

Massachusetts' Multi-Pollutant Policies and the Impacts for Climate Change Policy

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MassDEP

Presentation Outline

- Background on Massachusetts / New England
- Air Quality and Energy Interactions
- Massachusetts' Multi-pollutant strategies
 - Power Plants
 - Mobile Sources
- Conclusions



New England and Massachusetts

- If New England were a country
 - 12th largest in emissions
 - 13th largest economy
 - 43rd in population
- Emissions approx = Spain (310 MMT in 1990)
- MA = 19 tpy per person vs. 26 tpy for US, and 3 tpy globally





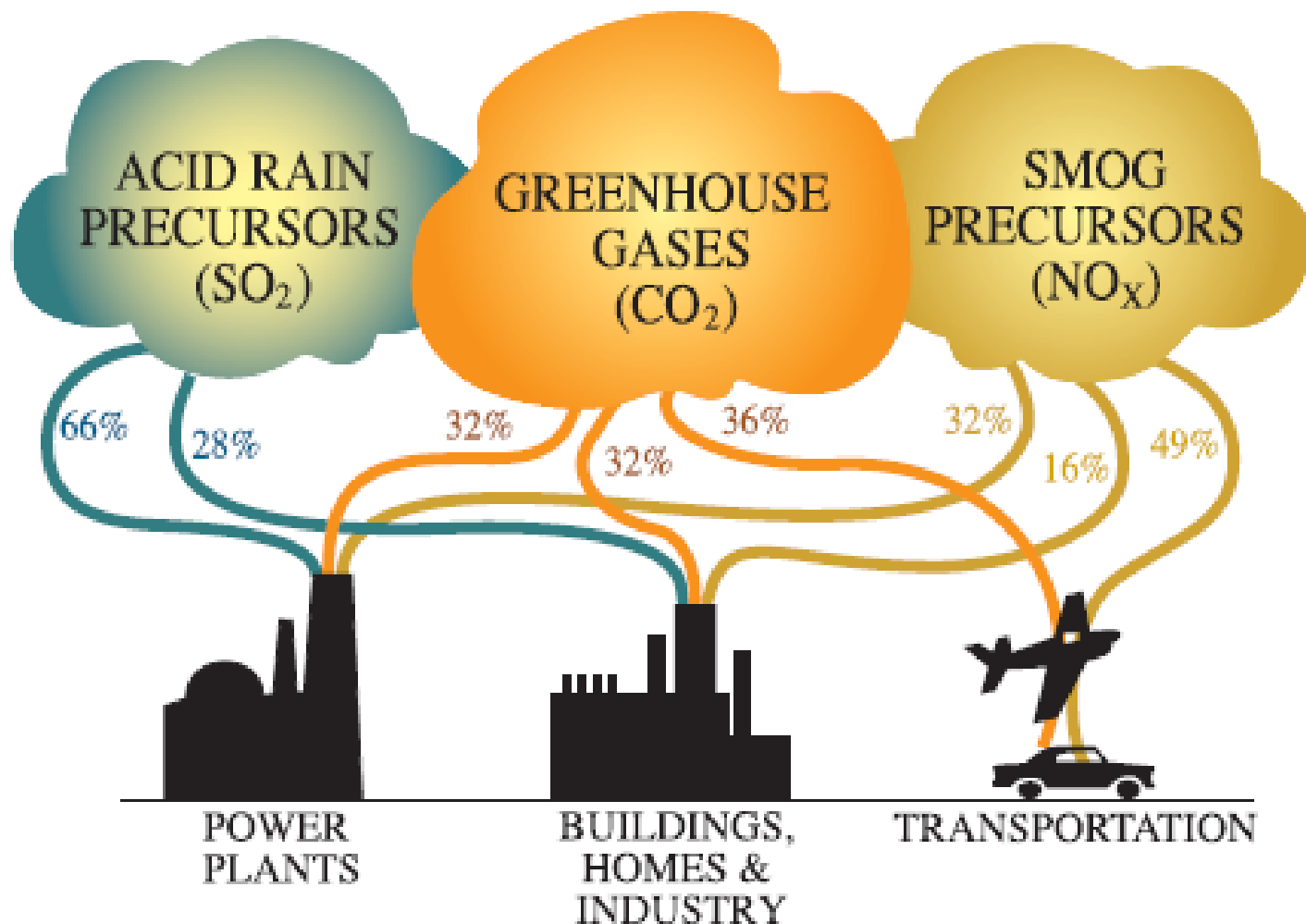
Statistics

- 3rd Largest World Economy
- 14% of US GHG Emissions
- 3.2% of World GHG Emissions (≈ Germany)

