the surrounding community, and the selection of a site that

would minimize impact on environmental features and eliminate the need for extensive off-site interconnects were key elements of the project's design. Activities included preparation of Connecticut Siting Council documentation, air quality permitting, water and wastewater permitting, and coordination with the local community for environmental review of such issues as traffic and noise.

Confidential Client, Critical Issues Assessment, Southwestern Connecticut
Completed critical issues assessment in a phased manner to support a potential 200-MW simple cycle electric generating facility proposed in southwestern Connecticut. In addition to issues identification and development of a permitting plan, air dispersion modeling was completed to support stack height optimization and feasibility assessment.

Clean Energy Future, LLC, Lordstown Energy Center, Village of Lordstown, Ohio
Full environmental licensing of a proposed 800-MW natural gas-fired combined cycle facility located in Trumbull County, Ohio. Work includes preparation of Ohio Power Siting Board (OPSB) documentation and mapping; a Prevention of Significant Deterioration (PSD) air permit application; and related resource permits and outreach.

NTE Ohio, LLC, Middletown Energy Center, Middletown, Ohio
Full environmental licensing of a proposed 525-MW natural gas-fired combined cycle facility located in Butler County, Ohio. Work has included preparation of OPSB applications for the generating facility and electric transmission interconnection; documentation and mapping; wetlands; noise; and cultural resources.

Advanced Power NA, Carroll County Energy, Carroll County, Ohio
Full environmental licensing of a proposed 750-MW natural gas-fired combined cycle facility located in Carroll County, Ohio. Work has included preparation of OPSB applications for the generating facility, natural gas pipeline interconnection and electric transmission interconnection; documentation and mapping; a PSD air permit application; wetlands; noise; cultural resources; and activities associated with water use and wastewater discharge alternatives. Also provided community outreach support.

North American Project Development, Oregon Clean Energy Center, Oregon, Ohio
Full environmental licensing of a proposed 800-MW natural gas-fired combined cycle facility located in Oregon, Ohio. Work has included preparation of OPSB documentation and mapping; a PSD air permit application; U.S. Army Corps of Engineers application; amendments and updates to the OPSB approvals; and related resource permits.

Advanced Power North America, Cricket Valley Energy Project, Dover, New York
Environmental licensing for a 1,000-MW combined cycle project requiring an Environmental Impact Statement (EIS) through the State Environmental Quality Review Act (SEQR) process as well as federal, state and local permits. The project's location on an industrial property, portions of which have been in use for many years, requires consideration of potential site contamination and cleanup, as well as building demolition issues. Other project issues include air quality; wetland and endangered species issues associated with the site's proximity to the Swamp River; development of an on-site groundwater supply; stormwater management; and other potential community concerns such as noise, visual, traffic and effect on services. Supported outreach through public open house and topical Working Group meetings.

Pure Energy Resources, Bayonne Energy Center, Bayonne, New Jersey
Project manager for environmental permitting associated with a proposed 512-MW natural gas- and oil-fired simple cycle electric generating facility. Issues included air quality, coastal consistency review, historical site contamination issues, water supply alternatives evaluation, and coordination associated

with the proposed underwater electric cable proposed to provide project output to meet New York City energy needs.

Calpine Corporation, Fremont Energy Center, Sandusky County, Ohio
Managed full environmental licensing for a proposed 700-MW combined cycle facility located near Fremont. The project's wet cooling system utilized city water supplies, and the project infrastructure utilized the adjacent rails-to-trails corridor. Work included preparation of an OPSB documentation and mapping, a PSD air permit application, and permits related to wastewater discharge to the local treatment plant.

Calpine Corporation, Lawrence Energy Center, Lawrence County, Ohio
Full environmental licensing for a proposed 2,200-MW combined cycle facility. The site's location on the shores of a major surface water body required consideration of cultural resources, wetland and floodplain issues. The project's proposed withdrawal and discharge of surface water required National Pollutant Discharge Elimination System (NPDES) authorization as well as review by the U.S. Army Corps of Engineers in that regard. Complex terrain immediately proximate to the site resulted in the need for interactive source air quality modeling. Stack height optimization required consideration of a nearby airport as well. In addition to the resource permits noted, an OPSB application was prepared and approved, and a Memorandum of Agreement developed to protect cultural resources at the site.

Sithe Energies, Heritage Station, Oswego, New York
Managed environmental licensing for an 800-MW combined cycle project on the 190-acre Independence Station cogeneration facility site. The project required review under the Article X process. As a part of this process, detailed stipulations were developed as a scope for the environmental evaluation. The resulting seven-volume application was confirmed by the Department of Public Service to have completely responded to the stipulation requirements, and was approved under an expedited settlement process. Key issues included the use of Lake Ontario water in the proposed wet cooling system, and potential cumulative effects associated with the project and the adjacent cogeneration facility. The full range of environmental disciplines was examined for the project.

Delta Power, Hyperion Power Project, Allen County, Ohio
Managed the preparation of the OPSB application for an approximately 750-MW combined cycle facility located in Fort Shawnee Township. Issues included avoidance of underground piping systems associated with the adjacent tank farms, and coordination with the project team of consultants responsible for a variety of technical issues.

Sithe Energies, Medway Station Expansion Project, Medway, Massachusetts
Managed environmental licensing efforts for a 540-MW natural gas-fired peak electric generating project proposed to augment existing on-site peaking capability. As the first simple cycle peaking project proposed in Massachusetts in some time, this project involved new applications for existing environmental standards, and additional documentation to support the appropriateness of technology selection. Issues included air quality, noise, and local concerns with regard to regional power plant development. Massachusetts Energy Facilities Siting Board (EFSB) approval, including expert witness testimony, was required for the project. In addition to technical permit applications at the state level, comprehensive environmental documentation was required through the Massachusetts Environmental Policy Act (MEPA) process. Early involvement in the project allowed for optimal siting and design to best minimize impacts of the proposed facility, and allow for mitigation of existing facility impacts, to assure regulatory officials and the local community that impacts associated with the proposed expansion were acceptable.

Peabody Power, Peabody Power Facility, Peabody, Massachusetts
Obtained full environmental licensing for a 99-MW peak electric generating facility to be operated on natural gas with oil backup. Documentation that EFSB review was not required was obtained via a formal jurisdictional advisory opinion process. MEPA Certification for the project was received following review of the Environmental Notification Form, with no Environmental Impact Report required. Other environmental issues included consideration of site remediation requirements, air permitting, noise impact analysis, and work within wetland buffer zones.

Competitive Power Ventures, L.P., Terrapin Power Project, Savannah, Georgia
Full environmental licensing for a proposed 800-MW combined cycle facility utilizing natural gas with low-sulfur fuel oil backup. Its location proximate to the Savannah River required consideration of wetland and floodplain issues. The site was also located within an industrially zoned area with a long history of industrial uses; a detailed site investigation was undertaken, including coordination with the United States Environmental Protection Agency (USEPA) and Georgia Environmental Protection Division to identify remedies that would return the site to a useful purpose. The site's proximity to Wolf Island, a PSD Class I area, required a detailed assessment of the project's potential effect on visibility in that area. The project proposed to utilize reclaimed water from an adjacent publicly owned treatment works for its wet cooling system.

Sithe/Exelon, Port City Power Project, Waukegan, Illinois
Full environmental licensing for an approximately 900-MW natural gas-fired combined cycle facility on an industrial site near Lake Michigan. Air quality impact analysis, noise assessment, ecological evaluation, consideration of site remediation needs, and visual impact assessment were all conducted for this project.

Competitive Power Ventures, L.P., Screven County, Georgia.
Prepared an air permit application, including consideration of PSD Class I impacts, for this 800-MW combined cycle facility. Adjacent to the Savannah River, the project proposed the use of surface water in a wet cooling system and discharge to a nearby agricultural facility in order to maximize water recycling. Environmental site assessment, cultural resource investigations and wetland delineations were conducted for the project.

Duke Energy North America, Washington Energy Facility, Washington County, Ohio
Managed environmental licensing for a 620-MW combined cycle facility utilizing wet cooling. Prepared documentation and mapping for the OPSB review and the air permit application. Issues included archaeological resources and water issues associated with the proposed intake and discharge into the Muskingum River.

Duke Energy North America, Madison Generating Station, Butler County, Ohio
Managed environmental licensing for a 640-MW simple cycle peaking facility consisting of eight General Electric (GE) 7EA units. Environmental support included documentation and mapping for the OPSB review, preparation of air permitting documentation, evaluation of the site for environmental and cultural resources, and documentation of construction stormwater management systems. The project began construction within six months of the initial permit application filing; this expedited review involved continual agency interaction and close coordination with the project's development and construction team.

Duke Energy North American, Audrain Generating Station and Bollinger Generating Station, Missouri
Managed environmental licensing for two separate 640-MW simple cycle peak electric generating facilities consisting of eight GE 7EA units. Environmental approvals for the Audrain Generating Station were received on an expedited schedule. Issues included air permitting, cultural resources,

Indiana bat habitat review, stormwater management and wastewater discharge authorization. The Bollinger Generating Station involved similar issues. In addition, the Bollinger site's proximity to a PSD Class I area involved consultation and review by the Federal Land Manager, including a CALPUFF analysis to address the potential for visibility and regional haze issues.

American National Power, ANP Bellingham Power Project, Bellingham, Massachusetts
Managed environmental permitting efforts associated with a proposed two-unit 580-MW natural gas fired facility. Comprehensive environmental documentation for both EFSB and MEPA review was completed, in addition to preparation of environmental applications. A key issue for this project was the number of similar projects proposed in the area, and the resulting need for cumulative impact assessment for air quality and water use. The use of dry cooling technology was incorporated to significantly limit facility water demand; proximity to the Charles River and the presence of on-site wetlands were also factors in the project's design and permitting. Coordination with Algonquin Gas Transmission Company was required to address impacts associated with a proposed natural gas pipeline interconnect crossing the Charles River.

U.S. Generating Company, Millennium Power Project, Charlton, Massachusetts
Managed full-service environmental permitting for the 360-MW Millennium Power project. This included preparation of comprehensive environmental documentation for both the EFSB and for MEPA review. Issues included air quality; potential effects of water withdrawal on the Quinebaug River; wetland impact; and archaeological resource avoidance. In addition to site development, the project also included offsite improvements; these piping corridors were also included in the permitting effort. Permit applications were prepared to meet federal, state and local requirements, and environmental support provided. Wetlands and salamander habitat creation were elements of project mitigation for which plans were developed and oversight provided.

U.S. Generating Company, Cataula Generating Project, Harris County, Georgia
Managed environmental permitting for the Cataula Generating Project, a proposed natural gas-fired peak electric generating project consisting of one to four units. The need to be prepared to meet potential future market demands required strategic involvement in presenting project information; the goal was to obtain permits with maximum flexibility while providing regulators with a level of comfort to allow their issuance of project approvals in a timely manner. Air permit applications, Army Corps of Engineers' wetland approval, and NPDES permitting were required. In addition, a comprehensive Environmental Assessment was prepared to support local permitting efforts, and local approvals (such as for the proposed on-site septic system) were overseen. A series of environmental analysis were performed to support project financing, including a site assessment for site contamination potential, and protected species and cultural resource screening.

South Carolina Electric and Gas, Peak Combustion Turbines, Canadys, South Carolina
Managed the preparation of an Environmental Assessment in support of an application before the Public Service Commission to permit an oil- or natural gas-fired peaking facility. A range of environmental issues were examined, including a wetland delineation using Army Corps of Engineers methodology. Special issues related to the facility's proximity to the existing coal-fired power plant; the extent to which existing services could be used at the proposed facility was also determined.

Duke Energy North American, Marshall County Generating Station, Kentucky
Managed environmental licensing for a 640-MW simple cycle peak electric generating facility consisting of eight GE 7EA units. In addition to air licensing, this project involved wetland delineation and avoidance, permits for work within mapped floodplain, Indiana bat habitat issues, stormwater management plan development and testing of groundwater to develop a water source for the project.

Duke Energy North America, Vermillion Generating Station, Vermillion County, Indiana
Managed environmental licensing for a 640-MW simple cycle peak electric generating facility consisting of eight GE 7EA units. Environmental support included evaluation of the site for environmental and cultural resources, preparation of air permit documentation, and preparation of an erosion control plan to identify construction stormwater management systems. An on-site groundwater well development program was also successfully completed for this project. The project began construction within six months of the initial permit application filing; this expedited review involved continual agency interaction and close coordination with the project's development and construction team.

Duke Energy North America, DeSoto Generating Station, DeSoto, Indiana
Managed environmental licensing for a 640-MW simple cycle peak electric generating facility consisting of eight GE 7EA units. Environmental conditions at the site were evaluated, and an air permit application prepared and submitted. An on-site groundwater well development program was also required at this site.

Duke Energy North America, Lee County Generating Station, Lee County, Illinois
Assisted client in initial site screening stage, assessing site for critical issues. Numerous other Illinois sites were also evaluated for this analysis. Following site selection, managed environmental licensing for a 640-MW simple cycle peak electric generating facility. Air permitting issues included the proximity of a nearby power plant proposal, and the agency's need to understand the potential for cumulative impacts. Water needs at the site were to be served through development of an on-site well.

Sonat, Upson Generating Project, Upson, Georgia
Managed the preparation of air permit documentation for a proposed peak electric generating power facility. Dispersion modeling was completed along a compressed timeline, including addressing issues pertaining to terrain impacts in the project's vicinity.

U.S. Generating Company, Peaking Units, Harris County, Georgia
Managed environmental permitting for the Cataula Generating Project, a proposed natural gas-fired peak electric generating facility consisting of one to four units. The need to be prepared to meet potential future market demands required strategic involvement in presenting project information; the goal was to obtain permits with maximum flexibility while providing regulators with a level of comfort to allow their issuance of project approvals in a timely manner. Air permit applications, Army Corps of Engineers' wetland approval, and NPDES permitting were required. In addition, a comprehensive Environmental Assessment was prepared to support local permitting efforts, and local approvals (such as for the proposed on-site septic system) were overseen. A series of environmental analysis were performed to support project financing, including a site assessment for site contamination potential, and protected species and cultural resource screening.

U.S. Generating Company, Environmental Permitting Specialist, Nationwide
As a member of the corporate environmental department, primary responsibilities included: management of permitting efforts, both for new projects and for existing operational facilities; direction of all Title V operating permit applications, company-wide; review of potential acquisitions to identify critical issues and determine appropriate actions; assessment of proposed greenfield or retrofit projects to identify opportunities and constraints, and to develop permitting plans; and strategic support for international development efforts.

Air Products and Chemicals, Coal-Fired Cogeneration Facility, York County, Pennsylvania
Managed the preparation of an Environmental Information Volume (EIV) for the Department of Energy (DOE) for a proposed coal-fired cogeneration facility. The project had obtained a grant from DOE under the Clean Coal Technologies program, thereby requiring multidisciplinary review under the

National Environmental Policy Act (NEPA). Project activities included strategic consultation with DOE to establish protocols for preparation of the EIV, site reconnaissance, the full range of environmental analyses, EIV documentation, and response to agency and public comment arising from the public scoping meeting. An additional responsibility was coordination with DOE and its third-party consultant to facilitate preparation of an EIS for the York County project.

Duke Energy Company, Coal Gasification Generating Facility, Camden, New Jersey
Project manager for multidisciplinary environmental permitting efforts associated with a proposed integrated gasification combined cycle (IGCC) coal-fired electric generating facility. Upon award of a Clean Coal grant, DOE negotiation and preparation of an EIV was initiated.

Biodevelopment Incorporated, L'Energia, Lowell, Massachusetts
Managed the regulatory strategy and permit preparation for an 85 MW natural gas-fired cogeneration facility proposed to supply steam to the Prince Company and electricity to Boston Edison. Major issues included air emissions, noise generation, discharge of stormwater into wetland resources, steam line construction impacts, and the proximity of the site to a known hazardous waste containment area.

Cogentrix, Inc., Coal-Fired Cogeneration Facility, Mayaguez, Puerto Rico
Managed the preparation of Environmental Impact Statements and other permit applications on both a federal and commonwealth level for a 300-MW coal-fired cogeneration facility on the coast of Mayaguez, Puerto Rico. Major issues included coordination of the joint regulatory process; in-field air monitoring, modeling, and control technology analysis for a federal and commonwealth Environmental Quality Board (EQB) air permit application; air quality emission risk assessment; comprehensive aquatic data collection in conjunction with NPDES and EQB discharge permits; and Army Corps of Engineers permitting for construction of the proposed coal handling conveyance to be constructed in the Mayaguez Bay.

