



# Connecticut Department of Energy and Environmental Protection



# GC3 Meeting

June 5, 2018  
1:00 — 3:00 p.m.



# Agenda

**1:00**

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

**1:05**

Transportation Climate Initiative listening session recap  
*Rob Klee, Commissioner of DEEP, GC3 Chair*

**1:15**

Building, Transportation, and Electric Sector Work Meetings

**2:00**

Next Steps – GC3 report outline  
*Keri Enright-Kato, DEEP*

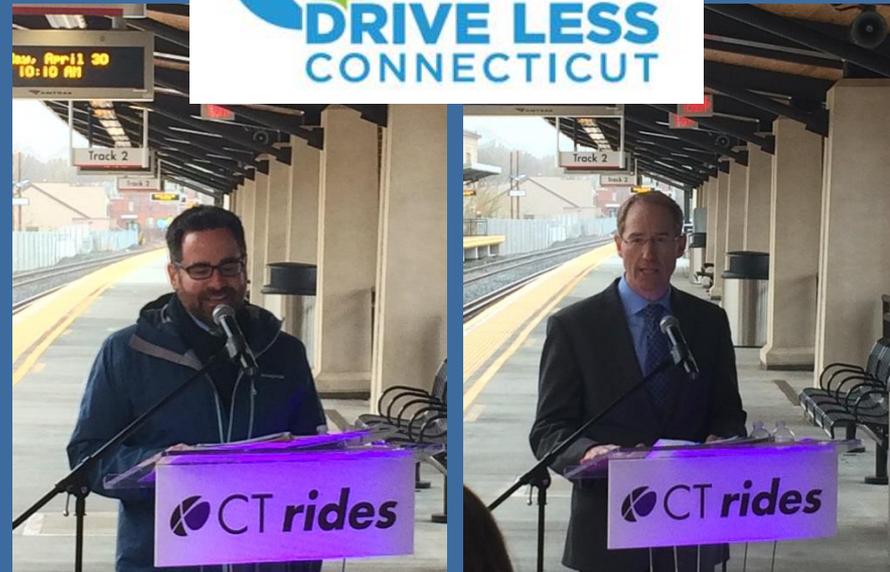
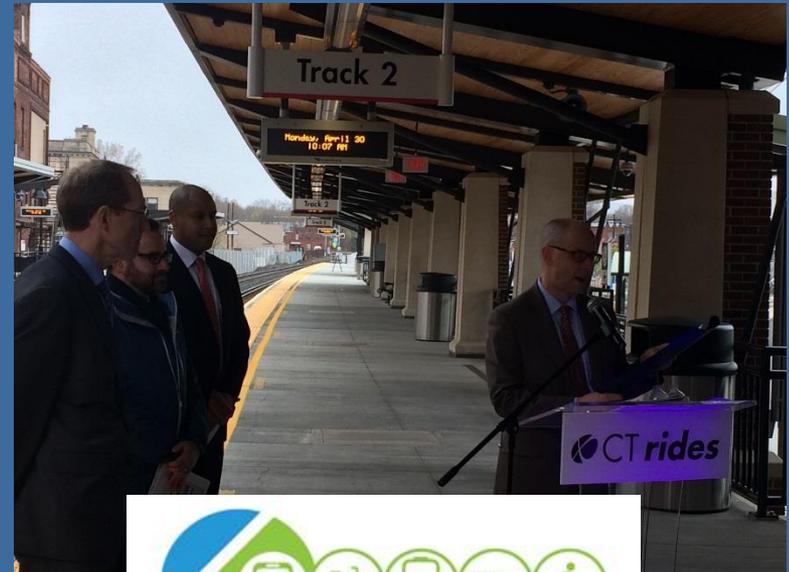
**2:30**

Public Comments



# CT Rides Drive Less Competition

Collectively through our month long participation in the Drive Less competition, the Green Bank, the Hartford, DECD, DEEP, DOT, DAS, and Eastern CT State University saved 67, 689 miles driven and avoided 59,586 Lbs. of CO2!



# Transportation Climate Initiative listening session recap



# Overview of TCI Event

Approximately 75 participants attended including the following categories:

- city and town planners
- government staff
- transit users
- freight companies and truckers
- walking/biking advocates
- regional planning organizations
- environmental advocacy organizations
- oil companies
- oil trade associations
- automobile manufacturers
- transit providers
- environmental justice advocates,
- land conservation groups
- smart growth organizations



# Overview of TCI Event

## Session Design:

- A series of 3 short presentations introducing key topics and posing a question for participants to discuss.
  1. What would make it easier for you to transition to low-carbon transportation choices?
  2. "A regional low-carbon transportation policy should..."
  3. Reflecting on the goals identified, what policies or actions should be explored to accomplish the region's low-carbon transportation goals?
- 30-40 minute facilitated discussions around questions (7-9 persons per table).
- Discussion feedback and written materials were collected and are being summarized by TCI.



