



# Connecticut Department of Energy and Environmental Protection



# GC3 Meeting

February 26, 2018  
2:00 — 4:00 p.m.



# Agenda

**2:00**

Welcome & Announcements  
*Rob Klee, GC3 Chair, Commissioner of DEEP*

**2:05**

Overview of CES and Legislative Proposals *Mary Sotos,  
Deputy Commissioner of Energy, DEEP*

**2:25**

Statement of Principles Discussion  
*Rob Klee, Commissioner of DEEP, GC3 Chair*

**2:50**

Framework and Timeline for Final Report  
*Keri Enright-Kato, DEEP*

**3:00**

Near-term Opportunities and Mid-term GHG Reduction  
Policy Discussion  
*Rob Klee, Commissioner of DEEP, GC3 Chair*

**3:30**

Public Comments



# 2018 Comprehensive Energy Strategy and Legislative Proposals



# A Blueprint for Action



Over **90 percent** of Connecticut's GHG emissions are related to energy usage.

The 2018 CES sets forth bold but achievable steps to meet GHG reduction goals, while containing costs to ratepayers.

The CES, along with the work of CIRCA and the GC3, form the foundation for two Governor's proposals this session, one focused on **planning and resiliency**, and the other focused on **Connecticut's energy future**.



# Comprehensive Energy Strategies 1-4



1. Ensure sustainable and equitable ***funding for energy efficiency.***



2. Advance ***market transformation*** of the energy efficiency industry.



3. ***Grow and sustain renewable and zero-carbon generation*** in the state and region.



4. ***Expand deployment of all cost-effective distributed generation*** (“behind the meter”) in a sustainable manner.



# Comprehensive Energy Strategies 5-8



5. Continue to improve **grid reliability and resiliency** through state and regional efforts.



6. Reduce transportation greenhouse gas emissions by accelerating the adoption of **low- and zero-emission vehicles** and strengthening alternative-fueling infrastructure.



7. Increase **mobility, connectivity, and accessibility** by advancing smart-growth, mixed-use transit-oriented development, and innovative transportation partnerships.



8. Modernize the grid.



# Ensure sustainable and equitable funding for energy efficiency



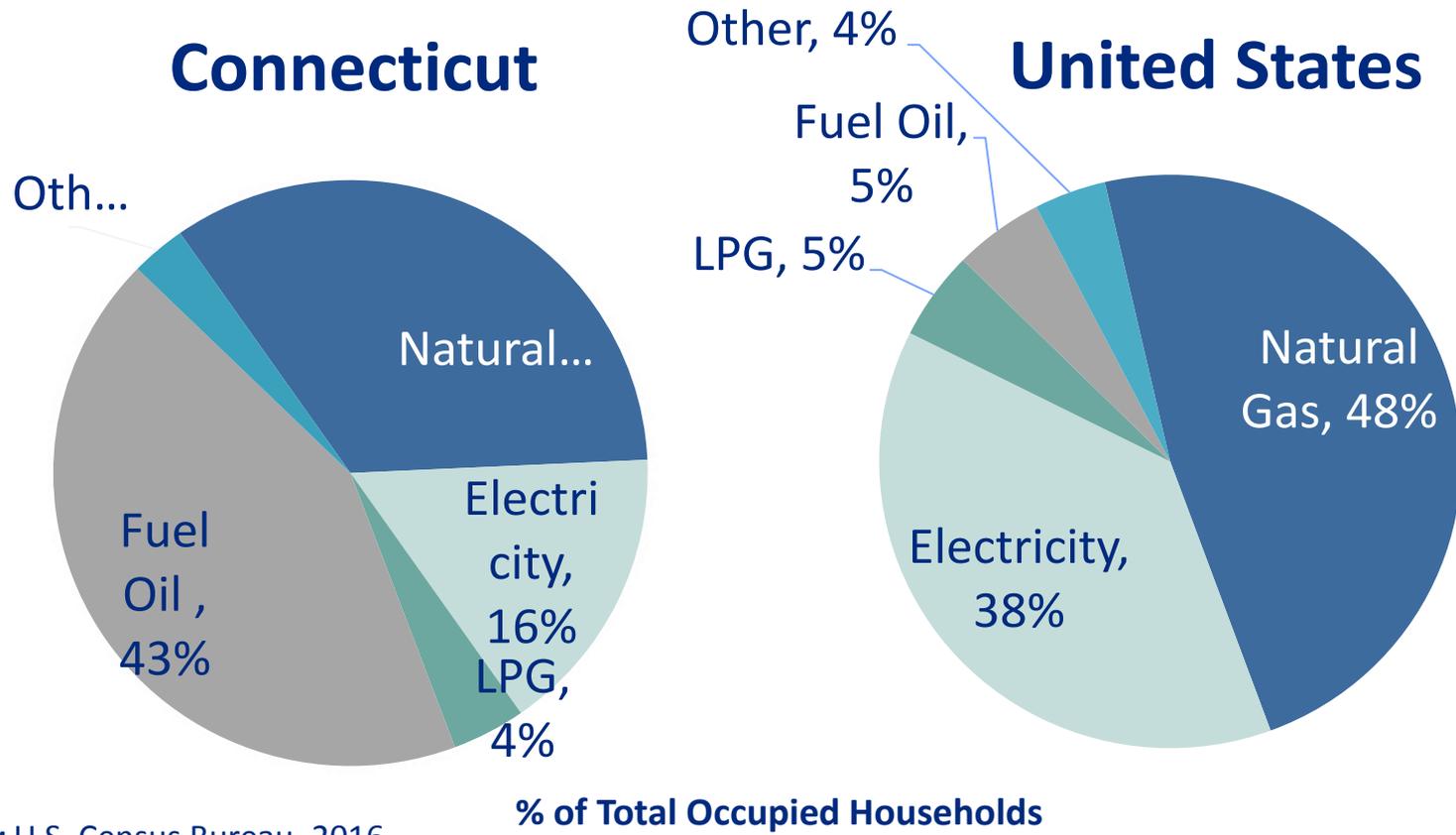
- ✓ Implement sustainable funding for energy efficiency
- ✓ Find equitable solutions for oil and propane conservation
- ✓ Reduce the energy burden of low-income households
- ✓ Address health and safety barriers to further unlock efficiency and create healthier homes
- ✓ Catalyze the competitiveness of Connecticut's businesses with increased energy productivity





