SLIDES: Major New York State Climate Change Policies

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Major New York State Climate Change Policies

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Climate change is real

There will always be uncertainty in understanding a system as complex as the world’s climate. However there is now strong evidence that significant global warming is occurring. The evidence comes from direct measurements of rising surface air temperatures and subsurface ocean temperatures and from phenomena such as increases in average global sea level, melting glaciers, and changes to many physical and biological systems. It is likely that most of the warming in recent decades can be attributed to human activities (IPCC 2007). This warming has already led to changes in the Earth’s climate.

The existence of greenhouse gases in the atmosphere is vital to life on Earth—indeed most average temperatures would be about 33 centigrade degrees lower than they are today. But human activities are now causing atmospheric concentrations of greenhouse gases—such as carbon dioxide, methane, tropospheric ozone, and nitrous oxides—to rise well above pre-industrial levels. Carbon dioxide levels have increased from 280 ppm in 1750 to over 375 ppm today (higher than any previous levels that can be reliably measured i.e. in the last 420,000 years). Increasing greenhouse gases are causing temperatures to rise; the Earth’s surface warmed by approximately 0.6 centigrade degrees over the twentieth century. The Intergovernmental Panel on Climate Change (IPCC) projected that the average global surface temperatures will continue to increase to between 1.4 centigrade degrees and 5.8 centigrade degrees above 1990 levels, by 2100.

Reduce the causes of climate change

The scientific understanding of climate change is now sufficiently clear to justify nations taking prompt action. It is vital that all nations identify cost-effective steps that they can now take, to contribute to substantial and long-term reduction in net global greenhouse gas emissions.

Action taken now to reduce significantly the build-up of greenhouse gases in the atmosphere will lessen the magnitude and rate of climate change. As the United Nations Framework Convention on Climate Change (UNFCCC) recognises, a lack of full scientific certainty about some aspects of climate change is not a reason for delaying an immediate response that will, at a reasonable cost, prevent dangerous anthropogenic interference with the climate system.

As nations and economies develop over the next 25 years, world primary energy demand is estimated to increase by almost 60%. Fossil fuels, which are responsible for the majority of carbon dioxide emissions produced by human activities, provide valuable resources for many nations and are projected to provide 85% of this demand (IEA, 2004). Minimising the amount of this carbon dioxide reaching the atmosphere presents a huge challenge. There are many potentially cost-effective technological options that could contribute to stabilising greenhouse gas concentrations. These are at various stages of research and development, however barriers to their broad deployment still need to be overcome.

Carbon dioxide can remain in the atmosphere for many decades. Even with possible lowered emission rates we will be experiencing the impacts of climate change throughout the 21st century and beyond. Failure to implement significant reductions in net greenhouse gas emissions now will make the job much harder in the future.

Prepare for the consequences of climate change

Major parts of the climate system respond slowly to changes in greenhouse gas concentrations. Even if greenhouse gas emissions were stabilised instantly at today’s levels, the climate would still continue to change as it adapts to the increased emissions of recent decades. Further changes in climate are therefore unavoidable. Nations must prepare for them.

The projected changes in climate will have both beneficial and adverse effects at the regional level, for example on water resources, agriculture, natural ecosystems and human health. The larger and faster the changes in climate, the more likely it is that adverse effects will dominate. Increasing temperatures are likely to increase the frequency and severity of weather events such as heat waves and heavy rainfall, increasing temperatures could lead to large-scale effects such as melting of large ice sheets (with major impacts on low-lying regions throughout the world). The IPCC estimates that the combined effects of ice melting and sea-water expansion from ocean warming are likely to cause the global mean sea-level to rise by between 0.1 and 0.9 metres between 1990 and 2100. In Bangladesh alone, a 0.5-metre sea-level rise would place about 6 million people at risk from flooding.

Developing nations that lack the infrastructure or resources to respond to the impacts of climate change will be particularly affected. It is clear that many of the world’s poorest people are likely to suffer the most from climate change. Long-term global efforts to create a more healthy, prosperous and sustainable world may be severely hindered by changes in the climate.

