

The Regional Greenhouse Gas Initiative: Profile of Maine's Experience

Jim Brooks

Director, Maine DEP Bureau of Air Quality

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Wu Conference Centre
University of New Brunswick



Maine's Climate Change Act

Passed by Maine Legislature 2003

Adopt a Climate Action Plan (CAP) to meet Greenhouse Gas (GHG) Reduction Goals

- 1990 levels by 2010
- 10% below 1990 levels by 2020
- Long-term:
 - reduction to eliminate dangerous threat to climate.
 - 75% to 80% below 2003 levels

Maine Climate Action Plan 2004

Stakeholders Process

- Stakeholder Advisory Group (SAG) ~ 50 members
 - State Legislators
 - State Agencies
 - Private Interest Groups
 - Non-Profit Advocacy Groups
- Working Groups (WG); SAG plus ~ 50 others
 - Buildings, Facilities and Manufacturing
 - Agriculture and Forestry
 - Transportation and Land Use
 - Energy and Solid Waste
- Technical Consultants/Staff
- External Science/Economic Advisory Panel

Top 10 Carbon Savings Options

#	Title	Savings		Cost \$/Ton	Status
		2010	2020		
1	Offset Requirements	365.0	1022.0	10	Pending RGGI results
2	Tailpipe GHG Emissions Standards	137.5	933.6	-48	Adopted by Rule 12/05
3	Regional Cap and Trade	376.0	755.0	-90	Implemented 2008
4	Clean Diesel/Black Carbon	383.8	740.0	14	Accomplished
5	Renewable System Benefit Charge	334.0	689.0	30	Pending RPS results
6	Set a Low GHG Fuel Standard	63.5	639.5	34	E-10 standard met
7	Emission Standards	484.0	609.0	23	Accomplished
8	Biomass Generation: Existing Units	574.0	574.0	15	Accomplished
9	Landfill Gas Mgmt: Energy Production	210.0	550.0	NE	In progress; ahead of schedule
10	More Stocking w/ Faster Growing Trees	531.7	531.7	1	Pending 2010 data

Carbon Savings (in KMT = 1000 Metric Tons)

>200 KMT @ (-\$)/Tonne

- 19: Commercial/institutional energy efficiency (-139)
- 3: Regional Cap and Trade (-90)
- 2: Tailpipe GHG (-48)
- 23: Fossil fuel efficiency measures (-34)
- 22: Mfg. electrical efficiency (-30)
- 14: Forestland Protection (-6)
- 21: Biomass electricity stocks (0)
- 15: Recycling / source reduction (0)

<200 KMT @ (-\$)/Tonne

- 36: CHP incentive policy (-185)
- 26: Appliance standards (-134)
- 37: Commercial building energy code (-61)
- 42: Voluntary green building standards (-45)
- 29: Public expenditure elec. efficiency (-55)
- 45: State buildings energy savings (-37)
- 30: Residential building energy codes (-35)
- 48: Promote energy efficient buildings (-19)
- 40: Green campus (-18)
- 35: Home heating efficiency (-6)
- 47: Slag concrete procurement preference (0)
- 49: Portland cement ASTM specification (0)
- 54: Agriculture nutrient management (0)
- 31: Voluntary partnerships (0)
- 32: ZEV Mandate (0)
- 46: GHG vehicle feebates (0)

>200 KMT @ (+\$)/Tonne

- 16: Early commercial thinning (0 - 1)
- 10: Increased stocking fast growth (1)
- 20: Timber Harvesting (3.5)
- 4: Clean diesel (6-14)
- 1: Offset requirements (10)
- 11: RPS (10)
- 8, 18: Bio-mass re-start, subsidy (15)
- 7: Emissions standards (23)
- 5: System Benefit Charge (30)
- 6: Low GHG fuel (34)

<200 KMT @ (+\$)/Tonne

- 41: Encourage freight anti-idling (>0)
- 50: Reduce HFC refrigeration leaks (1)
- 27: Landfill methane flaring (2)
- 25: Expand wood products use (3)
- 28: Softwood increase (3)
- 43: Waste to energy (9)
- 24: State fleet low GHG fuel (10)
- 44: Agricultural land protection (13)
- 38: Solar hot water heater (16)
- 39: Soil carbon buildup (28)
- 51: Organic farming (28)
- 34: State green power purchase (28)
- 52: Promote Maine bio-diesel (40)
- 53: Low GHG fuel infrastructure (1482)

