

Connecticut Energy Issues (Phase I: Overview of Connecticut)

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Prepared for:

Connecticut Energy Advisory
Board (CEAB)

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Statute Related to Connecticut Energy Issues Study

- "Not later than January 1, 2008, the Connecticut Energy Advisory Board shall conduct a study to develop recommendations on how to (1) coordinate and integrate the state's energy entities; (2) achieve the goals of (A) the Regional Greenhouse Gas Initiative, and (B) the state, with regard to the reduction of emissions of greenhouse gas, as provided by section 22a-200a of the general statutes; and (3) promote indigenous alternative fuel resources. The board shall submit a report containing its recommendations, including recommendations for legislation, to the joint standing committee of the General Assembly having cognizance of matters relating to energy and technology not later than January 1, 2009." Section. 58, Public Act 07-242

Current Situation in Connecticut

- **Energy-Related Concerns**

- **Connecticut faces rising energy costs**
- **Need to assure adequate electric capacity for reliability and manage peak demand to control system costs**
- **Challenges in achieving adequate regional coordination and cooperation**
- **Need to address the above in a way that meets environmental goals**

- **Working Thesis**

- **The structure and interaction of state government entities with energy-related responsibilities can be improved to advance the issues above**

Phase I Research Report

- **Today:** Preliminary review of Connecticut's energy-related agency/entity organizations
- **May:** Preliminary review of agency organization in other key states and identification of functional gaps or overlaps in Connecticut
- **June:** Phase I Research Report concluded

Today's Discussion

- **Overview of Connecticut Energy Activities**
 - **Agencies & Entity Responsibilities**
- **Entities/Agencies Functional Roles and Process Flows**
 - **Functional Areas:** Planning and Implementation (Project Identification, Siting/Permitting, and Financing/Incentives)
 - **Focus Areas:** Conventional Resources, Demand-Side Management, and Renewable Energy/Alternative Fuels
- **Indigenous Alternative Fuel Resources**
- **Overview of RGGI**

Entities/Agencies with Energy-Related Activities

■ Primary Entities/Agencies

- Department of Public Utility Control (DPUC)
- Connecticut Siting Council (CSC)
- Connecticut Energy Advisory Board (CEAB)
- Office of Policy and Management (OPM)
- Office of Consumer Council (OCC)
- Department of Environmental Protection (DEP)
- Energy Conservation Management Board (ECMB)
- Connecticut Clean Energy Fund (CCEF)

■ Secondary Entities/Agencies Relative to Energy

- Department of Administrative Services
- Department of Public Works
- Department of Transportation
- Department of Economic and Community Development

Phase 1: Example of Information Matrix of Connecticut Entities

Overview of Entities

	Governing Structure	Statutory Responsibility	General Description of Energy-Related Activities	Funding Source
Entity A				
Entity B				

Detailed Functional Roles – (Conventional Resources, Demand-Side Management, Renewables)

	Planning	Implementation		
		Project Identification	Siting/ Permitting	Financing/ Incentives
Entity A				
Entity B				

Description of Functional Areas

- **“Planning” includes:**

- The processes by which the state develops a plan to meet future energy needs; plans often balance reliability, costs, and desired resource attributes.
- The planning process may include: forecast future needs, weigh options to meet the needs, conduct scenario analysis, determine mix and amount of resources needed, plan for gas and power infrastructure.

- **“Implementation” includes:**

- **Project Identification:** Solicitation, selection of and contracting with resources (generation, transmission, DSM, renewable energy, etc...)
- **Siting/Permitting:** Process to site and permit resources
- **Financing/Incentives:** Funding provided to incent development of technology or resource; may be through loans, grants, incentives, and/or contracts

Description of Focus Areas

- **“Conventional” Supply**

- Large-scale Power Generation
- Transmission/Distribution Systems for Power and Gas

- **Demand Side Management**

- Energy Efficiency
- Demand Response
- Distributed Generation/Combined Heat and Power

- **Renewable and Alternative Fuels**

- Renewable energy resources
- Indigenous alternative fuel resources (?)

