

Energy and Technology Committee Informational Meeting

February 5, 2019

Katherine Dykes
Commissioner
Connecticut Department of Energy and Environmental Protection



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

1

Bureau of Energy and Technology Policy

Office of Energy Supply & Infrastructure

- Focuses on energy supply-side issues including electricity, natural gas, renewables and associated infrastructure (ie. transmission, natural gas pipelines, distribution networks)

Office of Energy Demand

- Focuses on energy efficiency programs including, federal weatherization, utility sponsored investments, and the state's "Lead by Example" programs.

Office of Climate Change and Innovation

- Focuses on the state's climate change programs including oversight of the Governor's Council on Climate Change, the Regional Greenhouse Gas Initiative (RGGI), compliance with the Global Warming Solutions Act (GWSA), emerging energy technologies and energy information.



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

2

Energy planning and implementation



Comprehensive Energy Strategy

The Department of Energy and Environmental Protection (DEEP) developed the first-ever Comprehensive Energy Strategy for the State of Connecticut – an assessment and Strategy for all residential, commercial, and industrial energy issues, including energy efficiency, industry, electricity, natural gas, and transportation.



Conservation & Load Management Plan

Every three years, Connecticut's utilities develop and implement an energy efficiency investment plan for the CT Energy Efficiency Fund (CEEF). The CEEF is funded by various sources, including customer contributions, the Regional Greenhouse Gas Initiative (RGGI) and the ISO New England Forward Capacity Market. The CT Energy Efficiency Board (EEB) advises and assists the utilities in the development of the plan. DEEP then reviews and approves or modifies the CEEF's plans and budgets in order to achieve cost-effective energy savings across the state.



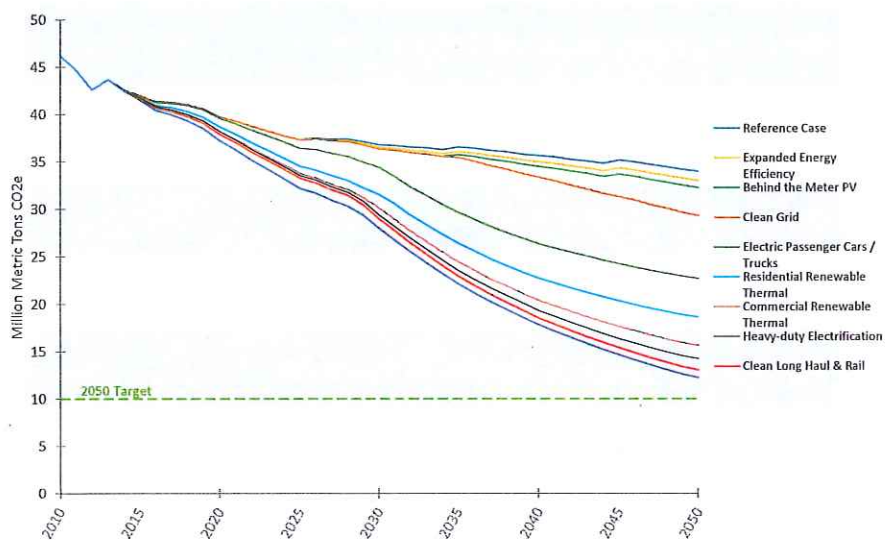
Integrated Resource Plan

The Integrated Resource Plan is a biannual assessment of Connecticut's future electricity needs, and a plan to meet those needs through a mix of generation and energy efficiency.



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

Emission reductions= energy transformation



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

Taking Action: Efficiency Investments



ENERGY SAVINGS

In 2018, clean energy in Connecticut resulted in energy savings equal to one 135 MW power plant. This is enough energy to power approximately 56,000 homes for a year.



\$65 MILLION IN CT TAX REVENUES

Generated from individual, corporate, and sales tax revenues per year as a result of clean energy programs and services.



