



Connecticut Department of Energy and Environmental Protection



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

2016 Comprehensive Energy Strategy: *What's Changing*

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CT DEEP

21st Century Energy: What's The Deal?
CBIA Conference
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Connecticut Department of Energy and Environmental Protection

Electricity: Restructuring, 15 Years On

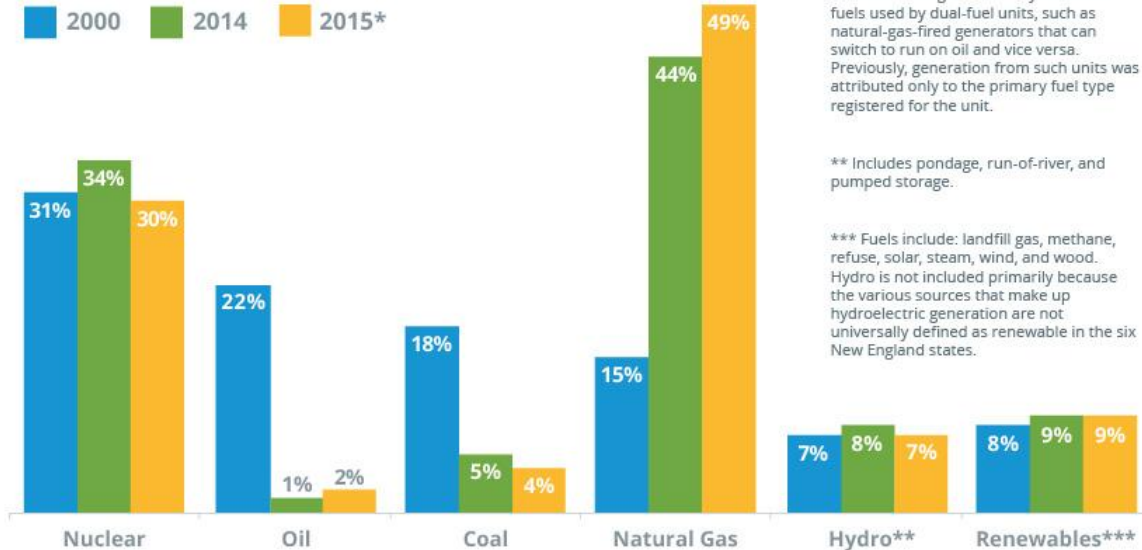
Objectives and Outcomes of Restructuring: Public Act 98-28

- Electric utilities sell off their generation assets; rely on competitive ISO-NE wholesale market to procure electricity
 - Shift risks from shareholders to ratepayers
 - Secure reliability at least cost through **fuel-neutral** market design
- Enable competition in retail electricity sales, to provide greater choice for CT ratepayers
- Maintain commitment to **fuel diversity**, clean energy sources through Renewable Portfolio Standard and efficiency programs