- ✓ Integrate energy efficiency with real estate market forces.
- ✓ Develop a sustainable workforce to meet industry demand
- ✓ Standardize efficiency with energy performance codes, standards, and certifications
- ✓ Transition to cleaner thermal fuels and technologies

# Context: How We Currently Heat our Homes



Source: U.S. Census Bureau. 2016.



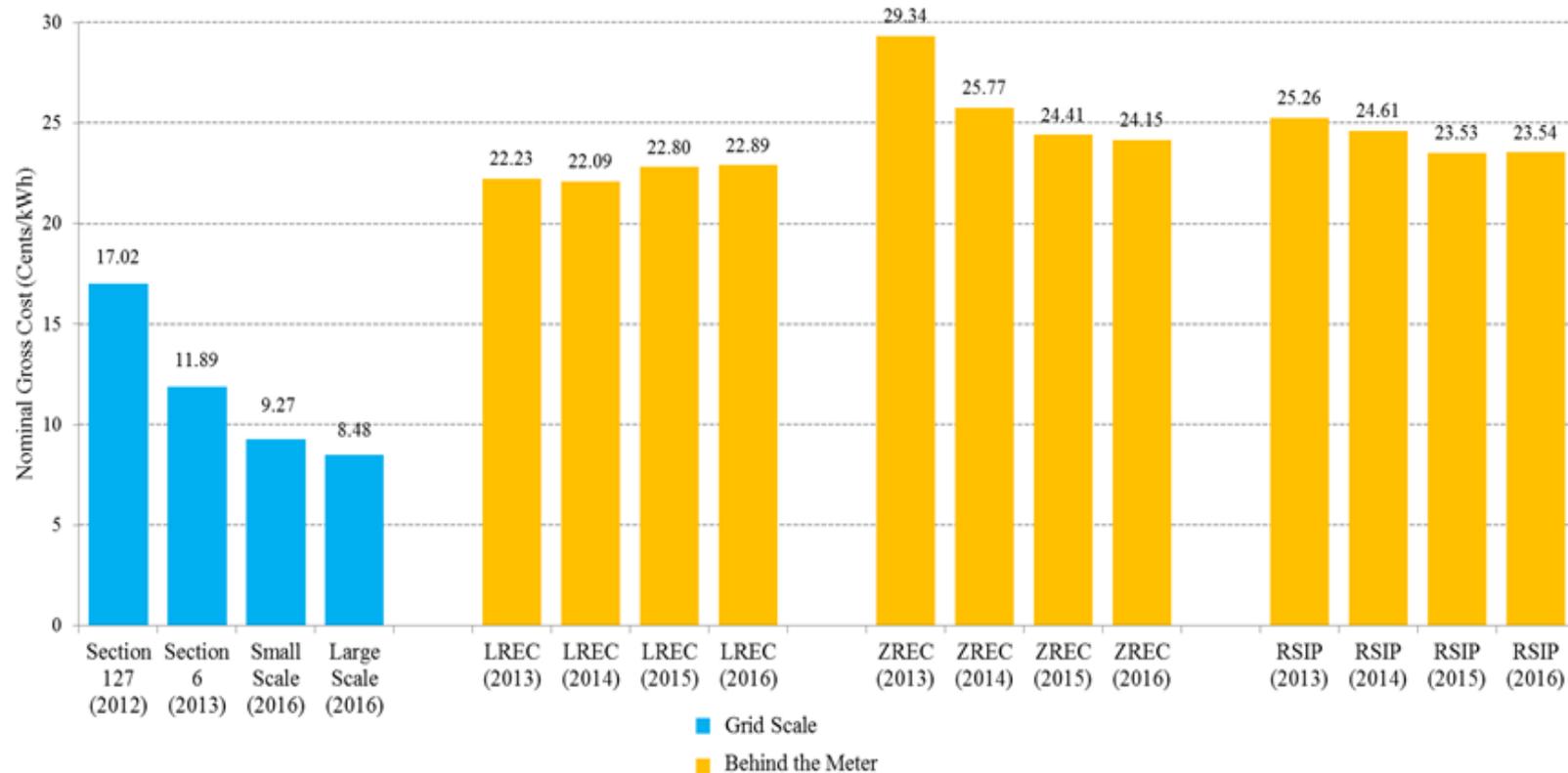
# Grow and sustain renewable and zero-carbon generation



- ✓ Increase the Renewable Portfolio Standard to 40% by 2030