U.S. Generating Company, Cogeneration Facility, Rotterdam, New York
Successfully obtained environmental permits for a 230-MW electric generating facility. Responsibilities included preparation of a multidisciplinary EIS under SEQR, Army Corps of Engineers wetlands permits, state wetland permits, air permits, water discharge permits, and Public Service Commission documentation for the proposed electrical interconnections. Enabled the project to meet an aggressive schedule for obtaining environmental approvals.

U.S. Generating Company, Cogeneration Facility, Guilderland, New York
Managed environmental permitting for a 230-MW independent power production facility. Responsibilities included preparation of a multidisciplinary EIS under SEQR, Army Corps of Engineers wetlands permits, air permits, and Public Service Commission approvals for proposed natural gas and electrical interconnections.

New England Power Service Co., Manchester Street Station, Providence, Rhode Island
Prepared a full-scope Environmental Assessment and environmental permit applications for repowering the Narragansett Electric Company's existing Manchester Street Station and associated new electric transmission system. Analyzed baseline environmental conditions to identify the projected impact, and developed mitigation to minimize identified impacts. Key issues included air quality, thermal discharges into the Providence River, and the preparation of state wetland applications.

Boston Thermal Cogeneration Corp., Cogeneration Facility, Boston, Massachusetts
Developed the strategy for and managed the permitting of a gas and oil fired cogeneration facility providing steam to the existing Boston Thermal distribution system and electricity to Boston Edison's power network. Permits were required from all levels of government, including a comprehensive MEPA

review. Issues including remediation of existing site contamination, air quality impacts, health risk concerns, traffic and noise. The location of the site on filled tidelands required compliance with coastal regulatory standards as well. Continuous interaction with community groups and regulatory agencies was an important component of the permitting strategy.

Experience Summay

Mr. Kalapinski has over 20 years of experience providing acoustic engineering consulting services. His primary expertise is in the development of three-dimensional noise model simulations of complex facilities and technical evaluation of analysis results. He frequently advises clients on noise mitigation strategies to support energy and industrial facilities. Mr. Kalapinski's acoustic engineering experience consists of the preparation of modeling calculations, technical studies, and study reports and impact statements for conventional electric power generation facilities, offshore and portside LNG terminals, wind energy facilities, compressor stations, pipelines, electric transmission lines and other linear distribution systems. He has provided documentation and expert witness testimony before numerous federal, state and local planning agencies, energy facility siting agencies, and in courts of law. He has also authored and presented several peer-reviewed papers at national and international conferences and scientific seminars.

Education

BS, Civil and Environmental Engineering, University of Massachusetts, 1994
Various Coursework, Environmental & Transportation Engineering, Northeastern University, 2001-2002
Various Coursework, Acoustics & Noise Control Engineering, Tufts University, 2001-2002

Relevant Project Experience

Competitive Power Ventures, Inc., Towantic Energy Center, Oxford, CT

Completed a noise model simulation and acoustic assessment in support of the environmental licensing of a proposed 805-megawatt (MW) dual-fueled combined cycle facility. Ambient acoustic conditions were monitored and characterized. A three-dimensional model simulation was developed to determine appropriate noise mitigation strategies. Results of the analysis were incorporated into a submittal to the Connecticut Siting Council. Ongoing support, including expert witness testimony, is being provided.

Footprint Power, Salem Power Plant Repowering Project, MA

Lead acoustic engineer for the Footprint Power project, a 600-MW natural gas-fired combined cycle power plant to be constructed at the site of the existing Salem Harbor Power Plant. Mr. Kalapinski directed the baseline sound monitoring program and developed a three-dimensional computer simulation model to predict future sound levels during construction and operation. A top-down noise mitigation analyses and conceptual noise control strategies were incorporated in a Best Available Noise Control analysis to demonstrate the feasibility of the project to operate within the Massachusetts and City of Salem noise requirements. Mr. Kalapinski also provided expert witness testimony before the Massachusetts Energy Facilities Siting Board. Ongoing support is being provided through construction, commissioning, and subsequent compliance and equipment acceptance testing.

North American Power Development, Oregon Clean Energy Center, Oregon, OH
Lead acoustic engineer supporting the environmental licensing of a proposed 800-MW natural gas-fired combined cycle facility. Updated third-party noise analyses to reflect alternative design configurations associated with EPC bids in support of the evaluation process, developed EPC contract language to assure project obligations under the Ohio Power Siting Board Certificate would be met, and supported permit modifications to reflect the final project configuration.

Advanced Power North America, Carroll County Energy, Carroll County, OH
Lead acoustic engineer for characterizing baseline acoustic conditions associated with a proposed 742-MW natural gas-fired combined cycle facility for incorporation in an analysis before the Ohio Power Siting Board. Provided ongoing project consultation and support through OPSB review process.

NTE Energy, Middletown Energy Center, Middletown, OH
Lead acoustic engineer supporting the environmental licensing of a proposed 525-MW natural gas-fired combined cycle facility. Ambient conditions were measured, and analysis of both construction and operational conditions was undertaken to determine potential effects at the nearest noise-sensitive areas. Mitigation measures were developed in consultation with the project team. The results of the analysis demonstrated the feasibility of the project to operate within OPSB criteria established for the Project, with resulting sound levels projected to have a minimal effect on existing ambient sound levels in the adjacent communities.

Cogentrix, Quail Brush Generation Project, CA
Acoustic lead and principal investigator for the preparation of an Application for Certification for a nominal 100-MW natural gas-fired power plant using reciprocating engine technology. Responsible for all portions of the noise assessment, including baseline monitoring, acoustic model simulation, assessment of impacts, and development of candidate noise and vibration mitigation measures. Sound-source levels were derived from consulting experience on similar projects and the acoustic model was calibrated using measurement data collected at an existing prototype facility. Provided expert testimony before the California Energy Commission.

Florida Power & Light, Bellingham Cogeneration Plant, Bellingham, MA
Assisted Florida Power & Light with its response to a noise enforcement action brought by the Massachusetts Department of Environmental Protection (DEP). A comprehensive noise audit of plant sources was performed along with nighttime monitoring in affected areas. Mitigation for two unshielded noise sources was designed and documented in a report submitted to the DEP, and subsequently installed by FPL. Following installation, monitoring in the neighborhood was conducted to demonstrate compliance with DEP noise regulations.

New York City Department of Environmental Protection 26th Ward WPCP Emergency Power Generation Facilities, New York, NY
Completed a noise impact assessment and provided acoustic engineering design services for the repowering of the 26th Ward WPCP facility. The project involved the replacement of two gas turbines with three diesel engines with remote radiators. Acoustical design services and permitting assistance were provided for an Environmental Assessment Statement in support of City Environmental Quality Review. Under the analysis, existing, no build, interim construction period, and full build out scenarios were examined.

Connectiv, Harford Power Project, Harford County, MD
Conducted a noise impact study for a 1,500-MW combined cycle power project. Baseline sound level monitoring and acoustic modeling were performed. Several mitigation options were evaluated and compliance with the Maryland Department of the Environment Noise Regulation was demonstrated. Assisted in the preparation of the application for a Certificate of Public Convenience and Necessity.

Orion Energy, ECAR Power Projects, Mid-Atlantic, US
Completed noise impact assessments for natural gas-fired peaking power plants in Henderson, Kentucky and Ceredo, West Virginia. Each plant was 510 MW and consisted of six GE 7EA turbines. A noise baseline monitoring and impact assessment was performed at both project locations, including development of noise impact criteria based on United States Environmental Protection Agency (USEPA) noise guidelines and standardized audibility thresholds. Mitigation measures were incorporated into the facility design to reduce off-site noise impacts.

TECO Energy, Chesapeake Peaking Station, Accomack County, VA
Completed a facility-wide noise mitigation analysis at an existing peak electric generating station. The mitigation analysis was conducted in response to alleged violations for excessive noise, cited by the County Commissioners. A comprehensive noise and vibration monitoring program was conducted at all major onsite sources to document the acoustical fingerprint. Offsite measurements both indoors and outdoors of nearby residences were completed to identify the spectrum responsible for the complaints. Low-frequency tonal sounds were identified and recommendations for mitigation were developed. New stacks and silencers were designed and installed to reduce turbulence noise and low frequency rumble. Following the replacement of the stacks and silencers, post construction monitoring demonstrated full compliance with design thresholds and noise complaints from area residences have since ceased.

Orion Energy, Astoria Repowering Project, New York, NY
Prepared the noise study for the Article X application including comprehensive baseline sound level monitoring, acoustic modeling, impact sound isopleths, and cumulative impact modeling of the 1,800-MW project with two other nearby combined-cycle projects for repowering of the existing Astoria Generating Station in New York City with six Siemens/Westinghouse 501F turbines.

Orion Energy, Free State Electric Power Project, Charles County, MD
Conducted a noise impact study for a 1,650-MW combined cycle power project. Baseline sound level monitoring and acoustic modeling were performed. Several mitigation options were evaluated and compliance with the Maryland Department of the Environment Noise Regulation was demonstrated. Assisted in the preparation of the application for a Certificate of Public Convenience and Necessity.

Duke Energy North America, Frederick Power Project, Point of Rocks, MD
Conducted a noise impact study for a 620-MW combined cycle power project. Both short and long-term sound level monitoring was completed at 12 noise sensitive receptor locations. Acoustic modeling was performed and detailed contour maps developed for several noise mitigation strategies and facility layouts. Compliance with the Maryland Department of the Environment Noise Regulation was demonstrated. Assisted in the preparation of the application for a Certificate of Public Convenience and Necessity and attended public meetings and hearings.

Russell Biomass, LLC, Russell Biomass, Russell, MA
Conducted a baseline sound survey and noise impact analysis of a 50-MW biomass facility to demonstrate compliance with Massachusetts DEP Noise Policy and local bylaws. Ambient background sound level monitoring was conducted at four representative locations. The primary exterior sources of

sound were identified as the cooling tower, transformers, wood chip handling, materials processing equipment, water pumps, emergency generator, and building and combustion fans. Interior sound sources include the boiler and turbine units, and auxiliary support equipment for which an industrial grade metal building and penetrations were acoustically designed to contain noise. The results of the analysis demonstrated that the Project would be consistent with previous industrial uses of the site and fully comply with state and local requirements.

Third-Party Power Plant Noise Reviews for Three Towns, MA and RI

Provided independent third-party noise impact reviews for the Boards of Selectmen in the Towns of North Smithfield, Rhode Island, and Dracut and Weymouth, Massachusetts regarding proposed combined cycle turbine projects in those towns: the 350-MW North Smithfield Energy Center (Indeck), the 750-MW Nickel Hill Energy Project (Constellation Power), and the 750-MW Fore River Station (Sithe Energies Group). Assistance was provided to the towns as interveners in the Energy Facilities Siting Board process. A formal review of noise modeling and impact assessment was completed. Expert testimony was provided at public hearings to describe key findings and address concerns of the regulators and the general public.

Select Publications & Presentations

Kalapinski, E, and P. Pellerin, 2013 "The Technical Challenges of Permitting Power Distribution and Transmission Systems subject to Ambient Noise Degradation Standards," International Wind Turbine Noise Conference which was held in conjunction the 27th Conference of the Institute of Noise Control Engineering, NOISE-CON 2013I, Denver Colorado, August, 2013.

Kalapinski, E, and P. Pellerin, 2012 "Assessment of Underwater Noise Generated by Offshore and Portside LNG Regasification Projects," presented at the 12th European Conference on Underwater Acoustics, Edinburgh, Scotland, July 4, 2012.

Kalapinski, E, and P. Pellerin, 2011 "Hydroacoustic Measurements during Construction of an East Coast Offshore Meteorological Research Platform," presented at the 25th Conference of the Institute of Noise Control Engineering, NOISE-CON 2011, July 25 - 27, 2011, Portland, Oregon.

Kalapinski, E, and P. Pellerin, 2009 "Wind Turbine Acoustic Modeling with the ISO 9613-2 Standard: Methodologies to Address Constraints," presented at the Third International Meeting on Wind Turbine Noise, June 17 – 19, 2009, Aalborg, Denmark.

Kalapinski, E, and P. Pellerin, 2009 "Wind Turbine Acoustic Modeling with the ISO 9613-2 Standard: Methodologies to Address Constraints," presented at the 157th Annual Meeting of the Acoustical Society of America, May 20, 2009, Portland, Oregon.

American Wind Energy Association. AWEA's 2nd Wind Power Project Siting Workshop, Siting Wind Power Projects in the Eastern US. The presentation provided technical guidance on wind turbine project permitting issues specific to the field of acoustics including baseline sound measurement programs, noise modeling and analyses strategies, and regulatory criteria. Boston, Massachusetts, 2005.

Registrations/Certifications/Professional Affiliations

Institute of Noise Control Engineering (INCE) Full Member Certified, Number 10244
Engineer in Training (EIT), MA, Number 16439
Acoustical Society of America, Associate Member, Number 10706732

Experience Summary

Mr. Sellars has over 35 years of environmental consulting experience specializing in siting, comprehensive environmental licensing, and transactional due diligence support for energy facilities nationwide. Mr. Sellars' experience includes preparation of: multimedia environmental permit applications; comprehensive environmental impact statements: environmental risk assessments; and, environmental compliance assessments. He has considerable experience with a range of environmental impact assessment methodologies and risk profiling techniques and is a frequently invited speaker on environmental permitting and due diligence topics.

Mr. Sellars has directed numerous electric generating facility siting studies, permitting feasibility analyses, and comprehensive licensing efforts. He has directed or played a significant role in the successful permitting of more than 30 new electric power generation projects. Mr. Sellars has considerable experience with a wide variety of power generation and emission control technologies. Mr. Sellars has also directed transactional due diligence assessments for a wide variety of energy and industrial facilities. He has participated in transactional due diligence reviews involving the acquisition of over 100 power plants. He has provided expert witness testimony on energy facility environmental issues in eight states.

Education

BS, Natural Resources, Cornell University, 1977

Power Plant Permitting Experience

CPV Towantic, LLC, CPV Towantic Energy Center, Oxford, Connecticut

Senior Technical Advisor for the completion of air quality impact analyses in support of a Petition for Changed Conditions before the Connecticut Siting Council and a Permit Application for Stationary Sources of Air Pollution for the CPV Towantic Energy Center, an approximately 800-MW combined cycle electric generating facility in Oxford, Connecticut.

Power Development Company/El Paso Energy, Milford, Connecticut

Officer-in-Charge for siting and comprehensive environmental licensing of a 540-megawatt (MW) natural gas-fired electric generating facility in Milford, Connecticut. Provided expert witness testimony before the Connecticut Siting Council.

Power Development Company/El Paso Energy, Meriden, Connecticut

Officer-in-Charge for siting and comprehensive environmental licensing of a 540-MW natural gas-fired electric generating facility in Meriden, Connecticut. Provided expert witness testimony before the Connecticut Siting Council.

Hess Corporation, Newark Energy Center, Newark, New Jersey

Project Manager for the comprehensive environmental licensing of a 650-MW combined-cycle electric generating facility at the existing Hess Oil Terminal in Newark, New Jersey. Key licensing issues surrounded the area's nonattainment status for $PM_{2.5}$ and close proximity to the Newark Liberty Airport as well as designated Environmental Justice communities. Directed air quality engineering and modeling as well as an economic dispatch/emissions displacement and air quality benefit analysis; Environmental Justice analysis and plan; Wastewater Treatment Works Approval and Significant Industrial User permit applications; New Jersey Land Use Regulatory Program Flood Hazard Permit, Freshwater Wetlands Permit, and Waterfront Development Permit application packages. Directed comprehensive geotechnical investigations of alternate on-land and underwater electric transmission route alternatives, including an in-water geotechnical boring program in the Passaic River. Provided expert witness

testimony before several regulatory agencies and supported community interaction programs including participation in open houses and stakeholder meetings.

Advanced Power North America, Cricket Valley Energy, Dover, New York.
Project Manager for the State Environmental Quality Review (SEQR) and comprehensive environmental licensing of a proposed 1,000-MW combined cycle electric generating facility in Dutchess County, New York. Key licensing issues included reuse of an abandoned industrial site, developing new procedures and software to process raw Automated Surface Observation System (ASOS) meteorological data for use in dispersion modeling, cumulative interactive source modeling for $PM_{2.5}$ and NO_2, development of a network of onsite bedrock aquifer water supply wells, protected species habitat surveys, and restoration of impaired wetlands. Provided expert witness testimony before the New York State Department of Environmental Conservation and supported numerous community outreach public workshops.