Electricity: Fuel Diversity

Percent of Total Electric Energy Production by Fuel Type

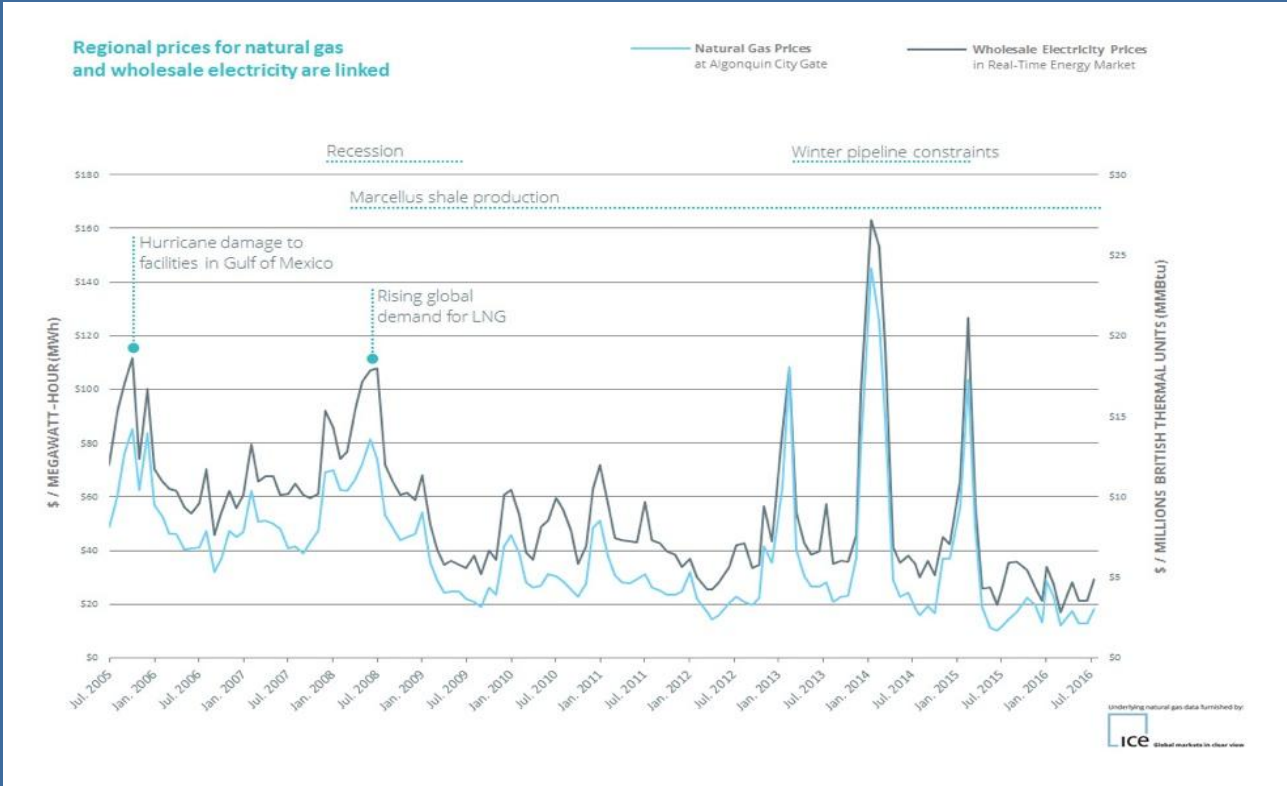


Source: ISO-NE



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Electricity: Fuel Diversity



Source: ISO-NE



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Electricity: Clean Energy at Least Cost

Market-based Programs Harness Competition to Reduce GHG Emissions

- **Malloy Administration Renewable Programs: 465+ MW in CT since 2011**
 - Five Competitive RFPs for grid-scale renewables since 2011, two currently pending for 15% of load
 - Reverse auction for LREC/ZREC program, open to broad range of Class I technologies
 - Declining schedule for Residential PV incentive program through CT Green Bank
 - Competitive RFP for Shared Clean Energy Facility projects, open to broad range of Class I
- **Regional Greenhouse Gas Initiative**
 - 45% reduction in CO₂ over 10 years
 - 8% increase in GDP
 - \$1.3 billion in net economic benefits just in last 3 years



Electricity: Challenges and Opportunities Ahead

- Continued need for decarbonization of electric grid: 75% renewable, 5% gas by 2050?
- Reliability challenges: climate change, cybersecurity, integration of intermittent renewables, natural gas reliance
- Fuel diversity: role of existing generation (nuclear, trash to energy) in electric system mix
- Integration of distributed clean energy into electric system planning
- Increasing transmission and distribution system costs
- Accommodating state public policy efforts within our deregulated market structure



Buildings: Opportunities for Families & Businesses

Energy Efficiency & Renewable Energy Investment

Doubled investment in electric efficiency; increase in natural gas efficiency investment. Continued lack of funding for oil efficiency.

