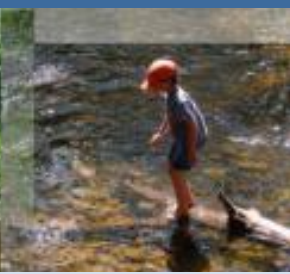




Connecticut Department of Energy and Environmental Protection



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

Connecticut's Comprehensive Energy Strategy

*Tracy Babbidge, Interim Bureau Chief
Bureau of Energy and Technology Policy*



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

Integrated Resource Plan

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

Conservation & Load Management Plan

- 2
 - Implements expanded budget for energy efficiency spending

Comprehensive Energy Strategy

- 3
 - 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



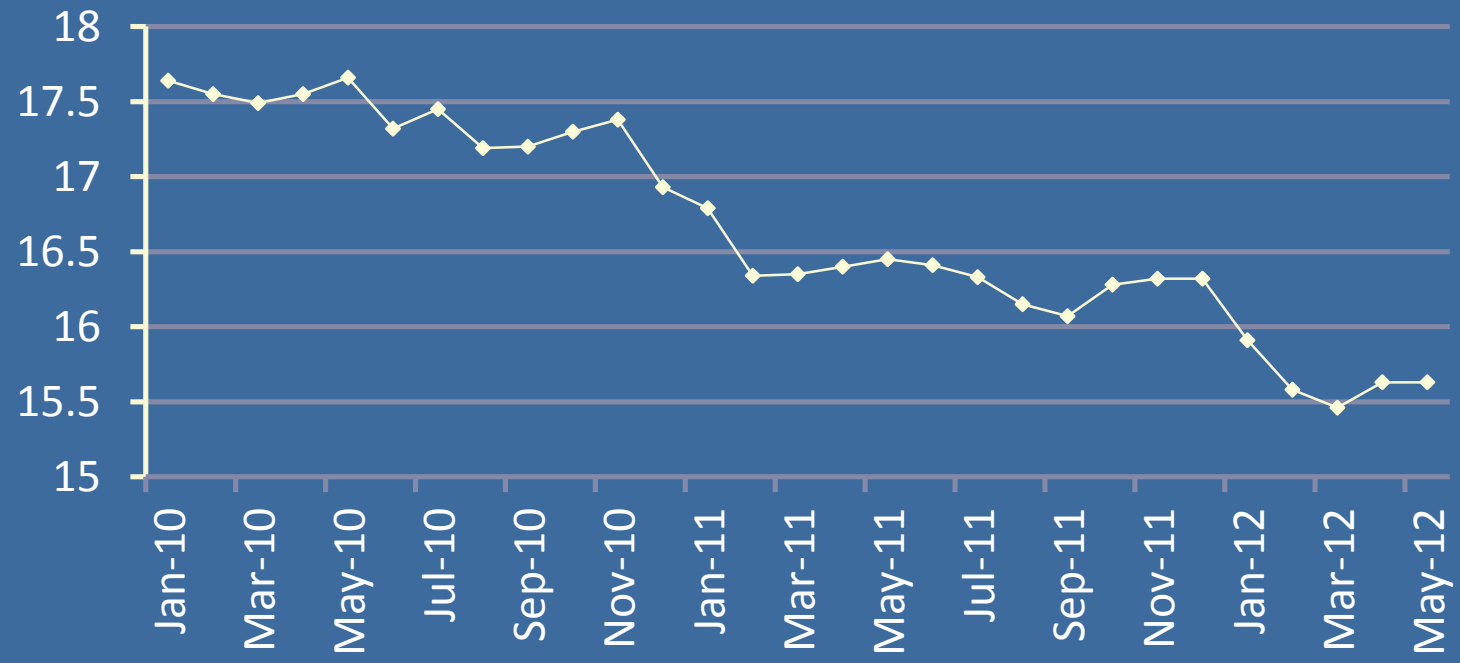
Electricity Sector - Chapter Summary

- 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

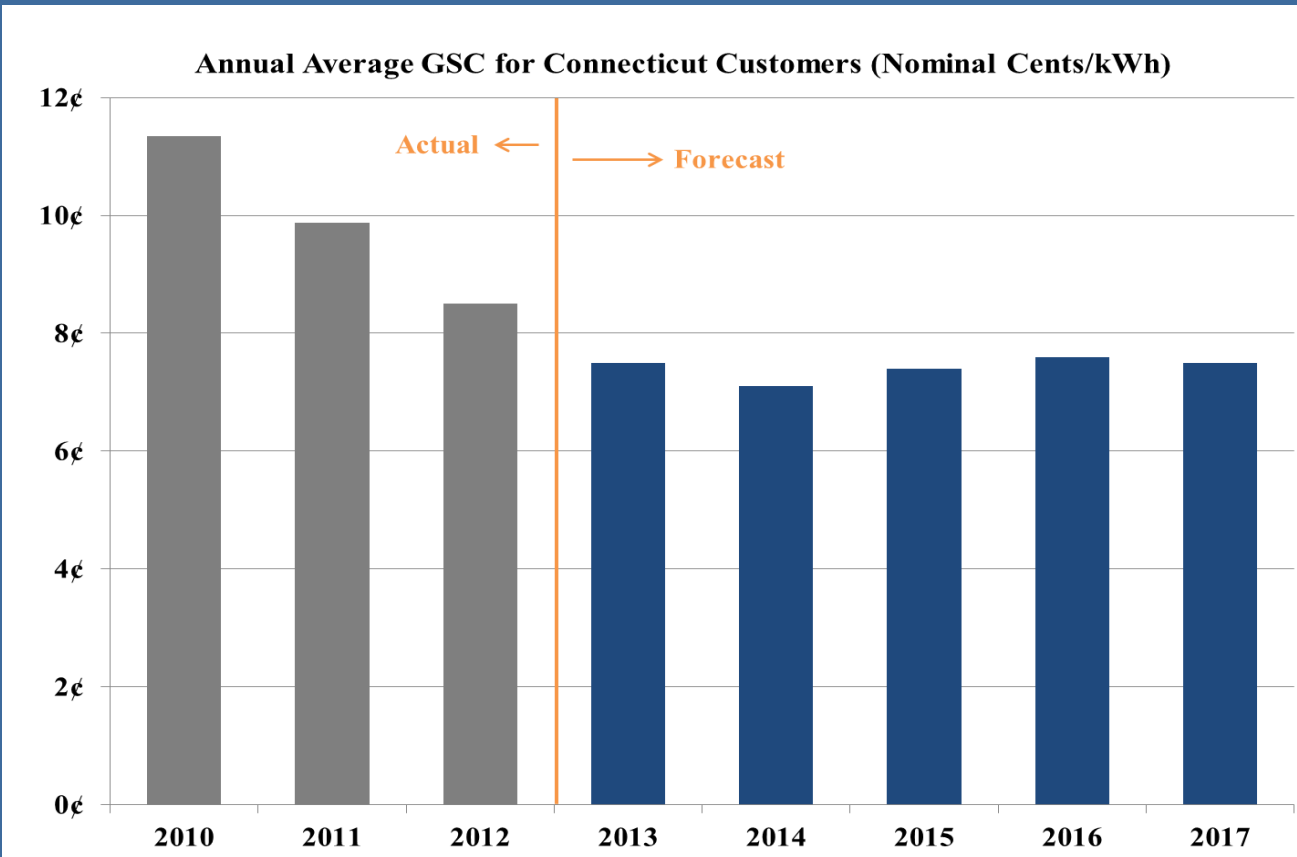
Avg Retail Electricity Price for CT (c/kWh)



Source: EIA

Connecticut Department of Energy and Environmental Protection

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)

