Northeast Low Emission Vehicle Program Overview

Presentation by

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for

NESCAUM

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What is NESCAUM?

- Northeast States for Coordinated Air Use Management
- An association of 8 Northeast state air pollution control programs including Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont
- Formed by the New England Governors in 1967, New York and New Jersey joined in the 1970's
- NESCAUM provides technical and policy support to its member states on issues related to air pollution
- Has a Low Emission Vehicle Workgroup that meets on a regular basis - Maryland and Pennsylvania also participate

Presentation Overview

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- Why the Northeast states opted into the California Low Emission Vehicle (LEV) Program
- Summary of Northeast State LEV program implementation dates
- Description of adoption procedures in different Northeast LEV states
- Zero Emission Vehicle requirements in the Northeast
- Greenhouse gas reduction potential
- Costs of compliance and administrative costs
- Conclusions

Reasons For Northeast State LEV Adoption

- In the late 1980's all of the Northeast states with the exception of Vermont were in nonattainment of the federal ozone standard
- Unhealthy concentrations of ozone and carbon monoxide persisted in the region
- Stringent emissions limitations for NOx and VOC had been placed on stationary sources
- Technical analyses for the Northeast demonstrated significant emissions reductions would be achieved with LEV program adoption*

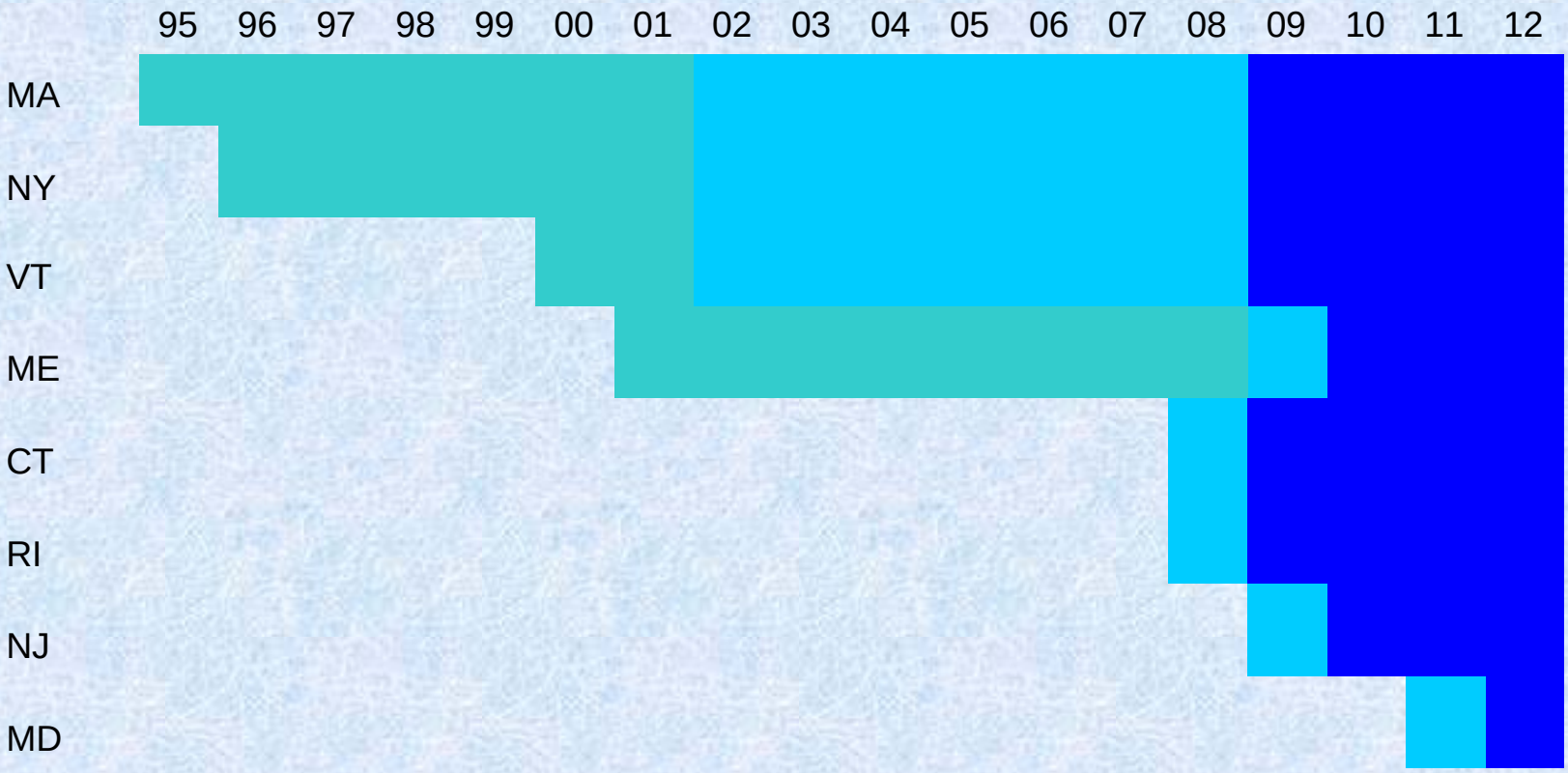
*prepared by Sierra Research, E.H. Pechan & Associates, EEA, and Mike Walsh