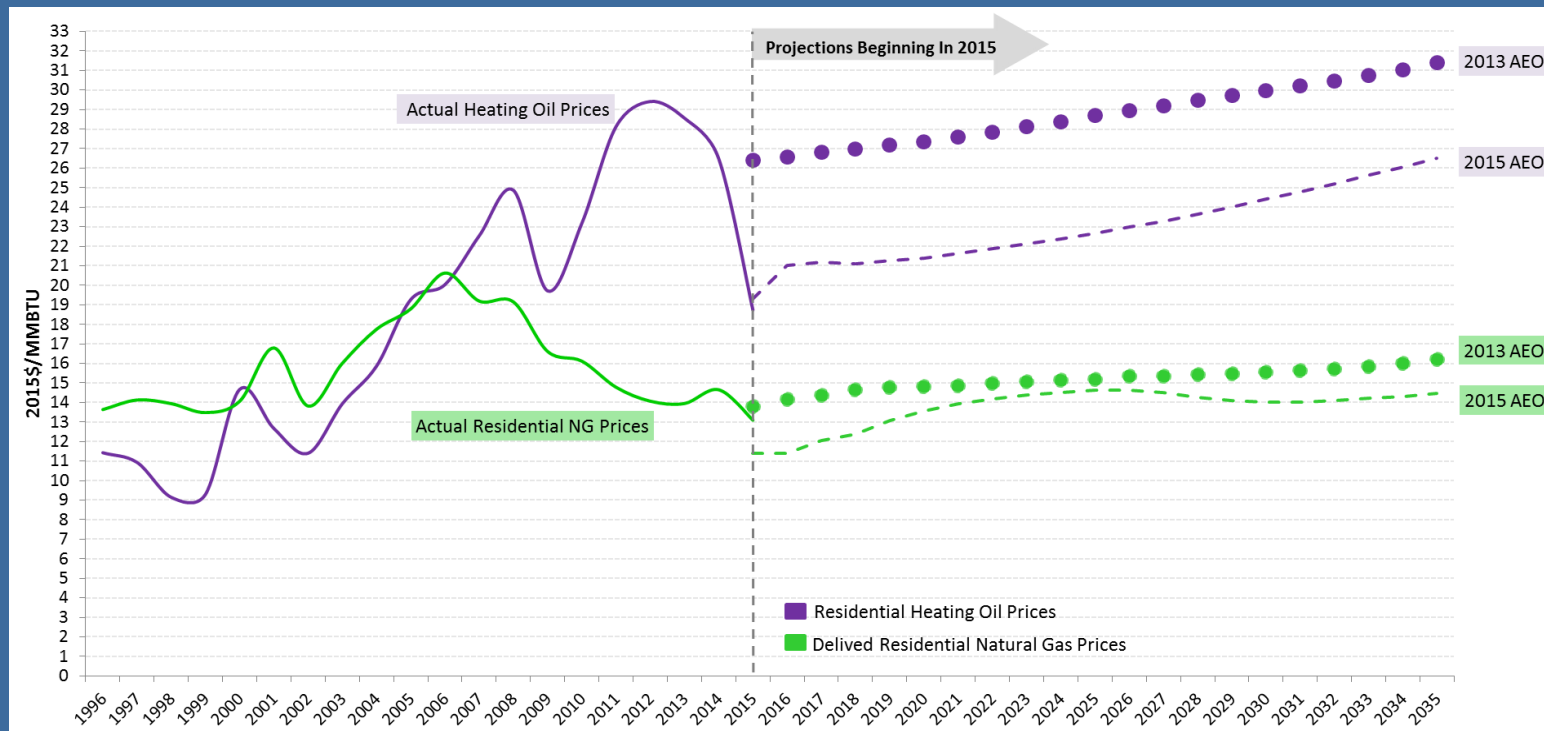
- ✓ More than 6,000 businesses and 980,000 households saved on their energy bills in 2015 through clean energy programs
- ✓ Nearly 39,000 homes weatherized *each year* through C&LM programs, including critical services to 20,000 low income homes
- ✓ Support 10,000 “green jobs” in our state
- ✓ Avoid building dirty, expensive fossil fuel power generation—equivalent to 500+ MW

Every \$1 of investment in state’s efficiency programs offsets \$2.80 of new generation and transmission projects

Every \$1 invested in CT Green Bank financing programs supports ~\$10 of private co-investment



Buildings: Opportunities for Families & Businesses



Buildings: Opportunities for Families & Businesses

Natural Gas Expansion Program

“[M]ake it easier for many Connecticut residents and businesses to take advantage of the opportunity to heat with lower cost and cleaner burning natural gas – *if they would like to do so.*”