Competitive Power Ventures, Smyth County, Virginia
Project Manager for the comprehensive environmental permitting of a proposed 700-MW natural gas-fired combined cycle electric generating facility in Smyth County, Virginia. Project approvals include State Corporation Commission Certificate of Public Convenience and Necessity and air, wetlands, and wastewater discharge permits. Major issues surround collection of onsite meteorological data and modeling in complex terrain, proximity to the Appalachian Trail and location upstream of protected species habitat.

North America Power Development, Oregon, Ohio
Senior Technical Advisor for the comprehensive environmental permitting of a proposed 800-MW natural gas-fired combined cycle electric generating facility in Oregon, Ohio. Project approvals include Ohio Power Siting Board Certification and a Prevention of Significant Deterioration Preconstruction Permit from the Ohio Environmental Protection Agency.

Advanced Power North America, Carroll County, Ohio
Senior Technical Advisor for the comprehensive environmental permitting of a proposed 700-MW natural gas-fired combined cycle electric generating facility in Carroll County, Ohio. Project approvals include Ohio Power Siting Board Certification and a Prevention of Significant Deterioration Preconstruction Permit from the Ohio Environmental Protection Agency.

Sithe New England, Mystic Station Redevelopment Project, Everett, Massachusetts
Project Manager for the comprehensive environmental licensing of a 1,600-MW combined-cycle power plant at Mystic Station. Responsible for the preparation of the Massachusetts Environmental Policy Act (MEPA) Environmental Impact Report, Energy Facilities Siting Board Petition, air, wastewater, and wetlands permit applications, Coastal Zone Management consistency determination, and Chapter 91 waterways license application. Provided expert witness testimony before the Energy Facilities Siting Board.

U.S. Generating Company, Millennium Power, Charlton, Massachusetts
Project Manager for the comprehensive environmental licensing of a 360-MW natural gas-fired electric generating facility in Charlton, Massachusetts. Responsible for preparation of the MEPA Environmental Impact Report, Energy Facilities Siting Board Petition and air, wastewater and wetlands permit applications. The project also entailed an innovative vernal pool construction demonstration project as mitigation for the project's proximity to protected salamander species habitat. Provided expert witness testimony before the Energy Facilities Siting Board.

Sithe New England, Fore River Station, Weymouth, Massachusetts
Provided expert witness testimony before the Energy Facilities Siting Board on site selection and air quality impacts of a proposed 800-MW combined-cycle electric generating facility in Weymouth, Massachusetts. Prepared multiple Notices of Project Change throughout the construction process and negotiated favorable air permit modification following plant commissioning.

American National Power Generating Facility, Bellingham, Massachusetts
Officer-in-Charge for the siting and comprehensive environmental licensing of a 580-MW natural gas-fired electric generating facility in Bellingham, Massachusetts. Key activities included preparation of the MEPA Environmental Impact Report, Energy Facilities Siting Board Petition, air and wetland permit applications. Provided expert witness testimony before the Energy Facilities Siting Board.

American National Power Generating Facility, Blackstone, Massachusetts
Officer-in-Charge for the siting and comprehensive licensing of a 580-MW natural gas-fired electric generating facility in Blackstone, Massachusetts. Key activities included preparation of the MEPA Environmental Impact Report, Energy Facilities Siting Board Petition, air and wetland permit applications. Provided expert witness testimony before the Energy Facilities Siting Board.

Sithe New England, Medway Station Expansion Project, Medway, Massachusetts
Officer-in-Charge for the comprehensive environmental licensing of a proposed 540-MW simple-cycle peak electric generating unit at the existing West Medway Station. Provided expert witness testimony before the Energy Facilities Siting Board.

PDC El Paso, Berkshire Power, Agawam, Massachusetts
Project Manager for the siting and comprehensive environmental licensing of a 272-MW natural gas-fired electric generating facility in Agawam, Massachusetts. Key activities include implementation of an innovative site selection process, preparation of the MEPA Environmental Impact Report, Energy Facilities Siting Board Petition, and air, wastewater, and wetlands permit applications. Provided expert witness testimony before the Energy Facilities Siting Board.

L'Energia Inc., Cogeneration Facility, Lowell, Massachusetts
Principal-in-Charge for the comprehensive environmental permitting of an 85-MW natural gas-fired cogeneration facility. Major issues included air quality, noise, and water consumption.

Milford Power Generating Facility, Milford, Massachusetts
Project Manager for the comprehensive environmental licensing of a 146-MW natural gas-fired electric generating facility. Key activities included preparation of a MEPA Environmental Impact Report, Energy Facilities Siting Board Petition, air, water use, and wastewater discharge permit applications. Major issues include impact of use of wastewater treatment plant effluent as cooling tower make-up, impacts to riverine ecology, noise impacts, wetlands crossings, and aesthetics. Provided expert witness testimony before the Energy Facilities Siting Board.

International Power America, Milford Power Expansion Project, Milford, Massachusetts
Project Manager for the comprehensive environmental licensing of a proposed addition of a 170-MW natural gas-fired combustion turbine to the existing Milford Power Generating Facility.

Riverside Steam and Electric Company, Cogeneration Facility, Holyoke, Massachusetts
Project Manager for the comprehensive licensing of an 80-MW coal-fired cogeneration facility. Key activities included preparation of the MEPA Environmental Impact Report, Prevention of Significant Deterioration (PSD) permit application, and zoning variance petition. Major issues included air quality, ash disposal, cooling water discharge to the Connecticut River, noise, and protection of endangered/special concern species, including the shortnose sturgeon.

Harvard University, Blackstone Station, Cambridge, Massachusetts
Project Manager for the comprehensive licensing of the Blackstone Station boiler replacement project. Blackstone Station provides steam for the Harvard University campus. Key activities related to securing modifications to the facility's air and NPDES permits, completing MEPA review, and securing modifications to the facility's Charles River consumptive water use approvals.

Peabody Power, LLC, Peabody, Massachusetts
Officer-in-Charge for the comprehensive licensing of a 99-MW natural gas-fired simple cycle peak electric generating facility. Key activities included preparation of the MEPA Environmental Notification Form, air and wetland permit applications.

Confidential Client, New Haven, Connecticut

Environmental permitting feasibility assessment for a proposed simple cycle peak electric generating facility in New Haven, Connecticut.

Confidential Client, Bridgeport, Connecticut
Environmental permitting feasibility assessment for a proposed combined cycle electric generating facility in Bridgeport, Connecticut.

Confidential Client, New Milford, Connecticut
Environmental permitting feasibility assessment for a proposed combined cycle electric generating facility in New Milford, Connecticut.

New York State Electric and Gas, Milliken Station Clean Coal Technology Demonstration Project, Lansing, New York
Project Manager for environmental licensing support for the Milliken Station Clean Coal Technology Program (CCT-IV) Demonstration Project. Project entailed installation of innovative flue gas desulfurization equipment and associated power plant modifications at NYSEG's 317-MW coal-fired power plant. Responsible for DOE-NEPA submittals and comprehensive environmental licensing. Provided expert witness testimony before the New York State Department of Environmental Conservation and the Tompkins County Environmental Commission.

Sithe Energies, Inc., Heritage Station, Oswego, New York
Officer-in-Charge for Article X Application and comprehensive environmental licensing of a proposed 800-MW natural gas-fired combined-cycle electric generating facility adjacent to the existing Independence Station, near Oswego, New York.

Calpine Eastern, Wawayanda Energy Center, Wawayanda, New York
Project Director for Article X Application and comprehensive environmental licensing of a proposed 540-MW natural gas-fired combined-cycle electric generating facility in Wawayanda, New York.

U.S. Generating Company, Generating Facility Wallkill, New York
Principal-in-Charge for the comprehensive environmental licensing of a 150-MW combined-cycle electric generating facility in Wallkill, New York. Key activities include preparation of an environmental impact statement and water quality and air permit applications.

Pure Energy Resources, Bayonne Energy Center, Bayonne, New Jersey
Strategic direction of air quality permitting of a proposed 512-MW simple cycle electric generating facility in Bayonne, New Jersey. Key permitting issues included use of simple cycle turbine technology in New Jersey to meet mid-merit New York City electrical demand, interstate air quality transport, and compliance with evolving $PM_{2.5}$ nonattainment area rules. Provided expert witness testimony before the Bayonne Planning Board.

New England Power and Narragansett Electric Company, Manchester Street Station, Providence, Rhode Island
Project Manager for environmental licensing of the 450-MW Manchester Street Station Repowering Project and associated underground electric transmission facilities in Providence, Rhode Island. Key activities included preparation of a comprehensive environmental assessment to support Energy Facility Siting Board and Coastal Resources Management Council license applications, air quality permitting, wetlands permitting and an 18-month estuarine quality and ecological sampling effort to support RIPDES permitting, including Clean Water Act Section 316(a) and (b) demonstrations. Provided expert witness testimony before the Energy Facility Siting Board.

Competitive Power Ventures, CPV Warren Power Generating Facility, Warren County, Virginia
Principal-in-Charge for the comprehensive environmental permitting of a 520-MW combined-cycle electric generating facility in Warren County, Virginia. Key licensing issues surrounded impacts to the nearby Shenandoah National Park. Provided expert witness testimony before the Virginia State Corporations Commission.

American Electric Power, Ohio and West Virginia
Principal-in-Charge for comprehensive air quality impact analyses for proposed coal Integrated Gasification Combined Cycle (IGCC) plants in Ohio and West Virginia.

Confidential Client, Thorofare, New Jersey
Directed critical flaw assessment and licensing strategy development for a proposed coal-fired cogeneration facility.

Competitive Power Ventures, CPV Cunningham Creek Power Generating Facility, Fluvanna County, Virginia
Principal-in-Charge for the comprehensive permitting of a 520-MW combined-cycle electric generating facility in Fluvanna County, Virginia. Key licensing issues included assessment of cumulative air quality impacts of all newly proposed power projects in Virginia. Provided expert witness testimony before the Virginia State Corporations Commission.

Competitive Power Ventures, CPV Pierce Power Generating Facility, Polk County, Florida
Principal-in-Charge for the comprehensive permitting of a 250-MW combined-cycle electric generating facility in Polk County, Florida. Provided expert witness testimony before the Board of County Commissioners.

Competitive Power Ventures, CPV Gulfcoast Power Generating Facility, Manatee County, Florida
Principal-in-Charge for the air quality permitting of a 250-MW combined-cycle electric generating facility in Manatee County, Florida.

Competitive Power Ventures, CPV Cana Power Generating Facility, St. Lucie County, Florida
Principal-in-Charge for the air quality permitting of a 250-MW combined-cycle electric generating facility in St. Lucie County, Florida.

Merchant Energy Group of the Americas, Washington
Principal-in-Charge for the comprehensive environmental licensing of a natural gas-fired peak electric generating facility near Puget Sound, Washington.

Air Quality Studies Experience

National Commission on Air Quality, Air Quality Modeling
Conducted regional-scale air quality modeling analyses covering the New York, New Jersey, and Connecticut area for SO_2 TSP, and NO_x. Evaluated several fuel switching and energy conservation

scenarios. Conducted a critical review of the emissions/air quality portions of State Implementation Plans.

United States Environmental Protection Agency, Emission Inventories
Directed several emissions inventory compilations to support regional-scale Eulerian photochemical and acid rain deposition modeling. Directed the Northeast Corridor Regional Modeling Project Emissions Inventory and the 1980 National Acid Precipitation Assessment Program Eulerian Modeling Emissions Inventory efforts. Developed the United States Environmental Protection Agency's Flexible Regional Emissions Data System (FREDS).

United States Department of Energy, Acid Raid Information Book
Contributing author of the United States Department of Energy's Acid Rain Information Book-Second Edition. Wrote chapter on monitoring programs and results.

Tennessee Valley Authority
Project Manager for independent external peer review of the 1985 National Acid Precipitation Assessment Program emissions inventory compilation efforts. Review focused on the adequacy of the emissions data to support applications for the regional acid deposition model.

United States Environmental Protection Agency, Dioxin Study
Modeled air transport of dioxin from contaminated network of unpaved roadways in Missouri as part of a health risk assessment. Developed modeling protocol for examination of dioxin-contaminated horse arena.

United States Environmental Protection Agency, Stack Height Regulations
Managed program for the United States Environmental Protection Agency's Control Programs Development Division to identify and evaluate sources affected by revisions to stack height regulations.

United States Environmental Protection Agency, Total Suspended Particulate Emissions Inventory
Conducted micro-inventories of total suspended particulates to determine causes of non-attainment in the Steubenville, Ohio and Wheeling, West Virginia area.

United States Environmental Protection Agency, Dispersion Modeling
Conducted dispersion modeling analysis of air quality impacts of incineration of toxic waste in New Jersey.

Professional Affiliations

President Emeritus, Northeast Energy and Commerce Association
Member, Air and Waste Management Association
Member, American Wind Energy Association

Experience Summary

Mr. Babcock has over 25 years of experience in air permitting, multimedia environmental licensing of new sources, due diligence evaluations, comprehensive compliance audits, compliance plans and reporting, and air pollutant emissions monitoring and testing. Mr. Babcock has served as the Project Manager and Technical Lead for numerous air quality permitting projects for minor and major sources, including New Source Review (NSR) permitting in both attainment and non-attainment areas. These air permitting projects included Best Available Control Technology (BACT) and Lowest Achievable Emission Rate (LAER) control technology analyses, air pollutant emissions inventory development, dispersion modeling evaluations, and regulatory applicability and compliance demonstrations. He has performed these services for numerous types of industrial sources including power generating facilities, waste to energy plants, pulp and paper mills, municipal landfills, semiconductor manufacturing, automotive manufacturing, surface coating, rubber manufacturing, and many other general manufacturing industries. He has completed these efforts throughout the United States including Connecticut, Massachusetts, New York, New Jersey, Delaware, Ohio, New Hampshire, Michigan, Pennsylvania, Rhode Island, Illinois, Indiana, Maryland, Virginia, North Carolina, South Carolina, Florida, Georgia, Maine, California, and Texas. In support of these projects, he has represented clients in pre-application negotiations to secure amenable permit terms for the project as well as post-operation negotiations to resolve compliance issues with both state and federal agencies.

Education and Training

BS, Chemical Engineering, Tufts University, 1988

Lead Verifier GHG Emissions; 2012

Registrations/Certifications

Professional Engineer, MA

Relevant Project Experience

CPV Towantic, Air Permitting, Combined Cycle Combustion Turbine Facility, Connecticut

Technical Lead for the NSR permitting of a natural gas-fired combustion turbine generating facility with supplemental duct firing having a nominal generating capacity of 785-megawatts (MW); backup firing of the combustion turbines with ultra-low sulfur diesel (ULSD) was incorporated into the application. Prepared a top-down BACT analysis; potential to emit analysis; and dispersion modeling analysis input parameters to demonstrate that the predicted ambient air impacts for the project were in compliance with the Significant Impact Levels (SILs), Prevention of Significant Deterioration (PSD) increments, and/or National Ambient Air Quality Standards (NAAQS). The BACT analysis included a top-down analysis for the control of greenhouse gas (GHG) emissions, including an evaluation of the facility's efficiency and estimates for cost to control using carbon capture and sequestration. Demonstrated that the facility's hazardous air pollutant (HAP) emissions were in compliance with Connecticut's Maximum Allowable Stack Concentration (MASC) requirements. The application was prepared in accordance with the Connecticut Department of Energy and Environmental Protection's (DEEP) recently revised *Permit Application for Stationary Sources of Air Pollution - New Source Review (NSR)* procedures; it was the first major source application submitted in accordance with the revised permitting procedures.

Turning Earth, Air Permitting, Biogas CHP Facility, Connecticut

Project Manager for the air permitting of a proposed facility to convert 75,000 tons per year of food and yard waste into compost and soils. The process would generate sufficient anaerobic biogas to power 1.6 MW of electricity from reciprocating internal combustion engines. Waste heat from the engines would be used to provide heat to an associated greenhouse. The air permit application included a top-down

BACT analysis for both the composting process and combustion engines; a potential to emit analysis; and a dispersion modeling analysis to demonstrate that ambient air impacts for the project were in compliance with the SILs and/or NAAQS. The BACT analysis included a top-down analysis for the control of GHG emissions, including the methane emissions from the composting process. Demonstrated that the facility's HAP emissions were in compliance with Connecticut's MASC requirements.

CPV Smyth Energy Center, Air Permitting, Combined Cycle Combustion Turbine Facility, Virginia

Technical Lead for the PSD permitting of a natural gas fired combustion turbine generating facility with supplemental duct firing having a nominal generating capacity of 700 MW. Prepared a top-down BACT analysis, potential to emit analysis; and dispersion modeling analysis input parameters to demonstrate that ambient air impacts for the project were in compliance with the SILs, PSD increments, and/or NAAQS. The BACT analysis included a top-down analysis for the control of GHG emissions, including an evaluation of the facility's efficiency and estimates for cost to control using carbon capture and sequestration.

