Investing New York's RGGI Auction Proceeds

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Program Goals

- Reduce GHG emissions in New York
- Reduce the cost of complying with the CO_2 Budget Trading Program
- Target funding for near-term CO_2 reductions and long-term developments in the program (approx. 75/25)
- Leverage additional improvements by building emissions reduction capacity in the public and private sectors

Program Focus

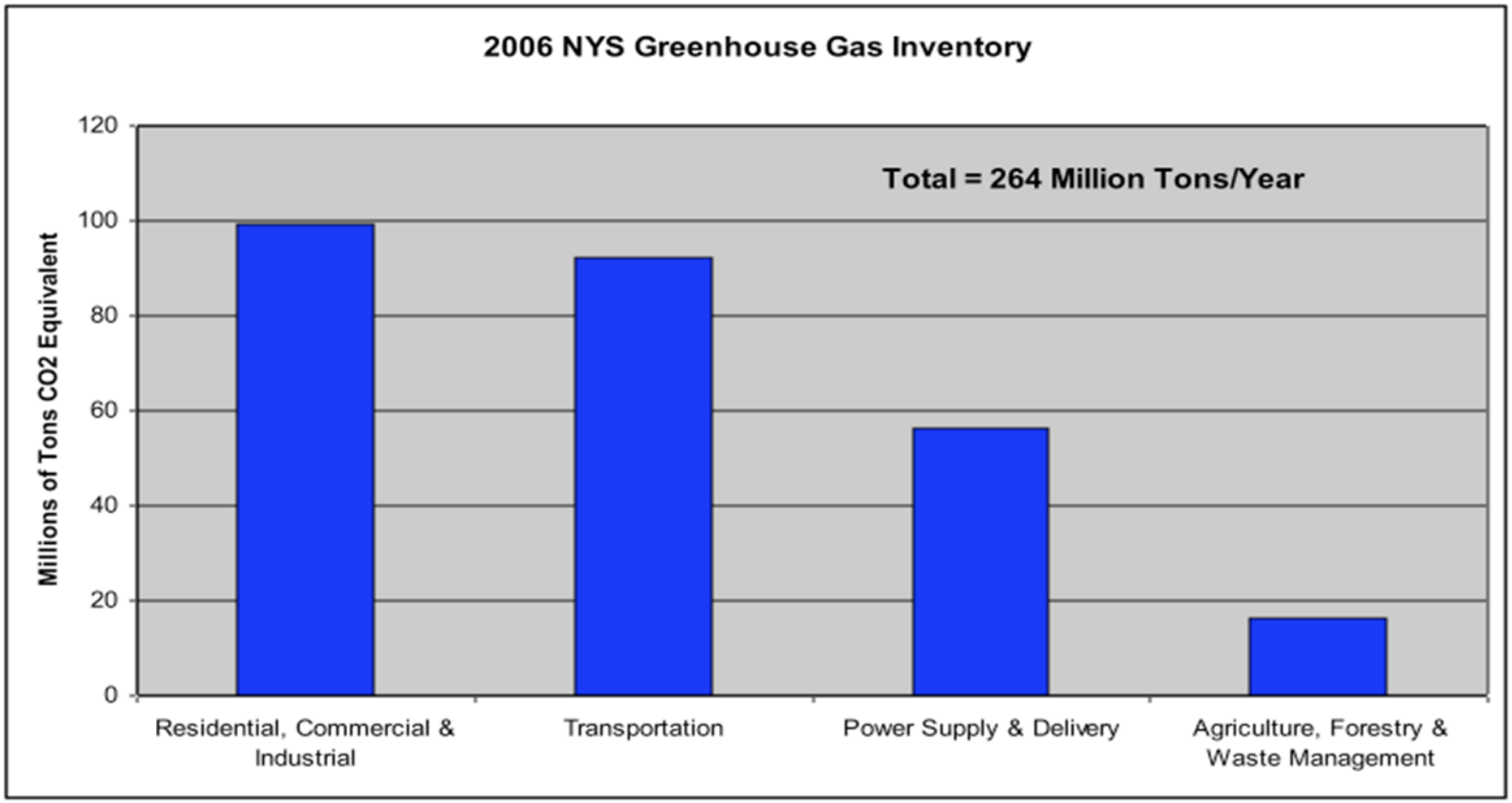
Investments will be Focused on . . .