Maine's Climate Action Plan: Implementation Status 2008

Accomplished

On Track

Needs Attention

To Be Replaced

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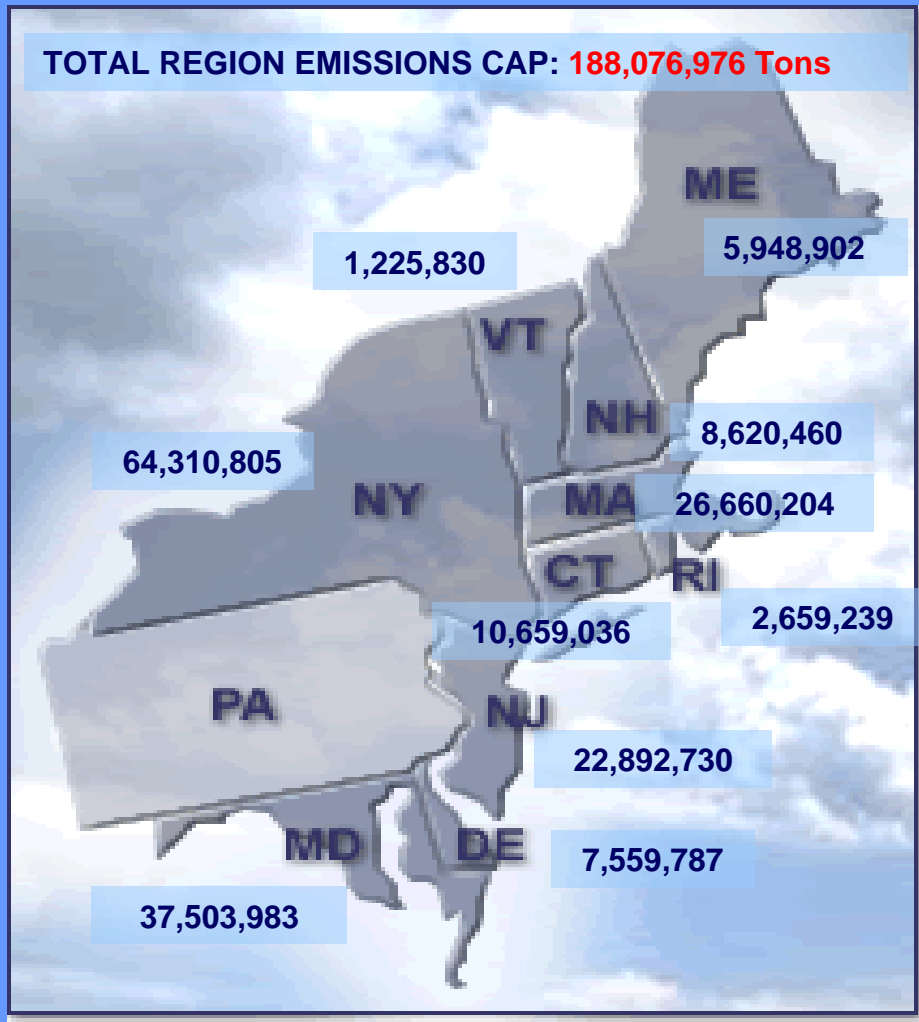
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RGGI: A regional CO₂ cap and trade program