Oregon Clean Energy, Air Permitting, Combined Cycle Combustion Turbine Facility, Ohio

Technical Lead for the preparation of an application to modify the PSD permit for a natural gas-fired combustion turbine generating facility with supplemental duct firing having a nominal generating capacity of 800 MW. The modification application incorporated final combustion turbine vendor emission guarantees, changes to operational restrictions, revised potential to emit calculations and a draft revised permit for review by the permitting agency. The dispersion modeling analysis was revised to reflect a revised equipment layout to demonstrate that the project's predicted ambient air impacts would be below the SILs. The application was submitted prior to construction of the project to ensure compliance once it becomes operational.

Highlands Ethanol, Air Permitting, Cellulosic Ethanol Production Facility, Florida

Technical Lead for the PSD permitting of a proposed 36 million gallon per year cellulosic ethanol plant using feedstocks including energy cane, energy grass, and napier grass. Criteria and hazardous air pollutant emissions were quantified for numerous emission sources including fermentation, distillation, product loadout, liquid/solid separation, storage tanks, wet cooling tower, material handling, waste gas flare and combustion sources. A top-down BACT analysis was completed for all emission sources and PSD subject pollutants including GHGs.

James City Energy Park, Air Permitting, Combined Cycle Combustion Turbine Facility, Virginia

Project Manager for the PSD permitting of a natural gas- and distillate oil-fired combustion turbine generating facility with supplemental duct firing having a generating capacity of 580 MW. The PSD application included a top-down BACT analysis, potential to emit analysis; and a demonstration of NAAQS compliance in both PSD Class I and Class II areas. As project lead for the air permitting task, provided support for the State Corporation Commission review process, the local planning board Special Use Permit application, and presented a summary of the air permitting process at the Virginia Department of Environmental Quality's (VDEQ) required public briefing.

Danville Energy, Air Permitting, Simple & Combined Cycle Combustion Turbine Facility, Virginia

Project Manager for the PSD permitting of a natural gas fired combustion turbine generating facility in Danville, VA. The proposed project consisted of four combustion turbine operating in simple cycle mode and two combustion turbines operating in combined cycle mode. The combined cycle turbines were arranged in a 2x1 configuration with supplemental duct firing of the HRSG. Total generating capacity of the proposed plant was 870 MW. The PSD application included a top-down BACT analysis, potential to emit analysis; and a demonstration of compliance with ambient air impacts below both the

PSD Class I and Class II area SILs. As project lead for the air permitting task, provided support for the State Corporation Commission review process, the local planning board Special Use Permit application, and presented a summary of the air permitting process at the Virginia DEQ's required public briefing.

Berrien Energy Center, Air Permitting, Combined Cycle Combustion Turbine Facility, Michigan

Air Permit Manager for the PSD permitting of a natural gas-fired combustion turbine generating facility with supplemental duct firing having a generating capacity of 1,100 MW located in Benton Harbor, MI. The project consisted of three GE 7FA turbines fired solely with natural gas and supplemental firing of the HRSGs with natural gas. Prepared a top-down BACT analysis, potential to emit calculations, and air dispersion modeling parameters to facilitate a demonstration that ambient air impacts for the project were below the SILs. Negotiated final permit limits and conditions with the Michigan DEQ on behalf of the client. Since construction of the project did not commence within 18 months from the date of issuance of the original permit, a second permit application was prepared in accordance with the DEQ regulations to obtain a new permit for the proposed project.

PG&E Generating, Combustion Turbine Permitting, Ohio

Project Manager for the environmental licensing of a two-phased project to install natural gas-fired peaking combustion turbines at four locations in Ohio. Initial phase of the project involved obtaining minor source air permits to construct and operate 49 MW of peaking capacity at each location. The Phase I air permitting effort was fast tracked to allow for initial operation of the turbines within six months from project kick-off. The second phase involved doubling the generating capacity at three of the four permitted sites. Due to the expanded capacity at these three stations, Ohio Power Siting Board (OPSB) approval was required in addition to revised air permits. The OPSB applications included a comprehensive environmental impact evaluation. All permitting efforts were coordinated with both the central and regional offices of the Ohio Environmental Protection Agency (EPA) and the OPSB to identify and resolve issues prior to submittal of the licensing applications.

Consolidated Edison, Air Permitting, Steam and Combustion Turbine Electric Generating Facilities, Massachusetts and New Hampshire

Technical Lead for the preparation of air permit applications for two Consolidated Edison facilities located in Massachusetts and New Hampshire. The two facilities collectively include gas- and oil-fired steam electric units, gas- and oil-fired peaking combustion turbines, and gas- and oil-fired combined cycle combustion turbines. Efforts included preparation of minor source air permit applications for new peaking turbines, revising air permits to include backup oil firing for combustion turbines initially permitted for gas-only operation, revising again the air permits to further increase allowable backup oil firing, preparing Title V Operating Permit Renewal applications including a Compliance Assurance Monitoring (CAM) Plan for an electrostatic precipitator- (ESP) controlled oil fired boiler, and PE review and approval of several air permit applications.

Indeck Elwood, Air Permitting, Coal-Fired Plant, Illinois

Technical Lead for the preparation of a PSD air permit application for a proposed 660-MW coal-fired circulating fluidized bed (CFB) boiler project in Illinois. The PSD permit application included a BACT analysis for NO_x, SO_2, PM/PM_{10}, and CO emissions. Additionally, a case-by-case Maximum Allowable Control Technology (MACT) analysis was completed in accordance with Section 112(g) for mercury emissions and a LAER analysis for VOC emissions. In response to comments received by the Illinois EPA, the BACT analysis was expanded to include a feasibility analysis for integrated gasification combined cycle (IGCC) technology. The emission sources at the facility included two proposed CFB boilers, limestone processing equipment, thermal limestone dryers, coal and ash handling equipment, and numerous fugitive emission sources. Emissions and exhaust flow rate data for all sources were developed

for the air dispersion modeling analysis that demonstrated compliance with all state and federal air quality standards.

Homer City Power, Title V Operating Permit, Coal-Fired Plant, Pennsylvania

Technical Lead for the preparation of a Title V Major Source Operating Permit application for the 1,600-MW coal fired power plant. The permit application addressed all state and federal applicable requirements; addressed proposed modifications to the facility including installation of selective catalytic reduction (SCR) and flue gas desulfurization (FGD) systems; and provided an estimate of current and actual potential emissions of criteria hazardous air pollutants for both fugitive and point emission sources.

Dickenson Russell Coal Company, Title V Operating Permit, Coal Cleaning, Virginia

Technical Lead for the preparation of a facility-wide air compliance audit at two coal preparation facilities in Virginia. The audits were performed to support the completion of the annual Title V Operating Permit compliance certification for each facility. All terms and conditions of the Title V permits were reviewed and a compliance determination completed for each facility. Following the completion of the audits, a minor source air permit application was submitted to the Virginia DEQ to address modifications to the waste coal handling operations and revise the opacity monitoring conditions in the Title V permit. The emission sources included numerous material handling operations, waste coal recovery operations, coal storage, and thermal coal dryers.

Confidential Client, Critical Flaw Evaluation, New CHP Plant, Massachusetts

Project Manager for a critical flaw evaluation to identify potential air permitting issues for a proposed combined heat and power (CHP) facility including several new boilers, a combined cycle combustion turbine, and several large emergency generator engines. The evaluation included an estimate of the likely BACT emission rate limits, NSR permitting implications, and an initial ambient air impact analysis using EPA's AERMOD model. The AERMOD analysis included a critical evaluation of the facility's air handling units with respect to impacts from the proposed CHP plant. Additional regulatory requirements including Massachusetts Environmental Policy Act (MEPA) review, wetlands, and noise were also evaluated.

University of Massachusetts, Air Permitting, CHP Plant, Dartmouth, MA

Project Manager for the preparation of a Non-Major Comprehensive Plan Approval (NMCPA) application for the proposed installation of a natural gas-fired CHP plant to replace the existing natural gas- and No. 6 oil-fired boiler plant at the campus. The application was prepared to satisfy the Massachusetts Department of Environmental Protection's (MassDEP) Environmental Results Program (ERP) regulations for new CHP plants. The CHP plant included a combustion turbine to generate electricity and a heat recovery steam generator (HRSG) with supplemental gas firing to support the campus' heating and cooling requirements. The application included an air dispersion modeling analysis using U.S. EPA's AERMOD dispersion model to address the impacts for both the proposed CHP plant and remaining limited use boilers. Project was the second CHP plant permitted in Massachusetts under the ERP regulations and included several unique features, such as a bypass stack, that required coordination with the Boston Office of the MassDEP to ensure accurate interpretation of the ERP regulations.

Dartmouth Power, Air Permitting and Compliance Services, Massachusetts

Project Manager for the re-permitting of a gas- and oil-fired simple cycle combustion turbine as well as providing support for ongoing compliance activities for the other generating units at the plant. A revision to the initial air permit issued for the simple cycle combustion turbine was required as actual emissions from the unit did not meet vendor guarantees. Negotiated acceptable terms with the agency

for revised air pollutant and noise limits from the unit. Also prepare all of the facility's ongoing air compliance reports including Title V annual and semi-annual compliance certifications, annual criteria pollutant source registration emission statements, Massachusetts mandatory GHG reporting and U.S. EPA mandatory GHG reporting.

Seaman Paper Company, Air Permitting, Biomass Boilers, Massachusetts

Project Manager for the preparation of a NMCPA air permit application for two biomass boilers. The biomass boilers were installed to replace the existing No. 6 oil-fired boilers. Since the boilers were below the size threshold in the MassDEP's Biomass BACT guidance policy, a "top down" BACT analysis was conducted to establish source-specific BACT emission limits for all criteria pollutants, and a restriction was placed on future operation of the existing oil-fired boilers. An air dispersion modeling analysis was conducted using U.S. EPA's AERMOD model for the new biomass boilers as well as the existing oil-fired boilers, which remained as backup units. After issuance of the NMCPA approval, a Title V Operating Permit renewal application was prepared to incorporate the requirements for the biomass boilers, including a CAM plan, which provided a detailed description of the monitoring, recordkeeping, and reporting requirements for the biomass boiler baghouses to demonstrate that particulate matter emissions will be in continuous compliance with the allowable emissions limits.

Motiva Enterprises, Title V Operating Permit, Bulk Gasoline Terminal Title V Permitting, Florida

Technical Lead for the preparation of a Title V Operating Permit renewal application with a CAM Plan for the gasoline and diesel loading racks at Motiva's bulk fuels terminal in Tampa. The terminal's vapor control system included both primary (Carbon Adsorption) and secondary (Flare) control systems operating in parallel. The CAM Plan was prepared in accordance with Florida Department of Environmental Protection (FDEP) and U.S. EPA guidance.

Penn Power, Air Permitting, Diesel and Digester Gas Engines, Philadelphia, Pennsylvania

Project Manager to provide air quality compliance support for Penn Power's two diesel and municipal wastewater treatment plant digester gas engine generating facilities in Philadelphia. Efforts included the air permitting of a new digester gas engine, compliance auditing and environmental management support, preparing semi-annual and annual Title V compliance reports, annual air emission reports, EPCRA Tier II reports, and SARA Title III reports.

Wyckoff Compressed Natural Gas Storage Facility, New York

Technical Lead for the preparation of a state minor air permit application to install and operate natural gas-fired engines for a proposed natural gas compressor station. These efforts included a review of the reciprocating internal combustion engine (RICE) MACT standard and subsequent determination that it was not applicable to the project. The application documented the potential emissions from the proposed compressor engines and glycol dehydrator system; demonstrated minor source status of the project, and demonstrated compliance with the New York State Department of Environmental Conservation's (NYSDEC) air toxics regulations through an air dispersion modeling analysis.

Milesburg Power, Air Permitting, 43 MW Waste Coal Fired Project, Pennsylvania

Technical Lead for the preparation of a PSD/NNSR air permit application for a proposed 43-MW CFB boiler firing waste coal. The permit application included a LAER analysis for NO_x emissions, a top-down BACT analysis for emissions of SO_2, PM_{10}, CO, and VOC emissions, and a state Best Available Technology analysis for HAP emissions. The emission sources included the CFB boiler, lime dryer, coal storage pile, lime storage silos, material handling, and roadways.

Generating Facility Asset Transfer Due Diligence, Numerous States

Project Manager for numerous due diligence efforts to evaluate current and future regulatory liabilities for numerous clients' bids to purchase electric generating assets for a wide range of generating technologies including conventional fossil fuel-fired boilers, simple and combined cycle combustion turbine facilities, and hydroelectric facilities. These efforts included: air pollution allowance and pollution control equipment costs; evaluation of site remediation liabilities regarding soil and groundwater contamination as well as asbestos and lead contamination; review of NPDES 316(a) and (b) compliance costs; FERC licensing; evaluation of each station's compliance management systems; and estimating operational and economic impact of current and proposed environmental regulations. Reports were prepared for each due diligence effort documenting findings and providing estimated compliance costs to be input into the client's pro forma. These efforts were conducted in Massachusetts, New York, New Jersey, Delaware, Ohio, New Hampshire, Michigan, Pennsylvania, Rhode Island, Illinois, Indiana, Maryland, Virginia, North Carolina, South Carolina, Florida, Georgia, Connecticut, Maine, California, and Texas.

Seaman Energy LLC, LFG Generator Engine Air Permitting, Massachusetts

Project Manager for the air permitting of two landfill gas (LFG) generator engines installed at the West Street Landfill in Gardner. Project involved preparing a NMCPA application, including top-down BACT analysis. The application was prepared in accordance with MassDEP's Landfill Gas to Energy Policy. A minor post-closure modification application was also prepared for the project and submitted to the MassDEP's Solid Waste Division.

Colebrook Landfill, LFG Generator Engine Air Permitting, New Hampshire.

Project Manager for the air permitting of a LFG generator engine at a municipal waste landfill. A temporary permit application was prepared in accordance with New Hampshire Air Resources Division (NHARD) requirements. The application included the generating engine along with a flare to provide backup LFG control. An air dispersion modeling analysis was completed to demonstrate compliance with NHARD's air toxics regulations using U.S. EPA's AERMOD dispersion model. The modeling analysis included not only the engine and flare point sources but also fugitive emissions from the landfill. Following issuance of the temporary permit, prepared the Permit to Operate application and the initial emission reports for criteria pollutants as well as NHARD's NOx emission statement program.

Wheelabrator Westchester, Air Permitting, New York

Project Manager and technical lead for the preparation of a permit application for the proposed increase in annual waste throughput for Wheelabrator's municipal waste combustor facility in Peekskill. The air permit application was prepared to allow for the maximum increase in municipal solid waste (MSW) throughput while avoiding PSD/NSR permitting, including a demonstration that the increase in emissions from baseline levels of all pollutants, including GHGs, would not be significant. In addition to air permitting, efforts were coordinated with renewal of the facility's solid waste management permit and associated State Environmental Quality Review (SEQR) filing, including a noise study to document that the increased truck travel to the plant would be in accordance with the NYSDEC regulations.

Wheelabrator Claremont, Air Permitting, New Hampshire

Prepared a permit application for the installation of controls to meet the requirements of New Source Performance Standard (NSPS) BBBB for small municipal waste combustors as adopted by the NHARD. The application included a proposed compliance strategy, a description of the proposed retrofit pollution controls, and proposed emission rate limits. The application also included an evaluation of existing permit limits with the future NSPS BBBB limits to ensure that the facility was in compliance with all applicable requirements after the modifications to the facility.

Wheelabrator Concord, Air Permitting, New Hampshire

Completed a Title V Operating Permit renewal application for a large municipal waste to energy facility in accordance with New Hampshire's regulations. The permitting effort included refining the permit to delete requirements that were no longer applicable since the effective date of NSPS Subpart Cb. Other permit language was revised to clarify the requirements for operating personnel.