- GHG reduction opportunities related to energy production and use across a spectrum of fuels and energy consumption activities.
- Advancing the State's broad energy goal of moving toward a clean energy economy.
- Possible Federal Gov't Stimulus Package Opportunities.
- Providing reductions in GHGs in the near term.
- Positioning New York to make additional long-term reductions.

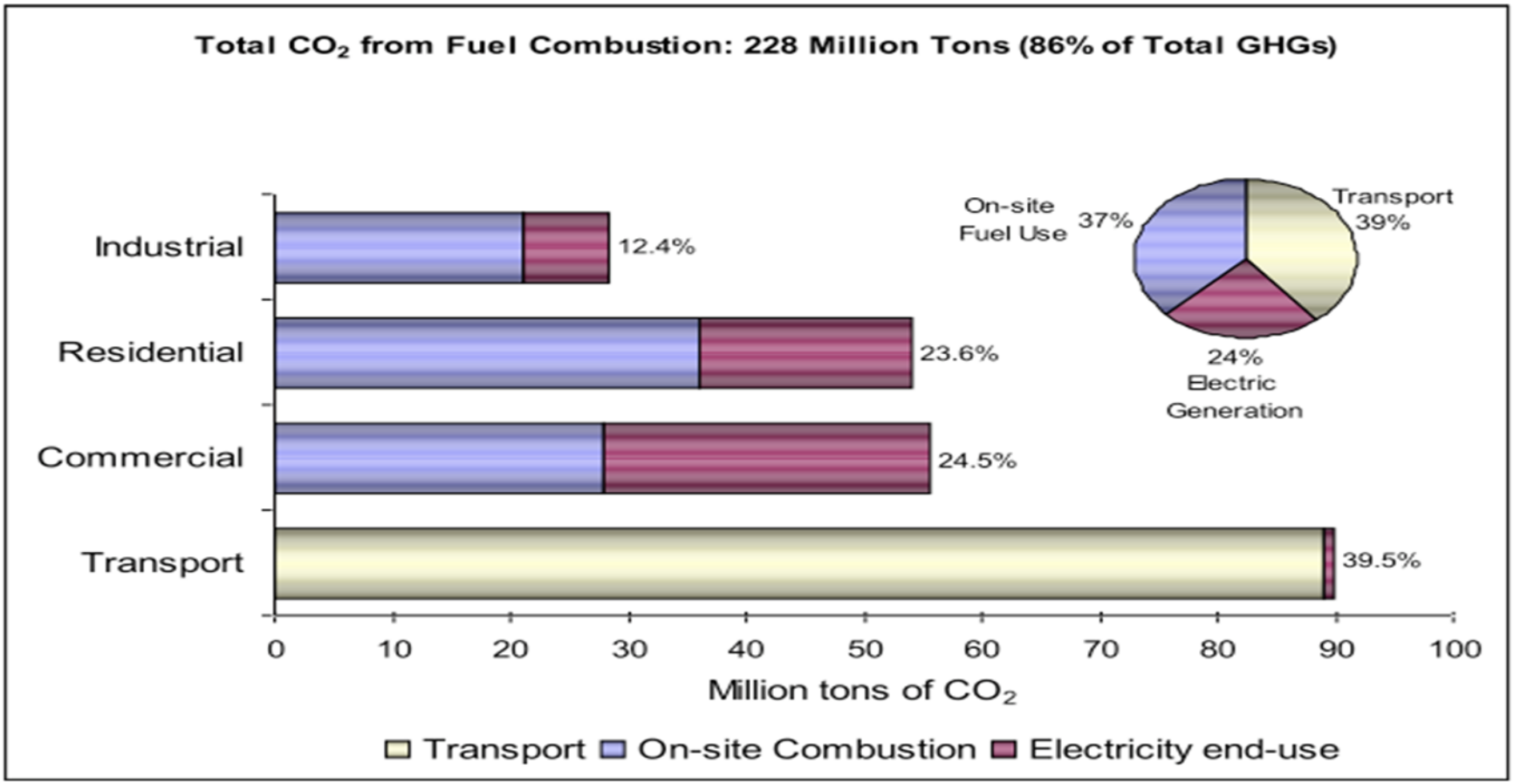
Proposed Funding Criteria

- Cost effectiveness: carbon equivalents reduced per dollar invested
- Long-range potential for the investment to reduce GHG emissions in New York
- Potential to reduce the cost of achieving CO_2 Budget Trading Program goals
- Other benefits to New York (e.g., create jobs; leverage capital investment in New York to promote economic development, health and environmental benefits)
- Reduce the cost burden and environmental impacts on low-income families and environmental justice communities
- Need for these funds based upon availability of other funding sources