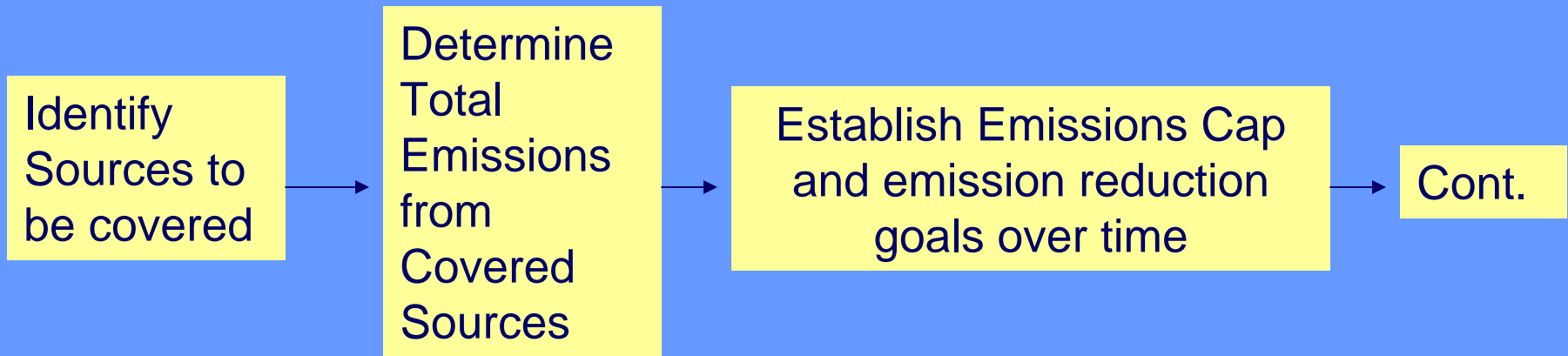
- Effective 2009
- CO₂ reduction target goal of 10% from present levels, plus additional reductions from Business As Usual due to growth
- Covers Electric Generators
 - Fossil Fuel-fired
 - 25 MW or greater
 - >10% annual gross sales to grid
- Purpose
 - Reduce Greenhouse gases
 - Promote energy efficiency & low carbon resources
 - Establish a carbon price
 - Encourage innovative technologies
 - Establish a national model

RGGI Source Applicability Fuel Requirements

- Existing fossil fuel fired (prior to 1/1/2005)
 - Greater than 50% fossil fuel
- Future fossil fuel fired (after 1/1/2005)
 - Greater than 5% fossil fuel
- Sustainable biomass provision: subtract out CO₂ emissions associated with sustainable biomass
 - Maine will be developing rules to define sustainable biomass within the next year

Cap-and-Trade Program

Goal: Achieve a Reduction in Emissions through a Flexible, Market-based Approach



Cap-and-Trade Program

Goal: Achieve Emission Reductions through a Flexible, Market-based Approach

Cap and Trade
Rule
Requirements

Each Emission
Source obtains
allowances
equal to
emissions

Allowances
obtained from:

- 1) Auctions
- 2) Trading
- 3) Creating CO2 Offsets

Reduction of Cap
(or CO2 emissions)
over time



Maine and Regional Chronology

- 1995 - Maine's first Greenhouse Gas Emissions Inventory
- 2000 - State Planning Office Climate Action Plan
- 2001 - NEG/ECP agree to regional reduction goals
- 2003 - Maine Climate Action Plan Legislation
- 2005 - Maine Finalizes Climate Action Plan
- 2005 - 8 Northeast Governors signed 20 page RGGI MOU



Maine and Regional Chronology

- 2007 to Present – Maine and other states adopt legislation/rules to implement RGGI
- Present – 10 Northeast Governors have signed MOU
- September 2008 – First Regional Auction
- December 2008 – Second Regional Auction
- January 2009 – Start of RGGI compliance program



RGGI MOU

- Signed by 10 states
- Minimum of 25% CO₂ allowances for public benefit
(Maine and several other states allocate 100%)
- 3 Year compliance period
- Establish Regional Organization (RGGI Inc.)
- Implementation of Model Rule with limited changes
- Agree to pursue regional auction



