

Rhode Island GHG Emissions Reduction Study

*Meeting No. 4
Providence, RI*

June 29, 2016

Overview of Today's Meeting

1. LEAP presentation of baseline
2. Defining scenarios for LEAP analysis
 - 2-Phase approach with timing
 - Discussion and feedback with Technical Committee
3. Public comment

1. LEAP Baseline

- Presentation of baseline using LEAP (this is done “live” by running LEAP at the meeting)



2. Defining Scenarios for LEAP Analysis



Objective:

Define 3-5 pathway scenarios for Rhode Island's 2050 80% GHG reduction target

2010 Rhode Island Major Sector GHG Emissions

1. 35% transportation
2. 27% electric power consumption
3. 26% commercial/residential heating
4. 9% industrial heating and processes
5. 2% waste
6. 1% natural gas distribution
7. <0.5% agriculture

Proposed Approach in 2 Phases

1. Phase I

- Finalize list of major mitigation options
- Define and model a high-investment/penetration scenario for each major option

2. Phase II

- Analyze potential combinations of major mitigation options and evaluate trade-offs, constraints, and dependencies
- Devise overall pathway scenarios that combine major options to reach the 2050 goal

Phase I Timeline

1. During July: ID major mitigation options and penetration rates
 - *Identify 10 major mitigation options based on input from today's meeting and 2 week comment period*
 - *Set assumptions for aggressive penetration rates with review and input from Technical Committee and stakeholders via email*
2. Remainder of July through August: Do LEAP analyses of major mitigation options

Phase II Timeline

1. Late Sept/early Oct: Present Phase I results and straw Phase II scenarios
 - *Use feedback to define 3-5 pathway scenarios capable of meeting 80% target*
2. Oct: Analyze 3-5 pathway scenarios in LEAP
3. Nov: Present Phase II results
 - *Use feedback to refine pathway scenarios*
4. TBD: Discussion of final results and report to Rhode Island



Discussion and Feedback



Questions on Proposed Approach?

Major mitigation options

1. Electric and natural gas energy efficiency (extending all cost-effective efficiency programs beyond 2024)
2. Vehicle miles traveled (VMT) reductions
3. Utility-scale renewable electricity
4. Distributed renewable electricity
5. Additional imports of low-carbon electricity
6. Nuclear electricity (license renewal for existing plants)
7. Electric heat in buildings
8. Biofuels/biomass heat in buildings
9. Electric vehicles
10. Advanced biofuels for transportation

High-investment/penetration rates

- Purpose is to provide indication of major options' GHG impacts if implemented at aggressive levels
- Less than full technical potential, but more than what's currently considered cost-effective
 - Assumptions to be based on stakeholder input and literature review
 - Will localize to RI with state-specific stocks and turnover rates within LEAP

Examples derived from CA Pathways

By 2050:

- 70% on-road vehicles zero-carbon
- 60-80% heat pump/solar thermal penetration for commercial/residential buildings
- 80% zero-carbon electricity

Sensitivity factors for Phase II

- Purpose is to see how scenarios compare if key underlying assumptions are varied
- Possible sensitivity factors:
 - Fuel prices
 - Technology costs
 - Discount rate
 - Biofuel emission factors
 - Population growth
 - Economic (GDP) growth

Additional Feedback

- Can email written comments to Pam Sherrill, sherrill6@cox.net
 - July 13 requested deadline
- Send technical questions to Jason Rudokas, NESCAUM, jrudokas@nescaum.org



Public Comment