Functional Areas by Entity— “Conventional” Supply

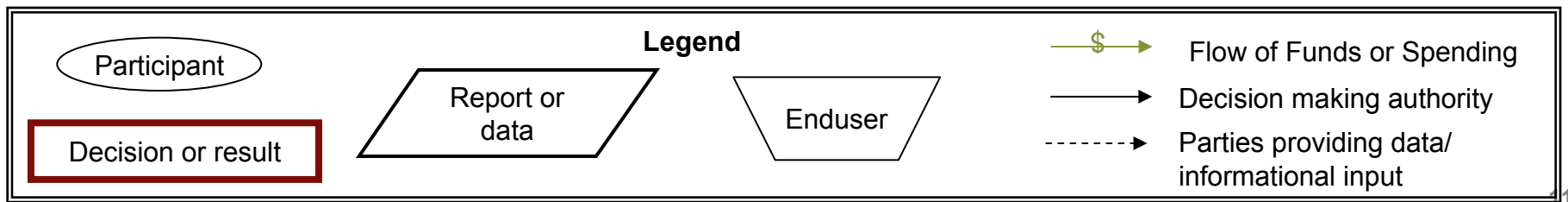
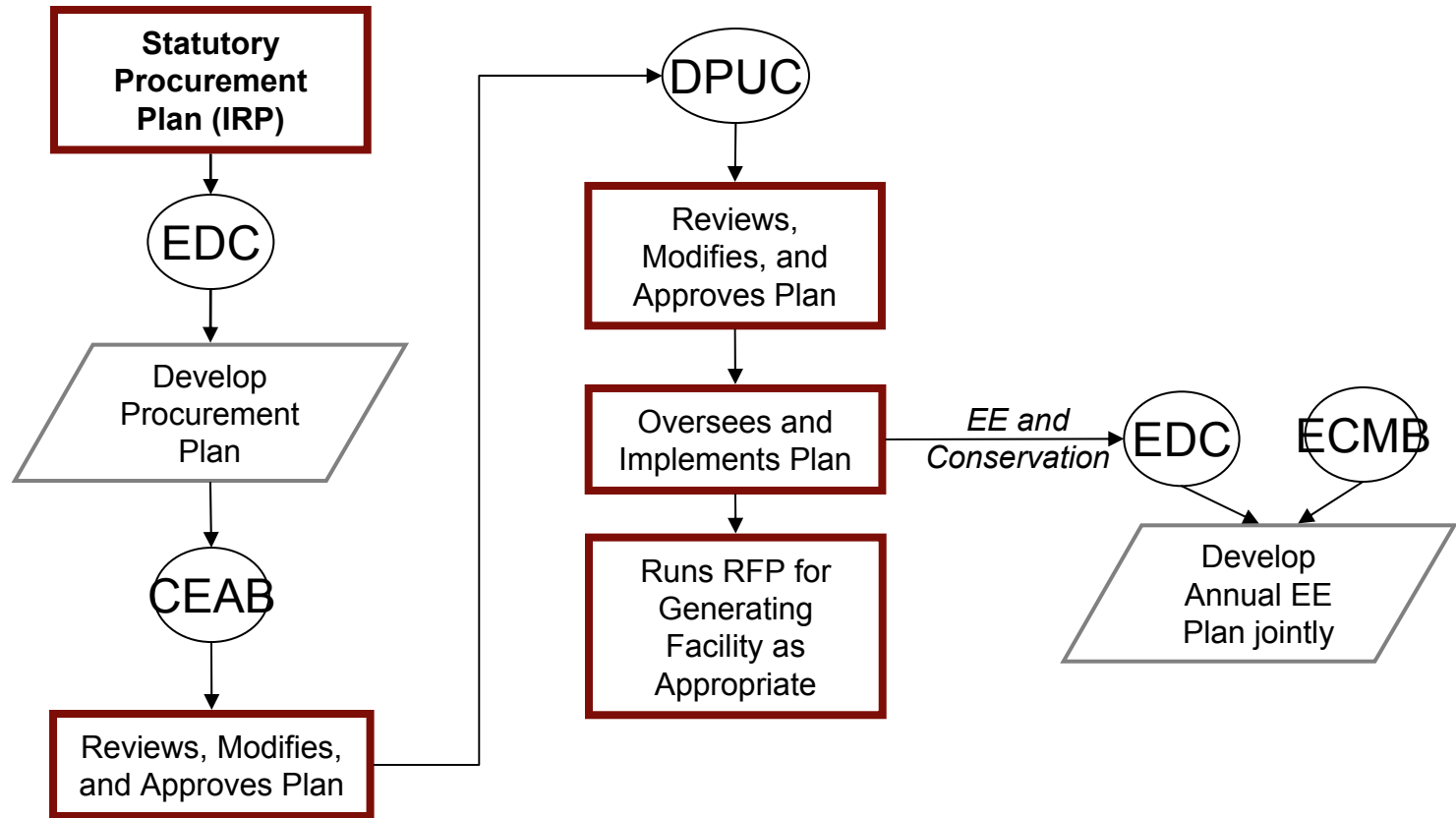
	Planning ¹	Implementation		
		Project Identification	Siting/ Permitting	Financing/ Incentives
DPUC	✓	✓	*	✓
CSC	✓		✓	
CEAB	✓	✓	✓	
OCC	*			
ECMB				
CCEF				
OPM	*	✓		
DEP	*		✓ *	