Andrew J. Bazinet
Competitive Power Ventures Inc.
50 Braintree Hill Office Park, Suite 300
Braintree, MA 02184

INDUSTRY EXPERIENCE:

Competitive Power Ventures, Inc., Braintree, MA March 2011 - Present

Director, Development *(March 2011 – present)*
Manager, Finance *(January 2004 – May 2005)*
Financial Analyst *(November 2000 – January 2004)*

Experience:

- Served as project manager for 785 megawatt dual-fueled electric generating facility proposed to be located in Oxford, Connecticut. Responsible for all aspects of project development.
- General responsibility for New England market new business development.
- Provided operating, financial and economic analysis and research and deal structuring contributions to wind generation business plan, business plan secured private equity funding of $25.0 MM (7/05).
- Lead analysis and bid structuring efforts for the CPV Colusa project bid into PG&E's 2005 RFP, bid award granted late 2005.
- Key contributor to team which secured a Reliability Must Run ("RMR") agreement for the Milford Power combined cycle unit located in Milford, Connecticut, contributions included cost analysis, drafting of agreement and regulatory filing preparation.
- Managed "back office" accounting and reporting functions for asset management portfolio, primary liaison between lender group, site management group and back office.
- Lead financial analysis for the due diligence team on the proposed acquisition of a portfolio of power generating assets valued at approximately $1.4 billion. Primary contributions included extensive due diligence regarding assets' commercial agreements, portfolio operating cash flow modeling and sensitivity analysis and financial structuring.

Pure Energy Resources, LLC, Burlington, MA June 2006 – February 2011

Manager, Finance & Origination

Experience:

- Key member of development team for the 512 MW Bayonne Energy Center, closed financing 9/30/10.
- Received promotion to Origination role in June 2008. Responsibilities include new business development origination and commercialization of existing development portfolio.

OTHER EXPERIENCE:

Iron Mountain, Inc., Boston, MA May 2005 – June 2006

Senior Financial Analyst – Price Desk *(February 2006 – June 2006)*
Corporate Financial Analyst *(May 2005 – February 2006)*

Accomplishments:

- Member of a two person team launching high profile enterprise pricing initiative for the North American Service Delivery ("NASD") business unit which represented approximately $1.5 billion

of the organization's total annual revenue of $2.3 billion, received promotion to Price Desk role after only nine months of employment.

- Teamed with Senior VP of Shredding unit to negotiate shredded paper sale agreement providing business unit with a long-term hedge to volatility in paper prices.
- Assisted in the implementation of a new target setting process which serves as the precursor to the annual budgeting process by contacting business unit leaders and other key personnel, gaining high-level alignment on the core drivers of their respective P/Ls and providing a preliminary forecast to serve as the building block of future iterations.
- Conducted in depth analysis of shredding product line including data gathering and research of historical financial and operating metrics, creation of financial model and presentation of analysis observations and conclusions to aid senior management in development of 5 year business and operating plan.
- Created standard financial and pricing models for capital budgeting and investment committee process, new medical records product line and corporate lease vs. buy analysis.

JSI Capital Advisors, Manchester, NH May 2000 – November 2000
Analyst

EDUCATION:

University of Massachusetts Lowell May 2000
Bachelor of Science in Business Administration
Finance Concentration

Babson College May 2013
Master of Business Administration

Dean Gustafson
Professional Soil Scientist
Senior Wetland Scientist
All-Points Technology Corporation, P.C.
3 Saddlebrook Drive, Killingworth, CT 06419
860-663-1697 860-836-6576

General Background

Mr. Gustafson has over 26 years of professional experience in the environmental consulting field. His experience includes NEPA/CEPA documentation, wetlands (delineation, evaluation, mitigation design, monitoring, stream restoration, and local, state and federal permitting), water-quality investigations, coastal-zone-management studies, natural-resource and ecological evaluations. Mr. Gustafson is experienced in vernal pool monitoring and assessment, including identification of a wide variety of native amphibians and reptiles that utilize vernal pool habitats. Mr. Gustafson also has extensive experience with the Connecticut Department of Energy and Environmental Protection Natural Diversity Data Base and has resolved numerous potential rare species conflicts with proposed developments. Mr. Gustafson has particular expertise in wetland identification, soil mapping, soil classification, vegetative and hydrology surveys, wetland impact assessment, wetland mitigation design and oversight. In addition, he has extensive experience in local, state, and federal wetland permitting including having worked on over 100 Connecticut Siting Council dockets along with providing expert testimony at Council hearings. Mr. Gustafson has consulted on numerous projects which involve soils related issues such as erosion and sediment control planning, vegetative soil stabilization and storm water management BMP evaluation and selection. He has served as the Environmental Compliance Monitor on several Connecticut Siting Council approved projects. Mr. Gustafson's water quality experience includes stormwater studies for compliance with National Pollution Discharge Elimination System (NPDES), Section 401 Water Quality Certification, and the 2004 Connecticut DEP Stormwater Quality Manual.

Employment History

Vanasse Hangen Brustlin, Inc., 54 Tuttle Place, Middletown, Connecticut

- Natural Resource Group Leader 1997 to 2012

Atlantic Environmental Services, Inc./GEI Consultants, Colchester, Connecticut

- Senior Project Scientist 1992 to 1997

Soil Science & Environmental Services, Cheshire, Connecticut

- Professional Soil Scientist 1988 to 1992

Key Projects

On Call Environmental Services, Northeast Utilities Transmission Group

Task Manager in support of various Connecticut projects, including assessment and permitting of bulk power substations, transmission lines/structures, underground utility installations, and environmental investigations of existing facilities. Services include pre-acquisition due diligence activities, conducting site development feasibility assessments, natural resources inventories of existing flora and fauna, vernal pool studies and assessment, habitat evaluations, wetland delineations, wetland assessment, wetland mitigation design, wetland mitigation construction monitoring, permit compliance monitoring, site layout and design evaluations, erosion and sediment control planning and construction monitoring, vegetative soil stabilization and storm water management BMP evaluation and selection, preparation of technical documents, coordination with State and local agencies, and permitting support.

Environmental Compliance Monitor, Structure Replacement Project, Montague/Leverett, Massachusetts

Environmental Compliance Monitor in accordance with Massachusetts Department of Environmental Protection 401 Water Quality Certificate permit conditions for 345 kV structure replacement project. Monitoring included installation of wooden timber swamp mats across a 65-acre beaver impoundment for the removal of eight existing wooden structures and replacement with four steel structures. Environmentally sensitive compliance monitoring across this approximate 3,500 linear foot span included monitoring of drilling activities for deep caisson foundations within wetlands including in the middle of the beaver impoundment.

Regulatory Permitting, Barbour Hill Substation Modifications, South Windsor, Connecticut

Project Manager responsible for the preparation of a Petition to the Connecticut Siting Council for a determination that no Certificate of Environmental Compatibility and Public Need was required for the proposed modifications to the Barbour Hill Substation in South Windsor, Connecticut. The project included the replacement and expansion of an existing facility and the modification of line interconnections. Responsibilities included conducting natural resource inventories, wetland delineation, noise study, soil and groundwater sampling, property survey, preparation of site/civil design drawings, supporting graphics, photo-simulations, and local and state permit documents. Mr. Libertine also supported CL&P during its contractor selection process and developed a site-wide soil and water management plan for implementation during construction activities.

Certificate of Environmental Compatibility and Public Need, Rood Avenue, Windsor, CT

Task Manager responsible for the preparation of environmental sections of a Certificate of Environmental Compatibility and Public Need to the Connecticut Siting Council for the construction of a new substation. The project included the construction of a substation in wooded uplands with direct wetland impacts. Responsibilities included conducting natural resource inventories, wetland delineation, and local and state permit documents and coordination with the U.S. Army Corps of Engineers New England Division. The project also included the successful transplanting of pink lady-slippers (*Cypripedium acaule*).

Regulatory Permitting, Barbour Hill Substation Modifications, South Windsor, CT

Task Manager responsible for the preparation of a Petition to the Connecticut Siting Council for a determination that no Certificate of Environmental Compatibility and Public Need was required for the proposed modifications to the Barbour Hill Substation. The project included the replacement and expansion of an existing facility and the modification of line interconnections. Responsibilities included conducting natural resource inventories, wetland delineation, and local and state permit documents.

Environmental Assessment and Constructability Review, Central Connecticut Reliability Project

Project Scientist for natural resources inventory/assessment and construction evaluation along 35 miles of ROW corridor. Environmental tasks included Connecticut and federal wetland delineations, Army Corp of Engineers data plots, wetlands functions and values assessment, inventory of threatened and endangered species and critical habitats, biological surveys, and cover-type mapping. Once existing conditions were documented, a feasibility analysis was conducted to identify environmental and constructability conflicts associated with proposed new line installation and facility upgrades.

Certificates of Environmental Compatibility and Public Need, Various Sites, Connecticut

Has served as Task Manager in support of numerous Applications to the Connecticut Siting Council (CSC) for the permitting of new electrical substations throughout Connecticut. These projects require extensive site data collection and analysis including natural resources inventories of existing flora and fauna, habitat evaluations, wetland delineation and function/value analysis, site layout analysis and wetland impact evaluation, wetland mitigation, preparation of technical documents, coordination with State and local agencies, and permitting. Environmental monitoring services for adherence to the CTDEP's General Permit for Construction Activities were also provided.

Environmental Permitting Services for Wireless Telecommunications Clients, New England & NY

Task Manager for environmental due diligence and permitting services in support of various telecommunications clients throughout New England and New York. Mr. Gustafson has worked directly with the major licensed PCS carriers since 1997. Projects include due diligence and land use evaluations; preliminary site screenings; preparation of compliance documentation, environmental assessments and Memorandums of Agreement to fulfill NEPA requirements; wetland delineation, assessments, and mitigation; local, state and federal wetland permitting; vegetative/biological surveys; rare species investigations; floodplain compliance; preparation of regulatory applications (including SEQRA submissions); permit compliance monitoring; and permitting support. Mr. Gustafson has testified on behalf of telecommunications clients in front of local municipalities and the Connecticut Siting Council on over 100 applications and petitions.

Telecommunications Carrier Wetland Compliance Program

Project Manager for major telecommunications carrier's wetland compliance program. Responsible for wetland delineation, assessment, mitigation and alternatives analysis, habitat evaluations, vernal pool identification and assessment, design review for permit feasibility, and successful permitting of over 50 wireless telecommunications facilities with local wetland/conservation commissions in the Connecticut, Massachusetts, and Rhode Island market

areas. Responsible for erosion and sediment control planning and construction monitoring for projects in Connecticut and Massachusetts that represent a potential to impact sensitive wetland resources during construction.

National Retailer, Rocky Hill, CT
Responsible for wetland permitting of a multi-tenant retail development resulting in significant unavoidable wetland impacts and the creation of a wetland mitigation area exceeding 1 acre is size. Wetland permits were secured from the Rocky Hill Wetland Agency, CTDEP and U.S. Army Corps of Engineers for wetland impacts and wetland mitigation area.

Luxury Residential Development, Hartford, CT
Project manager for an award-winning luxury residential community developer. Provided project management and technical direction for wetland compliance of projects undertaken in Connecticut including wetland determination, evaluation, mitigation design and local, state and Army Corps of Engineers permitting. Assisted with planning restoration of a failed slope that occurred during construction, secured approval from the local wetland commission and monitored erosion and sediment controls to ensure that nearby wetlands and perennial stream were not adversely impacted.

Retail Wetland Program, Various Projects, CT
Project manager for the Connecticut office for large retail Client Fee-for-Service and Turnkey Developer Programs. Provide project management and technical direction for wetland compliance of projects undertaken in Connecticut including wetland determination, evaluation, mitigation design and local, state and Army Corps of Engineers permitting.

Connecticut DOT West Haven/Orange Railroad Station, Environmental Assessment
Task manager for assessing natural resources, including wetlands, floodplain, aquatic habitats, and wildlife, associated with a proposed railroad station at one of two possible sites. Prepared technical documents in support of Draft Federal Environmental Assessment/Draft State Environmental Impact Evaluation.

Wetlands Survey and Permitting, ConnDOT Maintenance Facility.
Performed both a state and federal wetland survey and delineation in conjunction with the submission and successful obtainment of a CTDEP Inland Wetlands and Watercourses permit and 401 Water Quality Certifications to conduct remedial activities within and adjacent to existing floodplain wetlands.

Education	B.S. University of Massachusetts, Plant and Soil Sciences, 1988
	Graduate coursework, University of New Hampshire
Affiliations	Member, Lebanon Inland Wetlands and Watercourses Commission, since 1995.
	Member, Connecticut Audubon Society
Registration	Professional Soil Scientist, Society of Soil Scientists of Southern New England, since 1988.
	Connecticut Association of Wetland Scientists.
	Association of Massachusetts Wetland Scientists.
Certifications	OSHA Hazardous Water Operations and Emergency Response (HAZWOPER) Training (29 CFR 1910.120)

Qualifications

Curtis C. Jones, P.E., LEED AP

President

Curtis C. Jones is President, Owner, and Founder of **CIVIL1**. He is responsible for the overall financial and operational management of the company and is personally involved with each and every project completed by the firm. With over 30 years of civil engineering experience, Curtis has successfully designed and secured approvals for hundreds of commercial, residential, industrial, municipal, educational, and mixed-use projects.

Curtis' areas of expertise include master planning, land use planning, zoning, stormwater management and green energy. Curtis has demonstrated a consistent ability to use his diversity of experience to bring clarity and insight to the complex problems that are encountered on various projects.

As a land use professional and 50 year+ resident of Litchfield County, Curtis is well versed in the requirements and intricacies of local land use planning and zoning issues.

In addition to his duties at **CIVIL1**, Curtis fulfills many civic and professional responsibilities. Curtis' experience and commitment to public service provides him with the understanding, disposition, and fortitude to effectively work with diverse groups in achieving beneficial solutions to complex land management issues.

Curt holds a Bachelor of Science Degree, Cum Laude, in Civil Engineering from the University of New Haven and is a licensed Professional Engineer in Connecticut, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont as well as holding LEED AP accreditation from the U.S. Green Building Council and a Level 1 Certification from the Post Tension Institute.

CIVIL 1
Civil Engineers

CLIFF CROSMAN

PRINCIPAL ENGINEER - WATER TREATMENT

YEARS OF EXPERIENCE
41

EDUCATION
Bachelor of Chemical Engineering,
The Cooper Union, New York, NY

AREAS OF EXPERTISE
Water and wastewater treatment

LICENSE
Professional Engineer – New York State

EXPERIENCE SUMMARY

Mr. Crosman has over 41 years of experience in the engineering and design of water and wastewater treatment systems. Over the past 20 years, he has been responsible for all water and wastewater treatment systems included in the power generation and other industrial facilities designed by Burns and Roe. In the conceptual design phase, he prepares the water balance which defines how much water will be used in a plant and how much will be discharged. He defines the quality of wastewater discharge for environmental permitting. In the detailed design phase, he provides engineering of pretreatment, demineralization, condensate polishing, wastewater treatment, and chemical feed systems.

Gemma Power Systems, Liberty and Patriot Power Plants – Asylum and Clinton Townships, PA

Mr. Crosman provided engineering and design for the water and wastewater treatment systems in two (2) 829 MW combined cycle power plants. The water treatment systems include reverse osmosis, and electrodeionization. The near zero liquid discharge wastewater treatment systems include lime softening clarifiers, membrane filtration and reverse osmosis.

Louisiana Energy & Power Authority, Morgan City Power Plant – Morgan City, LA

Mr. Crosman provided conceptual engineering and design for the water treatment systems in a 64 MW combined cycle power plant. The conceptual design included a water balance that was used for environmental permitting. It included granular filters for secondary effluent from a municipal wastewater treatment facility and a demineralization system with membrane filtration, reverse osmosis, and electrodeionization.

Lansing Board of Water and Light, Reo Town Power Plant - Lansing, MI

Mr. Crosman provided engineering and design of a 600 gallon per minute two-pass reverse osmosis makeup demineralization, a 600 gallon per minute off-site regenerated condensate polishing system, and boiler and cooling water chemical feed systems for a new 100 MW combined cycle electric power and steam generation plant with once through heat recovery steam generators. Mr. Crosman prepared the water balance that was used to obtain a wastewater discharge permit.

Covanta Energy, Lee County Resource Recovery Facility – Ft. Myers, FL

Mr. Crosman provided engineering and design for a zero liquid discharge wastewater treatment system, including lime softening, granular filtration, membrane filtration and reverse osmosis for a 50 MW resource recovery facility. The system treats a cooling tower side stream flow, and cooling tower makeup is treated effluent from a municipal wastewater facility. The system provides demineralized water makeup to the boiler/steam turbine cycle in the facility.

Pure Energy Solutions, Bayonne Energy Center – Bayonne, NJ

Mr. Crosman provided engineering and design for an 800 gallon per minute demineralized water treatment system including membrane filtration, reverse osmosis, and electro-deionization. Demineralized water is injected into combustion turbines.

