The Operating Plan Development Process

David Coup
NYSERDA, Energy Analysis

Background

NYSERDA's rule (Part 507.4(d)) states that proceeds from the sale of allowances will be used to:

". . . promote and implement programs for energy efficiency, renewable or non-carbon emitting technologies, and innovative carbon emissions abatement technologies with significant carbon reduction potential."

Objective of the Operating Plan

The Plan will summarize and describe the individual programs to be supported by the RGGI auction proceeds. The Plan will include:

- program selection criteria
- descriptions of and budgets for the programs
- an anticipated schedule for implementation of the programs
- descriptions of the measurement, verification, & evaluation methods
- a quantification of NYSERDA's costs for program administration & evaluation

Stakeholder Process

Advisory Group . . .

The CO_2 Allowance Auction Program, Part 507.4(e) states that, "at least annually, the Authority shall convene an advisory group of stakeholders representing a broad array of energy and environmental interests to advise it on how to best utilize said funds."

The Advisory Group will:

- Provide input on the Concept Paper and the draft Operating Plan
- Refrain from advocating for specific projects
- Meet thereafter to provide input on annual updates to the Plan
- Have its meetings be open to the public

Broader Group of Stakeholders . . .

- Participate in Advisory Group meetings
- Submit comments in writing or to: rggiprograms@nyserda.org