The task of devising and implementing strategies to adapt to the consequences of climate change will require worldwide collaborative inputs from a wide range of experts, including physical and natural scientists, engineers, social scientists, medical scientists, those in the humanities, business leaders and economists.
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Joint National Academies of Science Statement
June 2005

“The scientific understanding of climate change is now sufficiently clear to justify nations taking prompt action.”
New York’s Climate
New York City’s Coastal Infrastructure

Long Island Coastline
Wilderness Areas—a key economic engine for New York.
Healthy Tourism depends on Climate Protection
Natural Resources Drive the Economy: Maple Syrup, Coldwater Fisheries, Wood Products Industry
New York’s Energy Consumption Means Billions Leave the State Each Year

NY Spent $55 Billion on Energy in 2005
Major New York Climate Policies
New York Climate Policy

Government Sector

Transportation Sector

Electric Generating Sector

Buildings Sector

Sequestration
Major New York Climate Change Initiatives

Overall State Reduction Targets

• 5% Below 1990 Levels by 2010
• 10% Below 1990 Levels by 2020
Government Sector

Lead by Example Measures (2001)

- 35% reduction in energy use by 2010
- 20% state energy consumption from renewables by 2010
- 100% all state vehicles will be zero emission, hybrid or alternatively fueled by 2010
Transportation

• Vehicle GHG Emissions Standards—
  – Beginning with 2009 Model Year
  – 30% reduction in vehicle greenhouse gas emissions

• Tax Incentives for biofuels, alternative-fuel vehicles

• Cleaner Mass-Transit, e.g., hybrid electric buses.

• Green Vehicle Incentives (Green EZPass, HOV Lane Rules)
Buildings Sector

- Aggressive Energy Efficiency Program ($300 million annually)
- Appliance and Equipment Efficiency Standards
- Green Building Tax Credit
- Urban Shade Trees
Sequestration

- Since 1995, preservation of 1 million new acres
- Open Space Acquisitions
- Urban Forestry
Electric Generating Sector

- Regional Greenhouse Gas Initiative to Reduce CO$_2$ Emissions from Power Plants through Mandatory Cap-and-trade Program
Background

- April 2003 Invitation from New York Governor Pataki
- 2 & ½ Year Design Process
- December 2005 Memorandum of Understanding (7 States)
- Maryland to Join
Designing RGGI: A Cap-and-Trade Program

1. Identify Sources to be Covered
2. Determine Total Emissions from Covered Sources & Set Cap
3. Issue Allowances (1 per ton) & Distribute
4. Trade
5. Sources Cover Emissions with Allowances and/or Offsets
6. Offsets
RGGI Program

- Start Date of 2009
- Covers Power Plants 25 Megawatts+
- Two-Phase Cap—Stabilize Emissions through 2015; Reduce 10% by 2019.
- Three-year compliance periods
- No Sunset Provision—No End Date
RGGI Program

• **Allocations:**
  – 25% for Auction for Consumer Benefit and/or Strategic Energy Purpose (can be higher—Vermont will auction 100%)
  – Remaining 75% of the allocations left to each state to allocate

• **Banking Allowed**
RGGI Program

• Offsets—5 Initial Types:
  – Natural Gas, Propane, Heating Oil Efficiency;
  – Land to Forest;
  – Landfill Gas Capture & Combustion;
  – Methane Capture from Animal Operations
  – SF₆ Leak Prevention;
RGGI Next Steps

• States to Implement Program on State-by-State Basis
• Maryland “On-Ramp”
• Add Additional States—MA & RI
• Link with West Coast—CA, OR, WA, AZ, NM?
• Recognize additional international emissions “currencies”?
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RGGI Program Components

• Offsets—project-based reductions:
  – Types:
    • Natural Gas, Propane, Heating Oil Efficiency
    • Land to Forest
    • Landfill Gas Capture & Combustion
    • Methane Capture from Animal Operations
    • SF$_6$ Leak Prevention