



Connecticut Department of Energy and Environmental Protection



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

Governor's Council on Climate Change (GC3)

January 22, 2016
1:30—3:30 p.m.



Connecticut Department of Energy and Environmental
Protection

Agenda

1:30

Welcome

1:40

Review and finalize business as usual (BAU) reference case, review terminology, LEAP analysis examples, and next steps

2:15

Review and discuss Leadership, Accountability, and Engagement working group recommendations

2:50

New items

3:00

Public Comments

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Overview

- Recap of LEAP Reference Case as base for GHG scenario analyses
 - ✓ How LEAP reference case is built
 - ✓ How it compares to standard future projection
 - ✓ Using with hypothetical scenarios
 - ✓ Future steps

Developing LEAP Reference Case for CT Scenario Analyses

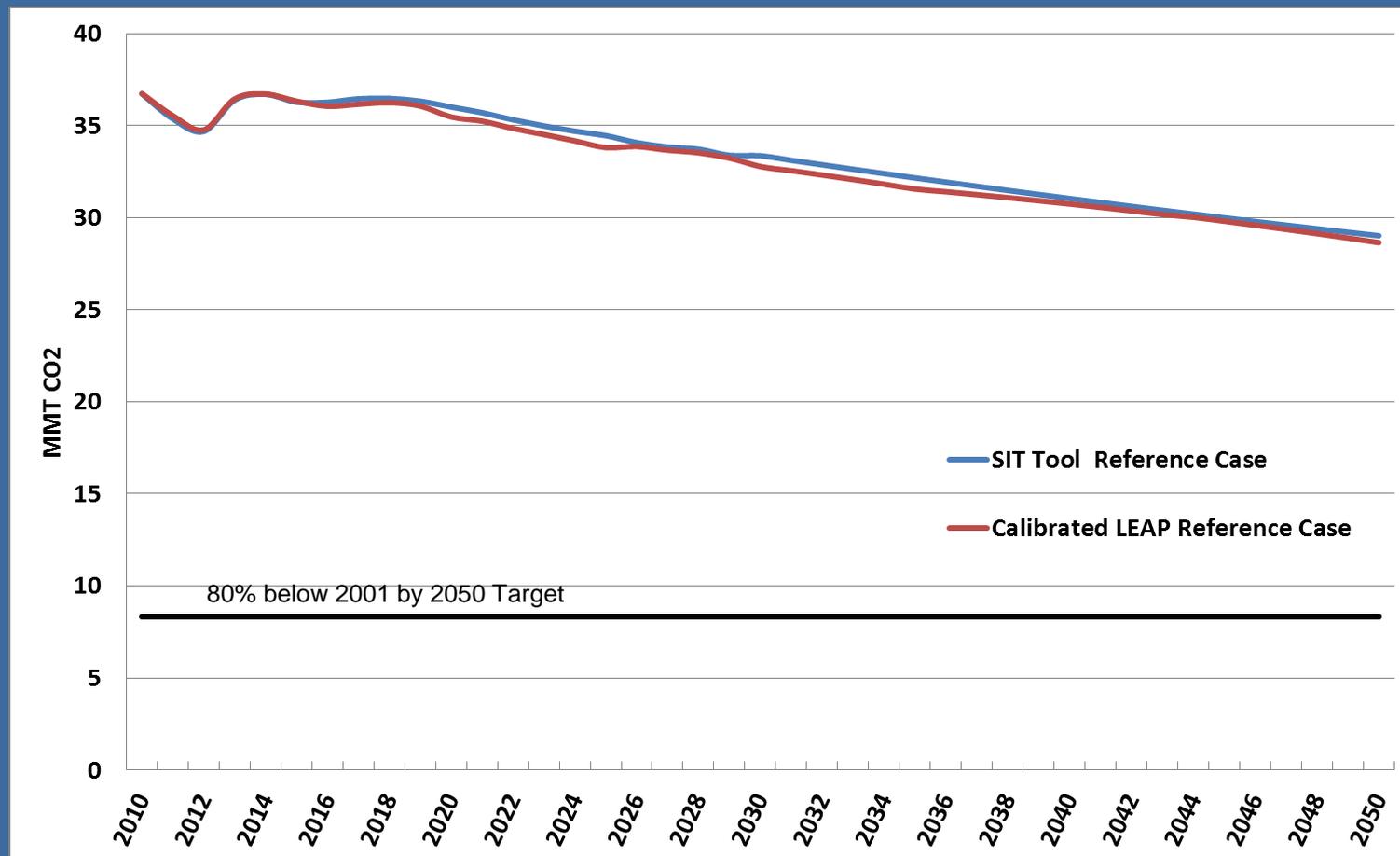
Included

- State Renewable Portfolio Standards (RPS)
- Regional Greenhouse Gas Initiative (RGGI) cap tightened to reflect February 2013 MOU
- Clean Air Interstate Rule (CAIR)
- Mercury and Air Toxics Standards (MATS) (full by 2016)
- Regional Haze Rule
- All federal regulations aimed at energy efficiency and renewable energy
- Up-to-date 2025 CAFE standards (Tier 3)

Not Included

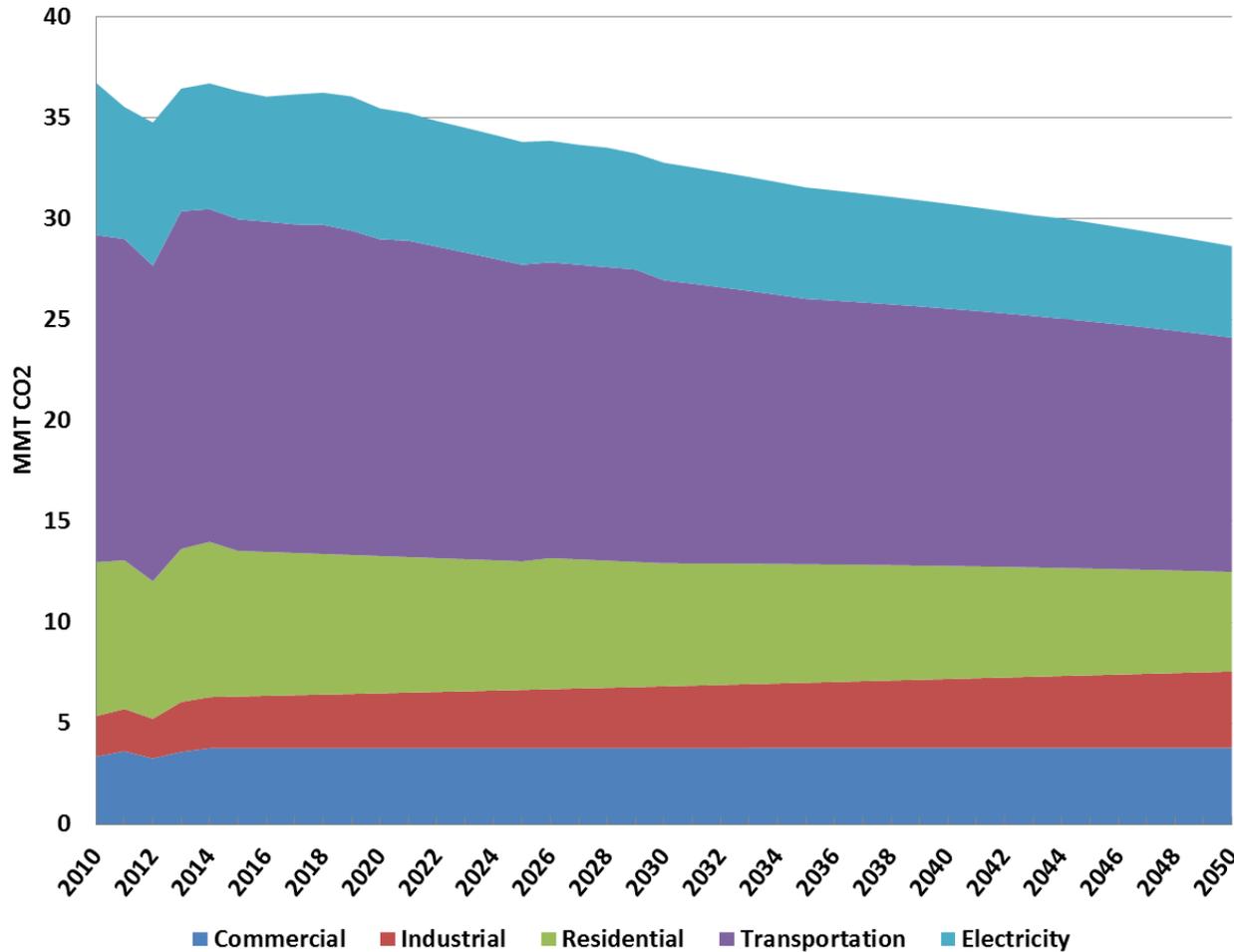
- Cross-State Air Pollution Rule (CSAPR) & Update
- EPA's proposed s.111 Clean Power Plan (CPP)
- State-specific energy efficiency programs, e.g., CT Energy Efficiency Fund
- Future EPA Heavy-Duty Vehicle GHG standards