- ✓ Use existing procurement authority for regional nuclear and hydropower resources
- ✓ Continue procuring grid scale renewables based on needs determined in the Integrated Resources Plan in a cost-effective and environmentally-sustainable manner
- ✓ Phase down biomass and landfill gas RECs in Connecticut's Class I RPS



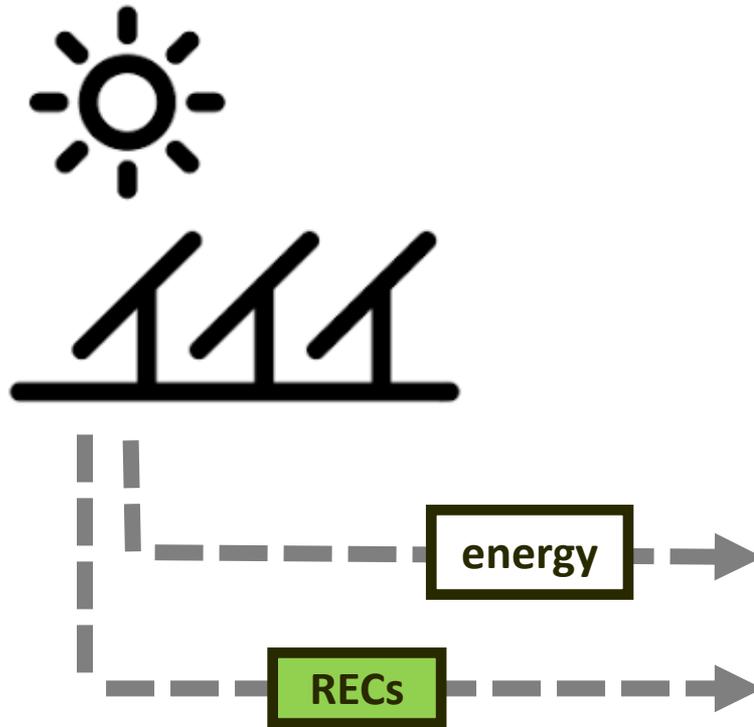
## Declining Cost of Clean Energy Programs, Behind the Meter and Grid Side (nominal dollars, 2012-2016)



