Connecticut’s Comprehensive Energy Strategy

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Clean Energy Policy Framework

**Principles:**

- Create a flexible portfolio approach to clean
- Spur innovation in technologies, policy, incentives, and financing
- Drive “all cost effective” energy efficiency
- Push for “deeper” energy efficiency
- Move away from traditional “subsidy” approach to a “finance” model—using limited government resources to leverage private capital
- Establish a platform for entrepreneurial activity
- Focus on deployment at scale to lower costs
- Harness market forces to bring down rates
Builds on Legislative Action on Energy

- Creation of Department of Energy and Environmental Protection
- “Green Bank” low-cost financing
- Reverse Auctions to drive down costs
  - Zero Emissions Renewable Energy Credit
  - Low Emissions Renewable Energy Credit
  - Larger scale clean energy procurement
- Commercial Property Assessed Clean Energy (C-PACE) Program
- “Lead by Example” state and municipal energy efficiency program
- Utility performance standards
Strategic Energy Planning Process

1. Integrated Resource Plan
   - Forecasts trends in the electricity sector out to 2022
   - Established plan to save ~$534 million annually through increased energy efficiency spending

2. Conservation & Load Management Plan
   - Implements expanded budget for energy efficiency spending

3. Comprehensive Energy Strategy
   - Long-term vision out to 2050
   - Plan for all energy needs of the state, covering all fuels, all sectors, including: Buildings (Energy Efficiency), Industry, Electricity, Transportation & Natural Gas
CT’s First Comprehensive Energy Strategy

- Strategy to guide Connecticut policymaking toward the Governor’s vision of a cheaper, cleaner, and more reliable energy future
- All fuels, all sectors, planning out to 2050
- Five chapters: Electricity, Efficiency, Industry, Transportation, Natural Gas
- DEEP welcomes public comment and questions during public comment period October 5th–December 14th 2012
  - Series of technical meetings, and public hearings around the state
  - Comments can be submitted online or by mail
  - Full Draft Comprehensive Energy Strategy, underlying analysis, and hearing schedule available at www.ct.gov/energystrategy
Electricity Sector - Chapter Summary

• Over-arching goal is cheaper, cleaner, more reliable electricity
• More systematic policymaking, building on 2012 Integrated Resources Plan (IRP)
• Structure policy and incentives to drive down the cost of clean energy
• Advance strategies to drive down rates further:
  – Peak-load shaving
  – Dynamic pricing
  – Systems efficiency
• Ensure progress on resiliency
  – Tree-trimming
  – Infrastructure hardening
  – Microgrids & distributed generation
• Strengthen Connecticut’s Renewable Portfolio Standard (RPS)
Backdrop: CT Electricity Rates Falling

Avg Retail Electricity Price for CT (c/kWh)

Source: EIA
Generation Costs Are Projected to Keep Falling

Source: CT DEEP; CLP; Brattle Group Projections
Projections based on current commodity price projections; 2013-2017 projections for CLP service territory (80% of state)
Energy Efficiency - Chapter Summary

• Buildings represent 44% of energy consumption in CT

• Statewide Energy Efficiency Goals
  – Broader and “deeper” energy efficiency

• To achieve these goals, the state needs a major commitment to energy efficiency with new incentives:
  – Commercial Property Assessed Clean Energy (C-PACE)
  – On-bill financing
  – Decoupling and performance-based incentives
  – Time of use electricity pricing
  – Efficiency audit benchmarking and disclosure
Energy Efficiency Lowers Costs

- Participant Cost
- Program Cost
- Energy Savings
- Capacity Savings
- RPS Savings

2015
- Net Cost $107 M

2017
- Net Cost $5 M

2022
- Net Savings $534 M

2012 $ Millions

Net Cost
- $0
- $200
- $400
- $600
- $800

Connecticut Department of Energy and Environmental Protection
Improve effectiveness of efficiency programs
• Multi-year planning & budgeting
• Expand home & commercial energy service businesses
• Marketing campaign (Energize CT)
• Recruit low-income participation
• Harness competition

Foster private investment
• Commercial PACE
• On-bill financing
• Performance contracting
• Building labeling & disclosure

New business models to drive utility investment in efficiency
• Recommend decoupling plus performance-based return on equity
• Revise rate structures
• Peak load shaving
Industry Sector - Chapter Summary

• Accounts for 10% of the state’s total energy consumption

• Sector contributes $30 billion a year to Connecticut’s Gross State Product (GSP)—14% of GSP

• Proposes ways to help Connecticut businesses increase their competitiveness by lowering energy costs, for example:
  – Redesign efficiency programs
  – Encourage fuel-switching
  – Tailor incentives for combined heat and power projects

• Recommends creation of:
  – “Connecticut Energy Competitiveness Fund”
  – Clean Energy Innovation Hub
CT Regaining Competitiveness-Industrial

Percent Change in Average Price of Electricity-Industrial Sector May 2010-May 2012

Source: EIA
CT Regaining Competitiveness-Commercial

Percent Change in Average Price of Electricity-Commercial Sector May 2010-May 2012

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Transportation Sector - Chapter Summary

- Invest boldly to provide real transportation flexibility
- Ensure sustainable funding
- Promote diversity of mobility choices
- Lead and incentivize transit-oriented development
- Provide a technology neutral, clean fuels/clean vehicles “platform”
  - Electric vehicle charging station build-out
  - Opportunities for natural gas fleet replacements and fueling access for long-haul truckers
  - Basic commitment to hydrogen fuel cell technology
- Improved gasoline and diesel vehicle efficiency
- Improve transportation system efficiencies
  - Pursue all cost-effective efficiency measures
  - Vehicle, freight, and port infrastructure efficiency
Connecticut Department of Energy and Environmental Protection