Motiva Enterprises, Refinery Expansion Project - Port Arthur, TX

Mr. Crosman provided engineering and design of a 7,000 gallon per minute packed bed ion exchange makeup demineralization system, an 1850 gallon per minute condensate polishing system, and boiler and cooling water chemical feed systems for new electric power and steam generation facilities within the refinery.

Mission Energy/Mitsui, Paiton Private Power Project Units 7 & 8 - East Java, Indonesia

Mr. Crosman provided conceptual engineering and design for sea water desalination, makeup demineralization, condensate polishing, and wastewater treatment systems for a 1320 MW coal fired power plant.

General Electric, Dezhou Power Project Units 5 & 6 – Dezhou City, China

Mr. Crosman provided engineering and design of condensate polishing, steam water sampling, and cycle chemical feed systems for a two unit 1320 MW coal fired power plant.

CPS Energy, Braunig Lake Power Plant – San Antonio, TX

Mr. Crosman provided conceptual engineering for water and wastewater treatment systems to serve new peaking combustion turbines and existing power generation units. He prepared the water balance used to revise the wastewater discharge permit for the site and defined criteria for a new makeup demineralization system.

Associated Electric Cooperative Inc., Dell Power Plant – Dell, AR

Mr. Crosman provided engineering and design for a 4,000 gallon per minute well water pretreatment system to remove iron and manganese, an 80 gallon per minute makeup demineralizer system consisting of reverse osmosis and electro-deionization, and boiler and cooling water chemical feed systems for a 580 MW combined cycle power plant.

Mitsui & Co. Ltd, Greenfield Energy Centre - St. Clair, Ontario, Canada

Mr. Crosman provided engineering and design for a 360 gallon per minute packed bed ion exchange type makeup demineralizer system, a 720 gallon per minute wastewater treatment system, and chemical feed systems for a 1005 MW combined cycle power plant.

Los Alamos National Laboratory, Los Alamos, NM

Mr. Crosman provided an engineering study to determine how wastewater discharges at several outfalls could be reduced or eliminated. Present and future NPDES requirements were evaluated. Equipment to treat and recycle blowdown from several cooling towers was recommended. Equipment to treat and recycle wastewater from a power generation facility was recommended.

Gulf Power Generation, Kaeng Khoi 2 Power Project, Thailand

Mr. Crosman provided conceptual engineering and design for river water pretreatment, makeup demineralization, boiler and cooling water chemical feed, and wastewater treatment systems for a 1468 MW combined cycle power plant.

New York City Department of Environmental Protection – Pelham Bay Landfill, New York, NY

Mr. Crosman specified the components of a treatability study to remove contaminants from landfill leachate including heavy metals, organics, and nitrogen compounds to meet discharge regulations. He recommended a treatment process to the New York City DEP. He specified equipment for collection and storage of leachate from various areas in the landfill.

Danielle S. Powers
Vice President

Ms. Powers has over 25 years of experience in the wholesale and retail electricity markets, power generation, and energy consulting fields. Ms. Powers has considerable expertise in wholesale electric market operations and analysis, transmission system planning and operations, generation asset sales and acquisitions, asset valuation, wholesale and retail energy planning and procurement, and power plant operations. Ms. Powers has been extensively involved in the design, implementation, and operation of the installed capacity market in the New England power region. She has experience in executing both regulated and unregulated fossil and renewable generation asset sale transactions in the areas of regulatory analysis, policy development, due diligence analyses, energy market assessment, and business unit strategy. Ms. Powers has significant experience in preparing market assessments and forecasts, and has advised several clients on the procurement of competitive electricity in deregulated markets by developing strategic procurement strategies, preparing solicitation packages, evaluating supply and service proposals, and negotiating contracts with retail energy suppliers.

REPRESENTATIVE PROJECT EXPERIENCE

Energy Market Assessment and Design

Responsible for the design and regulatory approval of the New England Forward Capacity Market for ISO-NE. Managed market design effort, which included designing the processes and procedures around resource qualification, resource bids and offers auction clearing determination of installed capacity requirements and market settlement. Responsible for drafting several sections of the Market Rule describing how the market would function, and presenting the draft rule to market participants during approximately 20 meetings over a six-month period. Responsible for leading various ISO-NE project teams in developing the detailed market design. Formed several external project teams made up of New England participants to gather input on major market design elements to ensure that the final design of the FCM reflected the involvement of affected parties and addressed their business concerns. Responsible for managing relationships among ISO-NE and key market participants for both new and existing markets.

Transmission Planning and Interconnections

Worked with several clients to evaluate transmission alternatives relative to their existing and proposed generating resources. Evaluated ISO-NE transmission tariffs, evaluated and managed interconnection processes, prepared and negotiated interconnection contracts, and performed project cost reconciliations. Provided consultation on required Federal Energy Regulatory Commission (FERC) filings. Responsible for staying abreast of relevant regulatory issues in order to ensure compliance with ISO-NE and FERC requirements.

Asset Sales

Managed and/or involved in the sale of over 12,000 MW of fossil fueled generation and purchased power contracts. Contributed to the successful sale of generation assets in all areas including regulatory, marketing, labor, environmental, transmission, market analysis, terms of sale, legal, transition power sales, and bid evaluation. Acted as client representative for bidder groups providing technical expertise and assistance. Provided full support for the initial and final due diligence processes.

Retail Energy Planning and Business Development

Managed the $13 million Massachusetts High Technology Council aggregated buying group account. Responsible for analyzing and advising on deregulation efforts and market conditions, developing strategic energy procurement plans, and securing electricity supply for various buying groups at a competitive price. Developed strategic energy plans for large end-users to enable them to realize energy cost savings through competitive energy procurement and energy usage analysis. Responsible for providing energy consulting services to a variety of energy consumers to prepare them for deregulation in various states. Responsible for developing and implementing business plans to evaluate the opportunities and risks associated with serving various target markets in order to continually grow electric retail capabilities. Analyzed evolving NEPOOL operational issues and analyzing their impact on energy supply and services. Investigated the status of deregulation efforts in numerous states to effectively manage existing customer accounts.

Retail Business Planning, Market Analysis, Wholesale Power Marketing and Account Management

Responsible for managing existing customer accounts while identifying and developing relationships with potential future customers. Developed a retail sales business plan outlining the process required to prepare the company for competition in the retail electricity market. Arranged wholesale electric power purchases and sales to contribute to a $44 million department sales goal by successfully seeking power transaction opportunities throughout New England. Analyzed deregulation efforts in each New England state to identify potential concerns and opportunities in the deregulated market.

Supply Chain Management

Selected to participate in a two year management training program as a purchasing agent responsible for the procurement of diverse goods and services. Scheduled and coordinated team meetings, prepared RFQs for team review, prepared and conducted bid analysis, and communicated results of analysis to team members, field personnel, and management. Coordinated procurement associated with the start-up of a new company affiliate. Ensured and maintained effective working relationships with vendors and field personnel.

Power Plant Operations and Engineering

Managed large scale projects such as the design and testing of a sulphur injection system and test burns of coals to measure the effects on the pollution control systems. Assigned as Project Engineer on a $4 million precipitator rebuild project with responsibility for preparing bid specifications. Responsible for the operation, maintenance, and overall performance of station pollution control systems. Managed all facets of various plant construction projects including project engineering, construction supervision, project estimating and scheduling, and budget tracking/analysis.

PROFESSIONAL HISTORY

Concentric Energy Advisors, Inc. (2005 – Present)
Vice President
Assistant Vice President

ISO New England (2003 – 2005)
Principal Analyst

Concentric Energy Advisors, Inc. (2003)
Executive Advisor

Navigant Consulting, Inc. (1999 – 2003)
Senior Engagement Manager

XENERGY, Inc. (1997 – 1999)
Manager of Strategic Energy Planning

New England Power Company (1989 – 1997)
Intern, Production Engineer

EDUCATION

M.B.A., Bentley College, magna cum laude, 2000
B.S., Mechanical Engineering, University of Massachusetts at Amherst, 1988

PROFESSIONAL AFFILIATIONS

Treasurer, International Association of Energy Economics, New England Chapter
EIT Certification (Engineer-in-Training)
Member of the Massachusetts Restructuring Roundtable
Total Quality Management - Certified Team Facilitator

TANYA L. BODELL

Executive Director

tanya.bodell@energyzt.com

Tanya Bodell is the Executive Director of Energyzt, a global collaboration of energy experts who create value for clients through actionable insights. She is based in Boston, Massachusetts. For more than 20 years, Ms. Bodell has provided business advisory and expert support to clients in the energy industry, advising them on asset valuation, investment strategy, mergers/acquisitions, restructuring, regulatory outreach and market analysis. She also provides expert support in large regulatory and litigation cases pertaining to the energy industry, including assessment and valuation of benefits and damages claimed for breach of contract, fraudulent misrepresentation, market manipulation, contingent liability, and insolvency.

ADVISORY SERVICES

Ms. Bodell interacts directly with investors and senior management of energy companies, adding value through business advice, transaction support and regulatory strategy. Selected services and assignments include the following:

Market Assessments and Electricity Market Design and Implementation

- Regularly performs market assessments of wholesale energy and capacity markets for market participants, including assessment of the impact of alternative market rules and regulations.
- Develops and directs analyses of market conditions using locational marginal pricing market models and industry data.
- Advises on policy recommendations concerning market design and implementation.
- Authors white papers and provides expert testimony regarding research and findings.
- Key advisor to the Singapore Public Utilities Board (subsequently Energy Markets Authority) on developing a competitive wholesale and retail electricity market, including market rules, licenses and codes (2000-2004).
- Primary advisor and project manager to the Ontario Market Design Committee, Ontario Energy Board, Ministry of Energy, Science and Technology and market participants on competitive market design, regulatory structure, environmental policy and risk management (1998 – 2001).

  Case Study: For a bank focused on project financing generation assets in the United States, performed a market analysis of the major markets in the United States, including NEISO, PJM, NYISO, MISO, ERCOT and CAISO. The lender incorporated the status of the markets in their assessment of risk associated with their portfolio of generation assets in each market.

Asset Valuation and Acquisition Strategy

Regularly called upon to provide independent asset valuations, due diligence and acquisition strategy for investors in the electricity industry.

- Served as an independent appraiser for valuation, transaction support, and disputes, including appraisals of traditional power generation assets, cogeneration facilities, and renewable power portfolios.
- For new entrants and emerging players, values enterprises, power assets, power purchase agreements, tolling arrangements, and trade books.
- Provides utilities and independent power producers with due diligence and advice relating to power purchase agreements, contract renegotiations, merchant plant investment opportunities and valuation of non-utility generation assets.
- Develops strategy for expansion into new businesses, technologies, and market segments, including advice on the regulatory structures, government support, and entry strategies for investments in commercial transmission, energy storage solutions, and renewable resources.
- Advises international clients on new entrant strategy for commercial energy investments in the US, including assessment of specific acquisition targets.

  Case Study: For an international investor looking to acquire a natural gas and power distribution company in Connecticut, Ms. Bodell provided asset valuation and risk analysis of the targeted company. Her analysis identified critical regulatory challenges that would mitigate potential upside from the acquisition and identified key risks that the new owner would face if the deal were to proceed.

Transmission

Provides new entrant strategy and transaction support for investments in US commercial transmission, advising transmission developers on potential markets, customer acquisition, regulatory strategy and financing options.

- For a large rail company, advised on potential use of existing rights of way for development of transmission lines, including advice on specific transmission opportunities, identification of strategic regions and potential partners.
- For a multi-billion utility in the Northeast, advised on their commercial transmission strategy and development opportunities.
- For a multi-billion dollar oil and gas pipeline company interested in expanding their energy transportation portfolio into electric transmission, provided new entry strategy and successfully presented to the Board, launching the firm's initiative to develop a commercial transmission business in North America.
- For a large southern utility interested in pursuing a commercial transmission business, provided strategic advice on regions, strategic partners and target projects, including bidding strategy on acquisition of an operational transmission line.
- For the triennial rate review of a transmission upgrade in California, submitted expert testimony on the benefits of the transmission upgrade.

- For a transmission line under development in the southwest, assessed the size and potential markets for transmission service.
- For large utilities interested in developing a commercial transmission business, advised on entry strategy, potential acquisitions, and performed due diligence on specific acquisition targets.
- On behalf of an independent transmission company, assessed transmission asset acquisitions valued at over a billion dollars.
- Advised generation owner on regulatory strategy to create independent transmission company for purposes of developing high voltage interconnection (1,000 MW of capacity).

  Case Study: For an independent transmission company looking to grow through acquisition, Ms. Bodell identified potential targets that met the firm's risk-return profile. She subsequently valued the acquisition targets under multiple scenarios which provided the basis for negotiations by the acquiring company.

Renewable Resources

- Assesses value of wind farms and renewable generation assets as merchant and contracted facilities, and incorporates the impact of such assets into market dynamics.
- Served as key litigation strategist for a client defending against a nearly $1 billion damages claim related to alleged breach of wind turbine supply agreements. Responsible for managing the entire project, including two testifying experts, overseeing research on markets turbine and nacelle prices, availability, market conditions, discovery and damages.
- Possesses deep understanding of environmental attribute markets and regulations, including production tax credit, investment tax credit, net metering credits, RPS requirements. design and implementation of generation information system tracking systems and markets for renewable energy credits.
- Served on the Alternative Energy Committee in Cohasset, Massachusetts, responsible for developing solar energy arrays on the school roofs and landfills
- Advised the Ontario Ministry of Science and Technology on policy to promote green power and renewable resource development.

  Case Study: For a commercial company located in Massachusetts, Ms. Bodell analyzed the costs, benefits and risks of pursuing installation of solar energy arrays under the state and federal regulatory regime, assisting the owner with soliciting potential developers.

Competitive Procurement

- Designs and manages competitive procurement processes, including review of power procurement agreement, credit requirements, request for proposal process, and auction.

- Designs and manages transmission open season and bilateral negotiations for transmission capacity.
- Assesses long-term and short-term gas contracts in the context of hedging plays against other energy contracts, including tolling agreements and long-term power purchase agreements.

  Case Study: For a large provider of default supply service in the Midwest, Ms. Bodell managed the competitive procurement process for $1.7 billion of energy required to meet the firm's regulatory obligation.

Tradebook / Risk Management

- Develops summary synopses on mark-to-market accounting and the marketable value of trade books and examines trader activities for market manipulation and non-compliance with regulatory requirements.
- Analyzed tradebook entries, energy contracts, and hundreds of legal documents to rebook off-balance sheet transactions into the financial statements of a bankrupt energy marketer's estate.

  Case Study: For a large, publicly-traded energy marketer, Ms. Bodell reviewed tradebook for wash trades and market manipulation, revalued tradebook and assessed controls on trading operations before and after conveyance.

Corporate Restructuring

Responsible for advising investors on valuation of power generation assets and securitization options in a number of high-profile restructurings in the electricity industry.

- For investors in a large Texas utility with a significant competitive generation portfolio, provided pre-bankruptcy filing advice regarding generation asset valuation and impacts of proposed market changes pertaining to Interim Solution B+.
- For the unsecured creditors committee of a bankrupt portfolio of coal plants located in New York, provided industry expertise, valuation, market assessments, and settlement advice.
- For the unsecured creditors committee of a bankrupt coal plant located in New England, provided industry expertise, valuation, power contract assessment, damages calculations, market assessments, and settlement advice.
- For the bondholders of a waste coal facility undergoing restructuring in Pennsylvania, provided project valuation, assessed project cash flows and debt capacity, interfaced with the company's financial advisor, and advised on changing market conditions.
- For the Enron estate, analyzed insolvency analyses under the three legal tests: balance sheet, cash flow and capital adequacy. Analyses included assessing the tradebook for purposes of identifying debt-like transactions and performing cash flow projections of debt repayment and capital requirements. Analyzed tradebook entries, energy contracts, and hundreds of legal documents to rebook more than $3.5 billion of off-balance sheet transactions for purposes of

understanding when the company was insolvent. Supported multiple experts, including the insolvency expert and the liability expert. Provided project management for the insolvency team over a two-year period. Settlement with various parties totaled more than $6 billion.

LITIGATION

Ms. Bodell has significant experience in high-stakes litigation in which hundreds of millions of dollars are at risk. She has played a key role in cases arbitrated, mediated, litigated, and heard before regulatory agencies, providing litigation support including assessment of business damages and lost profits, market context, expert testimony, economic arguments in legal filings, and advice on settlement strategy. From 2008 to 2011, she served a three-year term as Vice Chair of Standing Committee for the International Centre for Expertise at the International Chamber of Commerce. Below are selected examples of cases in which she has provided expert support.