Emission Reductions

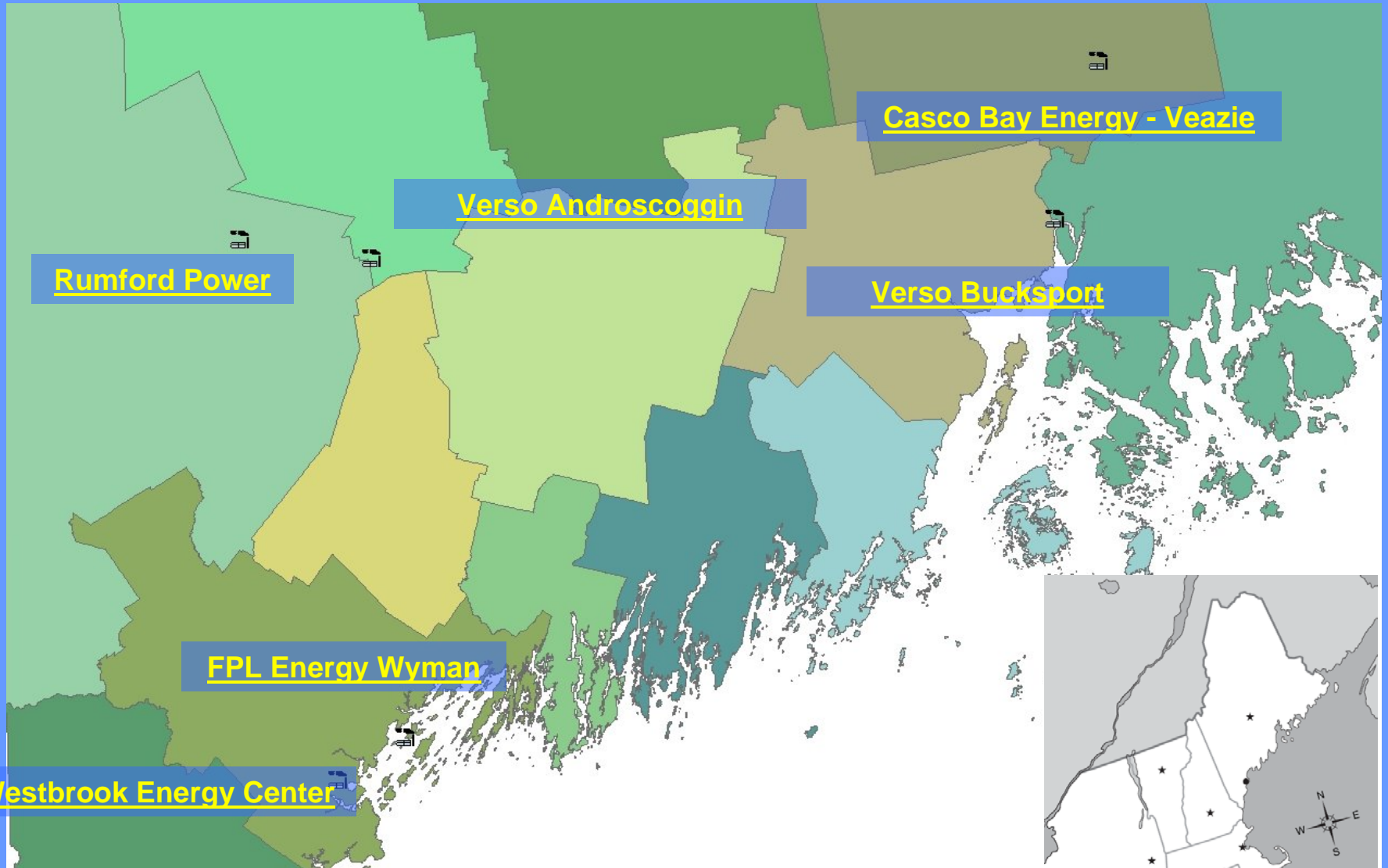
- Total RGGI CO₂ allocation: 188,076,976
- Maine allocation: 5,948,902
- Business as usual (BAU) growth could be 25% over baseline. From BAU,
 - Total projected CO₂ reductions could be: 65 million tons
 - Maine projected CO₂ reductions could be: 2.1 million tons

Note: Projected CO₂ reduction based on 10% reduction goal plus 7 to 25% reduction from offsetting BAU growth

Maine's CO₂ Budget

- Six Year Stabilization Period:
2009 through 2014 = 5,948,902 CO₂ allowances/year
- Four Year Reduction Period:
2015 = 5,800,180 CO₂ allowances
2016 = 5,651,458 CO₂ allowances
2017 = 5,502,736 CO₂ allowances
2018 = 5,354,014 CO₂ allowances
(10% reduction from stabilization period budget)