Connecticut Reference Case – LEAP Reference Compared to EPA State Inventory Tool



- GHG 21% below 2001 by 2030
- GHG 31% below 2001 by 2050

Connecticut Reference Case – LEAP Projections by Sector



Sector	2050 GHG Share	2010-2050 Avg. Annual Growth
Commercial	13%	0.3%
Industrial	13%	1.6%
Residential	17%	-1.1%
Transportation	41%	-0.8%
Electricity	16%	-1.3%

Terminology

Technologies – *machinery or equipment*

- Zero Emission Vehicles, Ground Source Heat Pumps, High Efficiency Lighting

Measures – *changes in business and consumer practices*

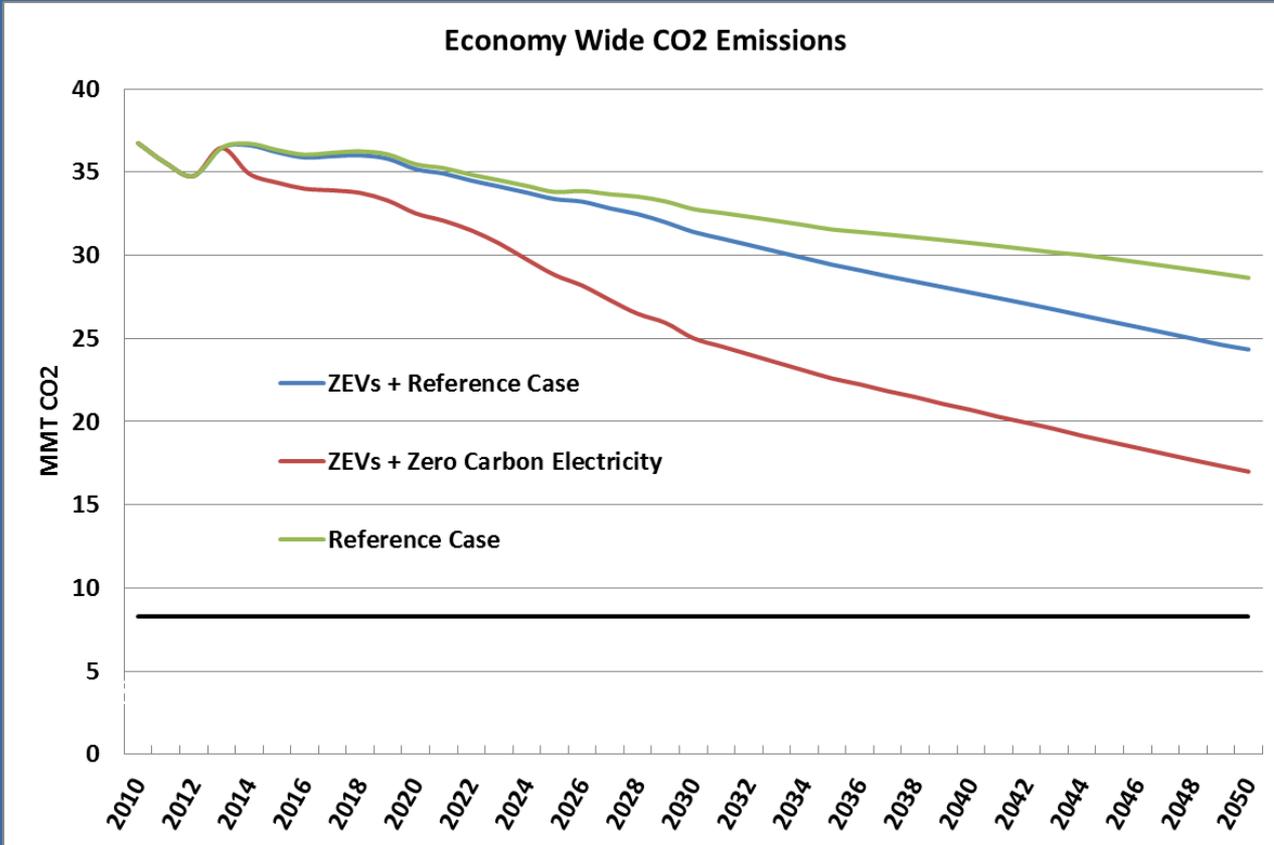