608,000 CUSTOMERS BENEFITTED

Annually, 102,000 through programs for families, businesses, municipalities and other institutions ranging from energy assessments, efficient appliances, weatherization, solar PV installations, efficient lighting, heating and cooling, process improvements, thermal insulation, education and financing. 506,000 through retail lighting product incentives.



\$6.4 MILLION IN PUBLIC HEALTH COSTS SAVED

Clean energy reduces emissions and pollutants resulting in healthier and cleaner air.⁴



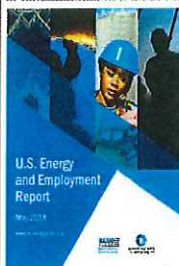
\$6.4 MILLION IN PUBLIC HEALTH COSTS SAVED

Clean energy reduces emissions and pollutants resulting in healthier and cleaner air.⁴

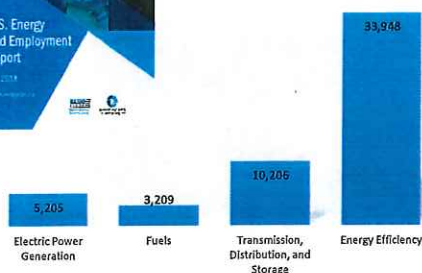


Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

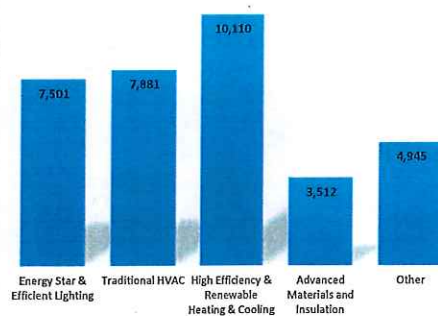
Energy Efficiency as an economic driver



CT Employment by Major Energy Technology



38,000 CT Clean Energy Jobs, of which 34,000 are Energy Efficiency Jobs



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

Accelerating Lead by Example program



Over 200 projects completed or in design



\$4 million in annual cost avoidance



90% of all **state owned** and leased buildings (~3,800 buildings) have been identified and established in EnergyCAP



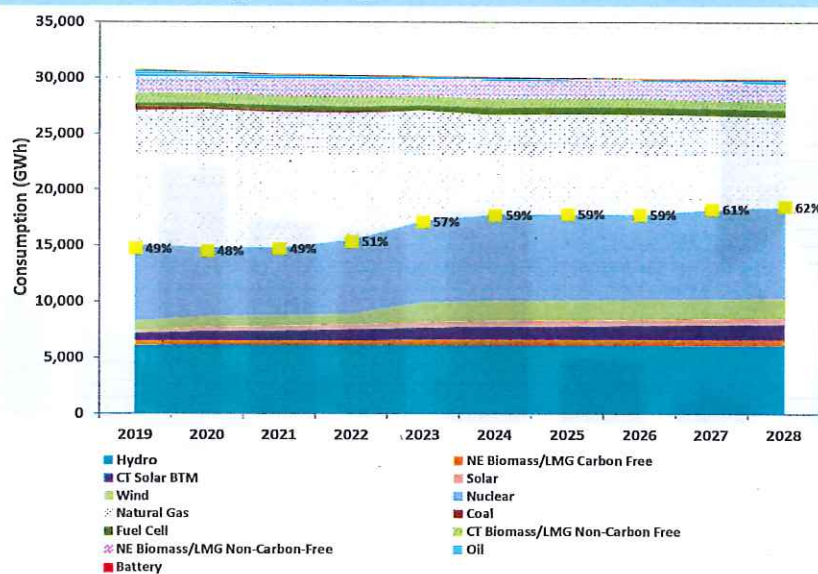
Purchased competitive electricity supply for all agencies at pricing below standard offer



