

North America Climate Change Action by State and Province

Canadian Federal Action

Megatons greenhouse gas (GHG) emissions (1990): 596

Megatons GHG emissions (2005): 747¹

Proposed Federal GHG Emissions Targets²

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels ³ |
|------|------------------------------|---|--|
| 2020 | 20 percent below 2006 levels | -2.5 percent below | 165 |
| 2050 | 70 percent below 2006 levels | -63 percent below | 529 |

Proposed Federal Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from Business as Usual (BAU) | Implementation/ Financing |
|--|---|--|---|
| * electricity generation from combustion * oil and gas * pulp and paper * iron and steel * iron ore pelletizing * smelting and refining * cement * lime * potash * chemicals and fertilizer ⁴ | Existing facilities (pre-2004): 18 percent emissions intensity reduction in 2010 relative to 2006 emissions, escalating by 2 percent annually thereafter. New facilities (2004 or later): Target in the fourth year of operation is 2 percent below emission intensity in the third year of operation, escalating by 2 percent thereafter. Enforcement of the target begins either in 2010 or in the fourth year of operations, whichever is later. Certain facilities will be regulated based on the "cleaner fuel standard," which assumes that the facility uses the cleanest fuel available, whether or not it actually does so, resulting in a lower target. ⁶ | <i>Turning the Corner</i> indicates that 145 Mt will come from direct emissions reductions. The technology fund is intended to produce another 20Mt of reductions. | Firms may meet obligations in one of the following ways: -- Reduce their own emissions -- Buy emissions credits from other firms, including performance credits that may be banked. -- Purchase CDM/JI credits toward up to 10 percent of obligation -- Contribute to a technology fund at the rate of C\$15/ton from 2010-2013, escalating to C\$20/ton in 2013 and indexed to inflation thereafter. Firms may meet 70 percent of their obligations through the fund in 2010, phasing out to 0 percent by 2018. ⁷ -- One-time early action credit ⁸ Targets will be applied on the basis of facility, sector, or corporate historical emissions performance, depending on the nature of the regulated company. Corporate-specific targets will apply only to the electrical sector. ⁹ The government proposal recognizes that costs of reductions will be passed on to consumers, most noticeably in terms of electricity and natural gas prices. An assessment indicates that costs will not exceed 0.5 percent of GDP in any given year between 2010 and 2020. More details can be found in "Turning the Corner: Modelled Analysis of Greenhouse Gas Emission Reductions and Economic Impacts." ¹⁰ The federal plan allows for equivalency agreements with provincial plans. ¹¹ |
| Minimum emissions threshold for regulation varies by sector. Regulated GHGs include all greenhouse gases in the Kyoto Protocol. Fixed process emissions are given a zero percent reduction target until sufficient technology is developed to reduce them. ⁵ Electrical, oil sands sectors | CCS targets starting 2018 ¹² | Not projected. | Details not developed. |

Notes

¹ All Canadian emissions data is provided by the Canadian government here: http://www.ec.gc.ca/pdb/ghg/inventory_report/2005_report/a10_eng.cfm

² Targets proposed by the *Turning the Corner*, the Conservative Party's climate change plan. Scheduled to take effect in 2010. An alternate bill advanced by the opposition, Bill C-377, offers stricter targets, but it has been blocked by Canada's Conservative majority.

³ Most of these estimates are approximated based on reported targets and emissions levels.

⁴ Environment Canada. 2007. *Turning the Corner: Regulatory Framework for Greenhouse Gas Emissions*. Available at http://www.ec.gc.ca/doc/virage-corner/2008-03/541_eng.htm#compliance (accessed on November 12, 2008).

⁵ Michael R. Barrett, Gray E. Taylor. *Canada: Key Federal & Provincial Actions to Address Greenhouse Gas Emissions*. Bennett Jones LLP. Available at <http://www.bennettjones.com/Images/Guides/guide4063.pdf> (accessed on December 12, 2008).

⁶ See note 5.

⁷ Bernard Roth, et al. 2007. *Canada: Climate Change & Emissions Regulation*. Fraser Milner Casgrain LLP. Available at <http://www.mondaq.com/article.asp?articleid=50554> (accessed on November 12, 2008).

⁸ See note 4.

⁹ See note 5.

¹⁰ See note 4.

¹¹ See note 7.

¹² See note 4.