# Overview of TCI Event

## Feedback

- Strong appreciation of the demonstrated commitment from state leadership (Commissioner level participation and engagement)
- Participants appreciated the diversity of the participants at the event
- Liked the workshop style which allowed for concrete discussions and ideas to emerge
- More time for discussion
- Topics too broad, narrowing would be useful
- Provide more context to the discussions



# Overview of TCI Event

## Next Steps

- At least 2 more sessions planned in the region through July
- TCI will collect feedback and ideas, categorize and summarize for TCI states to inform potential regional next steps
- A few examples of emerging regional policy solutions include:
  - Utilize price signals to ramp up electrification of the transportation sector (cap and invest, carbon fee, VMT tax, etc.)
  - No single state solution, regional approach necessary
  - Invest in clean vehicles infrastructure



# Building, Transportation, and Electric Sector Work Meetings



# Transportation Sector

## Progress to date, what is going well?

- CAFÉ standards
- California LEV-ZEV
- EV technology development
- EV purchase incentives
- EV Charging station incentives 200+ funded
- Electric bus pilot project
- Expansion of services (CT Fastrak/Springfield-NH)
- Financing of secondary EV market

## Primary limitations to progress

- Threats to CAFÉ & California LEV-ZEV
- Low gas prices & increasing market for SUVs
- Nimble adaptation to evolving EV charging capacity
- High percentage of single occupancy driving
- Limitations to EV Sales in CT
- Sustainable Funding for EV incentives

## Catalysts for Success

- Incentives/Price signals/Financing
- Education and Outreach
- Technological Innovation
- Co-benefits gained



# Transportation

## High Level Recommendations

1. Retain CAFÉ standards & California LEV/ZEV
2. Support clean electric grid
3. Transportation electrification
4. Sustainable transportation funding
5. VMT reductions (recognizing inherent limitations)

## Strategies to consider

1. **Price Signals: rebates/tax credits/financing/disincentive**
  - Sustainable funding (regional carbon pricing, taxes. etc.)
  - For EV's
  - For low-carbon fuel vehicles
2. **Expand charging infrastructure**
  - Building codes
  - Private sector incentives
3. **Improve rate design for electric charging**
  - Residential
  - Commercial and Industrial (i.e. Transit buses)
4. **Lead by example:**
  - State automobile fleet electrification
  - Transit bus fleet electrification
5. **Strengthen state policy coordination and policy tools for transportation planning**
  - Measurement tools
  - State coordination

# Building Sector

## Progress to date, what is going well?

- Coordination between CES and C&LM Plan
- Selling demand reduction to the ISO NE Forward Capacity Market
- Energy data dashboard/customer engagement platforms
- Mainstreaming high performance buildings/green certifications
- Financing
- Commercial energy management training at technical high schools and community colleges

## Primary limitations to progress

- Uncertainty of funding stream for C&LM Plan
- Lack of roadmap for deployment of renewable heating and cooling technology
- Limited workforce development resources for skilled technicians; training for HVAC contractors; reduced funding for technical high schools; need to expand education and diversification of contractors
- Measuring carbon reduction; Savings Measurement and Verification (M&V) challenges as efficiency becomes mainstream

## Catalysts for Success

- Incentives/Price signals/Financing
- Education
- Innovation
- Co-benefits to economy and clean energy industry



# Building Sector

## High Level Recommendations

1. Deploy thermal building envelope/insulation improvements
2. Strategic electrification of building efficient thermal energy consumption.
3. Integration of technologies: efficiency/storage/renewables'

## Strategies to consider

### 1. Improve HVAC efficiency in all sectors (Residential, Commercial, and Industrial)

- Continued focus on financing
- Identify and ensure financing is accessible for all income demographics
- Diversify education and training of contractors, invest in skilled technicians

### 2. Deploy renewable heating and cooling technologies

- Chart pace of electrification needed to convert to electric heating and cooling and develop a clear roadmap
- Residential targeting of electric resistance customers for heat pump technologies
- Identify commercial and industrial opportunities
- Target new construction
- Financing [residential sector: Smart-E Loans], marketing, and declining block incentives [“Thermalize” approach]
- Identify solutions for demographics not suited to financing
- Continue to investigate and adopt best practices on how to value, measure, and communicate technology’s ability to reduce fossil fuel consumption.
- Include real-time monitoring to assess system performance, price the energy service, and monitor peak demand impact.



