

# Massachusetts Greenhouse Gas Reporting Regulation 310 CMR 7.71

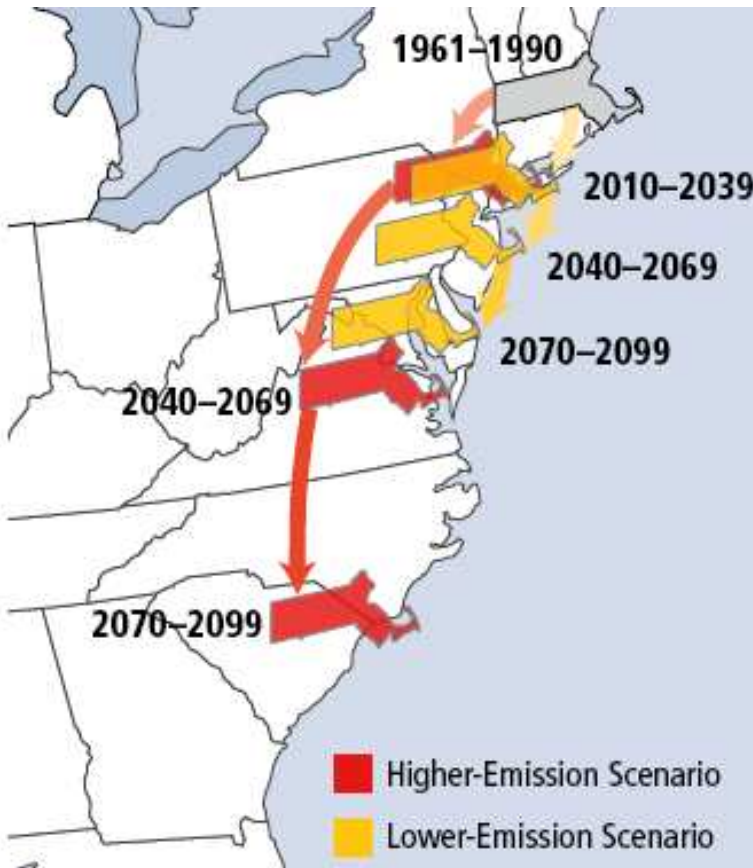


**James C. Colman, MassDEP**

Massachusetts Regulation on Reporting of  
Greenhouse Gas Emissions Seminar

July 23, 2009

# Climate Change: Massachusetts Impacts



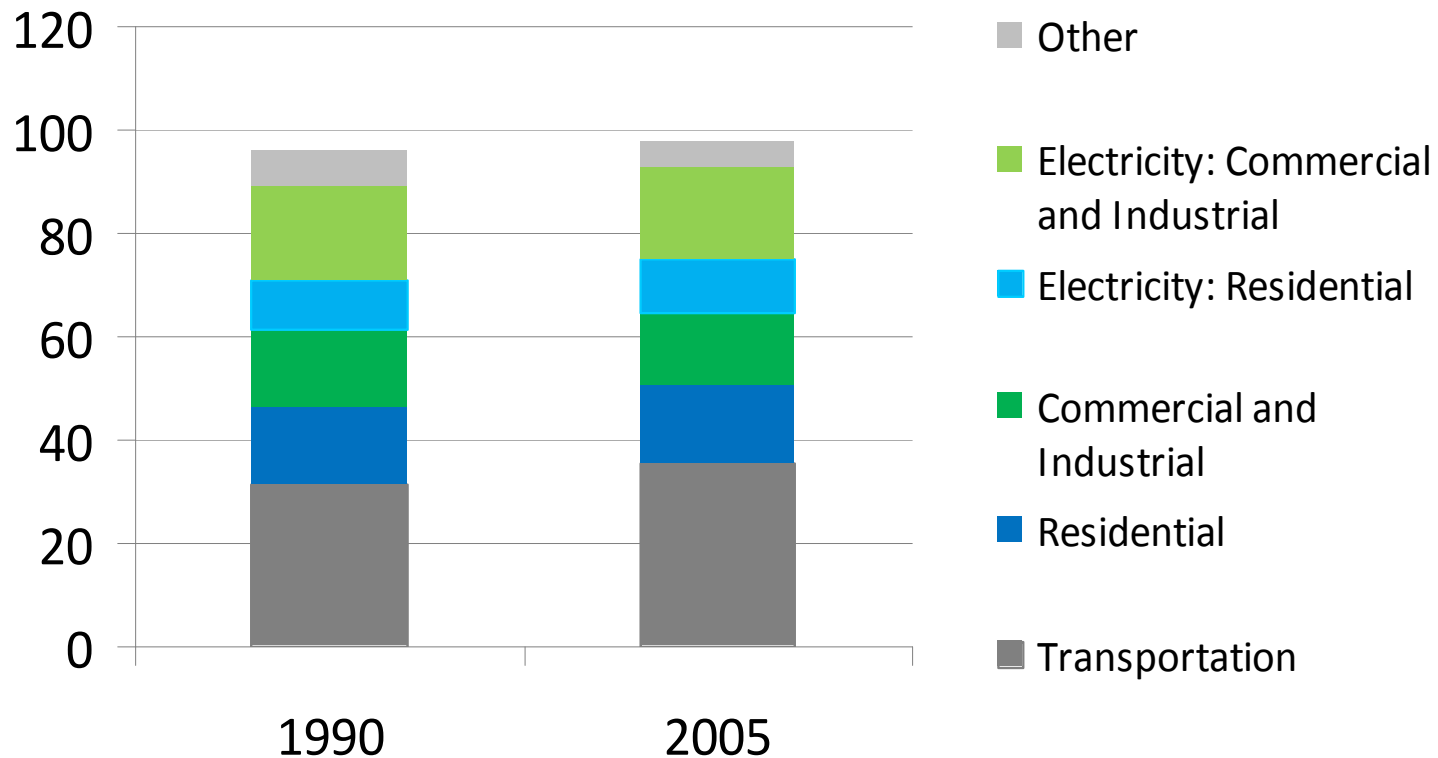
Source: UCS, 2007

- Rising Sea Levels → Coastal Erosion
- Warmer Water → Degraded Habitats  
Cranberry Industry and Agriculture Impacts
- Hotter Summers → Health Impacts  
More Droughts
- Warmer Winters → Less Maple Syrup  
Less Snow/ Skiing

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# 1990 and 2005 MA GHG Emissions by Sector



\*"Other" includes Agriculture, Waste, and Natural Gas transmission and distribution

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# Massachusetts Environmental Legislation

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The 2008 Legislative Session resulted in five nation leading pieces of legislation that put Massachusetts at the national forefront addressing climate and building a clean energy economy.

- Global Warming Solutions Act
- Green Communities Act
- Ocean Act
- Biofuels Act
- Green Jobs Act

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# The Global Warming Solutions Act (GWSA)

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- Signed by Governor Patrick on August 7, 2008.
- Major Provisions:
  - Require Mandatory Reporting of Greenhouse Gas (GHG) Emissions
  - Track Statewide GHG Emissions
  - Develop 1990 Baseline and 2020 BAU Projection
  - Convene mitigation advisory committee and adaptation advisory committee
  - Develop Targets and Plans to Achieve Statewide Reductions
    - o 10%-25% below 1990 levels by 2020
    - o 80% below 1990 levels by 2050
  - Economy-wide emission reduction plans

Full text of the GWSA can be found at:

<http://www.mass.gov/legis/laws/seslaw08/sl080298.htm>

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# 1990 Greenhouse Gas Emissions Baseline