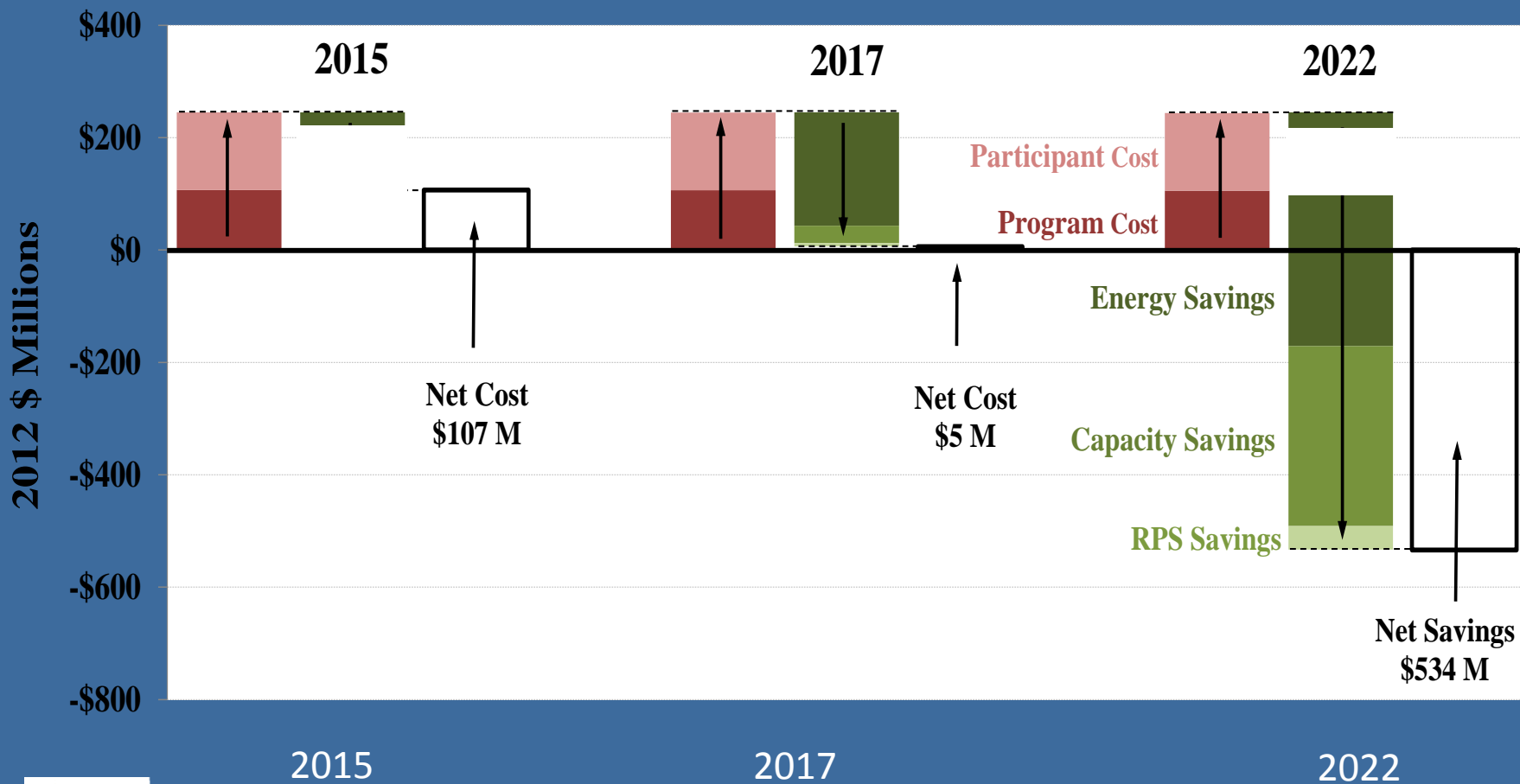


Energy Efficiency - Chapter Summary

- 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



Implementing Best Practices in Energy Efficiency

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