- VMT Reduction, Demand Response

Scenarios - *combinations of Technologies and Measures modeled in LEAP intended to achieve mid-and long-term GHG reduction targets.*

Scenarios do not prescribe what policies would be used to achieve the scenario combinations.

Hypothetical Zero Emission Vehicle Scenario

Total CT CO₂ Emissions



Reference Case:

- On average 55% fossil fuel electricity generation 2030 - 2050 (AEO extrapolation)

ZEVs + Reference Case:

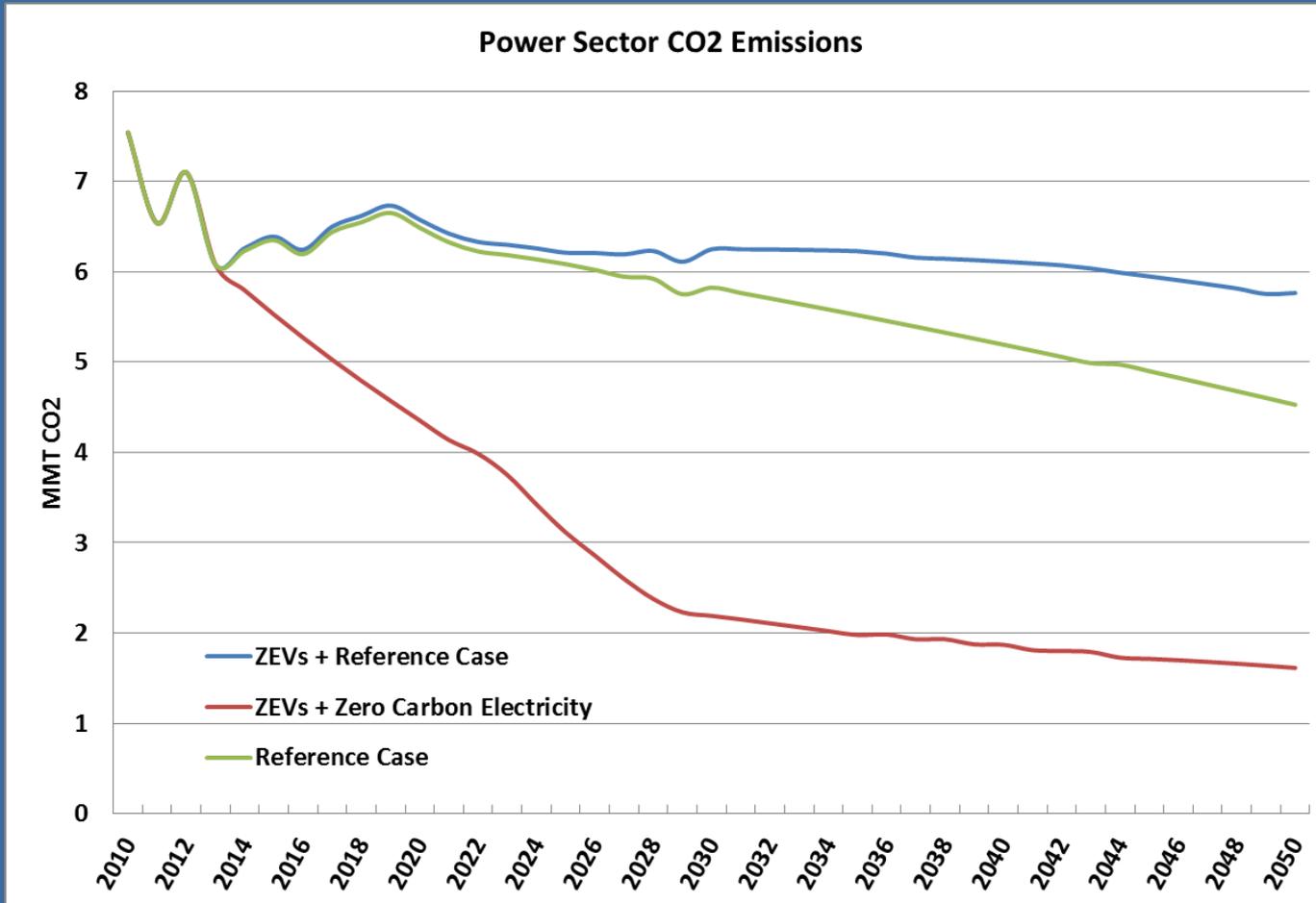
- 70% of passenger cars and trucks electric by 2050
- Reference Case electricity generation