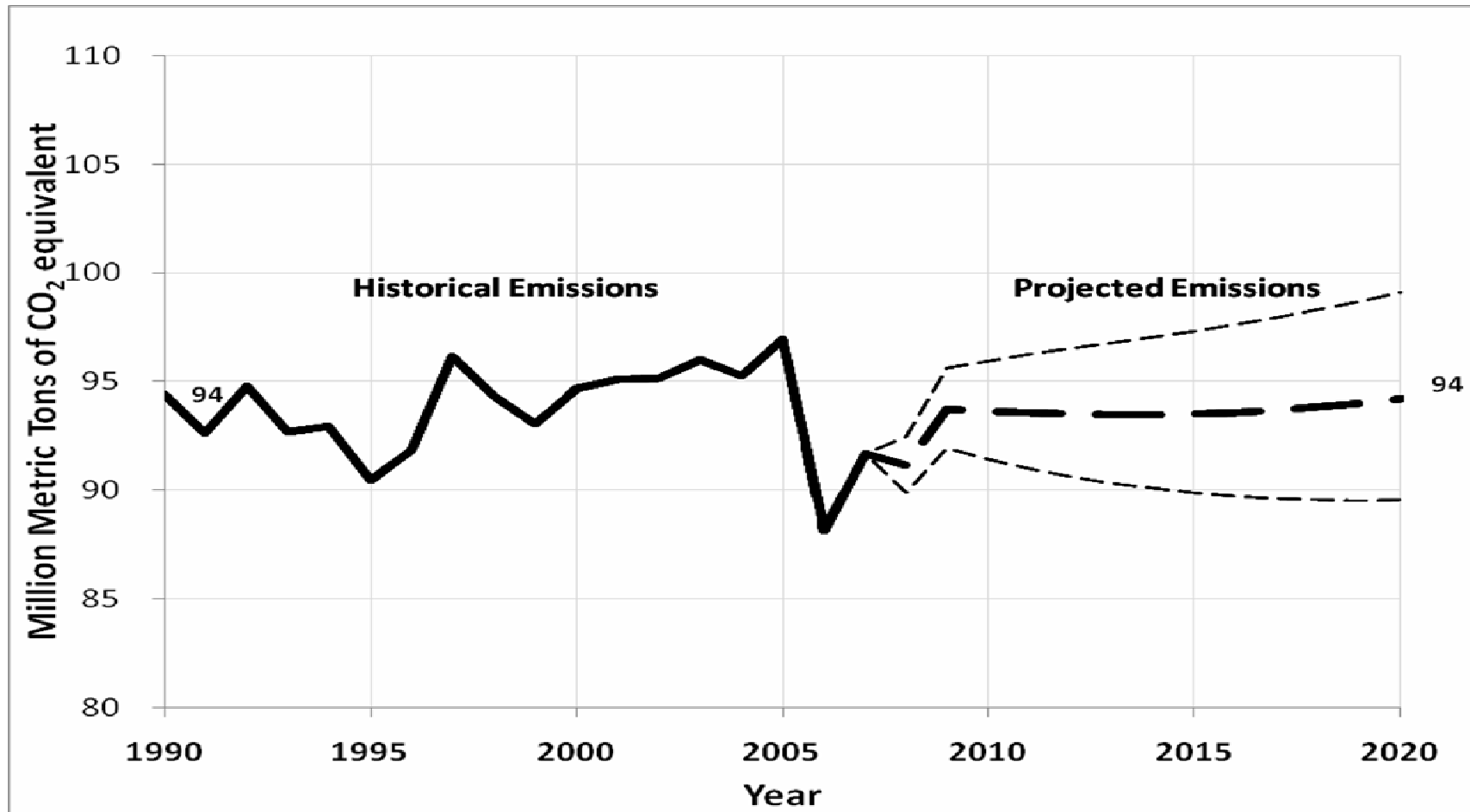
**Table 1: 1990 Baseline (MMTCO<sub>2</sub>e)**

<b>Energy Total</b>	<b>89.8</b>
CO <sub>2</sub> from Fossil Fuel Combustion	83.9
Residential CO <sub>2</sub>	15.0
Commercial CO <sub>2</sub>	8.4
Industrial CO <sub>2</sub>	6.0
Transportation CO <sub>2</sub>	28.9
Electric Generation CO <sub>2</sub>	25.6
Electricity Imports CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	2.0
Other Gases Total	3.8
Stationary Combustion	0.4
Electric Power	0.1
Other	0.3
Mobile Combustion	1.5
Natural Gas and Oil Systems	1.9
<b>Industrial Processes</b>	<b>0.7</b>
<b>Agriculture</b>	<b>0.4</b>
<b>Waste</b>	<b>3.6</b>
<b>Gross Emissions</b>	<b>94.4</b>