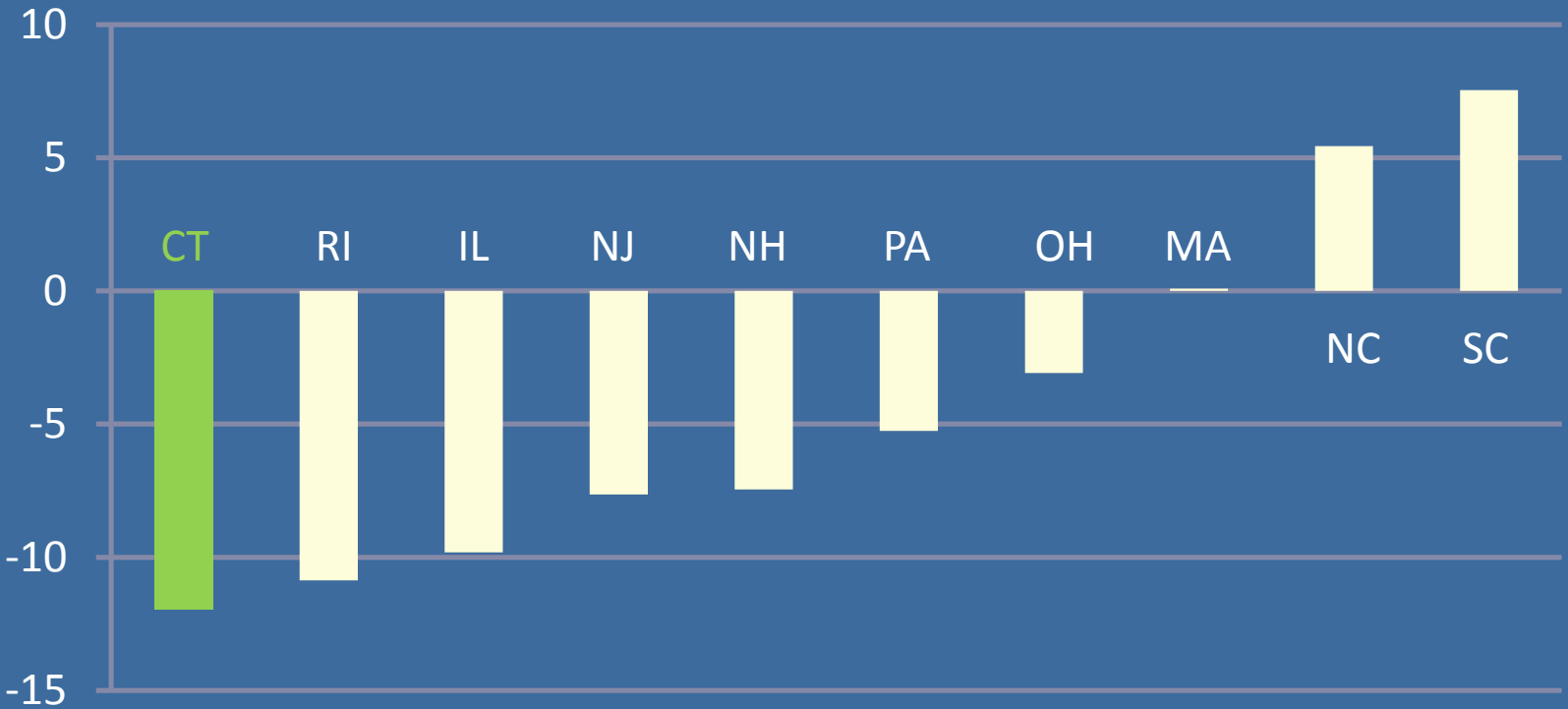
Industry Sector - Chapter Summary

- 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

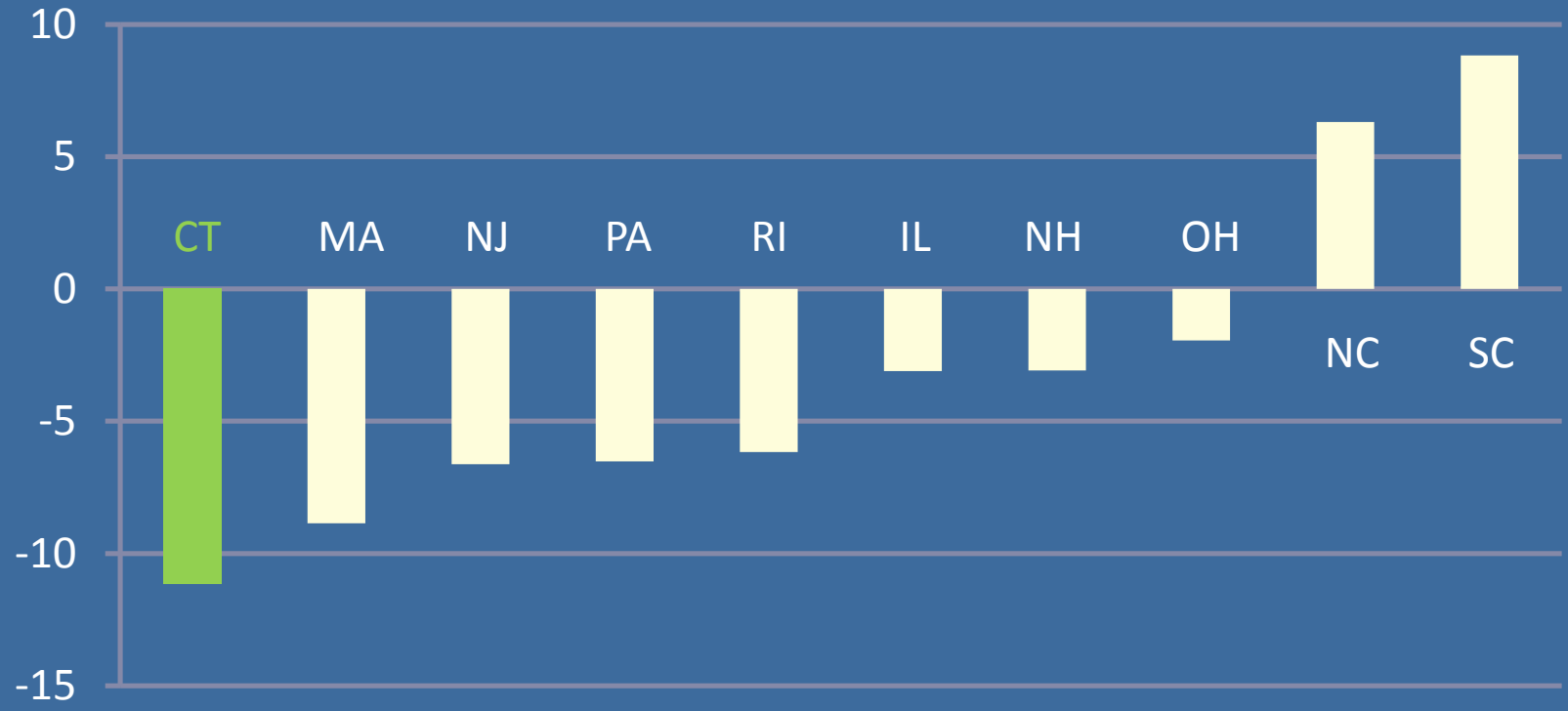
Percent Change in Average Price of Electricity- Industrial Sector May 2010-May 2012