ZEVs + Zero Carbon Electricity:

- 70% of passenger cars and trucks electric by 2050
- 80% zero carbon electricity by 2050

Hypothetical Zero Emission Vehicle Scenario

Power Sector CO₂ Emissions



The grid mix has a large impact on the efficacy of vehicle electrification

Electricity demand is 22% higher by 2050 in the ZEV scenarios

Next Steps

- Continue incorporating Technologies and Measures
- Evaluate fuller Scenarios based on mixes of Technologies/Measures

Task	Jan.	Feb.	Mar.	April	May	June	July-Dec.
Task 1 Develop future GHG trends under business as usual.							
Task 2 Develop sector specific technology, measures, and scenario sets.							
Task 2.2 Build technologies, measures, and scenarios into LEAP.							
Task 3 Develop a policy narrative around GHG mitigation scenarios							
Task 4 Additional analytics							

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Categories of Recommendations

Several common themes emerged from the research and analysis of the models investigated and the following elements were identified as key features of success:

- ✓ Competition and recognition
- ✓ Resources and training
- ✓ Cross-Sector Partnerships
- ✓ Goal setting, measurement and evaluation
- ✓ Leading by example
- ✓ Communication and stakeholder engagement

Some recommendations may be implementable in the short-term, while others may need additional planning and coordination.

Competition and recognition

Enhance and support opportunities for statewide competition and recognition

1. Investigate revitalizing the former Climate Leadership Awards Program to recognize leadership in addressing climate change in Connecticut.
3. Collaborate with Connecticut industry associations (CBIA, CT Sustainable Business Council, CT Conference of Municipalities, CT Alliance for Campus Sustainability, etc.) to develop or enhance annual reporting and recognition programs that highlight companies, businesses, and organizations leading the charge to reduce GHG emissions.
4. Support and promote work-based challenges that mitigate GHG emissions associated with transportation, such as:
 - The Department of Energy's Workplace Charging Challenge
 - Employee commuting challenges; i.e. the National Bike to Work Day or the Clean Air Challenge.

Resources and Training

Optimize the deployment of resources and training to help drive sustained and meaningful engagement

1. Strengthen relationships with Connecticut colleges and universities to leverage statewide expertise, resources, and research support.
2. Promote climate-related learning and training opportunities provided by nonprofits, associations, labor unions, and state and federal agencies through announcements on social media, websites, list-serves, and public calendars.
3. Develop climate change mitigation and adaptation toolkits that are customized for different sectors (business, community groups, municipalities, higher education, etc.) and help stakeholders learn about and contribute to the state's climate goals. Development of a toolkit could be a collaborative process among various organizations that hold relevant expertise needed.
4. Continue the Exploring Climate Change Solutions Webinar Series. Additional topics and speakers have been identified for monthly or bi-monthly webinars for 2016.

Goal Setting, Measurement, and Evaluation

Encourage, support, and publically recognize Connecticut business, state agencies, municipalities, and nonprofits to measure their annual emissions and set reduction targets.

1. Call on all Connecticut state agencies, municipalities, companies, and institutions of higher learning to formally set GHG reduction goals in line with the statewide goals and to regularly assess progress and publicly report the results.
2. Routinely highlight prominent examples of goal setting, reporting, and transparency by Connecticut companies, institutions of higher education, and municipalities. This could be through webinars, content on state agency web pages, and a climate leadership award program.