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



# Expand cost-effective distributed generation



Net Metering

SHREC

LREC/ZREC

Virtual Net  
Metering



# Increase Access, Reduce Costs

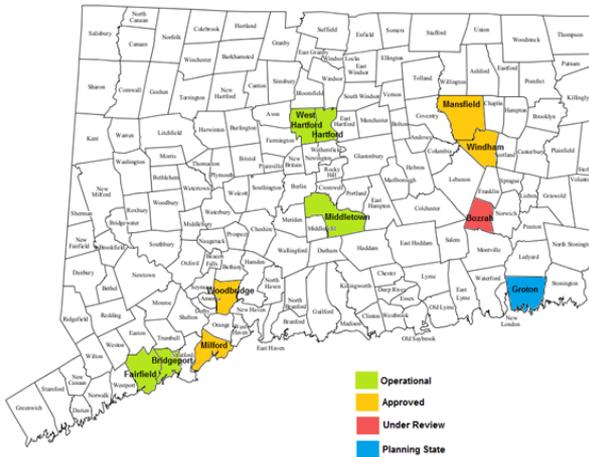


- ✓ Grandfather existing distributed generation systems
- ✓ Determine total authorized utility spending for all distributed generation tariffs
- ✓ Designate consumer categories within the spending cap
- ✓ Hold semi-annual competitive solicitations for Low and Zero Emission Tariff categories
- ✓ Integrate a statewide shared clean energy program into the new LREC/ZREC auctions
- ✓ Enhance transparency of voluntary renewable energy products
- ✓ Establish renewable generation rates for residential customers



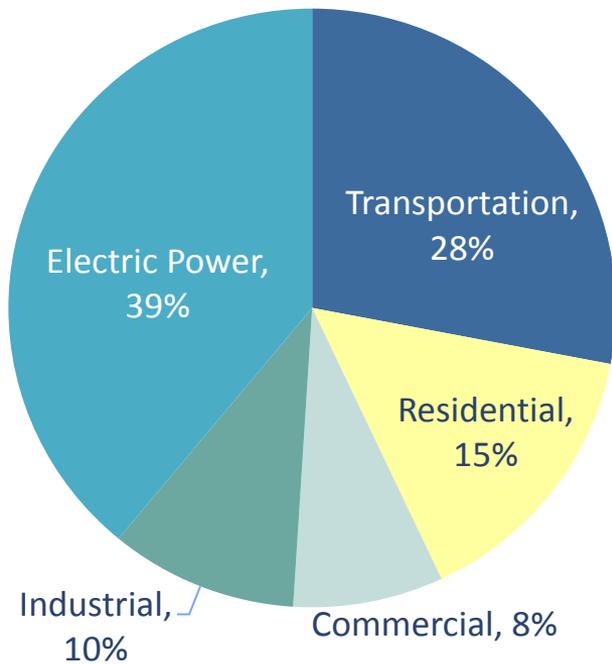
# Improve Grid Reliability and Resiliency

- ✓ 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.

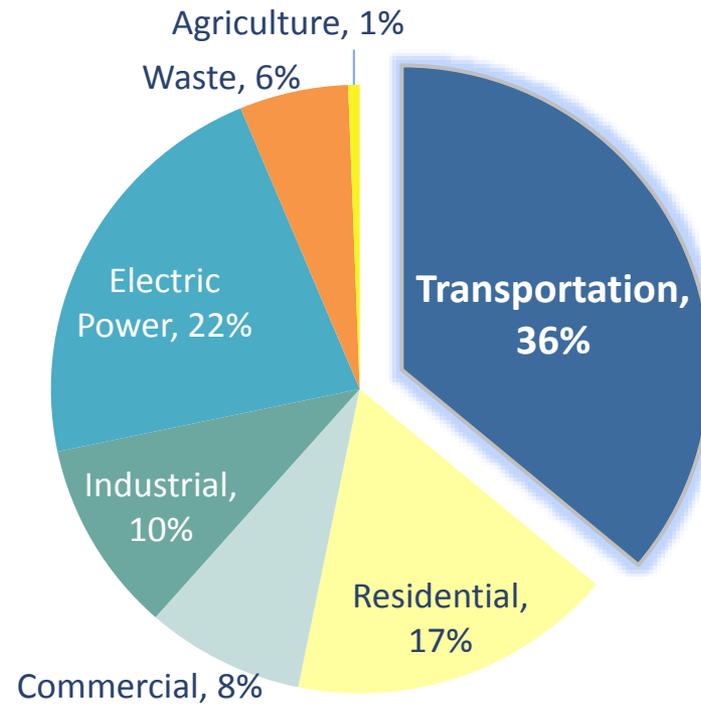


# Current Consumption and Emissions Trends

## Energy Consumption by Sector



## GHG Emissions by Sector



# ZEVs needed for a 45% GHG reduction by 2030

	2020	2030	2050
45% below 2001 by 2030			
# of ZEVs	70,000	750,000	2,600,000
% of Fleet	3%	32%	95%