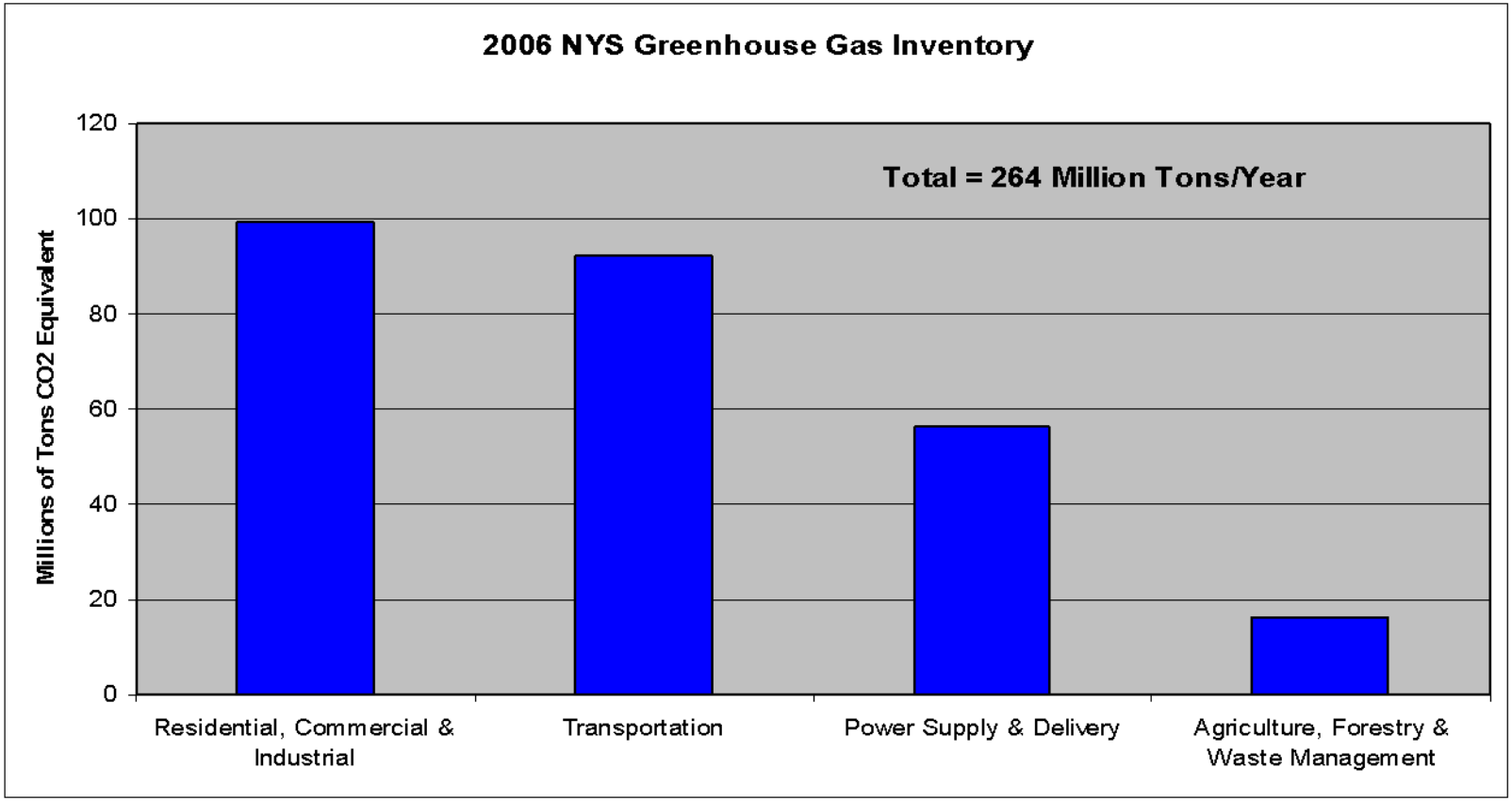
Process and Anticipated Timing

Mid-November:	Meet with the Advisory Group (in a meeting that is open to the public) to receive feedback on the Concept Paper.
December 1st:	Receive comments from stakeholders on the Concept Paper
Early January:	Prepare the Draft Operating Plan, distribute it to the Advisory Group, and post it on NYSERDA's website.
Late-January:	Meet with the Advisory Group (in a meeting that is open to the public) to receive feedback on the Draft Operating Plan.
Late-January:	Receive comments from stakeholders on the Draft Operating Plan through NYSERDA's website.
Early March:	Create Final Operating Plan and present to NYSERDA's Board for approval
Early Spring:	NYSERDA Board Meeting