Cross Sector Partnerships

Foster expansion of successful cross-sector partnerships in Connecticut and encourage development of new partnerships that lead to innovative strategies to address climate change.

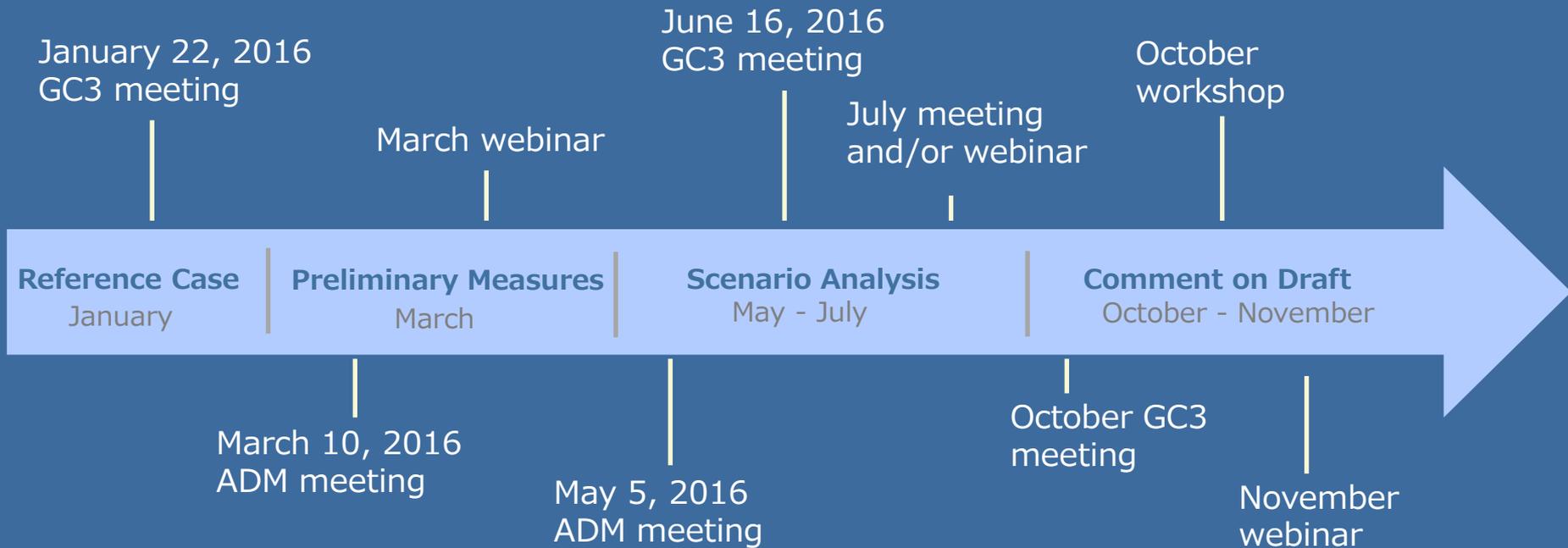
1. Support the expansion of the goNewHavenGo model to additional Connecticut communities as a means to tackle transportation-related emissions.
2. Facilitate and support dialogue between sectors to identify shared values and opportunities for partnership and collective action.

Communication and Stakeholder Engagement

Develop a robust short- and long-term communication and stakeholder engagement framework that can be adjusted to fit the needs of stakeholders through time.

3. Further investigate the Portland, OR Equity Work Group model and metrics for ensuring equity is incorporated into the state's climate strategy.
4. Ensure clear and accessible two-way communication channels between the state and stakeholders through developing regular opportunities for dialogue.

2016 Stakeholder Engagement Opportunities



Note: DEEP will coordinate GC3 engagement efforts with the development of the Comprehensive Energy Strategy (CES)