Note: numbers are approximate based on modeling assumptions



# ZEVs, Infrastructure and Transportation Planning



- ✓ Develop an EV Roadmap, that includes a review of sustainable incentive funding models and, in collaboration with PURA, examines the appropriate regulatory framework for EV deployment in CT.
- ✓ Increase EV uptake through consumer education and new fleet purchasing models.
- ✓ Facilitate state and regional transportation planning that improves system efficiency and reduces vehicle miles traveled.



# Modernize the Grid



- ✓ Initiate grid modernization proceedings
- ✓ Integrate efficiency, storage and renewables to manage peak demand
- ✓ Ensure interoperability of demand response communications between buildings and the grid
- ✓ Apply best practices from the federal Grid Modernization Lab Initiative



# Legislative Priorities



***“We have to lower carbon emissions everywhere. We have to once again make Connecticut a national leader in green energy.”***

***-Governor Malloy, State of the State Address, Feb. 7., 2018***

- 45% GHG Reduction by 2030
- 40% Class I RPS by 2030
- Science-based climate resiliency planning
- Cost effective distributed generation programs
- Commitment to Energy Efficiency and the CT Green Bank



# Statement of Principles



# Agreed Upon Themes

- Modernize and transform the building, electric, and transportation sectors.
- Largest and least cost reduction measures that are proven and scalable.
- Co-benefits such as improved health, economic development, energy security and independence, and quality of life.
- Fairness, equity, justice, and intergenerational costs.
- Engagement
  - all levels of government, private sector, individual citizens, civic organizations, religious groups, non-governmental organizations, and other members of civil society
- Maximize synergies between mitigation and adaptation measures
- Regular review process



# Discussion

- Achieving steep reductions within a short timeframe
- Negative and positive impacts of measures
  - ❖ Direct economic costs to families and businesses (increase electricity and fuel costs)
  - ❖ Economic growth/job creation
  - ❖ Health
  - ❖ Equity and fairness (race, class, geographic, generational)
  - ❖ Cost of inaction



# Framework and Timeline for Final Report



# 2030 Climate Framework

The 2030 Climate Framework should signal government, the private sector, non-governmental organizations, and individuals to implement actions that align with the recommended sector specific GHG reductions targets and strategies.



# 2030 Climate Framework

- Develop a 2030 climate framework to achieve a 45% reduction in GHG emissions. The framework will coordinate and leverage existing and ongoing efforts and identify a suite of new policy options to accomplish the State's climate goals
- The framework will ensure the state is on a sustainable path to achieve its 2050 vision of reducing GHG emissions 80% below 2001 levels.
- The framework emphasizes that there is no single solution but rather a balanced mix of strategies that lead to meaningful emission reductions and which provide the greatest level of certainty in meeting the state's GHG reduction targets.
- The framework will include sector specific targets and a suite of policy options to meet the state's 2030 mid-term target.



# 2030 Climate Framework

**Electric Sector** [X% carbon reduction/tons of CO<sub>2</sub>e reduced]

High Level Recommendation: Zero-carbon electricity generation and electric energy efficiency

➤ Suite of Policy Options

**Building Sector** [X% carbon reduction/tons of CO<sub>2</sub>e reduced]

High Level Recommendation: Thermal energy efficiency and strategic electrification

➤ Suite of Policy Options

**Transportation Sector** [X% carbon reduction/tons of CO<sub>2</sub>e reduced]

High Level Recommendation: Transportation electrification, low-carbon fuels, and VMT reductions

➤ Suite of Policy Options



# Draft Timeline

## March 14<sup>th</sup>

- GC3 meeting to continue discussing sector policy options and sector emission reduction targets