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

7

Decarbonizing our grid resource mix



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

8

Seizing opportunities in offshore wind

Regional commitments and selections

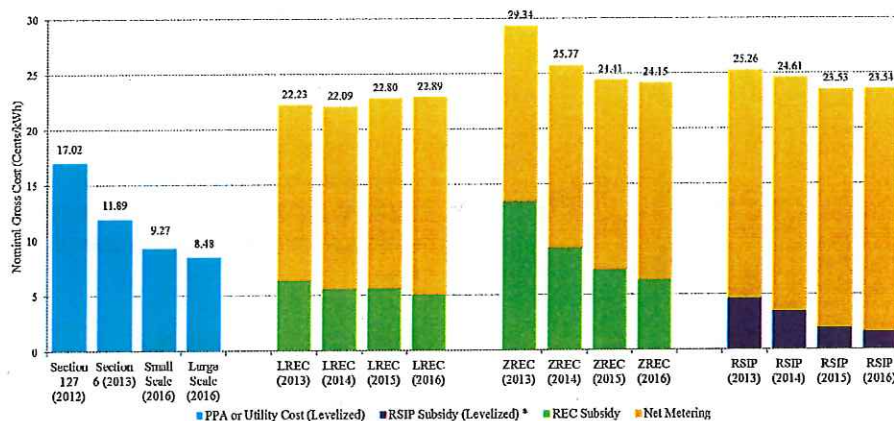
State	MW of OSW	% of state load
CT	304 MW selected in 2018	4.5%
MA	1600 MW goal by 2027 800 MW selected in 2018	13.35%
RI	400 MW selection in 2018	23.72%
NY	9,000 MW goal by 2035	25%



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

9

New models for sustainable, cost-effective solar



* Average cost for RSIP was levelized over 20 years for Purchased Residential PV systems and not leased systems.



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

10

Transitioning to electric transit for all

To meet our climate goals, by 2030:

- 20% (500,000) of light-duty fleet needs to be electric by 2030, 95% (2.6 million) by 2050
- 30% of buses and light commercial trucks should be electric by 2030, 80% by 2050

To do that, we need to ensure:

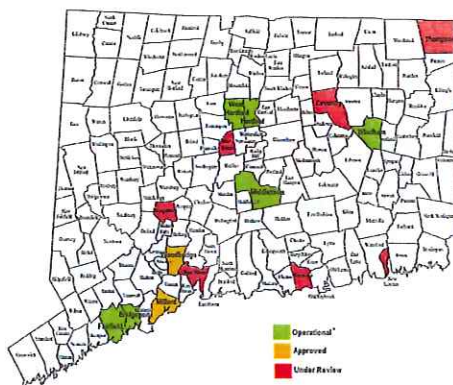
- ZEVs are affordable
- Vehicle charging infrastructure
- Longer-term transit-oriented development



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

11

Improving Grid Reliability and Resiliency



*Bridgeport and Middletown both have 2 projects in each town. In each town, one project is operational and the other is approved but not yet operational. Middletown and Hartford also have one project under review in each town.

- ✓ Support ISO NE improving regional winter natural gas generation fuel security and reliability
- ✓ Continue to deploy community **microgrids** to support statewide resiliency goals in strategic locations and support the Energy Assurance Plan.
- ✓ Ensure **coastal resiliency** of substations and other critical grid infrastructure to support DEEP's flood management goals.



Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

12

Modernizing the grid



Key elements:

- Expand data collection on electric vehicle and renewable thermal load shape and flexibility
- Explore rate structures that encourage off-peak electric use and incent EV and RTT adoption
- Develop a transparent process for the EDCs to consider non-wires alternatives
- Quantify and transparently communicate the distribution system benefits provided by DERs
- Conduct or expand pilots on solutions that can lower or meet peak demand, including demand-response and energy storage
- Investigate costs and benefits of upgrading EDC communications and metering infrastructure, analytical capabilities, and billing and other back-end systems
- Establish statewide data standards for cybersecurity and interoperability
- Require EDCs to plan for integration of new beneficial electric loads
- Require EDCs to plan for adaptation of the distribution system in the face of climate change