Maine RGGI Sources





Maine CHP Incentive

- To promote and reward operation of CHP units at integrated manufacturing facilities (IMF)
- Anticipated behind-the-meter CO2 emissions transferred to IMF pre-retirement account annually
- RGGI source deducts CO2 emissions associated with CHP from total CO2 emissions
- Actual amount balanced annually and retired

Voluntary Renewable Energy Purchases (VRECs)

- 2% budget into voluntary renewable set-aside account at start of control period
- Retire allowances in an amount equal to actual VRECs purchased annually

Offset Categories

- Landfill methane capture and destruction
- Reduction in emissions of sulfur hexafluoride (SF₆)
- Sequestration of carbon due to afforestation
- Reduction or avoidance of CO₂ emissions from natural gas, oil or propane end-use combustion due to end-use energy efficiency
- Avoided methane emissions from agricultural manure management operations
- Note: work being done on development of forestry management offset category

Forest Offset Categories

- The Maine Forest Service, Maine Department of Environmental Protection, Environment Northeast and Manomet Center for Conservation Sciences are developing a proposal to include new forest offset categories in RGGI:
 - Forest management,
 - Urban forestry,
 - Avoided deforestation, and
 - Biomass plantations.

Forest Offset Eligibility

5-part test

- Baseline – The landowner must measure carbon in the applicable carbon pools at the start of the project.
- Additionality – Inventory data gathered through the federal Forest Inventory and Analysis (FIA) program should be used to create a performance standard for average carbon stocks per acre.
- Permanence – Credits sold from an improved forest management project must be maintained permanently.
- Measurement and Verification- Sampling plans and measurement and verification protocols should follow the RGGI rules for afforestation projects.
- Leakage – In order to avoid internal leakage, a landowner must enroll all lands in a management unit.
- Certification – Forest management projects must be third-party certified.

First Auction

- September 25, 2008
- 59 participants (44 purchased allowances)
- Compliance sources purchased 80% of total
- Six of ten states offered allowances:
 - Connecticut, Maine, Maryland, Massachusetts, Rhode Island, Vermont
- 872,506 Maine allowances (12,565,387 total)
- Demand outpaced supply 4:1
- Clearing price: \$3.07 (reserve price: \$1.86)
- \$2,678,593 Maine proceeds (\$38,575,783 total)

Second Auction

- December 17, 2008
- 69 participants (46 purchased allowances)
- Compliance sources purchased 80% of total
- All 10 states offered allowances
- 872,506 Maine allowances (31.5 million total)
- Demand outpaced supply 3.5:1
- \$3.38 Clearing Price (\$1.86 Reserve Price)
- \$2,949,070 Maine proceeds (\$106.5 million total)

Third Auction

- Region auction set for March 18, 2009
- All 10 RGGI states plan to participate
- \$1.86 Reserve Price
- 2009 allowances - quantities similar to Auction 2
 - 31.5 million total
 - 872,506 Maine

Changes:

- 2.2 million tons of 2012 allowances to be offered
 - 65,437 Maine

Use of Proceeds

- 100% Public Benefit
- Energy and Carbon Savings Trust Maine
Energy Conservation Board
- 85% to reduce electricity consumption
- 15% for fossil fuel conservation measures
- Competitive bid process
- RGGI Trust rules before Legislature

Trust Awards

- Proposals for low income weatherization funded this winter:
 - Maine State Housing, \$500,000
 - Community Concepts Inc., \$110,000
 - Passamaquoddy Tribe, \$40,000

(awards met RFP requirements and selected, pending contract negotiation and execution)

Next Steps

- Offsets
 - Launch Existing Categories
 - New Categories—Forest Management
- Low carbon fuel standard (LCFS)
- Regional and National Action Plans
- Other Sectors
- U.S. Climate Change Legislation?
- More Regional Initiatives?
- Linkages to other Regional Initiatives?



Questions?

Pamela Lord Bliss



Additional RGGI sources:

www.maine.gov/dep

www.rggi.org