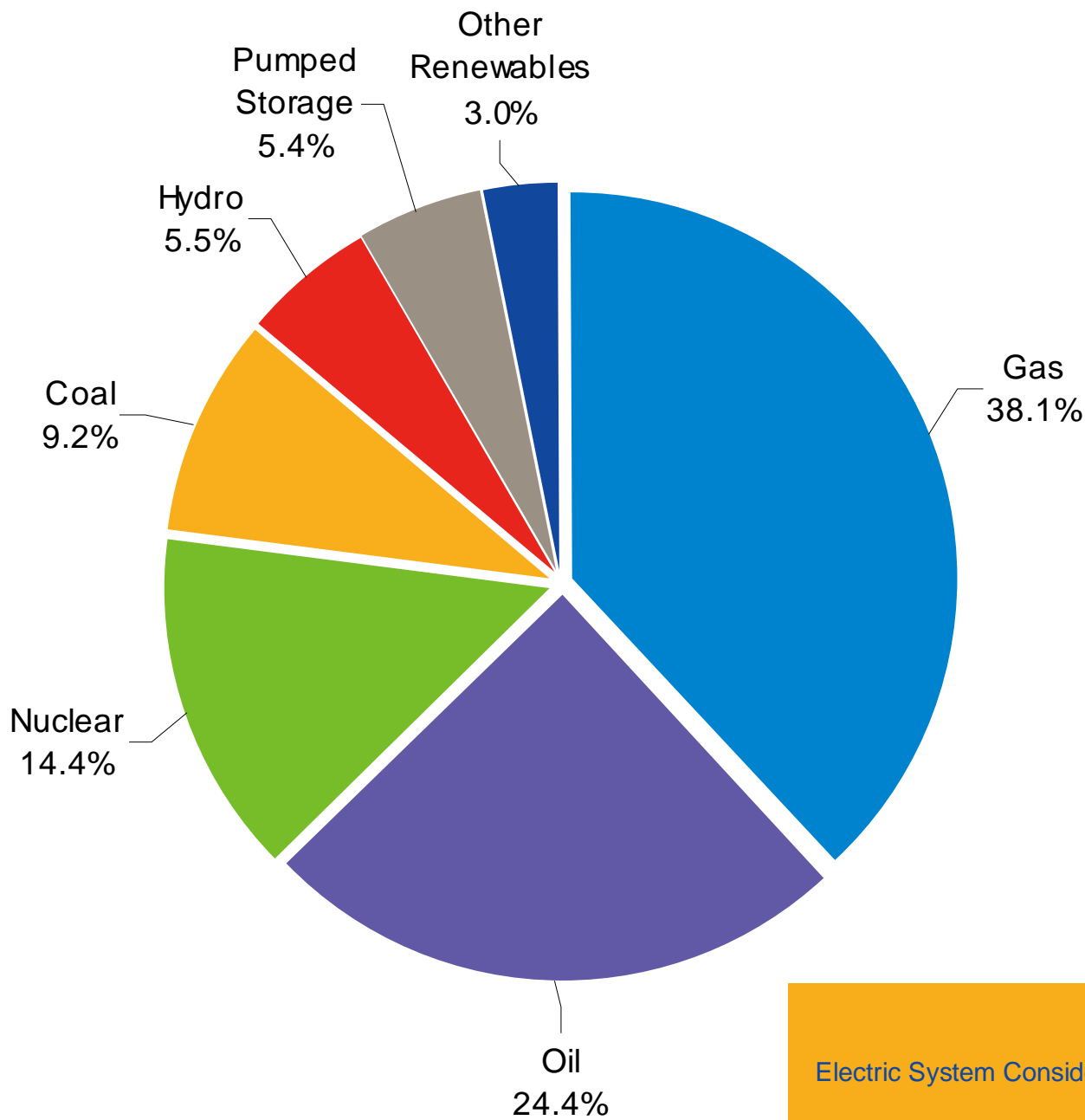


Air Quality and Energy are Inseparable

MASSACHUSETTS SOURCES OF GREENHOUSE GASES, ACID RAIN, AND SMOG



New England's Electricity Market



Power Plant Policies



MA Multi-Pollutant Power Plant Regulation

- Major Provisions Effective May 11, 2001
- Standards
 - Output-Based Emission Rates - SO_2 , NO_x , CO_2
 - Annual caps for CO_2 (tons) and Hg (lbs)
 - Credit creation and trading program for CO_2
- Compliance - 2006, 2008, 2012



Expected Annual Reductions

- Mercury: 85% (about 155 pounds)
- SO₂: 50-75% (about 56,000-84,000 tons)
- NO_x: 50% (about 15,000 tons)
- CO₂: 10% (about 1,954,000 tons, implemented on-site or off-site)



Final Mercury Standard

Effective June 2004

- Form of the standard
 - Output-based and % control efficiency options
- Level of the standard
 - Phase 1: 85% or 0.0075 lb/GWh by 1/2008
 - Phase 2: 95% or 0.0025 lb/GWh by 10/2012



MassDEP Power Plant CO₂ Regulations

- 310 CMR 7.29: Finalized May 11, 2001
 - Annual Carbon Dioxide (CO₂) cap for each facility in 2006
 - Annual facility CO₂ “rate” standard of 1,800 pounds CO₂ per megawatt hour - 2008
- Compliance can be demonstrated with off site reductions according to procedures in trading regulations, finalized October 2006





RGGI Status

- Model Rule issued with state budgets
see: www.RGGI.org/
- Regional organization being developed
- Energy and Air Quality policy links established
- Starting date – Jan. 1, 2009