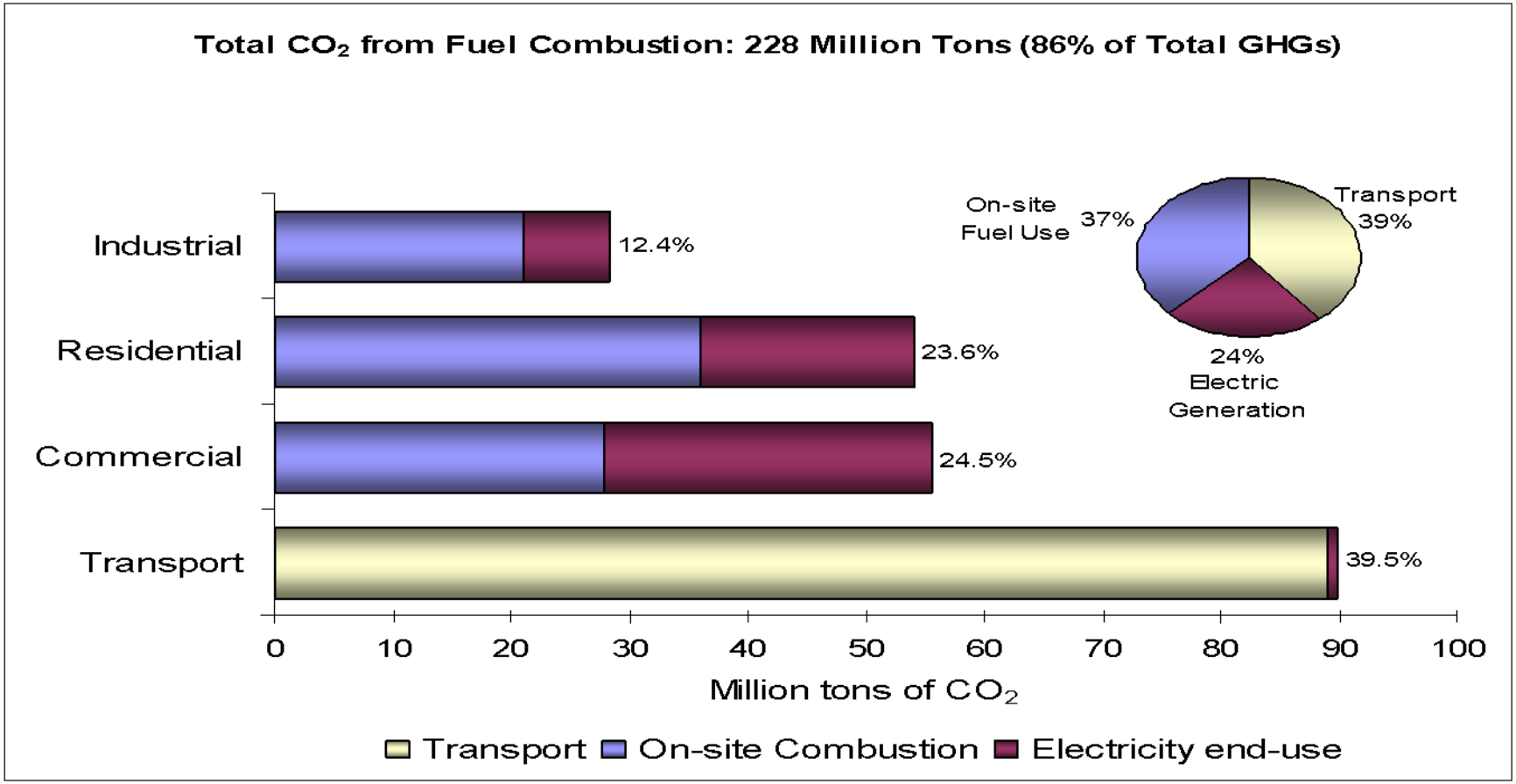
Goals, Focus and Funding Criteria

John Williams
NYSERDA, Energy Analysis

2006 NYS Greenhouse Gas Inventory Breakdown by Sector



New York CO_2 Emissions from Fuel Combustion (2006)



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
  - 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

Residential, Commercial & Industrial

Karen Villeneuve
NYSERDA, Residential Efficiency Affordability Program

Target Area: Residential, Commercial, and Industrial Sectors

Purpose :

- Reduce end-user fuel consumption through energy efficiency and behavior change
- Reduce on-site emissions

Strategies:

- Target fuels/technologies not sufficiently addressed by other funding
- Target environmental justice communities
- Increase deployment of underutilized and emerging energy efficiency and clean energy technologies
- Use existing programs for delivery to the extent possible

Target Area: Residential, Commercial, and Industrial Sectors

Initiatives to cost-effectively reduce greenhouse gas emissions in the near term:

- Oil, gas, and wood heating system repairs and replacements as part of whole building energy efficiency
- Green building incentives to assist in lowering 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

Initiatives to address the long-range potential to reduce greenhouse gases in NYS:

- Advanced building controls and automation
  - More efficient operations
  - Occupancy awareness
  - Respond to energy price signals
- Flexible load end-use appliances capable of meeting smart grid requirements
- Lighting and day-lighting systems
- Demonstrate modulating HVAC systems
- Demonstrate high-performance building envelope systems, construction methods to enable increasing codes and standards

Target Area: Residential, Commercial, and Industrial Sectors

The following strategies reduce the energy cost burden and environmental impact on low-income, small business and environmental justice communities, and provide other co-benefits:

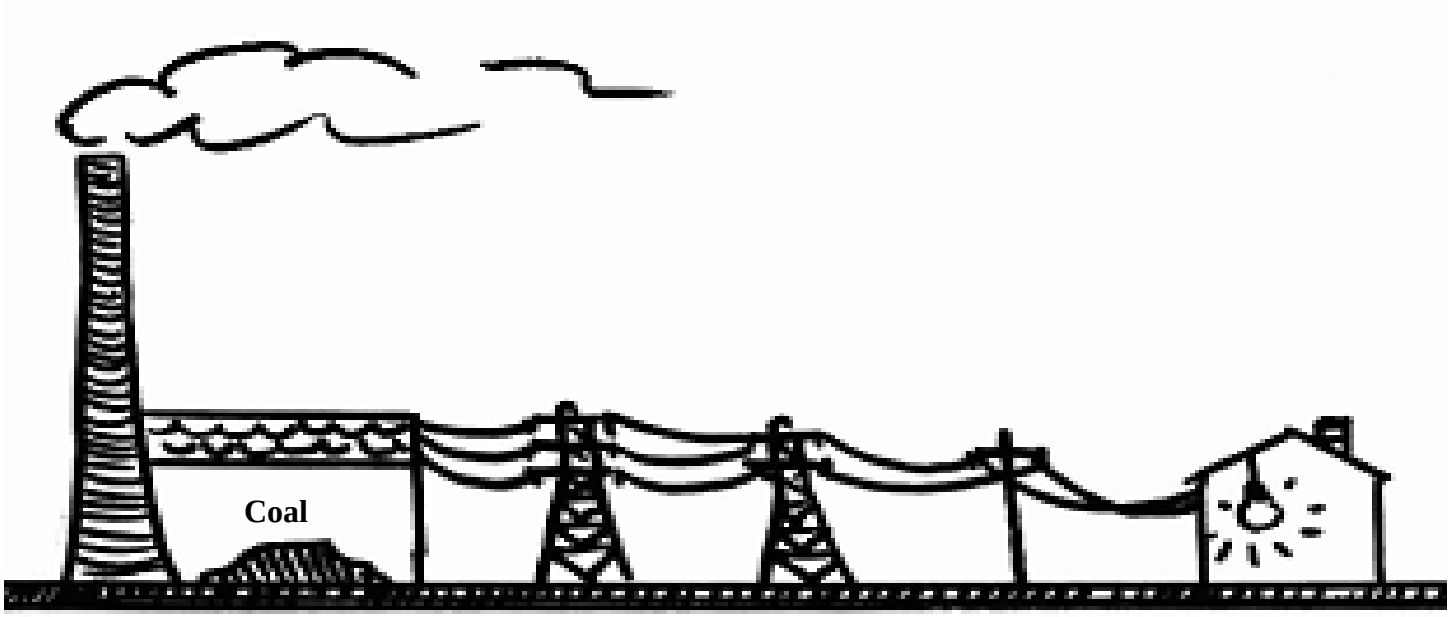
- Higher incentives and individually targeted outreach and marketing to selected communities and households.
- Community-wide solutions to emissions reduction goals through model green communities with on-site clean energy production and low carbon footprints, including green construction.
- Whole-building programs providing health and safety benefits, including improved indoor air quality

Electric Power Supply & Delivery

Peter Douglas
NYSERDA, Energy Efficiency Research

Target Area: Electric Power Supply and Delivery (EPSD)

Objective: Reduce the carbon footprint of the electric power sector in NYS



Power Plant

E1 = 35% (0.35)