Summary of Canadian GHG Emissions By Province

| | 1990 Emissions, Mt CO2e | 2005 Emissions, Mt CO2e | Percent of Canada's emissions (2005) |
|--|-------------------------|-------------------------|--------------------------------------|
| Total, Canada | 596 | 747 | |
| Alberta | 170 | 233 | 31% |
| British Columbia | 50.6 | 65.9 | 9% |
| Manitoba | 18 | 20.3 | 3% |
| New Brunswick | 16.2 | 21.3 | 3% |
| Newfoundland and Labrador | 9.9 | 10.5 | 1% |
| Nova Scotia | 19.5 | 22.7 | 3% |
| Ontario | 175 | 201 | 27% |
| Quebec | 85.3 | 89.4 | 12% |
| Saskatchewan | 44.1 | 70.9 | 9% |
| Other (Yukon, PEI, N.W. Territories, Nunavut) | 7.4 | 12 | 2% |

Summary of Canadian Provincial Climate Action by Province

Alberta - Summary of Climate Action

Canada's highest emitter, Alberta produces about 1/3 of the country's emissions, despite containing only 10% of its population. Albertan oil sands development was "predominantly" responsible for 1/3 of Canada's emissions increase between 1990 and 2004. – UNDP¹

Emissions as a % of Canada's (2005): 31%

Megatons GHG emissions (1990): 170

Megatons GHG emissions (2005): 233

Alberta GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels | Projected Reduction as a % of Canada's Target |
|------|---|---|---|---|
| 2020 | Intensity 50% below 1990 levels; emissions stabilized | 20-35% above 1990 levels ² | ~ 17-27 Mt above 2005 levels ³ | N/A |
| 2050 | 50% below business as usual levels, or 14% below 2005 levels. | ~18% above 1990 levels | 32 | 6% |

Alberta Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|---|---|---|---|
| Large industrial facilities producing over 100,000 tons CO ₂ e per year. ⁴ All Kyoto Protocol GHGs are regulated. ⁵ | By the end of 2007, "established facilities" (those have completed eight years of commercial operation) must reduce their emissions intensities by 12% relative to a baseline intensity that is the average of the facility's 2003, 2004 and 2005 intensities. New facilities have a three-year grace period, after which they must reduce intensity by 2% per year. ⁶ | "Reduction from the provincial business as usual levels of 20 megatonnes CO ₂ e by 2010 and 60 megatonnes CO ₂ e by 2020." ⁷ | Producers are responsible for implementing reductions using one of three compliance mechanisms: -- Implement reductions themselves -- Buy performance credits - Alberta-based credits from firms that overperform past the 12% reduction requirement. These cannot be banked. -- Buy emissions credits - Alberta-based credits from firms not subject to the requirements. These can be banked. -- Contribute to the Climate Change and Emissions Management Fund at a price of C\$15 per ton. ⁸ Alberta's environmental ministry has estimated that the cost of compliance will be \$177 million per year, or 0.1% of Albertan GDP. While industrial process emissions are not included in the intensity target, they are included in the calculation that determines whether a facility exceeds the 100,000 ton CO ₂ e threshold for regulation. ⁹ | Alberta is the first jurisdiction in North America to impose such restrictions. ¹⁰ However, Alberta's price cap of \$15/ton on contributions to the Fund implies a \$15/ton cap on the price of carbon in its trading system as a whole, which is not enough to achieve the reductions laid out in its plan. The Pembina Institute has estimated that the price of carbon needs to start at \$30 per ton and rise to \$75 per ton by 2020 in order to achieve necessary GHG reductions. ¹¹ Indeed, in the plan's first year of operation, only half of the emissions reduction target was reached; the other half was met through payments into the fund, and it is unclear whether the Fund will actually be able to achieve an equivalent amount of reduction. ¹² |
| Electricity distributors | Provincial goal to generate 12.5% of electricity from renewable and alternative sources by 2008, 20% by 2020. ¹³ | Not projected. | Renewable Energy and Energy Efficiency Revolving Fund created to accomplish this. ¹⁴ | |
| Fuel distributors | 5% ethanol content in gas/diesel by 2010. ¹⁵ | Not projected. | \$209 million Renewable Energy Producer Credit - tax break to distributors who blend biofuels. ¹⁶ | |