MA RGGI Status

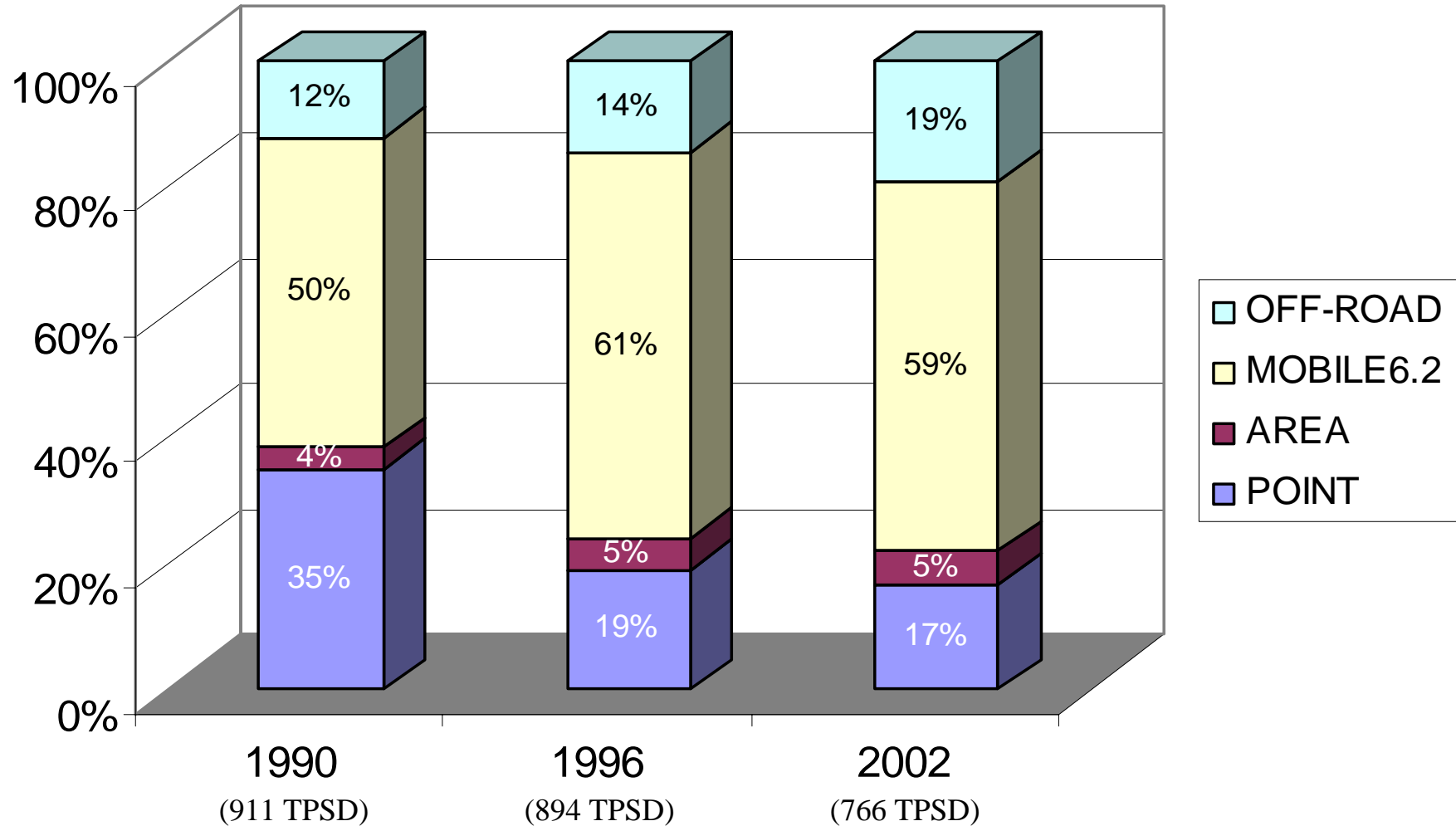
- Rejoined RGGI in January 2007
- Governor indicated auctions for allowance allocation
- Proceeds to go towards renewables and energy efficiency
- Final MA regulation early 2008



