Connecticut Department of Energy and Environmental Protection

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

GC3 Meeting

November 5, 2018
1:30 — 3:30 p.m.

Agenda

1:30	**Welcome & Announcements** *Rob Klee, GC3 Chair, Commissioner of DEEP*
1:40	**Review and discuss draft report recommendations and suite of strategies**
3:20	**Next Steps** *Keri Enright-Kato, CT DEEP*
3:30	**Public Comments**

Draft Recommendations & Suite of Strategies

Summary of Draft Report Updates

- ✓ Developed more specific targets
- ✓ Included high/med/low impact, implementing entities, and associated co-benefits.
- ✓ Reorganization of the sector order as well as the creation of a “cross sector”
- ✓ Completion of the executive summary
- ✓ Incorporated red-line edits from Council members
- ✓ Expanded discussion on the cost of inaction with more specific on CT risks/costs
- ✓ Updated the GHG inventory to include progress to the 2020 target
- ✓ Included a reference the IPCC report and urgency of action

CROSS SECTOR

Pricing Carbon

1. Implement an economy-wide carbon fee that assesses the carbon content of fossil fuels and sets a price per ton of carbon emitted.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	Governor, General Assembly, DRS, DEEP, OPM	✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

2. Implement an economy-wide cap-and-invest program that sets a limit on carbon emissions and allows the market to determine a carbon price based on the least cost reduction measure

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	Governor, General Assembly, DEEP	✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

CROSS SECTOR

Expand consumer education and awareness efforts to increase the uptake of zero- and low-carbon technology measures

1. Increase visibility of EnergizeCT resources.

Emissions Reduction Impact	Implementation Entities	Co-benefits
LOW	DEEP, CT Green Bank, Utilities administering C&LM Plan, CT Energy Efficiency Board	✓ Environmental Sustainability ✓ Health and Well-being

2. Enhance outreach efforts by using social media campaigns, webinars, case studies, testimonials, and customer engagement platforms.

Emissions Reduction Impact	Implementation Entities	Co-benefits
LOW	DEEP, CT Green Bank, Utilities administering C&LM Plan, CT Energy Efficiency Board	✓ Environmental Sustainability ✓ Health and Well-being

3. Increase training of real-estate industry professionals on integrating U.S. DOE Home Energy Scores, energy efficiency, and renewables into the real-estate transactions process.

Emissions Reduction Impact	Implementation Entities	Co-benefits
LOW	DEEP, CT Green Bank, Multiple Listing Services, Real Estate Trade Organizations, Utilities administering C&LM Plan, CT Energy Efficiency Board	✓ Environmental Sustainability

ELECTRICITY SECTOR

Commit at least 50 megawatts of demand reduction per year to the ISO-New England forward capacity market

1. Design a targeted C&LM Plan program that strives to reduce electricity consumption by 1 -2 million megawatt hours through the replacement of existing inefficient electric resistance space and water heating equipment with high efficiency renewable thermal technologies.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	DEEP, Utilities administered C&LM Plan, CT Energy Efficiency Board, Green Bank	✓ Enhancing Energy System Security ✓ Economic Development

2.Target C&LM Plan investments in electric measures that reduce peak demand such as exterior lighting, retail lighting, lighting in state buildings, and high efficiency refrigeration.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	DEEP, Utilities administered C&LM Plan, CT Energy Efficiency Board, Green Bank	✓ Enhancing Energy System Security ✓ Economic Development

ELECTRICITY SECTOR

Achieve at least 66 percent zero-carbon energy generation by 2030

1. Meet the RPS target of 40% by 2030, with an aim to reduce the carbon intensity of the RPS.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	DEEP, Green Bank, PURA, Renewable Energy Developers	✓ Enhancing Energy System Security ✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

2. Implement CTWISE Residential and ensure a transparent and predictable compensation framework to maintain at least the historical annual average 40-90 megawatts of residential behind the meter renewable energy resources.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	DEEP, Green Bank, PURA, Renewable Energy Developers	✓ Enhancing Energy System Security ✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

3. Implement CTWISE Auction for Businesses and Government entities, deploying 50 MW/year distributed solar and 10 MW/year of fuel cells.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	Electric Distribution Companies, DEEP, Green Bank, PURA, Renewable Energy Developers	✓ Enhancing Energy System Security ✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

ELECTRICITY SECTOR

Achieve at least 66 percent zero-carbon energy generation by 2030

4. Implement CTWISE Shared Clean Energy program, deploying 25 MW/year with a focus on low-moderate income customers

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	Electric Distribution Companies, DEEP, Green Bank, PURA, Advocates, Renewable Energy Developers	✓ Enhancing Energy System Security ✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

5. Maintain in-state zero-carbon nuclear generation and develop a long-term zero-carbon replacement strategy equivalent to 2100 megawatts.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	DEEP, PURA	✓ Enhancing Energy System Security ✓ Economic Development ✓ Health and Well-being

6. Exercise existing procurement authority for zero carbon energy through competitive bidding processes that drive down prices.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	DEEP	✓ Enhancing Energy System Security ✓ Economic Development

ELECTRICITY SECTOR

Optimize grid management strategies to reduce carbon emissions

1. Increase adoption of smart management technologies to optimize flexibility of distributed energy resources.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	PURA, Utilities	✓ Enhancing Energy System Security

2. Over the next 2-5 years, research and identify opportunities to integrate battery storage and distributed renewable energy technologies to reduce and displace carbon emissions associated with increased electrification