Contract Dispute

- Served as the expert witness on industry context in a contract interpretation case between an electric cooperative and municipal electric company who jointly held rights to the output of a large coal generation plant worth hundreds of millions of dollars.
- In a lawsuit between an electric utility and a cooperative that served multiple load serving entities, assessed the value of the excess energy the utility supplied to the load serving entities due to their breach of the supply contract.
- In a dispute between a large hydroelectric power producer and natural gas independent power producer in the Pacific Northwest over damages exceeding $1 billion, reproduced the independent power project's pro-forma and calculated lost profits to the project under various scenarios including alternative electricity and gas prices and water conditions. Developed the analysis of the required return on equity for highly leveraged non-utility generation projects, including the equity, debt, and financial Betas.
- For various industry clients, reviewed more than three dozen power purchase agreements to advise on contract renegotiations, merchant plant investment opportunities and valuation of non-utility generation acquisitions.
- For a waste coal facility in Pennsylvania, served as the independent appraiser of the facility to assess the fair market sales value under the remainder of the power purchase agreement and as a merchant plant.
- For a coal plant in Connecticut undergoing contractual restructuring, assessed the value of the facility under the existing power purchase agreement, a proposed tolling agreement, and as a merchant facility.
- For the counterparty to a long-term power purchase agreement with the California Department of Water and Power, reviewed publicly-available contracts and settlements to advise on potential contract restructuring positions.

- For a potential purchaser of a cogeneration project in Oklahoma, performed a market study to assess the regulatory regime and other aspects of the market that could affect the value of the investment, including future gas and electricity price projections.
- For an owner of a cogeneration project in Michigan, analyzed a proposed back-to-back transaction involving the power purchaser and a third party to determine whether the proposed agreement posed additional risks for the project. The analysis included review of the purchaser's stranded cost calculations and regulatory filings, as well as a detailed assessment of the two contracts and associated project documents.
- For a Maryland utility, calculated stranded costs associated with its power purchase agreement and determined potential settlement negotiation positions and strategies that the utility could take with respect to buying down the contract.
- For a Texas cooperative in a power purchase agreement with a cogeneration project, analyzed potential renegotiation positions, including the potential for a buy-out and buy-down of power prices.
- In a dispute over interpretation of the terms of a cogeneration contract in Florida, supported expert testimony on the application of the Public Utility Regulatory Policy Act (PURPA) to the contract. The analysis included a survey of all publicly available non-utility generation project contracts.
- In a dispute over interpretation of the terms of a power purchase agreement in New Jersey, calculated lost profits under alternative interpretations and developed a litigation strategy to obtain the favored interpretation.
- In a contractual dispute between a U.S. electric utility and qualifying facility in Pennsylvania, analyzed the financial viability of the cogeneration project for a temporary restraining order proceeding, supported the expert testimony of the damages expert and assisted counsel for deposition and cross-examination questions.

Product Liability

- For an electric utility suing contractor for over $55 million over failure to install a fire protection, calculated impact on business due to replacement power costs incurred while the coal plant was down, a key aspect of the damages claim. Coordinated with other experts on related matters including project schedule and appraisal.
- For multiple litigations concerning Westinghouse nuclear steam generator product liability cases in which damages claims exceeded $500 million per case, developed damages approach and calculated alternative damages tied to liability case. Repeated and adjusted analytical approach for four of the ten lawsuits brought against Westinghouse by electric utilities, drafted expert reports, provided document review and deposition questions to counsel, and advised on strengths and weaknesses of case using ex-ante and ex-post approaches.

IRS Tax Litigation

- In a claim concerning proper tax treatment of a contingent debt instrument, defended client against IRS investigation. Analyzed contingent debt instruments in the context of a 20-year, multi-billion dollar coal purchase agreement, drafted expert reports, and advised counsel on depositions.
- In an IRS claim concerning excessive retention of earnings by a privately-held marine transportation business, analyzed working capital and investment cash needs to show that the retained earnings were required to meet legitimate business purposes.

EXPERT TESTIMONY

- "Analysis and Cost Comparison of Renewable Power in California," Testimony before the Little Hoover Commission, Sacramento, CA, February 28, 2012.
- "Expert Report of Tanya L. Bodell," In the Matter of Arbitration Between Big Rivers Electric Corporation, Claimants, vs. City of Henderson, Kentucky and City of Henderson Utility Commission d/b/a Henderson Municipal Power and Light, Defendants, American Arbitration Association Re: 52-198-00173-10, August 24, 2011.
- "Prepared Direct Testimony of Tanya L. Bodell on Behalf of Atlantic Path 15, LLC," Before the Federal Energy Regulatory Commission, Atlantic Path 15, LLC, Docket No. ER11-2909-000, submitted February 18, 2011.

PUBLICATIONS

Ms. Bodell is a regular columnist for Pennwell Publications *Electric Light & Power* magazine as well as Wiley Publications *Natural Gas & Electricity*. Through her columns, she offers monthly insights on business issues facing the energy industry.

Column in *Natural Gas & Electricity*, Wiley Periodicals, Inc., a Wiley Publication

- "Shale's Big Impact on US Manufacturing: Boom or Bust?" November 2014
- "Why Virtual Pipelines Transporting CNG are becoming a Reality," August 2014
- "Parallel Play: Coordinating Natural Gas and Electricity Markets," May 2014
- "Understanding the Recent Volley in Natural Gas Prices," March 2014
- "Outlook – Spark Spreads, Dark Spreads, and Bed Spreads Showing Cutthroat Competition," January 2014
- "NGLs versus LNG: The Fight of the Century," November 2013
- "Natural Gas Could Bring Overseas Jobs Back to United States," October 2013
- "Pop Go Gas Prices: Has the Market Recovered?" July 2013
- "Waste Makes Haste: Low-Cost Power Plants Scramble to Keep Pace," May 2013
- "Price Impacts of Regulating the Worldwide Fracking Frenzy," March 2013

- "Natural Gas Challenges King Coal: Check or Checkmate?" January 2013
- "A Midsummer Night's Dream: Why Natural Gas Prices Still Sleep," November 2012
- "The Yin and Yang of Natural Gas Prices and Renewable Resources," September 2012
- "Electricity and Natural Gas Dance: It Takes More than Two to Contango," May 2012

Column in *Electric Light & Power*, Pennwell Publications

- "What do Lower Oil Prices Mean for the Power Sector?" November 2014
- "For Sail: Mega Merger Tactics in the Electricity Industry," September 2014
- "Who's on First? Ongoing Challenges to FERC's Jurisdiction," July 2014
- "How Big Data is Becoming a Bigger Deal for the Power Sector," May/June 2014
- "Transformative Technologies to Watch During the Next 2 Years," March/April 2014
- "Why Google Bought Nest for $2.3 billion," January/February 2014
- "Restructuring a Challenged Business Model – How Will Electric Utilities Survive?" November/December 2013
- "Leveling the Power Sector Playing Field: When New Entrants Can Compete," September/October 2013
- "Evolving Power Markets: The Long and Short of It," July/August 2013
- "Sifting through Shifting Support for Energy Subsidies," May/June 2013
- "Understanding Obama's Energy Policy: Definitions for the Armchair Economist Part II," March/April 2013
- "Under the Influence of Integrated Energy Markets," January/February 2013
- "An Energy Year in Review: Annus Horribilis or Annus Mirabilis?" November/December 2012
- "NOC NOC. Who's There? Demand Response," September/October 2012
- "Integrating Energy Markets? How Substitutes, Complements are Evolving," July/August 2012
- "Spreading Value, Part 2: How Market Fundamentals Change the Calculation," May/June 2012
- "How Low can Natural Gas Go? The Power Sector May Offer the Answer," March/April 2012
- "Risky Business – How Power Contracts Allocate Uncertainty," January/February 2012
- "Is a Perfect Storm Brewing for the Power Sector in 2012?" November/December 2011
- "Will the Electricity Industry Still Need a Carbon Tax?" September/October 2011
- "Is the (Electricity) World Flat?" July/August 2011
- "When Baseload Generation becomes an Option," May/June 2011
- "The Economic Value of Renewable Resources: Intrinsic, Extrinsic and External," March/April 2011
- "Transacting in Transmission: New Business Models for an Old Business," January/February 2011

- "Have you Identified the Exit Strategy Nearest You?" November/December 2010
- "How to Achieve Growth in a Low-growth Industry," September/October 2010
- "Shifting from Economies of Scale to Network Externalities," July/August 2010
- "What's your Business Plan for Smart Grid?" May/June 2010
- "Why We Can't Avoid Avoided Cost," March/April 2010
- "Economic Challenges of Integration," January/February 2010
- "Will the Meter Still Matter?" November/December 2009
- "Multipurpose Megawatts: Markets Define New Values," September/October 2009
- "Spreading Value: How Environmental Policy Changes the Calculation," July/August 2009
- "Self-Audits, Mock Audits and Assessments: Are You Prepared for a Regulatory Investigation?" May/June 2009
- "Clean-Coal Power Generation: The Uncertainties Beyond Carbon Policy," March/April 2009
- "Understanding Obama's Energy Policy: Definitions for the Armchair Economist," March/April 2009
- "Revisiting Your Generation Investment Strategy in a Recession," January/February 2009

Articles

- "What in the World is Happening to the Power Sector?" Executive Digest Newsletter, Pennwell Publications, July 11, 2012.
- "An Allegory of Uncertainty for Base Load Generation," Electric Light & Power, May/June 2008
- "Beware the Ides of March, Regulators Unsheath their Daggers," Electric Light & Power, March/April 2007
- "Competitive Retail Electricity Markets: Is the Phoenix Rising?" World Energy Magazine Vol. 10 No. 1, 2007
- "Searching for Hedge Funds: The Dark Matter of the Electricity Universe," Electric Light & Power, November/December 2006
- "Trading Places: Who's Dealing Now?" World Energy Magazine, Vol. 9 No. 2, 2006

Interviews

- Interviewed by Alan Rooks, "Hot Stuff: US Energy Market in Overdrive as Shale Drilling Booms," Cutting Tool Engineering, Vol. 66, Issue 4, April 2014
- Interviewed in: "The New Golden State of Smart Grid," Electric Light & Power, May/June 2010
- Interviewed in: "Special Report: Executive Roundtable on Renewable Energy," Power Engineering, January 2009

PRESENTATIONS AND SPEAKING ENGAGEMENTS

Ms. Bodell is an established speaker and moderator at industry conferences, offering market insights and identification of strategic opportunities for attendees, a selection of which is provided below:

- "Capital Expenditures in the Energy Industry," American Manufacturing Technologies Global Marketing and Forecasting Conference, October 15, 2014
- "The Future of Energy in New England," Northeast Energy Commerce Association Annual Conference, May 14, 2014
- "Impacts on Texas Plant Valuations and Potential M&A," Infocast ERCOT Market Summit (moderator) and Pre-summit Forum (chair and speaker), February 25, 2014
- "Energy Trends: Why Jobs, Capital Investment and Trade are Heating Up," Association for Manufacturing Technology 2013 Global Forecasting and Marketing Conference, October 16, 2013
- "Energy Trends: Pricing Trends in the Midwest," Infocast Black Gold Conference, September 20, 2013
- "Energy Markets: Pricing Trends in the Midwest", Infocast Reshoring Summit: Bringing Manufacturing back to the U.S., March 12-13, 2013
- "The New Dynamics of Integrated Energy Markets," with Jamie Heller and Alan Herbst, Infocast Webinar, November 15, 2012
- "Gas-Fired Power Generation as a Driver for New Demand and Pipelines," Marcellus and Utica Infrastructure Summit, Infocast Conference, Pittsburgh, PA, July 12-13, 2012
- "Competitors or Collaborators? Exploring the Interplay between Renewable Energy & Other Fuel Sources," Wall Street Renewable Energy Finance Forum, New York, June 19-20, 2012
- "Executive Briefing: Power Market Trends Impacting the Value of Power Assets," Executive Session Moderator, Power Generation Asset Financing Summit, New York, May 19-21, 2012
- "Trends Shaping the Future," Projects & Money, New Orleans, LA, January 18, 2012
- "Integration of the 21st Century Transmission System," Economic and Regulatory Perspective, Presentation at the Electric Light & Power Executive Conference, Tampa Bay, FL, March 22, 2010
- "Dealing with Multi-Agency Investigations," Presentation at the Infocast Conference, Washington, DC, June 12, 2009
- "Differentiating Between Legitimate Price-Setting and Market Manipulation," Presentation at the Infocast Workshop, Washington, DC, June 10, 2009
- "Clean Coal: Our Generation Bridge to the Future?" PennWell Webcast, November 18, 2008
- "Whose Expert is it Anyway: The Pros and Cons of Party versus Tribunal Appointments," Speech to the Conference on Use of Expertise in International Arbitration, International Chamber of Commerce Alternative Dispute Resolution, January 11, 2008

- "Discovery Rules: Where does Knowledge End and Discovery Begin?" Speech to the Conference on Use of Expertise in International Arbitration, International Chamber of Commerce Alternative Dispute Resolution, January 11, 2008
- Panel on Regulatory Compliance, with John Moot and Greg Mocek, McDermott Will & Emery Annual Conference, Washington, DC, October 2007
- "A Brief Review of New Institutions and Structures in the Electricity Industry," Presented to the GEMI Power Conference, Houston, Texas, June 29, 2006

PROFESSIONAL AFFILIATIONS (PAST AND PRESENT)

Northeast Energy Commerce Association, Boston, MA

Energy Bar Association

Women's Council on Energy and the Environment, Washington, DC

International Centre for Expertise, International Chamber of Commerce, Paris, France

South Shore Art Center, Cohasset, MA, Board of Directors (2012 - present)

Cohasset Advisory Committee, Cohasset, MA (2013 – present)

Cohasset Alternative Energy Committee, Cohasset, MA, Chair (2011 – 2013)

EMPLOYMENT HISTORY

Energyzt, Boston, MA

- Executive Director, 2012 to Present

FTI Consulting, Boston, MA

- Managing Director, 2010 to 2012

Charles River Associates, Inc. (CRA International), Boston, MA

- Vice President, 2003 to 2010
- Principal, 2001 to 2002

Putnam, Hayes & Bartlett (subsequently PHB Hagler Bailly), Washington, DC

- Principal, 1999 to 2000
- Senior Associate, 1998
- Associate, 1993 to 1997

EDUCATION

Massachusetts Institute of Technology, Boston, MA

- Sloan School of Management, Sloan Fellow
- Masters in Business Administration

University of Chicago, Chicago, IL

- Harris School of Public Policy, Harris Fellow
- Masters of Arts, Public Policy, *with honors*

Pomona College

- Bachelors of Arts, Mathematical Economics, *Magna cum Laude*

Simon Carr

Managing Director

simon.carr@energyzt.com

Simon Carr is a Managing Director of Energyzt, a collaboration of energy experts whose goal is researching and communicating the impacts of integrated energy markets. He is based in Washington, DC and has more than 30 years of experience in the electricity industry. Originally from New Zealand, he has worked in that country, in Europe and for the last 17 years has lived in the U.S., holding senior positions in a number of consulting firms. His particular area of expertise is the modeling of electricity markets and electricity price forecasting, using production cost models such as GE MAPS and PROMOD.

Typical assignments are described below.