✓ Denotes entity’s direct responsibility

* Denotes entity involvement through board membership

¹The processes by which the state develops a plan to meet future energy needs; plans often balance reliability, costs, and desired resource attributes. The planning process may include: forecast future needs, weigh options to meet the needs, conduct scenario analysis, determine mix and amount of resources needed, plan for gas and power infrastructure.

Process Flow Example: Planning and Implementing Procurement Plan



Functional Areas by Agency—Demand Side Management

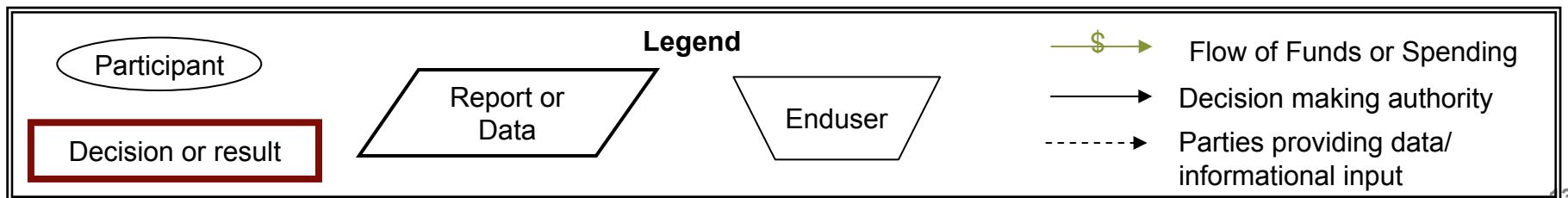
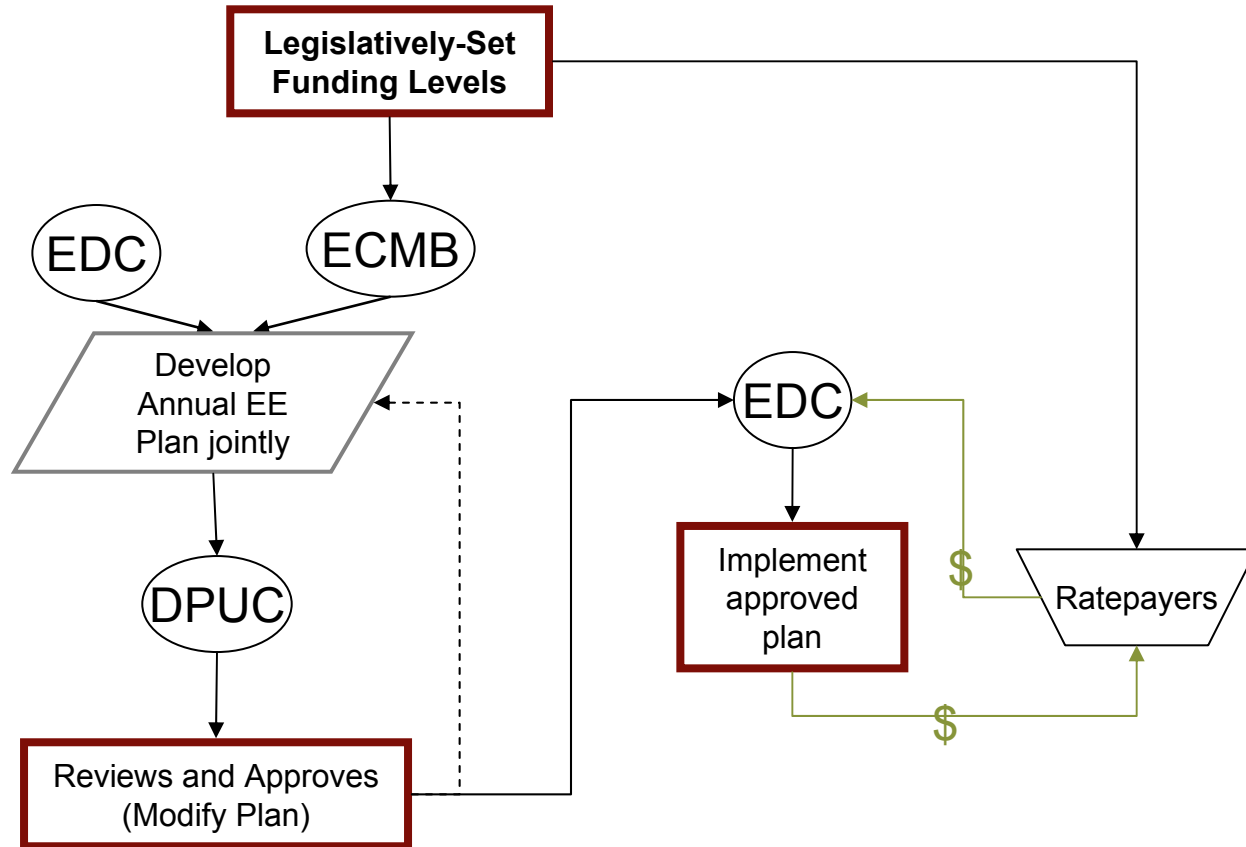
	Planning ¹	Implementation		
		Project Identification	Siting/ Permitting	Financing/ Incentives
DPUC	✓	✓ *	*	✓
CSC			✓	
CEAB	✓	✓	✓	
OCC	*	*		
ECMB		✓		✓
CCEF		*		✓
OPM	*	✓ *		✓
DEP	*	*	✓ *	✓ RGGI