Criteria Pollutant Emissions Reduced (seven Northeast LEV States)

- With LEV II implementation, 8 percent of light-duty vehicle VOCs and 16 percent of light-duty vehicle NOx will be reduced
- In 2015, approximately 24 tons per day of NOx will be reduced in the seven Northeast LEV states and 13 tons of VOCs
- In 2025, approximately 29 tons of NOx per day will be reduced and 19 tons of VOCs
- Significant CO emissions reductions are also realized – 80 tons per day with full program implementation or 4 percent of total light-duty CO emissions
- Toxics emissions – such as benzene, 1,3-butadiene and other are also reduced 8 percent or more

Note: See additional slides (18-21) for detail

Northeast LEV Program Implementation



Early adopting Northeast LEV states

ZEV credit multiplier in effect

Northeast ZEV requirements same as CA

The LEV Adoption Process – how it has worked

- Section 177 of the Clean Air Act provides states with the authority to adopt either California or federal vehicle emission standards
- Four states have relied on existing state statutory authority to adopt LEV (NY, RI, VT, and PA)
- Five states passed additional legislation requiring LEV adoption (MA, ME, CT, NJ, and MD)
- Legislation is necessary if:
  - existing statute does not give sufficient authority;
  - state case law constrains environmental agency authority;
  - a specific policy, regulation, or statute prohibits LEV adoption.

The LEV Adoption Process (continued)

- For example, approximately 25 states have regulations, statutes, or policies that prohibit adoption of standards that are more stringent than federal standards
- Each state must evaluate existing authority, state case law, and policies and statutes to determine whether or not sufficient authority exists to adopt LEV without additional legislation