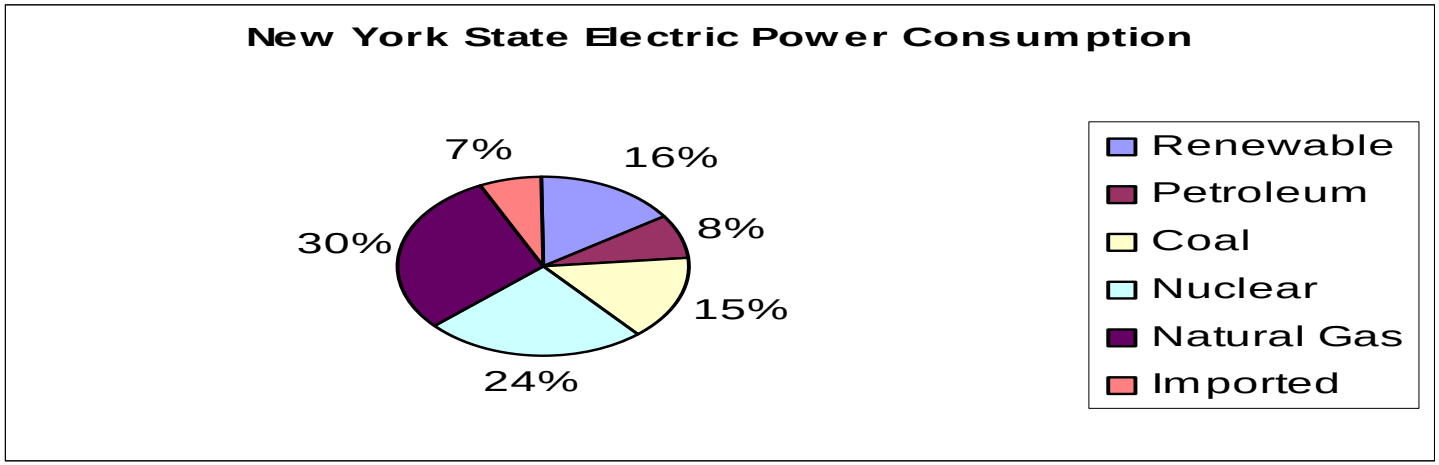
Transmission and Distribution

E2 = 90% (0.90)

End-Use

Target Area: Electric Power Supply and Delivery (EPSD)

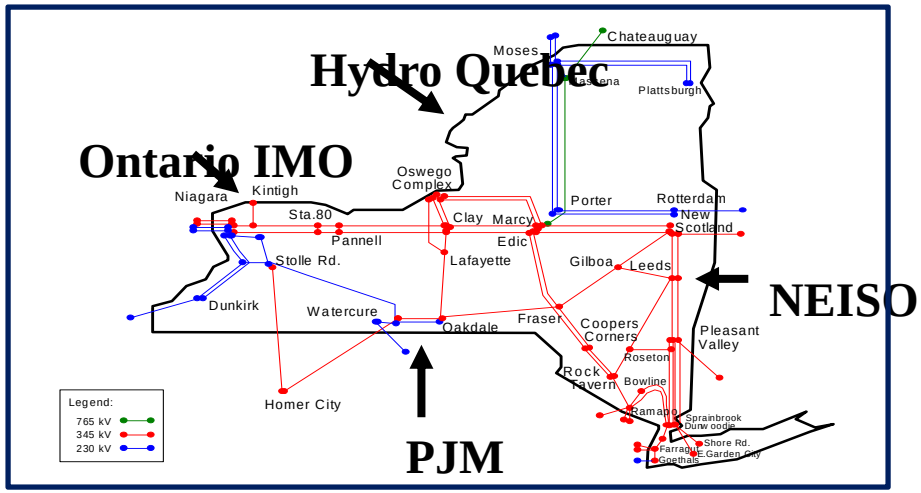
Support near-term projects to reduce carbon emissions



- Improve overall efficiency and performance of existing power plants
- Increase performance and capacity of existing T&D infrastructure
- Demonstrations to reduce risks of incremental investment
- Advanced controls, bio-fuels, transformers, cabling & other technologies

Target Area: Electric Power Supply and Delivery (EPSD)

Support long-term projects to reduce carbon emissions



- Smart Grid
- Advanced controls
- Storage
- Tidal Power
- Off-shore wind
- Gas Separation for O_2, CO_2
- Sequestration