# Building Sector

## Strategies to consider

**3. Use price signals, incentives, and financing to maintain and accelerate adoption pace for various income levels of above recommendations**

**4. Strengthen standards and incentive structures**

- Increase installer and user training to improve effective operations between standard boiler and heat pump technology for partial building deployment optimization.
- Use national and international standards to ensure interoperability of demand response communications between buildings and grid
- Incent higher efficiency systems at a higher incentive rate

**5. Concurrent with demand reduction strategies, ensure waste heat recovery and cleaner fuels are being used in generation**



# Electric Sector

## Progress to date, what is going well?

- Grid-scale procurements and incentives encouraging distributed generation (LREC/ZREC & RSIP/SHREC)
  - Competition and transparency drives down prices
  - Long-term contracts provide predictability
- RPS – 40% Class I – aligned with GC3 reduction targets
- Procurement authority – offshore wind, AD, fuel cells, energy storage
- CPACE
- Restructuring Class III to bring on more CHP
- RGGI – program review completed with tighter cap
- Residential solar – equitable installations (LMI/non-LMI)
- Rate incentives (CHP demand ratchet waiver)
- AD – merging energy and waste goals
- Resiliency – microgrid program and climate adaptations
- Demand response and energy storage at ISO level

## Primary limitations to progress

- Unlocking energy storage
- Siting concerns, especially grid-scale
- Cap on procurement authority
- Distributed generation cap (C&I, VNM, shared solar)
- Grid modernization and EDC business model
  - Smart grid technology deployment (smart meters) and demand response
  - Rate design/value of DG and time of use rates
- High electricity rates
- Regional market structures/ISO-NE
  - Regional fuel security rules/requirements
- Aligning policies with GHG reduction goals
- Reduction of soft costs (local permitting)
- Data availability (grid modernization)
- Federal policies and changes (tariffs, tax incentives, etc.)

## Catalysts for Success

- Incentives/financing
- Innovation/grid modernization
- Customer acquisition/community campaigns
- Transparency, certainty, and understandability in policies
- Co-benefits (economic development, health, resiliency, security, safety)



# Electric Sector

## High Level Recommendations

1. Increase deployment of new, cost-effective zero-carbon renewable energy sources
2. Maintain existing, cost-effective renewable and zero-carbon energy sources
3. Emphasize grid modernization, grid security, and resiliency by integrating emerging technologies like energy storage and improving integration of existing distributed energy resources to achieve greatest GHG reductions
4. Work with regional partners on implementing GHG reduction policies and strategies related to the electric sector (ISO, FERC, RGGI, NEPOOL, etc.)

## Strategies to consider

1. DEEP exercise existing procurement authority for grid-scale renewable and zero-carbon energy in a transparent and predictable manner
2. Develop policies that support other procurement/deployment of zero-carbon, renewable energy and provide consumers and developers access to affordable capital
3. Support improved and increased integration of distributed energy resources and microgrids, and increased transparency on the distribution system to enhance grid security and resiliency.
4. Use strategic competitive processes and take advantage of economies of scale to drive down prices of renewable and zero-carbon energy
5. Coordinate with regional states to remove barriers for new and emerging technologies that reduce GHG emissions
6. Ensure balanced approach to siting renewables



# Next Steps



# Who is the Target Audience?

## General Assembly

- legislation

## State Agencies

- integration into planning
- policy recommendations
- programs & initiatives
- facilities, operation and fleet

## Municipalities

- local permitting, zoning and ordinances
- integration in planning
- facilities, operations and fleet
- programs & initiatives

## Individuals

- purchases
- transportation choices
- investments

## Businesses

- facilities, operations, and fleet
- products and services

## Non-profits

- facility operations and fleet
- programs & initiatives
- education

## Advocacy & Associations

- policy recommendations
- programs & initiatives
- education

## Higher Education

- Facilities, operations and fleet
- curriculum & education
- workforce training
- research



# GC3 Report Structure

- I. Overview of GC3
- II. Overview of modeling process and reference case  
(assumptions in appendix)
- III. GC3 mid-term target recommendation and passage of  
S.B. 7
- IV. Sector recommendations
  - a. High level recommendations
    - i. Suite of strategies and catalysts for success

\*Full report 20-30 pages with assumptions and REMI analysis as appendices



# Timeline

**June - August**

- Draft report

**September**

- Release draft report
- Stakeholder engagement

**October**

- Revise draft as necessary
- Release final report



# Public Comments