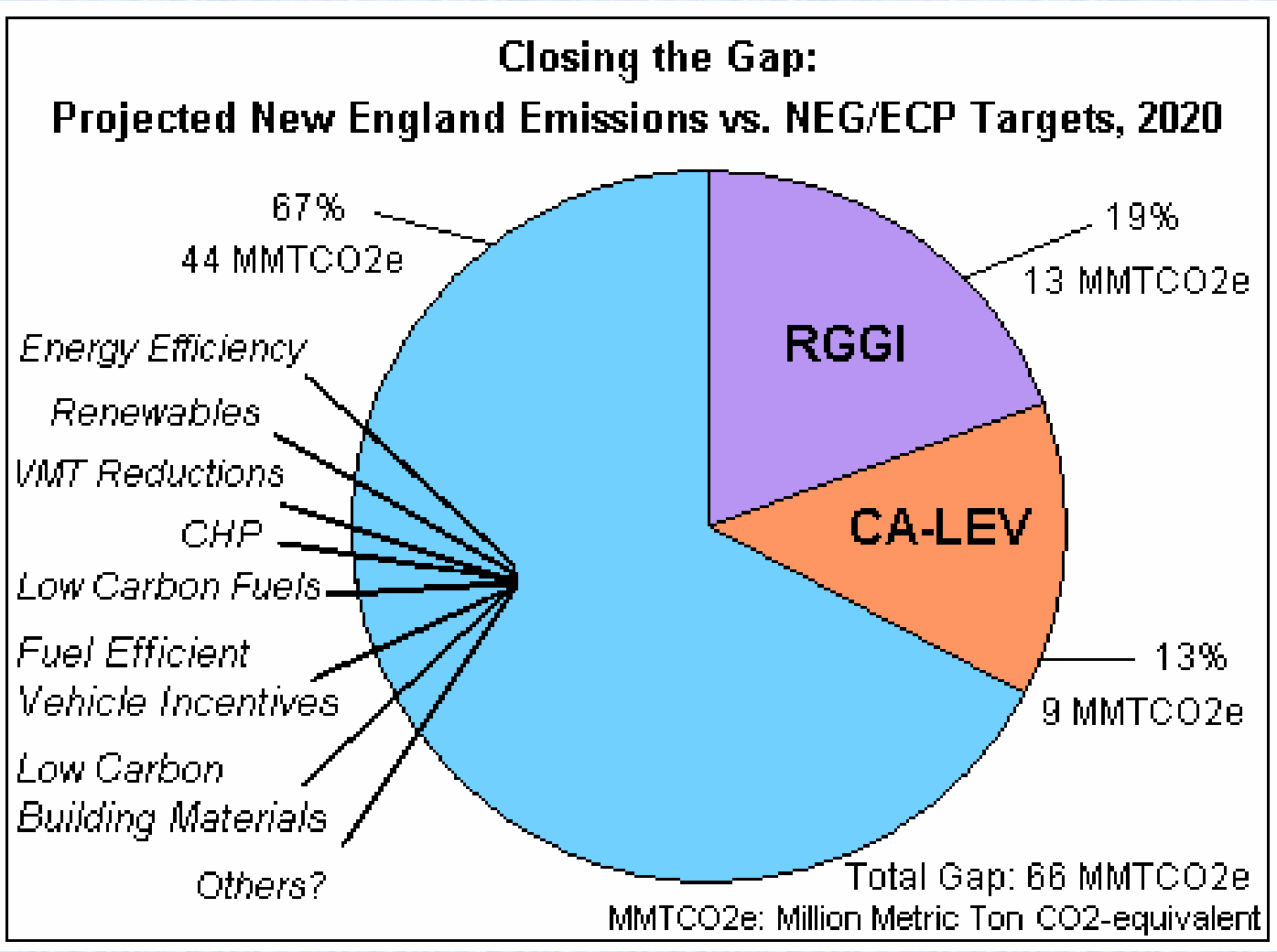
Zero Emission Vehicle (ZEV) Program Requirements in the Northeast

- The ZEV requirement has been in force in NY, MA, and VT since 2007
- ZEV will be in force in the remaining 6 Northeast LEV states between 2008 and 2011
- Until 2011, no fuel cell vehicles will be required in the Northeast in accordance with the "travel provision"
- The Northeast states have provided automobile manufacturers with flexibility in meeting the ZEV requirement in the Northeast
- This flexibility ends in 2009 when the percentage requirements for advanced technology vehicles match California

Northeast State Climate Plan Goals

- The New England Governors and Eastern Canadian Premiers have set a goal of reducing regional GHG emissions to 20% below 1990 levels in 2020
- An additional goal of achieving significant further reductions in the 2050 timeframe has been agreed to
- New York and New Jersey have also established climate plans or targets for GHG emissions reductions

Climate Plan Goals



GHG Emissions Reduced in Northeast LEV States

State	Baseline GHGs (millions of tons)	With Regulation (millions of tons)	GHGs Reduced in 2030 (millions of tons)	Percent Reduction from Baseline
Connecticut	18.2	13.8	4.4	24%
Maine	8.8	6.7	2.1	24%
Massachusetts	28.8	21.9	6.9	24%
New Jersey	35.6	27.0	8.5	24%
New York	60.9	46.4	14.5	24%
Rhode Island	5.5	4.1	1.4	26%
Vermont	5.0	3.8	1.2	24%
Total	**162.8**	**123.7**	**39.0**	**24%**