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¹The processes by which the state develops a plan to meet future energy needs; plans often balance reliability, costs, and desired resource attributes. The planning process may include: forecast future needs, weigh options to meet the needs, conduct scenario analysis, determine mix and amount of resources needed, plan for gas and power infrastructure.

Process Flow Example: Planning and Implementing Energy Efficiency Fund



Functional Areas by Agency— Renewable Energy Supply

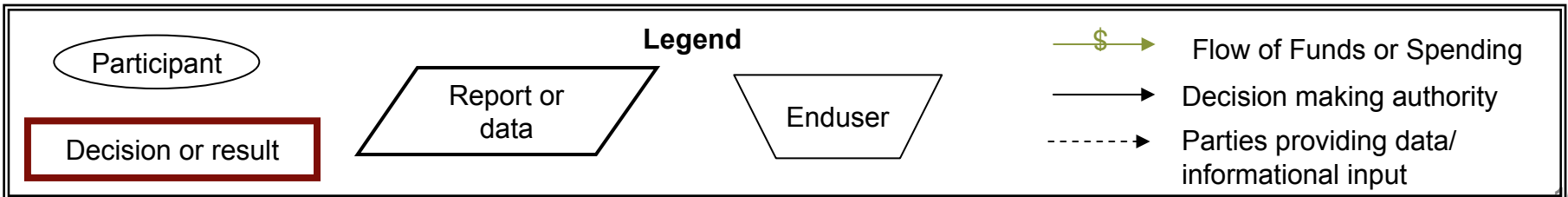
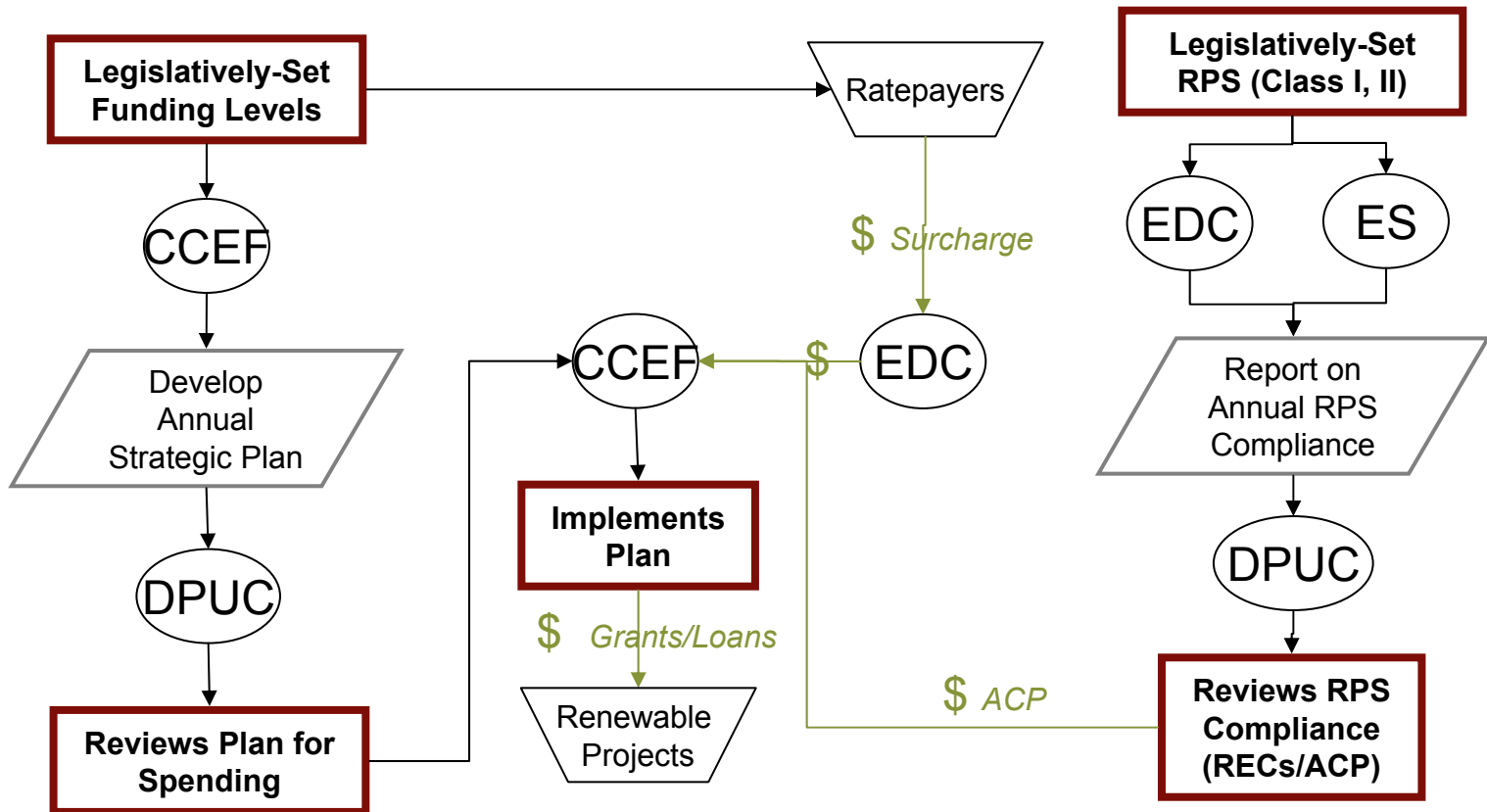
	Planning	Implementation		
		Project Identification	Siting/ Permitting	Financing/ Incentives
DPUC	✓	✓	*	✓
CSC			✓	
CEAB	✓	✓	✓	
OCC	*	*		
ECMB		*		
CCEF		✓		✓
OPM	*	✓ *		
DEP	*	*	✓*	✓ RGGI

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¹The processes by which the state develops a plan to meet future energy needs; plans often balance reliability, costs, and desired resource attributes. The planning process may include: forecast future needs, weigh options to meet the needs, conduct scenario analysis, determine mix and amount of resources needed, plan for gas and power infrastructure.

Process Flow Example: Planning and Implementing Renewable Energy



Indigenous Alternative Fuel Resources

- **In the final report, the CEAB must develop recommendations on how to “promote indigenous alternative fuel resources”.**
- **What are indigenous alternative fuel resources?**
 - **Pursuant to statute, "renewable energy" eligible for CCEF funding is:**

“solar photovoltaic energy, solar thermal, geothermal energy, wind, ocean thermal energy, wave or tidal energy, fuel cells, landfill gas, hydropower that meets the low-impact standards of the Low-Impact Hydropower Institute, hydrogen production and hydrogen conversion technologies, low emission advanced biomass conversion technologies, alternative fuels, used for electricity generation including ethanol, biodiesel or other fuel produced in Connecticut and derived from agricultural produce, food waste or waste vegetable oil, provided the Commissioner of Environmental Protection determines that such fuels provide net reductions in greenhouse gas emissions and fossil fuel consumption, usable electricity from combined heat and power systems with waste heat recovery systems, thermal storage systems and other energy resources and emerging technologies which have significant potential for commercialization and which do not involve the combustion of coal, petroleum or petroleum products, municipal solid waste or nuclear fission.