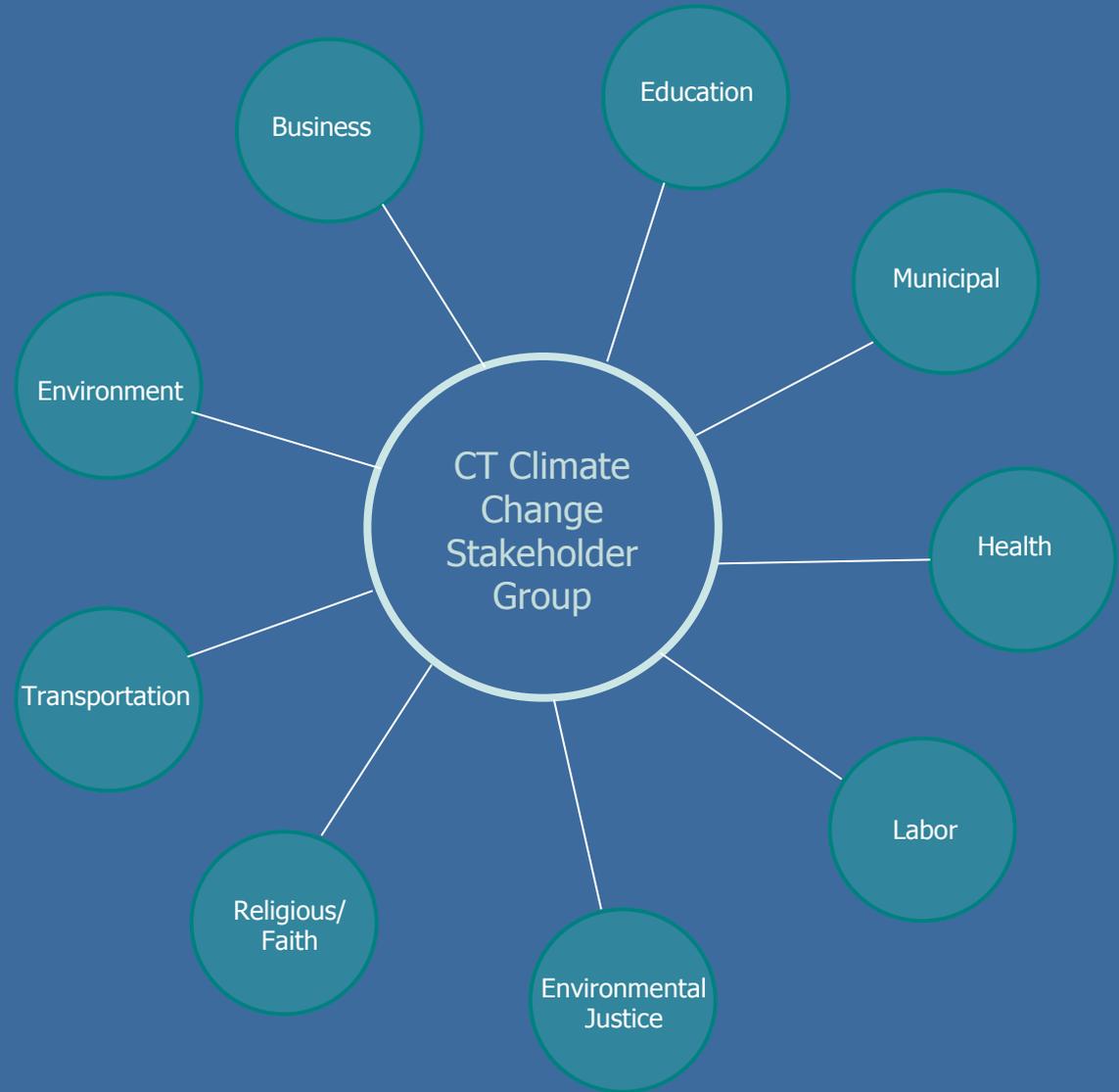
Long-term Stakeholder Engagement 2016 & Beyond

In addition to the targeted meetings and webinars, the development of a Climate Change Stakeholder Engagement Group for both short- and long-term stakeholder engagement should be further explored and considered.

A group could be made up of individuals from organizations that adequately represent the 9 sectors indicated in this graphic. A facilitator would manage the meetings, set the agenda, and coordinate work group outcomes.

The CT Climate Change Stakeholder Group would report, at a minimum, annually to GC3 members and facilitate communication bi-directionally on:

- state strategies for reducing GHG emissions;
- voluntary efforts that lead to emission reductions; and
- general stakeholder input, ideas, and concerns.



2016 Confirmed Meeting Dates & Times

ADM meeting March 10, 2016 2-4pm

ADM meeting May 5, 2016 1-3pm

GC3 meeting June 16, 2016 1-3pm

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