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	DEEP, PURA	✓ Enhancing Energy System Security ✓ Environmental Sustainability ✓ Health and Well-being

TRANSPORATION SECTOR

Maintain increasing fuel economy and low- and zero-emissions standards

1. Maintain adherence to Corporate Average Fuel Economy (CAFE) and GHG emission standards mid-term review 2016 final determination.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	Federal Government , California Air Resources Board, DEEP	✓ Health and Well-being ✓ Environmental Sustainability

2. Maintain adherence to California low-emissions and zero-emissions vehicle requirement.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	Federal Government , California Air Resources Board, DEEP	✓ Health and Well-being ✓ Environmental Sustainability

TRANSPORATION SECTOR

Increase light-duty fleet ZEV penetration rate to, at least 20% by 2030

1. Implement price signals to incent EV adoption and reduce electric system impacts.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	PURA, Utilities	✓ Enhancing Energy System Security

2. Expand EV charging network to ensure consumer confidence, reduce range anxiety, and ensure equitable access.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	DEEP, Private Sector, PURA, Utilities	✓ Economic Development ✓ Health and Well-being

3. Develop a state fleet transportation lead by example program that sets annual emissions reduction targets and enables an increasing adoption of zero-emission vehicles.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	DAS, DEEP, OPM	✓ Health and Well-being ✓ Environmental Sustainability

TRANSPORATION SECTOR

Advance initiatives that enable VMT reductions of 1-2% by 2030

1. Increase transit ridership 11% by 2030.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	DOT, Municipalities	✓ Health and Well-being ✓ Environmental Sustainability

2.Encourage, incent, and support alternative modes and active transportation that reduce single-occupancy vehicle driving.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	DOT, OPM, Municipalities	✓ Health and Well-being ✓ Environmental Sustainability

3. Expand transit-oriented development projects which support walkable, mixed-use, and sustainable urban and suburban community development, leading to increased public transit ridership.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	DOT, OPM, Municipalities	✓ Economic Development ✓ Health and Well-being ✓ Environmental Sustainability

TRANSPORATION SECTOR

Develop sustainable funding for transportation electrification and transit infrastructure

1. Implement a multi-state cap and invest program that sets a limit on transportation sector emissions and reinvests program proceeds in measures that drive down emissions, provides benefits to citizens, and mitigates costs to consumers.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	Governor, General Assembly, DEEP	✓ Health and Well-being ✓ Environmental Sustainability

2. Implement tolls and/or congestion pricing — a market mechanism to reduce traffic congestion and improve efficiency of travel for all drivers.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	Governor, General Assembly, DOT, OPM	✓ Health and Well-being ✓ Environmental Sustainability

3. Implement a vehicle miles traveled fee that is assessed based on an individual's mileage driven.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	Governor, General Assembly, DOT, OPM	✓ Health and Well-being ✓ Environmental Sustainability

BUILDING SECTOR

Accelerate the adoption of building thermal energy conservation improvements such as weatherization, insulation, efficient windows, and HVAC

1. Expand access to thermal energy efficiency measures through innovative financing options for all income levels.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	DEEP, Utilities administered C&LM Plan, CT Energy Efficiency Board, CT Green Bank, Capital for Change, CHAFA, DOH, DECD, DAS	✓ Social Development ✓ Enhancing Energy System Security ✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

2. Ensure building codes are continuously aligned with the most recent International Energy Conservation Code and include resiliency standards.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	DEEP, OPM, DAS	✓ Social Development ✓ Enhancing Energy System Security ✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

BUILDING SECTOR

Accelerate the adoption of building thermal energy conservation improvements such as weatherization, insulation, efficient windows, and HVAC

3. Track and reduce energy consumption and associated GHG emissions in state and municipal buildings, including "lead by example" reduction targets for 2030.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	DEEP, Utilities administered C&LM Plan, CT Energy Efficiency Board, CT Green Bank, OPM, DAS, Sustainable CT, Municipalities, Utilities	✓ Enhancing Energy System Security ✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

4. Review consistency of energy efficiency cost-effectiveness testing with public policy goals.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	DEEP, Energy Efficiency Board, Utilities	✓ Environmental Sustainability

BUILDING SECTOR

Transition building fossil fuel thermal loads to efficient renewable thermal technologies

1. Develop sustainable funding mechanisms to incentivize the replacement of fossil fuel space and water heating with efficient renewable thermal technologies.

Emissions Reduction Impact	Implementation Entities	Co-benefits
HIGH	Governor, General Assembly, DEEP, OPM, CT Green Bank	✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

2. Incentivize new construction installation of renewable thermal technologies.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	DEEP, Utilities administering C&LM Plan; CT Energy Efficiency Board, CT Green Bank, Housing Authorities	✓ Economic Development ✓ Environmental Sustainability ✓ Health and Well-being

BUILDING SECTOR

Increase training and technical capacity of workforce

1. Expand training programs to include renewable thermal technology installations and standards training.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDIUM	Industry trade organizations, Utilities administering C&LM Plan, CT State Colleges and Universities and State Department of Education/Technical High School System, manufacturers, NEEP	✓ Economic Development ✓ Environmental Sustainability

2. Increase outreach and education efforts to HVAC industry professionals on proper installation of heat pumps and integration with existing equipment.

Emissions Reduction Impact	Implementation Entities	Co-benefits
MEDUM	Industry trade organizations, Utilities administering C&LM Plan, CT State Colleges and Universities (community colleges)and State Department of Education/Technical High School System, manufacturers, NEEP	✓ Economic Development ✓ Environmental Sustainability

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