2006 NYS Greenhouse Gas Inventory Breakdown by Sector



New York CO_2 Emissions from Fuel Combustion (2006)



Program Funding Target Areas

Residential, Commercial, Industrial (On-site Energy Use)

Power Supply and Delivery

Transportation

Agriculture, Forestry and Waste Management

Multidisciplinary Initiatives

Target Area: Residential, Commercial, and Industrial Sectors

Purpose

- Reduce end-user fuel consumption through EE and conservation
- Reduce on-site emissions

Strategies

- Target fuels/technologies not addressed by other funding
- Focus on environmental justice communities
- Increase emerging EE and clean energy technologies
- Use existing programs for delivery to the extent possible

Target Area: Residential, Commercial, and Industrial Sectors

Near term potential to reduce greenhouse gases in NYS

- Oil, gas, and wood heating system repairs and replacements as part of whole building EE
- Green building incentives to lower the carbon footprint of new construction projects
- Solar thermal and ground-source systems, combined heat and power systems, and district heating systems
- Improved industrial processes
- Technologies and practices to reduce the use of hot water

Target Area: Residential, Commercial, and Industrial Sectors

Long-range potential to reduce greenhouse gases in NYS

- Advanced building controls and automation
- More efficient operations
- Occupancy awareness
- Response to energy price signals
- Flexible load end-use appliances/smart grid requirements
- Lighting and day-lighting systems
- Demonstration of modulating HVAC systems
- Demonstration of advanced building systems to show feasibility of meeting improved codes and standards

Target Area: Power Supply and Delivery

Purpose

- Reduce carbon footprint of the electric generation, transmission and distribution industries
- Co-benefits of reduced emissions of sulfur/nitrogen oxides, particulate matter

Strategies

- Target activities to reduce compliance costs for generators
- Focus on EJ communities – esp. peak demand units
- Increase deployment of emerging technologies
- Use existing programs for delivery to the extent possible

Target Area: Power Supply and Delivery

Near term potential to reduce greenhouse gases in NYS

- Improved efficiency of existing power plants
- Increased performance and capacity of T&D infrastructure
- Demonstrations to reduce risks of incremental investment
- Advanced controls, transformers, cabling & other technologies

Target Area: Power Supply and Delivery

Long-range potential to reduce greenhouse gases in NYS

- Smart Grid/Advanced Controls/Energy Storage
  - Stabilize wind assets & increase market penetration of renewables
  - Improve power quality
  - Reduce congestion and enhance reliability
- Advanced Renewables Demonstrations
  - Tidal power, off-shore wind
- Carbon Capture and Sequestration
  - Gas separation for O_2, CO_2
- Dual-fuel/ Bio-fuels
  - EJ related to reducing emissions at peaking units

Target Area: Transportation

Purpose

- The Transportation initiative focuses on new and improved technologies and programs that target behavioral changes

Strategies

- Reduce vehicle miles traveled
- Increase use of renewable alternative fuels (per Renewable Fuels Roadmap and Sustainable Biomass Feedstock Study)
- Develop and deploy high efficiency vehicles
- Improve performance and efficiency of transportation systems

Target Area: Transportation

Near term potential to reduce greenhouse gases in NYS

- Vehicle Miles Traveled (VMT) Reduction and Smart Growth
- Metropolitan Transportation Authority (MTA) Systems Efficiency
- Transportation Systems Improvements
- Idling Reduction
- Alternative Fuel Vehicles (AFV) and Vehicle Efficiency
- Fleet Modernization

Target Area: Transportation

Long-range potential to reduce greenhouse gases in NYS

- Advanced Transportation Technologies and Systems
  - Plug-in hybrid electric vehicles, electric vehicles and vehicle to grid (V2G)
  - electrified rail systems
- Commercial Hybrids, advanced Alternate Fuel Vehicles
- Larger-scale Transportation Demand Management
- Intelligent Transportation Systems
- Low Carbon Fuel Utilization
- Transit Improvements
- Land use/Transit Oriented Developments (TOD)