Target Area: Electric Power Supply and Delivery (EPSD)

Promote technologies that provide significant co-benefits

Energy Storage

- Stabilize Wind Assets
- Improve Power Quality
- Reduce Congestion
- Enhance Reliability

Smart Grid

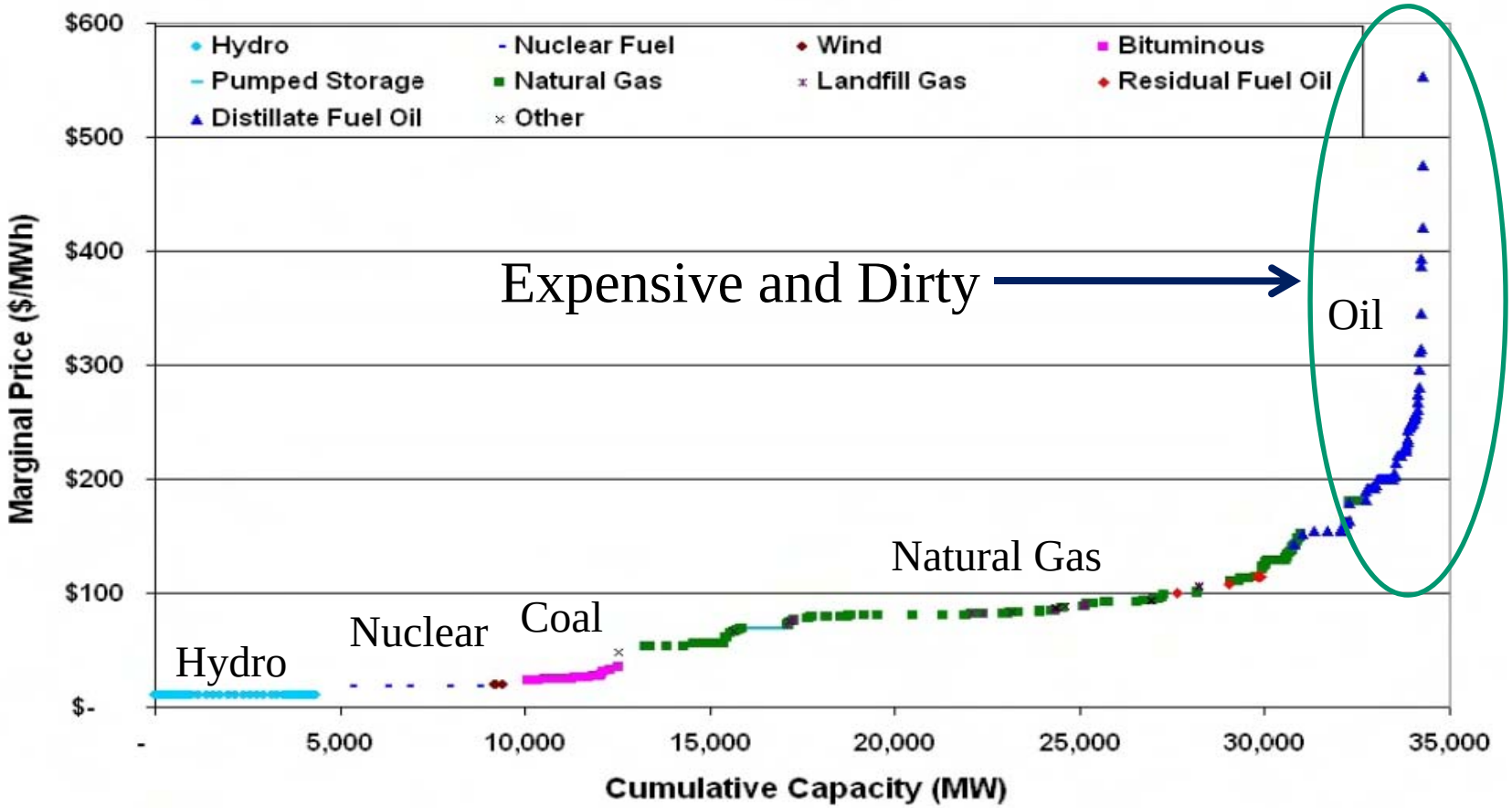
- Increase performance of existing assets
- Enable DR transactions to reduce dispatch of peaking units
- Increase market penetration of renewable resources