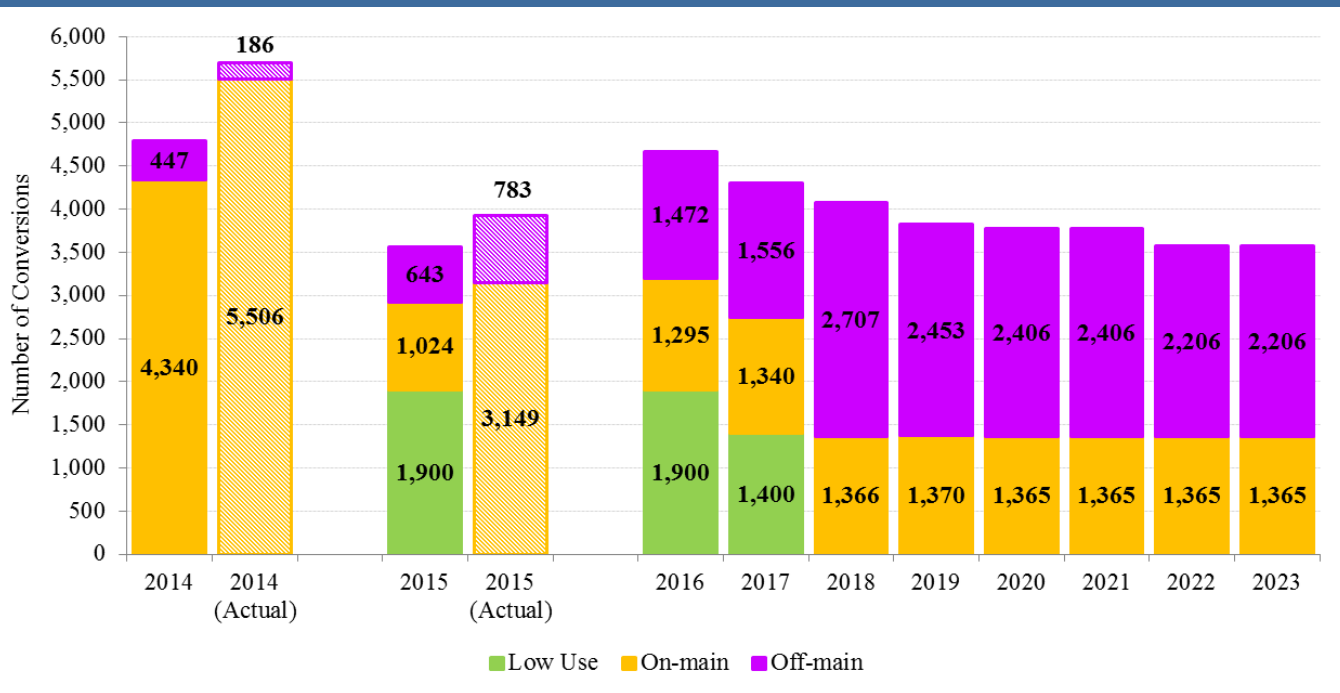
- ✓ Enable “portfolio” expansion projects
- ✓ Encourage municipal partnerships
- ✓ Safeguard against rate increases for *existing* gas customers (below 0.2% to date)
- ✓ Establish low-cost financing
- ✓ Ensure adequate capacity to serve new gas customers

38,000 residents and businesses switched to natural gas in 2014 and 2015, representing 76% of gas utilities’ original targets, and 103% of adjusted targets



Buildings: Opportunities for Families & Businesses

Natural Gas Conversions, Commercial & Industrial Sector



Buildings: Opportunities for Families & Businesses

Renewable Thermal Opportunities

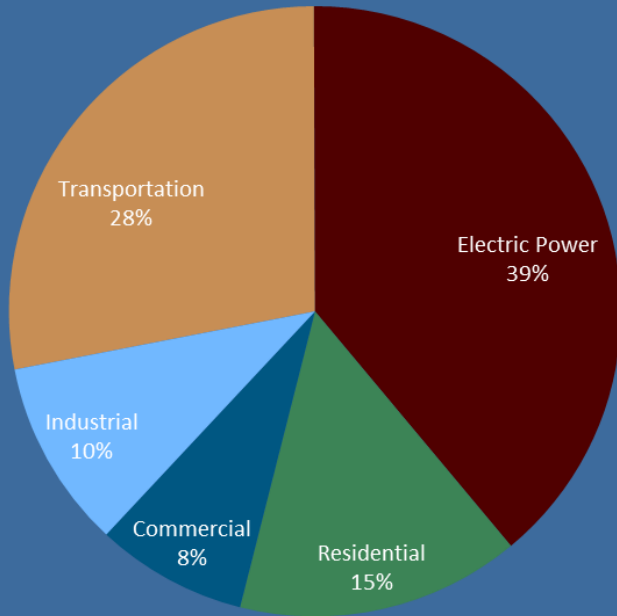
Another choice for Connecticut families and businesses

- ✓ Rebates currently available through EnergizeCT.com
- ✓ Models and lessons learned from other states' incentive programs
- ✓ Technical and economic potential
- ✓ ASHP: maintaining backup heating systems; appropriate equipment efficiency standards
- ✓ Ensuring competitive electricity rates