Current State and Future Vision

**TODAY**
- Growing shortfall in federal transportation funding
- Long commutes, congestion
- Limited transportation options
- Inefficient vehicle stock
- Dominant fuel choice—oil
- Oil supply risks

**IMPACTS**
- Degrading infrastructure
- Major contribution to air emissions
- High gasoline costs
- Congestion costs

**CORE STRATEGIC ELEMENTS**
- Sustainable funding
- Enhanced Mobility
- Efficient technologies and fuels
- System efficiencies

**THE FUTURE**
- New funding models that advance transportation, energy, and environmental goals
- Improved quality of life, livability
- Economic development
- Shorter commutes, less congestion, fewer trips, more options
- Multiple fuel options—natural gas, electric, hydrogen fuel cell, etc.
- Highly efficient vehicles
- Cost-effective efficiency measures
- Freight and port infrastructure maintenance and optimization

Sustainable funding
Enhanced Mobility
Efficient technologies and fuels
System efficiencies

Growing shortfall in federal transportation funding
Long commutes, congestion
Limited transportation options
Inefficient vehicle stock
Dominant fuel choice—oil
Oil supply risks
Degrading infrastructure
Major contribution to air emissions
High gasoline costs
Congestion costs
New funding models that advance transportation, energy, and environmental goals
Improved quality of life, livability
Economic development
Shorter commutes, less congestion, fewer trips, more options
Multiple fuel options—natural gas, electric, hydrogen fuel cell, etc.
Highly efficient vehicles
Cost-effective efficiency measures
Freight and port infrastructure maintenance and optimization
Transportation: Critical Opportunities

1. Enhanced mobility
   - Support strategic growth along major transportation corridors, for example:
     - CTfastrak (New Britain to Hartford Busway),
     - New Haven to Springfield Rail
     - MetroNorth Rail Enhancements
     - Shore Line East service expansion
   - Invest in and promote alternative mobility options

2. Sustainable funding for transportation
   - Develop options for transportation funding

3. Clean fuels/clean vehicles platform
   - Promote adoption of high efficiency passenger vehicles
   - Develop baseline infrastructure for a variety of advanced fuel options

4. System efficiencies
   - Promote anti-idling, maintenance and expansion of traffic light synchronization
   - Preserve and enhance existing port services and markets
   - Identify opportunities for mode shifting of freight
   - Ensure strong regional coordination
Natural Gas Chapter-Summary

• Transformative emergence of lower cost shale gas in the energy market

• Cleaner and cheaper fuel
  – Burning natural gas instead of fossil fuels can reduce emissions of nitrogen oxides (NO$_x$) by 20-50%, sulfur oxides (SO$_x$) by up to 99%, and carbon dioxide (CO$_2$) by 25-30%
  – Conversion to natural gas offers ~50% heating cost savings in all sectors, creates jobs, and reduces emissions

• Current state of natural gas in CT:
  – Only 31% of the residential customers in CT use natural gas for heating
  – Limited availability
  – Natural gas infrastructure build-out strategy needed

• Multiple “tiers” of opportunity within the State:
  – ~220,000 residents and businesses are “on-main”
  – ~90,000 residents and businesses have potential for conversion
  – “Anchor loads” can be a cost-effective economic development strategy
Natural Gas in Connecticut Today

• In heating and industrial manufacturing, CT significantly lags surrounding states in the utilization of natural gas.

• Oil maintains a 50% market share in CT’s residential heating market, by comparison, fuel oil penetration in the entire US is only 7%.

• Natural gas’ share of the heating market is 31% with electricity and propane comprising the balance (15% and 4% respectively).

Sources: SNL; Energy Information Administration State Energy Data System (SEDS); Northeast Gas Association.
Natural Gas Build-Out Strategy

The Draft Strategy proposes to make gas available to as many as 300,000 additional Connecticut homes and businesses. Specifically, it calls for:

- Establishment of a thorough planning process for expansion
- Increased availability of financing options
- Alternative financing for low-income homeowners
- Flexible extension cost calculations
- Regulatory changes (i.e., extended payback periods)
- Alternative rate rider to pay customer main extension costs
- Construction of roughly 900 miles of gas mains
- Increased customer awareness
Technical Meetings-Dates

– All Technical Meetings held in Hearing Room 1 at DEEP’s New Britain office (10 Franklin Square):

• **11/14** Transportation (10:30 AM)
• **11/15** Electricity (9:00 AM)
• **11/16** Natural Gas (9:00 AM)
• **11/19** If necessary (9:00 AM)
• **11/27** Efficiency – Buildings (9:00 AM)
• **11/28** Efficiency – Industry (10:30 AM)
Public Hearing Dates

- **11/14/12**: Bridgeport 6:00 PM, City Common Chambers, Bridgeport City Hall, 45 Lyon Terrace
- **11/19/12**: New Haven 6:00 PM, Room G-2 Hall of Records, 200 Orange Street
- **11/20/12**: Hartford 9:00 AM, Phoenix Auditorium, DEEP Office, 79 Elm Street
- **11/20/12**: Storrs 6:00 PM, Room 106, UCONN – Center for Environmental Sciences and Engineering, 3107 Horsebarn Hill Road, Building 4 Annex, U-4210
- **11/26/12**: Torrington 6:00 PM, City Hall Auditorium – 140 Main Street, Torrington
Questions?

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