Target Area: Agriculture, Forestry, and Sustainable Bioenergy

Purpose

- Reduce Lifecycle Carbon Intensity of biopower and biofuels
- Reduce emissions from ag, forestry & waste management
- Characterize potential for terrestrial carbon sequestration

Strategies

- Foster innovation and new business strategies
- Promote sustainable resource management techniques
- Guidance from ongoing New York State Renewable Fuels Roadmap and Sustainable Biomass Feedstock Study

Target Area: Agriculture, Forestry, and Sustainable Bioenergy

Near and mid-term potential to reduce greenhouse gas emissions in NYS

- Produce and capture biogas from biological waste streams for electric or thermal applications
- Integrated on-farm energy efficiency & energy production

Near and mid-term potential to build infrastructure & capacity

- Strengthen the supply infrastructure through workforce development, training, and business support programs
- Expand education and outreach to forest landowners, the public, and other stakeholders

Target Area: Agriculture, Forestry, and Sustainable Bioenergy

Long range initiatives to reduce greenhouse gases in NYS

- R&D on advanced biofuels and methods for sustainably expanding feedstock resources and conversion processes
- Studies on NY capacity to supply woody biomass as a sustainable, renewable fuel
- Demonstration of commercial-scale manufacturing and processing of advanced biofuels
- Financial incentives to facilitate end-user transition to sustainable, advanced biofuels
- Characterization of opportunities for terrestrial CO_2 sequestration to accurately estimate costs and benefits for each option in terms of net amounts sequestered and time scales

Target Area: Multidisciplinary Initiatives

Purpose

•Leverage Investments and Build Capacity

- Stimulate voluntary action at the local and corporate level
- Develop Climate Change Mitigation & Risk Management Solutions
- Move toward a Clean Energy Economy

Strategies

•To Build Capacity to Mitigate and Manage Climate Change

- Technology innovation & product commercialization
- Widespread understanding of environmental response & climate change risks
- Effective climate change policy
- Outreach, education and strategic partnerships

Target Area: Multidisciplinary Initiatives

Near term initiatives to reduce greenhouse gas emissions & build local capacity to further reduce GHGs

•Outreach, Education & Strategic Partnerships

- Identify sectors with interest in GHG reduction (e.g., universities, local governments, industry)
- Provide information resources, tools, models, incentives to help partners meet their energy and GHG goals
- Educate residents, urban planners, municipalities, business owners, and consumers on the importance of climate mitigation activities

Target Area: Multidisciplinary Initiatives

Long range initiatives to reduce greenhouse gases and move NYS toward a clean energy economy

- Clean Energy Innovation Initiative: University-Industry partnerships to stimulate the development of climate mitigation technology
- Clean Energy Business Development: Provide assistance for start-up companies in NYS to develop successful business models
- Climate Change Research and Analysis
  - Identify effective strategies for managing climate risk and mitigating climate change in NYS
  - Assess the relationship of the CO2 budget trading programs with other evolving energy and environmental policies

Program Evaluation & Reporting

Overarching goals of the evaluation effort:

- Provide a credible evaluation of the portfolio and individual programs
- Provide timely information to stakeholders on
  - Progress toward program and public policy goals
  - Progress toward emission reductions, EE and renewable energy
  - Program efficiency and effectiveness

Program Evaluation & Reporting

Potential evaluation elements:

Impact Assessment

- Measure and verify outcomes attributable to the programs and compare achievements to stated goals
- Calculate program and portfolio cost-effectiveness

Market Characterization & Assessment

- Develop understanding of markets, market actors, customers
- Inform program design/delivery

Process Evaluation

- Review program oversight and operations
- Provide actionable recommendations for program and process improvements

Program Evaluation & Reporting

NYSERDA to prepare annual reports that will include:

- Accounting of sales of CO_2 allowances and funds generated
- Summary of program activities
- Evaluation of the results and impacts of program activities and accomplishments (e.g., reductions in greenhouse gases)
- Accounting of program administration costs and expenditures

NYSERDA RGGI Website:

http://www.nyserda.org/RGGI/default.asp

RGGI Concept Paper:

http://www.nyserda.org/RGGI/Concept%20Paper%20Nov%2012.pdf