Source: EIA

CT Regaining Competitiveness-Commercial

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



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



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



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



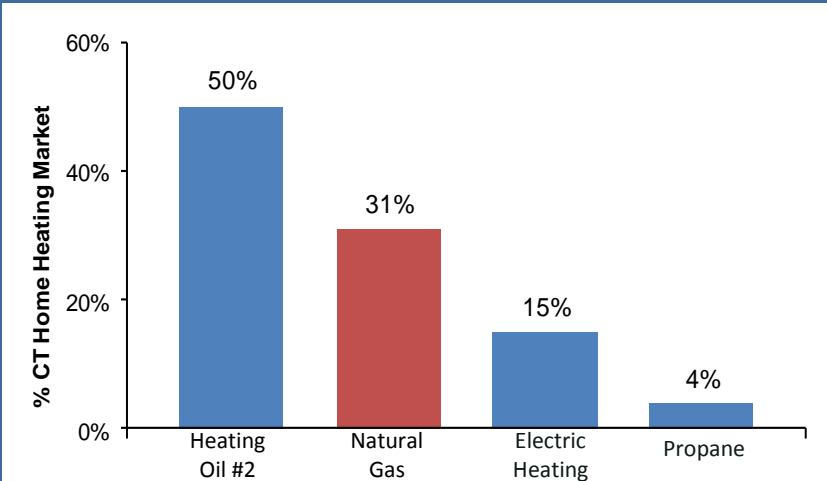
Natural Gas Chapter-Summary

- 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

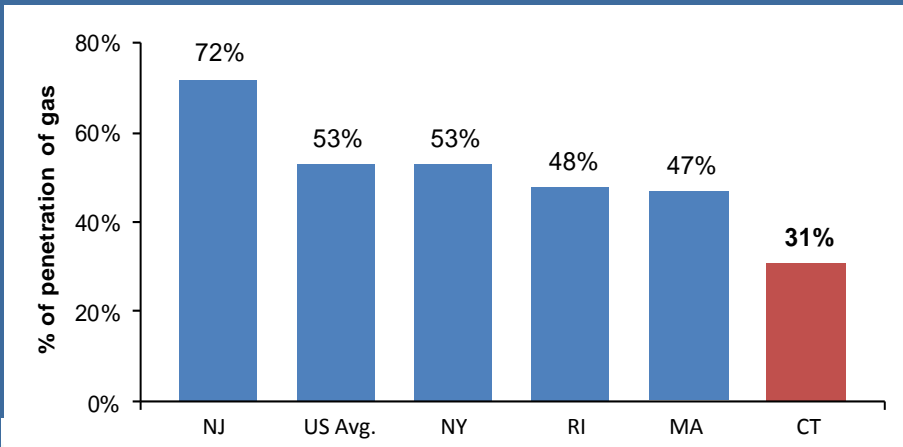


Natural Gas in Connecticut Today

CT Home Heating Market Penetration



Natural gas heating penetration



- 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?



tracy.babbidge@ct.gov