Dual-fuel, Bio-fuels

- Environmental justice
- Reduce emissions at peaking units

Target Area: Electric Power Supply and Delivery (EPSD)

Reduce the cost burden & environmental impacts on environmental justice communities



Transportation

Richard Drake
NYSERDA, Clean Energy Research and Market Development

Target Area: Transportation

The Transportation initiative focuses on new and improved technologies and includes programs that target behavioral changes by:

–Reducing vehicle miles traveled

–Increasing the use of renewable alternative fuels

(consistent with the findings and recommendations from the ongoing New York State Renewable Fuels Roadmap and Sustainable Biomass Feedstock Study)

–Developing and deploying high efficiency vehicles

–Improving the magnitude, performance, and efficiency of transportation systems.

Target Area: Transportation

Initiatives to cost-effectively reduce greenhouse gas emissions and to reduce the cost of the RGGI Program in the near term:

Expand existing programs

- Vehicle Miles Traveled (VMT) reduction
- Metropolitan Transportation Authority (MTA) efficiency
- Transportation Systems Improvements
- Idling reduction
- Alternative Fuel Vehicles (AFV) and vehicle efficiency
- Fleet modernization
- Outreach and Education

Target Area: Transportation

Initiatives to address the long-range potential to reduce greenhouse gases in NYS:

- Plug-in hybrid electric vehicles, Electric vehicles and Vehicle to Grid (V2G)
- Commercial Hybrids, advanced Alt. Fuel vehicles
- Larger-scale Transportation Demand Management
- Intelligent transportation systems
- Low carbon fuel utilization
- Transit improvements
- Land use/Transit Oriented Developments (TOD)

Target Area: Transportation

Initiatives that provide other substantial co-benefits in NYS include:

Economic Development:

- Product development
  - Rail - Jobs
  - Transit - Jobs
- Smart Growth – TOD

Air Quality Improvements:

- AFVs / vehicle efficiency

Target Area: Transportation

Initiatives to reduce the cost burden of energy and environmental impact on low-income and environmental justice communities:

- Quality of life
  - Transit performance/efficiency improvements
- Air Quality
  - Alternative Fuel Vehicles
  - Urban Hybrids (Bus, truck)
  - Commercial VMT reduction

Agriculture, Forestry & Bioenergy

Jeff Peterson
NYSERDA, Clean Energy Research and Market Development

Target Area

Agriculture, Forestry, and Sustainable Bioenergy Initiative

The purpose of the initiative is threefold: reduce the lifecycle carbon intensity of biopower and biofuel production; reduce emissions derived from the agriculture, forestry and waste management sectors; and, characterize the potential for carbon sequestration in New York's terrestrial ecosystem.

This will be accomplished through an integrated series of activities to:

- Foster innovation and apply new business strategies to address the issue.
- Promote sustainable resource management techniques.