Indigenous Alternative Fuel Resources (continued)

➤ **Pursuant to statute, "renewable energy" for RPS purposes is:**

"Class I renewable energy source" means (A) energy derived from solar power, wind power, a fuel cell, methane gas from landfills, ocean thermal power, wave or tidal power, low emission advanced renewable energy conversion technologies, a run-of-the-river hydropower facility provided such facility has a generating capacity of not more than five megawatts... or a sustainable biomass facility...or (B) any electrical generation, including distributed generation, generated from a Class I renewable energy source

"Class II renewable energy source" means energy derived from a trash-to-energy facility, a biomass facility that began operation before July 1, 1998...a run-of-the-river hydropower facility provided such facility has a generating capacity of not more than five megawatts...and began operation prior to July 1, 2003.

"Class III source" means the electricity output from combined heat and power systems with an operating efficiency level of no less than fifty per cent that are part of customer-side distributed resources developed at commercial and industrial facilities in this state on or after January 1, 2006, a waste heat recovery system installed on or after April 1, 2007, that produces electrical or thermal energy by capturing preexisting waste heat or pressure from industrial or commercial processes, or the electricity savings created in this state from conservation and load management programs begun on or after January 1, 2006.

- **Further consultation with CCEF to learn what it considers to be indigenous alternative fuel resources.**
- **Other thoughts?**

RGGI Overview - Background

- In Spring 2003, Connecticut joined with several New England and Mid Atlantic states to build upon their individual efforts to address greenhouse gas emissions
- Representatives of environmental and energy regulatory officials created a plan for program development.
 - DEP and PUC represented Connecticut, with participation from stakeholders
- Goals:
 - Develop a multi-state cap and trade program to reduce greenhouse gas emissions
 - Reduce carbon dioxide emissions from power plants
 - Maintain energy affordability and reliability
 - Accommodate the diversity in policies and programs in individual states
- By 2007, Memorandum of Understanding signed by 10 States

RGGI Overview – Key Components of MOU

- Regional “Cap” set at stabilization of current emission levels for the period 2009 to 2014 and then reduced 2.5% per year from 2015 to 2018
 - State starting budget based on average CO₂ emissions in 2000-2002
 - Connecticut’s initial budget is about **10.7 million tons per year**
- Allocation of at least 25% of each state’s budget for consumer benefit
 - Most states proposing nearly 100% consumer benefit allocation
 - Connecticut will auction all allowances and use proceeds for consumer benefit
- Regional auction of allowances planned
 - Generating units must obtain allowances for their emissions
 - 3 year compliance period
 - Proceeds used to fund “consumer benefit”
- Offsets Allowed to Create CO₂ “Credits”

RRGI Overview – Status Update

- Connecticut DEP **proposed** regulations to implement RGGI
 - Rules to control CO₂ emissions; establish allowance allocation; tracking system, transfers, and monitoring; greenhouse gas offset projects
 - Applies to all fossil fuel fired electric generating units with nameplate capacity of 25 MW or greater
 - Program starts January 1, 2009
 - Proceeds of Auction
 - Development of Class I Renewables
 - Development of Energy Efficiency Measures
 - CHP set aside
 - Consumer side distributed resources set aside
 - Voluntary clean Purchase set aside
- Hearings/Public Comment Period Concluded
- Adoption Contemplated June 2008

RGGI Overview – Status Update

- Regional Organization (RGGI, Inc.) established to assist signatory States in further development and implementation of RGGI consistent with the Memoranda of Understanding
 - Assisted in auction design
 - Will select vendor for regional auction on behalf of states
 - First auction planned for September 2008

Focus Questions for Going Forward

- **What is the energy planning process?**
- **What constitute a statewide energy plan?**
- **By what process is it created?**
- **What are the plan's implementation path and funding mechanisms?**
- **How are appropriate responses to energy needs identified and evaluated?**
- **How are alternative project proposals solicited and evaluated?**
- **How are siting/permitting processes coordinated?**