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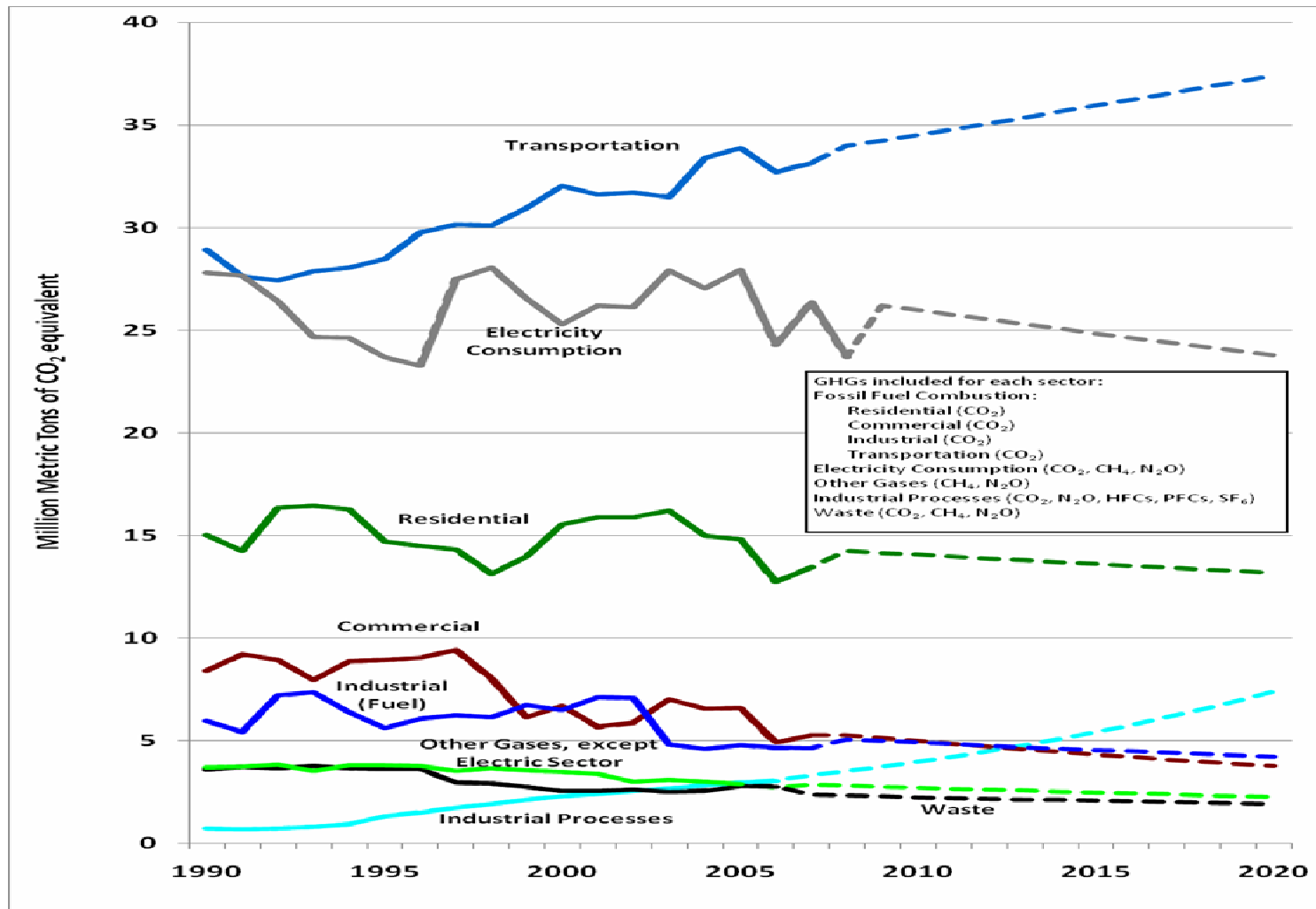
# 2020 Business as Usual (BAU) Emissions Projection



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# 2020 BAU Emissions Projection by Sector



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# GHG Emission Reporting Purposes

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- “What is measured, can be reduced”
- Measure progress to 2020 & 2050 Goals
- Target programs to reduce emissions where greatest reductions can happen
- Identify successful strategies