ELECTRICITY MARKET MODELING & PRICE FORECASTING

- Numerous detailed analyses of U.S. electricity markets and the preparation of 20-year price forecasts for ERCOT, WECC and various regions in the Eastern Interconnect.
- Preparation of numerous market assessments for proposed and existing generation capacity, typically for regulatory proceedings or to assist financing
- The development of capacity price forecasts for ISO NE, NYISO and PJM
- Over a period of five years, supervising modeling of the Californian electricity market as part of a recurring assignment for the Department of Water Resources. This study included evaluating contracts between the State of California and Californian utilities, to set price tariffs
- Developing a simulation model of the Irish electricity system for ESB National Grid. This project used PLEXOS, a sophisticated electricity modeling package and required validating unit dispatch and transmission flows against other models of the system
- Directing the work of a team of consultants working with GARCH statistical models to forecast prices for U.S. electricity markets, and overseeing the development of a suite of price forecasting and dispatch models based on volatility modeling and spread options

ASSET VALUATION

- Estimating future generation and revenues for a wide variety of generating units, typically for financing or as part of a proposed sale or acquisition. These have included:
    - Valuation of proposed hydro developments in Ontario
    - Valuation of a group of diverse hydro asserts in ISO NE, including a large 1000 MW pumped storage plant. This involved simulating the dispatch of this unit into both energy and ancillary services markets
    - Valuation of coal and gas fired generation in ERCOT, PJM, and MISO
    - Valuation of existing and proposed wind generation in ERCOT and NYISO

REGULATORY STUDIES & MARKET DEVELOPMENT

- For a client with gas-fired generation capacity in Ontario, reviewing the possible impact of EDAC, the revised commitment algorithm implemented in late 2011
- Reviewing the ancillary services market in ERCOT, for a client developing battery storage technology
- For a Canadian utility, an assessment of the potential for demand response programs to delay investment in additional generating capacity
- For ISO NE, an evaluation of the effect of historical demand response to estimate the realized benefit of such programs on electricity price and generation cost
- Acting as project manager for the a project with ESB National Grid, the Republic of Ireland transmission network operator, to design market rules for the Republic's electricity market. This involved working in Dublin over a six-month period in 2004. Responsibilities included interfacing with the client's project managers and preparing sections of the market rules

TRANSMISSION STUDIES

- Preparing an Independent Market Assessment for a transmission line between PJM and New York City. This involved forecasting energy and capacity revenues, based on estimated LMP price differentials across the transmission line
- For the New York Power Authority, examining a number of potential transmission line projects to establish the viability of the projects and the effect on the Authority's revenues and costs. The proposed transmission lines were between Quebec and the northeastern U.S., to import additional hydro power
- Preliminary economic studies for NStar to establish the feasability of a DC transmission line from Quebec into New Hampshire, similar to the proposed Northern Pass line

GENERATION & ENVIRONMENTAL ASSESSMENTS

- Evaluating the effect of proposed CO_2 regulation on generation, electricity prices and emissions in Eastern Canada and the northeastern U.S., a study carried out for the Western Climate Initiative and documented in a public report
- For the New York Power Authority, an economic evaluation of proposed Great Lakes offshore wind plants, in response to the Authority's RFP. The study considered changes in operating costs, electricity prices and cost of service

LITIGATION SUPPORT

- Preparation of Expert Testimony related to the sale of power from a merchant facility
- Contract review for purchased power agreement related to Enron litigation

EMPLOYMENT HISTORY

Energyzt, Washington, DC

- Managing Director, 2013 to Present

SAIC, Washington, DC

- Vice President, 2011 to 2013

Navigant Consulting, Washington, DC

- Director, 2006 to 2011

Charles River Associates, Washington, DC

- Principal, 2003 to 2006

PHB Hagler Bailly/ PA Consulting, Washington, DC

- Managing Consultant, 2002 to 2003
- Principal, 1999 to 2002

Cambridge Strategic Management Group, Boston, MA

- Senior Consultant, 1998

Putnam, Hayes & Bartlett, Boston, MA

- Senior Associate, 1997

EDUCATION

McMaster University, Hamilton, Ontario

- M.Sc in physics
- Commonwealth Scholarship

University of Canterbury, Christchurch, New Zealand

- B.Sc (Hons) in physics
- Sir George Grey Scholar

Witness: **D. Lynn Gresock**
Danielle S. Powers

Question Middlebury-3:

List the names, addresses and qualifications including the number of any vocational or professional license issued by the State of Connecticut, if any, of those individuals that the certificate holder and petitioner intend to have testify to the Connecticut Siting Council in support of Exhibit I and Exhibit 2 referenced by and made a part of submission of the Petition to Reopen and Modify of CPV Towantic LLC filed November 3, 2014.

Response:

CPV Towantic, LLC's proposed witnesses are: Lynn Gresock, Frederick Sellars, Andrew J. Bazinet, Dean Gustafson, Curtis C. Jones, Danielle S. Powers, and Tanya Bodell. Please see the response to Q-Middlebury-2 for the additional requested information.

Witness: Andrew J. Bazinet

Question Middlebury-4:

Besides the Inland Energy Center in Riverside County, California (as cited in Tetra Tech "Environmental Overview" report Para. 2.1.1, page 5) where else in the United States has the proposed GE Frame 7H-Series operated?

Response:

Other than the Inland Empire Energy Center, there are no currently-operating examples of GE's H-series gas turbine technology located in the United States. Internationally, there are two examples of GE's H-series technology operating in 50-Hz configurations, which in GE nomenclature are referred to as 9H-series turbines. GE's Baglan Bay facility in the United Kingdom achieved commercial operation in 2003 and TEPCO's Futtsu 4 facility achieved commercial operation in 2008.

Witness: Andrew J. Bazinet

Question Middlebury-5:

With respect to the proposed GE Frame 7HA.01 turbines, list the location and total number of hours of operation in the six months prior to the date that CPV Towantic LLC filed its Petition to Reopen and Modify i.e. March 3, 2014 – November 2, 2014.

Response:

There are no GE Frame 7HA.01 turbines currently in operation (please note that the proposed GE Frame 7HA.01 is a more advanced H-class than the GE Frame 7H-Series used at Inland Empire Energy Center). As described in the response to Q-Middlebury-4, there are three instances of GE's H-series technology currently in operation worldwide, which in aggregate have accumulated in excess of 200,000 operating hours since achieving commercial operation. The two 7H units at Inland Empire Energy Center produced in excess of 13 TWh (precisely, 13,003,753 MWh) of energy between achieving commercial operation in 2009 and the end of 2013 (the last full year of available data). GE began testing of its HA.01 turbine this year at its Greenville, South Carolina facility.

Witness: Andrew J. Bazinet

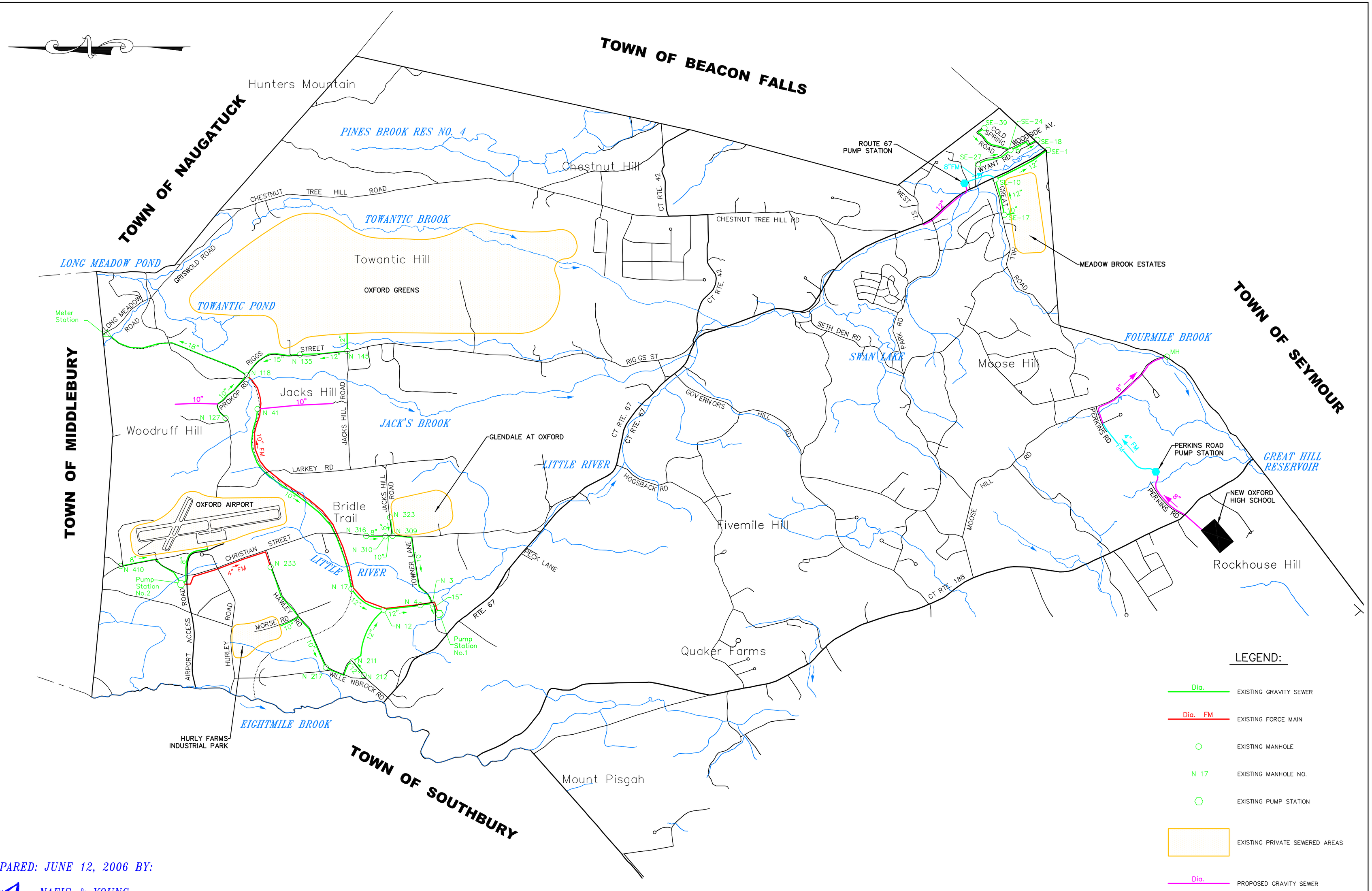
Question Middlebury-6:

Does the wastewater discharged from the plant pass through the Town of Middlebury? Describe, or provide a map, of the course by which the wastewater discharged to the municipal sewer system travels to the Naugatuck Wastewater Treatment Plant.

Response:

CPV Towantic, LLC does not know whether the wastewater discharge from the Facility passes through the Town of Middlebury. Based on discussion with the Oxford Water Pollution Control Authority, the wastewater discharge from the Facility will not pass through the Town of Middlebury. However, based on the attached map that CPV Towantic, LLC found on the Internet, it appears that the sewer system may pass through the Town of Middlebury.

Given the relatively limited quantity of wastewater discharged by CPV Towantic, LLC (a maximum of 4.5 gallons per minute, which is roughly equivalent to the flow of a common garden hose), the course and capacity of the Town of Oxford sewer system is not material.



LEGEND:

- Dia. — EXISTING GRAVITY SEWER
- Dia. FM — EXISTING FORCE MAIN
- EXISTING MANHOLE
- N 17 — EXISTING MANHOLE NO.
- EXISTING PUMP STATION
- EXISTING PRIVATE SEWERED AREAS
- Dia. — PROPOSED GRAVITY SEWER
- Dia. FM — PROPOSED FORCE MAIN
- PROPOSED PUMP STATION

1500 0 1500 3000 4500

Scale 1" = 1500'

TOWNWIDE SEWER MAP
OXFORD, CONNECTICUT

PREPARED: JUNE 12, 2006 BY:

NAFIS & YOUNG ENGINEERS, INC.
1355 Middletown Avenue
Northford, Connecticut 06472
Phone: (203) 484-2793
Fax: (203) 484-7343
Email: nyeng@nafisandyoung.com

Mar 27, 2007-2:05pm
L:\OXFORD\WPCA\2006-053\TOWNWIDE SEWER MAP.dwg

Witness: Lynn Gresock

Question Middlebury-7:

Describe the mitigation incorporated into the Project to meet the documented Nighttime Noise Limit of 51 dBA at the nearest residentially zoned area being the Oxford-Middlebury town line north of the Project.

Response:

The potential mitigation measures are described in Sections 4.2 and 4.3 of Appendix D of Exhibit 1 to the Petition. As noted in Appendix D, the selected design and mitigation measures are subject to change in the Facility's final design, but in all cases the Facility will comply with the most stringent noise limit (nighttime) of 51 dBA at the nearest residentially zoned areas (and all surrounding residentially zoned areas) as required by the state noise regulations.

Witness: Lynn Gresock

Question Middlebury-8:

Describe the mitigation incorporated into each of the "three smaller and shorter building enclosures" (per Change No. 5 listed in the Petition, page 10; Tetra Tech "Environmental Overview" report Para. 2.5) proposed in lieu of one large combustion turbine and steam turbine building.

Response:

The currently approved Facility layout incorporates a 110-foot tall building that encompasses both gas turbines as well as the steam turbine. As a part of the updated Facility, reducing the heights of structures provides benefits by reducing visibility and improving dispersion of stack emissions. The selected GE technology incorporates separate enclosures for each element (a 64-foot tall enclosure for the steam turbine, and one 37-foot tall enclosure for each gas turbine) that provide for equipment protection and sound attenuation.

Witness: Lynn Gresock

Question Middlebury-9:

Provide a copy of the complete filing submitted to the State of Connecticut Department of Energy and Environmental Protection (DEEP) on or about September 8, 2014 as cited in Tetra Tech "Environmental Overview" report Para. 4.0, page 22, Exhibit 1 to the Petition.

Response:

Disks containing the September 8, 2014 air permit application, redacted for commercially sensitive material, (over 550 pages long) and revisions to that application that were submitted to DEEP to date are attached. As DEEP's technical review progressed, responses to DEEP questions resulted in updates to various sections of the application as originally filed.

Witness: Lynn Gresock

Question Middlebury-10:

Describe in greater detail, or provide, the specific references used as input to the acoustic model described as "information contained in reference documents, or developed using empirical methods" (in Tetra Tech "Environmental Overview" report Para. 4.1.1, page 35).

Response:

See Section 4.2 of Appendix D of the Environmental Overview. Reference documents used in support of engineering calculations include the following:

- Hoover & Keith, Inc. Noise Control for Building Manufacturing Plant Equipment and Products. (7th printing), 1994.
- Bies D. and Hansen C. "Engineering Noise Control: Theory and Practice", 4th Edition Published by Taylor & Francis, 2009.
- GE Power & Water Power Generation Products CAE, Multi-Shaft 7HA.01 (7F-7 series) / D602 Estimate of Sound Power Levels at Base Load Technical Specification, rev 14-Jul, 2014 (document contains proprietary information).
- Edison Electric Institute, Electric Power Plant Environmental Noise Guide, 1985.
- National Electrical Manufacturers Association. NEMA Standards Publication No. TR 1-1993 (R2000) Transformers, Regulators and Reactors.
- International Organization for Standardization (ISO). Standard ISO 9613-2 Acoustics – Attenuation of Sound during Propagation Outdoors. Part 2: General Method of Calculation. Geneva, Switzerland, 1996.
- DataKustik GmbH. Computer-Aided Noise Abatement Model CadnaA, Version 4.3 Munich, Germany, 2014

Witness: Andrew J. Bazinet

Question Middlebury-11:

Explain the reason and difference in cost estimate for the "ULSD storage, previously two 40-foot tall tanks, [that is proposed to be changed] now one tank that will be 48 feet tall."

Response:

The number and size of tanks are not based on cost, and no cost differential has been calculated. Rather, CPV Towantic, LLC decided to retain the previously-approved total number of storage tanks (three), and adjusted sizing to allow for two of the tanks to contain demineralized water (see response to Q-Middlebury-12). The size of the remaining tank was then adjusted for appropriate storage of ULSD.

Witness: Andrew J. Bazinet

Question Middlebury-12:

Explain the reason and difference in cost estimate for the "The single water storage tank [that is proposed to be changed] two water storage tanks that are 42 feet tall."

Response:

As noted in the response to Q-Middlebury-11, the number and size of tanks are not based on cost, and no cost differential has been calculated. Rather, CPV Towantic, LLC decided to retain the previously-approved total number of storage tanks (three), and determined it would be beneficial to shift to use of two of the tanks for storage of demineralized water. The redundancy of having two separate water storage tanks safeguards against off-specification demineralized water. By splitting the total stored volume into two tanks, CPV Towantic could continue to operate on ULSD, during periods when needed to ensure reliability of the electric grid, despite the water in one tank potentially requiring additional demineralization to meet specifications.

Witness: Andrew J. Bazinet

Question Middlebury-13:

Describe in detail the significant benchmarks of the proposed Facility in intervals of six months beginning in June 1, 2015 including an estimate of the schedule for financing, permitting and construction to allow the completion of the Project by the proposed extension of the construction deadline of June 1, 2019.

Response:

June 1, 2015 – November 30, 2015: During this six month period CPV Towantic, LLC is expected to complete its permitting of the newly proposed design, will finalize commercial arrangements for the construction and long-term operation of the facility, and may obtain financing and commence construction.

December 1, 2015 – May 31, 2016: The project is expected to obtain financing (if not previously obtained) and to either commence or continue construction during this 6 month period.

June 1, 2016 – May 31, 2018: Notably there are four six month intervals within this period, however the activity expected during this time frame is all construction related and culminates with the project achieving commercial operation on or around June 1, 2018.

June 1, 2018 – June 1, 2019: The additional twelve months to complete construction, beyond the planned commercial operation date of June 1, 2018, is being requested to accommodate potential delays in achieving commercial operation due to factors beyond CPV Towantic, LLC's control.