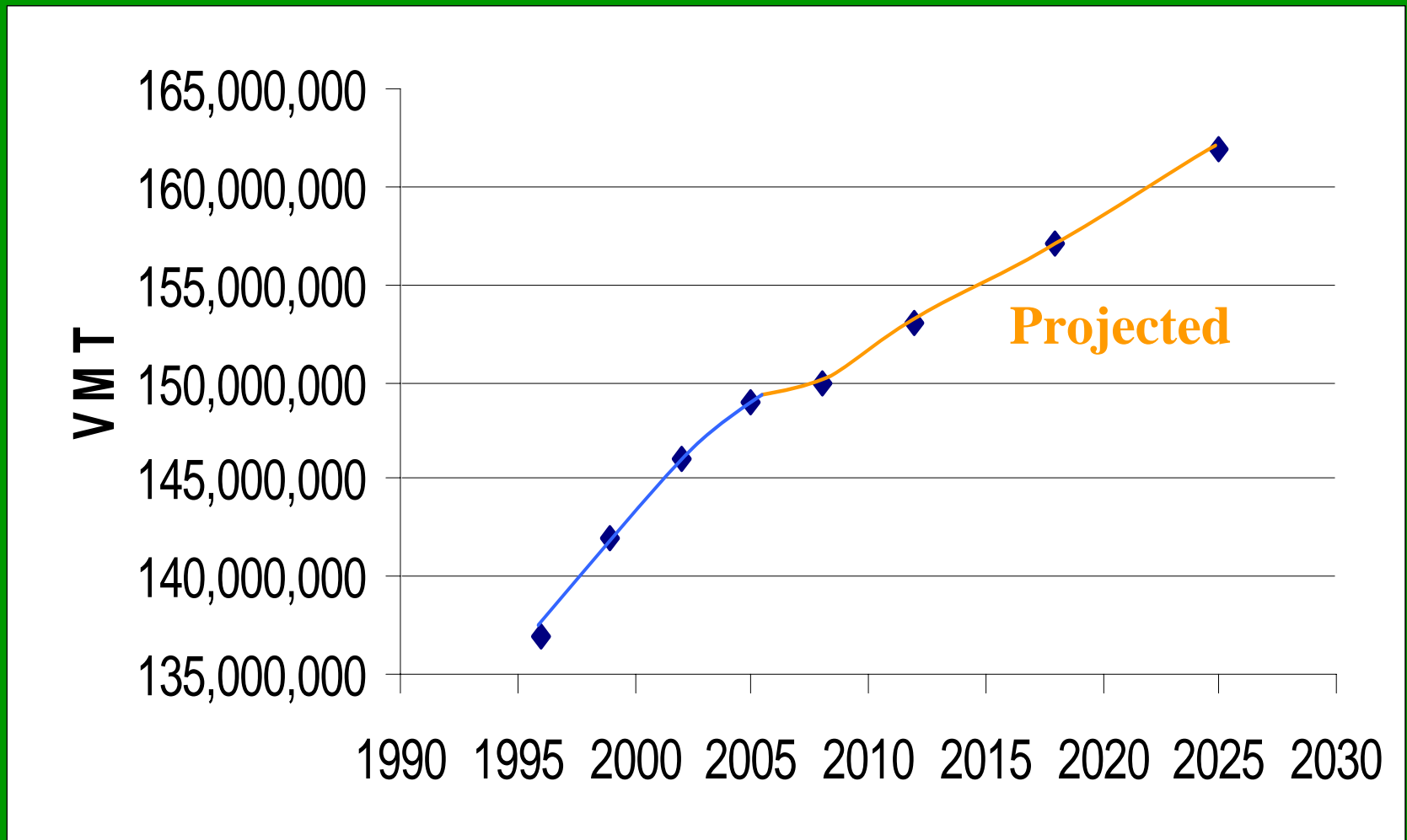
Mobile Source Policies



Trends in NO_x Contribution



MA Vehicle Miles Traveled Counter Other Efforts



Mobile Source Strategies

- CA tailpipe standards
 - Begun early 1990s, now include GHG standards adopted in 2005
- New Federal Fuel standards – gasoline and ultra low sulfur diesel
- VMT reductions – efforts since mid-1970s
- Retrofits of on- and off- road engines



CA LEV GHG Standards

- MA and 9 other states have adopted CA standards
- Estimated GHG emission reductions of 18% in 2020 and 24% in 2030
- Added Cost of approx \$1000 per vehicle offset by saved operating costs
- Court challenges remain - Standards take effect in model year 2009?



Conclusions

- Air Quality Policy and Energy Policy must be linked
- In the US, Mobile Sources contribution is increasing – solutions will difficult
- Multi-pollutant strategies are effective
- Carbon policies can be linked to other AQ efforts - mobile and stationary sources



More Information – Power Plants

- Statement of Reasons & Response to Comments: 310 CMR 7.29, Emission Standards for Power Plants

<http://www.mass.gov/dep/air/laws/regulati.htm>

- Greenhouse Gas Credits: Technical Support Document & MassDEP Response to Comments: Amendments to 310 CMR 7.00: Appendix B & 310 CMR 7.29

<http://www.mass.gov/dep/air/laws/regulati.htm>



Thank you very much!

Questions, Comments?

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