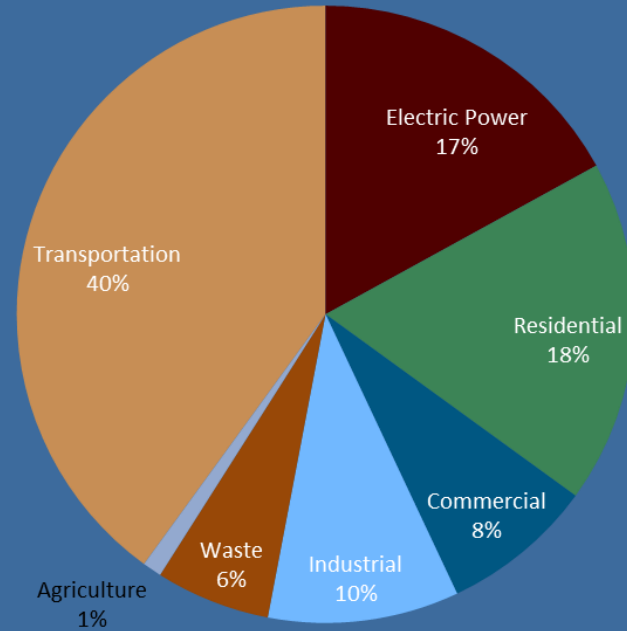


Transportation

Energy Consumption by Sector

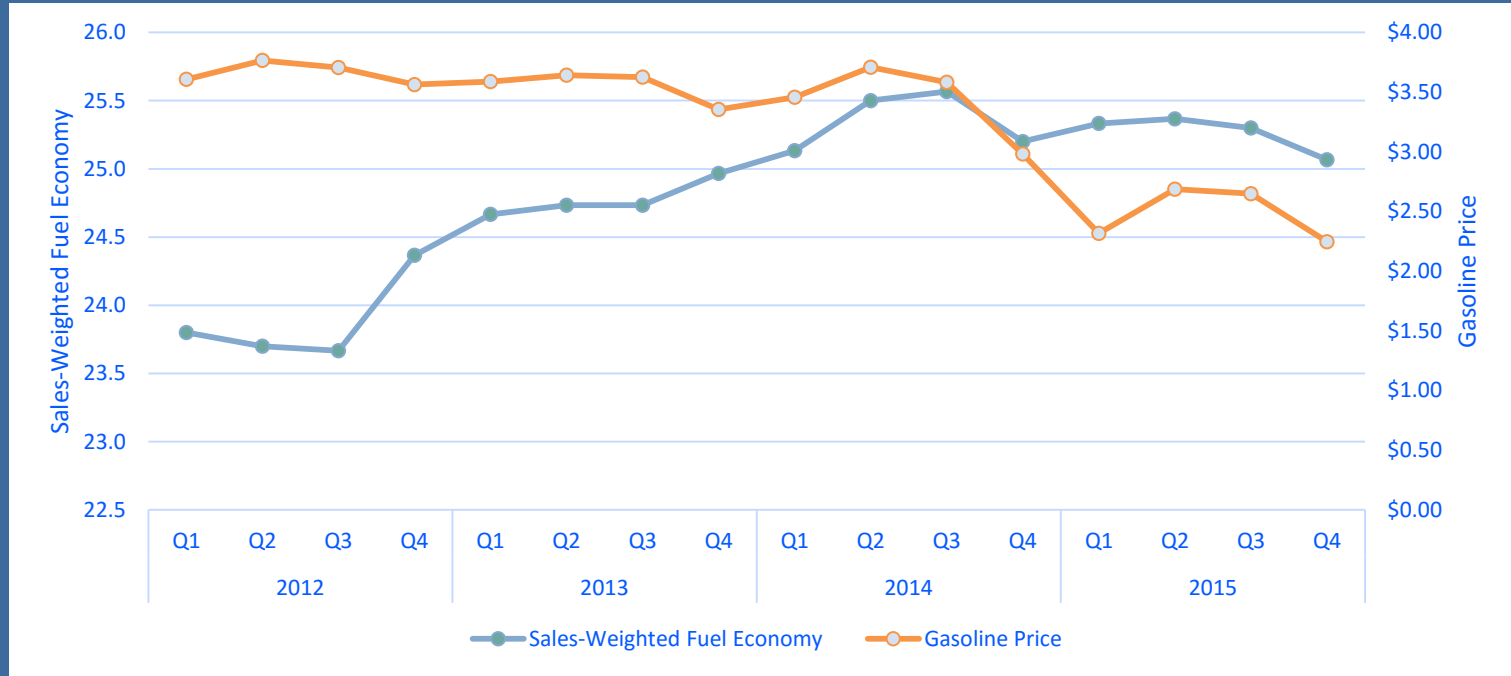


Distribution of GHG Emissions by Sector



Transportation

Sales-weighted fuel economy and gasoline prices, 2012-2015



Transportation