## April/May Stakeholder Meeting

- Transportation sector

## May/June Stakeholder Meeting

- Building and Electric Sectors

## June

- GC3 meeting to finalize sector targets and suite of policy options

## June – July

- Draft report

## August

- Release final report



# Near-term Opportunities and Mid-term GHG Reduction Policy Discussion



# GC3 Near-term Opportunities

## Transportation Climate Initiative

- 11 Northeast and Mid-Atlantic states and the District of Columbia have been working together since 2015 to explore regional policies to **improve transportation systems and reduce carbon emissions and other pollutants from the transportation sector**, which accounts for the largest share of regional carbon emissions.
- In November 2017 a bipartisan group of seven states and the District of Columbia announced plans to further explore regional policy solutions by engaging with communities and businesses **to discuss the opportunities and benefits that could be achieved from coordinated state action**.
- States have committed to **hosting listening sessions** to help states understand the public's vision, ideas, and solutions and to collect input on preferred policy options to develop a low-carbon transportation system.

## CTRides Commuter Challenge (May 2018)

- **A month-long competition** during May will encourage employers and individuals to compete for recognition and prizes for reducing the most number of private vehicles used for commuting in order to reduce miles traveled and auto emissions. Employers will compete in the following categories:
  - Total of all trips taken by employees with other than single occupant vehicles (SOV)
  - Number of employees who begin taking non-SOV trips during May
  - Participation rate
  - Team spirit
- **Interest by GC3 members to commit their organization to participate in the competition?**
  - Commitment to actively promote the use of choice commuting modes to their employees through internal communications, marketing and in-house events using the support and resources of CTride



# Policies for Consideration

- Questions or clarification on the policy list and descriptions provided?
  - ✓ Federal, current state, potential new policies and programs.
- Additional ideas?
- Further resources?



# Transportation Sector Policies

Current Programs & Policies	Programs & Policies for Consideration
Federal tax incentive for ZEV purchase	Increased Taxes or Price Floors on Gasoline and Diesel
Federal Renewable Fuel Standard Program	Vehicle Miles Travel Tax
Federal Corporate Average Fuel Economy (CAFE) Standards	LEV/ZEV access to HOV Lanes, Free Parking, and Reduced Property Tax
International ZEV Alliance	Congestion Pricing/Tolls
ZEV Memorandum of Understanding	Lead by Example: A Standard for the State's Fleet for the Purchase of LEV/ZEVs
California LEV/ZEV Standards	Time-of-use Rate for EV Charging
Connecticut Hydrogen and Electric Automobile Purchase Rebate	Further Development of the Complete Streets Program and Multi-Mobility
Reduced Registration Fees for Electric Vehicles	Improve the Existing Car Sharing Service into LEV and ZEV
Auto Insurance Discounts	
Let's Go CT	
CTfastrak	
Complete Streets	
HOV lanes	



# Example Electric Sector Policies

Current Programs & Policies	Programs & Policies for Consideration
Federal tax incentive for RE	Clean Energy Standards
Regional Greenhouse Gas Initiative (RGGI)	GHG Emissions Reporting Program
Renewable Portfolio Standard (RPS)	Voluntary Purchases of Clean Energy
State Procurements for Grid-Scale Renewables	Grid Modernization Technology Deployment
Net Metering/Virtual Net Metering	
Low-Carbon and Zero-Carbon Renewable Energy Credits (LREC/ZREC)	
Residential Solar Investment Program (RSIP)	
Community Solar	



# Building Sector Policies

Current Programs & Policies	Programs & Policies for Consideration
Federal Building Benchmarking Programs	Replace Electric Resistance Heaters with Efficient Heat Pump Technologies
Energy Efficiency Improvements - Financed Through Incentives from CT Energy Efficiency Fund and CT Green Bank	Establish a Residential Property Assessed Clean Energy Program
Commercial Property Assessed Clean Energy Program	Expansion of Building Energy Use Benchmarking Program to Municipalities and Private Sector
Lead by Example: Building Energy Use Benchmarking Program	Update State Building Code based on 2016 California Green Building Standards Code and 2018 International Energy Conservation Code & Triennial Updates Hereafter
State Building Code Based on 2012 International Code Council Standards	Thermal Renewable Energy Credit Program (T-REC)



# Economy-wide Approaches

Currently there are no federal or state comprehensive policies that aim to reduce greenhouse gas emissions across all sectors. Two such policies that are worth considering, and are implemented in other jurisdiction in include:

- Carbon tax
- Cap-and-trade/invest



# Public Comments