Priorities will be guided by findings and recommendations from the ongoing *New York State Renewable Fuels Roadmap and Sustainable Biomass Feedstock Study*

Target Area

Agriculture, Forestry, and Sustainable Bioenergy Initiative

Initiatives to reduce greenhouse gas emissions in the *near-to-mid-term*:

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

Initiatives to build infrastructure capacity in the *near-to-mid-term*:

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

Target Area

Agriculture, Forestry, and Sustainable Bioenergy Initiative

Initiatives to address the *long-range* potential to reduce greenhouse gases in NYS include:

- Research and development of advanced biofuels and methods for sustainably expanding feedstock resources,

- Studies to better understand the capacity of New York's land resources to supply woody biomass as a sustainable, renewable fuel,

- Demonstration of commercial-scale manufacturing and processing of advanced biofuels,

- Provide financial incentives to market participants to facilitate end-users' transition to using sustainable, advanced biofuels, and

- 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

Agriculture, Forestry, and Sustainable Bioenergy Initiative

Initiatives that provide other substantial co-benefits in NYS include:

- The training and education initiatives will support a workforce that can service the forest products industry in New York.
- Bringing new technologies and fuels to market will provide jobs throughout the value chain for the product.

Target Area

Agriculture, Forestry, and Sustainable Bioenergy Initiative

Initiatives to reduce the cost burden of energy and environmental impact on low-income and environmental justice communities:

- Implementing innovative business solutions to achieve the goals of the program will increase employment opportunities in many rural communities that have been impacted by the closure of forest products companies in upstate New York.

Multi-disciplinary

Janet Joseph
NYSERDA, Clean Energy Research and Market Development

Multidisciplinary Initiatives

The Multidisciplinary Initiatives seek to ***leverage*** investments and ***build capacity*** in NY to:

- Stimulate *voluntary action* at the local and corporate level
- Develop *new* climate change mitigation and risk management *solutions* for NY
- Move toward a *clean energy economy* in NY

Multidisciplinary Initiatives

Technology Innovation And Product Commercialization

Effective Climate Policy

Capacity to *Mitigate* and *Manage* Climate Change

Outreach and Education

Understanding of Environmental Response and Climate Risks

Multidisciplinary Initiatives

Initiatives to cost-effectively reduce greenhouse gas emissions in the near term and build local capacity to further reduce GHG:

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

Multidisciplinary Initiatives

Initiatives to address the long-range potential to reduce greenhouse gases and move NYS toward a clean energy economy:

Clean Energy Innovation Initiative: University-Industry partnership in NY to stimulate the development of climate mitigation technology

✓Catalyze collaboration in NY universities in the clean energy arena
✓Leverage federal funding into NY institutions
✓Develop new intellectual property
✓Foster academic-business partnerships that lead to commercial technology
✓Develop the next generation of engineers/scientists

Multidisciplinary Initiatives

Initiatives to address the long-range potential to reduce greenhouse gases and move NYS toward a clean energy economy:

Clean Energy Business Development

✓Provide assistance for start-up companies in NYS to develop successful business models

✓Provide assistance to companies to expand technology development and manufacturing capacity in NYS

- Grow clean energy companies in NYS and create green jobs
- Get better, cheaper, cleaner low-carbon technology into the marketplace

Multidisciplinary Initiatives

Initiatives that provide other substantial benefits in NYS include: developing new climate mitigation and risk management solutions in NYS that are effective and equitable

Climate Change Research and Analysis

✓Better understand how climate change is affecting NY's environment
✓Identify effective strategies for managing climate risk and mitigating climate change in NYS
✓Explore the potential for new, credible o*ffset* measures of potential value in NYS
✓Assess the relationship of the CO2 Budget trading programs with other evolving energy and environmental policies affecting NYS

Program Evaluation

Jennifer Meissner
NYSERDA, Energy Analysis

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, increased energy efficiency and greater use of 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
  - Track changes over time
  - Inform program design/delivery

Program Evaluation & Reporting

Potential evaluation elements (continued):

- Process Evaluation
  - Review program oversight and operations
  - Gauge customer satisfaction
  - Provide actionable recommendations for program and process improvements

Program Evaluation & Reporting

Developing and implementing an effective evaluation:

- Early and continued stakeholder input
- Understanding of programs, markets, goals and timing of expected results
- Adequate resources
- Transparency
- Integration of evaluation with program administration (i.e., feedback loop)

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