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# Timeline

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- December 2008: Emergency regulation promulgated
- April 2009: Registration pursuant to emergency regulation
- April 2009: Public comment on amendments
- **July 2009: Final amended “comprehensive” regulation**
- April 2010: Facilities Report 2009 CO<sub>2</sub> emissions
- 2011 and future years: Facilities Report 2010 emissions of 6 GHGs by April and triennial verification required by December

Regulations are available at:

<http://www.mass.gov/dep/air/laws/regulati.htm#771>

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# GHG Reporting Requirements

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- Applicability
- Registration of 2008 Emissions
- Annual Reporting Requirements for Facilities
- Verification of Facility Reports
- Voluntary Reporting by Facilities
- Reporting Requirements for Electricity Sellers

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# Applicability

- The GWSA identifies reporters:
  - Facilities subject to 310 CMR 7.00: *Appendix C* (The MA Air Operating Permit Program)
  - Facilities that emit  $> 5,000$  tons/year in CO<sub>2</sub>e
  - Retail electricity sellers.
- Once in always in, unless a facility can show that it is unlikely to trigger any applicability requirement in any future year.

# Registration of 2008 Emissions

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- One-time requirement for facilities to submit a form to MassDEP by April 15, 2009 based on 2008 emissions of:
  - direct stack emissions only (no motor vehicles)
  - fossil fuel combustion only (no biomass)
  - CO<sub>2</sub> only
- Nearly 300 facilities have registered



# Annual Reporting Requirements

- Most facilities report “direct emissions”
  - Includes emissions from motor vehicles and emissions from stationary emission sources (factory stacks, manufacturing processes, vents, fugitive emissions).
- Report “in accordance with all applicable provisions of the General Reporting Protocol.”
- Facilities will report to a “regional greenhouse gas registry.”
- 2009: CO<sub>2</sub> only; 2010: six gases
- Reporting deadline is April 15<sup>th</sup>



# The Climate Registry (TCR)

“The Climate Registry is a nonprofit collaboration among North American states ... that sets consistent and transparent standards to calculate, verify and publicly report greenhouse gas emissions into a single registry.”

- TCR will be working with MassDEP to support Massachusetts GHG reporting program.
- MassDEP is utilizing existing TCR protocols and expertise
  - General Reporting Protocol (GRP)
    - Detailed technical guidelines for quantifying GHG emissions
  - General Verification Protocol (GVP)
    - Describes the third party verification process.



# Triennial Verification of Facility Reports

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- Third Party Verification by a The Climate Registry (TCR) accredited verification body
- Required once every 3 years on a staggered schedule
  - Largest facilities verify emissions first, starting in 2011
- GHG emissions data exempt from verification:
  - Reported to US EPA in accordance with 40 CFR Part 75 (large combustion facilities only)
  - Included in RGGI offset project report
  - Reported to TCR's voluntary program



# Voluntary Reporting by Facilities

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- Voluntary reporting by facilities not otherwise subject to 310 CMR 7.71
- Facilities may include additional data elements, beyond those required, in any report



# Requirements for Electricity Sellers

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- Reporters include all retail sellers of electricity:
  - Electric utilities, i.e., distribution companies (4)
  - Municipal electric departments } (40)
  - Municipal light boards }
  - Competitive suppliers (~40)
- Electricity sellers will report MWhs sold and GHG emissions
- MassDEP will publish annual emission factors that facilities can use to calculate GHG emissions
- Optional adjustment for retail sellers that document sales of electricity from specific low carbon generation sources (e.g. RECs, long term contracts)



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# Greenhouse Gas Reporting



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# How to calculate GHG emissions for report

$$\text{Emissions} = \text{MWh} \times \text{EF} \times \frac{1 \text{ short ton}}{2,000 \text{ pounds}}$$

Where:

- Emissions = short tons of carbon dioxide equivalents (CO<sub>2</sub>e); CO<sub>2</sub>e means that, for gases other than carbon dioxide, the value is adjusted to account for differing global warming potentials
- MWh = Megawatt hours supplied by retail seller for consumption in MA
- EF = Biogenic and non-biogenic emission factors in lb CO<sub>2</sub>e/MWh, updated annually by MassDEP after public comment; includes CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, weighted for global warming potential

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