*An approximate 3% CO_2 reduction that will be realized from ZEV program implementation is not included in these numbers

Reformulated Gasoline Use (10% Ethanol)

	Current RFG Fraction
DC	100%
DE	100%
MA	100%
MD	86%
ME	0%
NH	65%
NJ	100%
NY	54%
PA	25%
RI	100%
VA (part)	100%
VT	0%
OTR	67%

Costs of Compliance and Administration (criteria pollutants)

- State staff working on the program range from ½ FTE to 4 FTE in our region
- The additional cost of purchasing a LEV II vehicle is estimated to be approximately $215 = 1% increased vehicle cost*
- EPA estimates the additional retail cost for vehicles meeting Tier 2 emission standards to be $50-218. Therefore, the additional costs to consumers for vehicles meeting LEV II standards vs. Tier 2 standards are negligible
- The extended LEV warranty on some vehicles may result in lower repair costs to the consumer
- CARB estimates that the cost-effectiveness of LEV II standards relative to LEV I standards is on average $1.00 per pound of pollutants reduced. For comparison purposes, mobile source control measures usually are in the range of $5.00 per pound of emissions and stationary sources are in the range of up to $10.00 per pound of pollutants reduced

*assumes $190 for exhaust controls; $25 for evaporative controls, $19,000 cost for an average vehicle

Conclusions

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- The LEV program has provided critically important NOx and VOC reductions in the Northeast LEV states
- With the introduction of the new ozone standard, emission reductions from the LEV program remain essential to the Northeast air programs
- The LEV program is an essential component of the Northeast state climate action plans to reduce GHGs
- The LEV program has proved to be relatively easy to administer and very cost effective
- Consumers have maintained the same choice of vehicles over the past 12 years of program implementation and the program is transparent to the consumer

Questions? Contact

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Additional Slides

Criteria Emissions Reductions Achieved in Early LEV States*

Calendar Year	NOx Reduced (% light duty emissions)	NOx Reduced (tons per day)	CO Reduced (% light duty emissions)	CO Reduced (tons per day)	VOC Reduced (% light duty emissions)	VOC Reduced (tons per day)
2015	11.4%	18.8	.2%	5.3	6.3%	11.4
2020	14.7%	19.3	.4%	11.8	7.6%	12.1
2025	16.4%	20.1	.9%	25.1	8.4%	13.4

*Massachusetts, New York, Maine, and Vermont

Criteria Emissions Reductions Achieved in Recent LEV States*

Calendar Year	NOx Reduced (% light duty emissions)	NOx Reduced (tons per day)	CO Reduced (% light duty emissions)	CO Reduced (tons per day)	VOC Reduced (% light duty emissions)	VOC Reduced (tons per day)
2015	4.5%	4.9	1.5%	23.5	2.2%	2.6
2020	10.8%	8.1	3.0%	44.8	4.8%	4.5
2025	15.2%	9.7	3.7%	54.7	6.9%	6.0

*Connecticut, Rhode Island, and New Jersey

Method for Calculating LEV Program Criteria Emissions Reductions

- Cambridge Systematics used the MOBILE6.2 model and EPA's June, 2002 guidance document to estimate the emissions difference between LEV II and Tier 2
- EPA, "Modeling Alternative NLEV Implementation and Adoption of California Standards in MOBILE6," June 5, 2002
- The difference between a LEV II and a Tier 2 fleet was estimated
- Northeast state specific data – such as I/M program requirements, fleet mix, and VMT were used

EPA Guidance on Modeling LEV II and Tier 2

- EPA provides input files for MOBILE6 which dictate the number of vehicles in different emissions categories
- This determines the fleet average NOx and VOC emissions level for both LEV II and Tier 2
- The Northeast states used these input files in their MOBILE modeling of Tier 2 and LEV II
- One reason the EPA method results in an emissions difference between LEV II and Tier 2 is the average NOx standard is .07 g/mi for Tier 2 and the average expected NOx emission level for LEV II is .055 g/mi

GHG Emissions Reduced in MA with LEV