Notes

- ¹ Simon Donner. 2007. Canada Country Study. UNDP. Available at http://hdr.undp.org/en/reports/global/hdr2007-2008/papers/Donner_Simon_CANADA.pdf (accessed on November 12, 2008).
- ² Pembina Institute. 2007. Highlights of Provincial Greenhouse Gas Reduction Programs. Available at <http://pubs.pembina.org/reports/provCCplans-moncton-cd.pdf> (accessed on November 12, 2008).
- ³ Alberta Environment. 2008. Alberta's 2008 Climate Change Strategy. Available at <http://environment.gov.ab.ca/info/library/7894.pdf> (accessed on November 12, 2008).
- ⁴ Environment Canada. 2008. Turning the Corner: Detailed Emissions and Economic Modelling. Available at http://www.ec.gc.ca/doc/virage-corner/2008-03/571/Annex3_eng.htm (accessed on November 12, 2008).
- ⁵ Michael R. Barrett, Gray E. Taylor. Canada: Key Federal & Provincial Actions to Address Greenhouse Gas Emissions. Bennett Jones LLP. Available at <http://www.bennettjones.com/Images/Guides/guide4063.pdf> (accessed on December 12, 2008).
- ⁶ Environment Canada. A Way Forward: Canadian Perspectives on Post-2012 Climate Policy
- ⁷ See note 4.
- ⁸ Bernard Roth, et al. 2007. Canada: Climate Change & Emissions Regulation. Fraser Milner Casgrain LLP. Available at <http://www.mondaq.com/article.asp?articleid=50554> (accessed on November 12, 2008).
- ⁹ See note 5.
- ¹⁰ Government of Alberta. 2007. Alberta first in North America to impose greenhouse gas cuts on large industrial facilities. Available at <http://www.gov.ab.ca/acn/200706/217306EC104D7-0191-EE88-DC294E2D925234E5.html> (accessed on November 12, 2008).
- ¹¹ Pembina Institute. 2008. Alberta Industry Fails to Reduce Greenhouse Gas Pollution. Available at <http://www.pembina.org/media-release/1631> (accessed on November 12, 2008).
- ¹² Government of Alberta. 2008. Alberta industries comply with pivotal climate change legislation. Available at <http://www.gov.ab.ca/acn/200804/23421A13065B8-02F7-B8BB-28C7FACB086E54EE.html> (accessed on November 12, 2008).
- ¹³ See note 4.
- ¹⁴ See note 4.
- ¹⁵ See note 4.
- ¹⁶ Government of Alberta. 2006. New bioenergy investment energizes Alberta's agriculture sector. Available at [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/bdv11191/\\$FILE/bioenergy_plan_news_release.pdf](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/bdv11191/$FILE/bioenergy_plan_news_release.pdf) (accessed on November 12, 2008).

British Columbia - Summary of Climate Action

Emissions as a % of Canada's (2005): 9%
 Megatons GHG emissions (1990): 50.6
 Megatons GHG emissions (2005): 65.9

British Columbia GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels | Projected Reduction as a % of Canada's Target |
|------|-----------------------|---|-------------------------------------|---|
| 2020 | 33% below 2007 levels | ~10% below ¹ | 20 | 12% |
| 2050 | 80% below 2007 levels | ~73% below | 52 | 10% |

British Columbia Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/Financing | |
|---|--|---|--|---|
| All fossil fuels sold in the province | Carbon tax starting at \$10/ton on July 1, 2008 and rising by \$5 per year to \$30/ton in 2012. The exact tax schedule can be found here: http://www.fin.gov.bc.ca/scp/tp/climate/A4.htm | Projected by MK Jaccard and Associates to reduce GHGs by 3 Mt of CO2e annually by 2020. ² | The carbon tax applies to the "purchase or use of fossil fuels within the province" and is collected at the wholesale level, except for marketable natural gas and propane, for which it is collected at the retail level. ³ | |
| | | | 100% of the revenue from the carbon tax will go into tax cuts, 2/3 of which will go to individuals and 1/3 of which will go to businesses. There is also a tax credit specifically designed for low-income people. The schedule of tax cuts can be found at http://www.fin.gov.bc.ca/scp/tp/climate/A2.htm . | |
| | | | The oil and gas industry is estimated to pay \$50 million in the first year, and the cement sector is estimated to pay \$7 million. ⁴ In order to assist consumers with rising costs, a one-time \$100 climate action dividend will be paid to every British Columbia citizen, to be invested (in theory) in greener technology in order to reduce the carbon tax paid by the individual. | |
| All electrical power generators in British Columbia | <ul style="list-style-type: none"> Carbon capture and storage required for all coal-fired electricity generation facilities. (effective 2/2007) 90% of British Columbia's electricity must come from clean or renewable energy (target date not given). By 2016, electricity generation facilities must be "net zero," i.e. all emissions must be eliminated or offset.⁵ | MK Jaccard and Associates project a 4.8 Mt to 8.9 Mt CO2e reduction from the electricity generation sector in 2020 as a result of combined policies and a 0.5 Mt CO2e reduction as a result of electricity generation offsets. Projections for 2010 and 2015 are also available on page 112 of British Columbia's Climate Action Plan. ⁶ Nevertheless, as estimates are provided as a result of aggregate policies, it is impossible to tell how much reduction from the electrical generation sector is a result of the specific policies listed to the left. | A 0.4% levy on electricity, natural gas, grid propane and heating oil in place since 9/1/07 goes toward establishing a Clean Energy Fund to encourage alternative and renewable energy. (Transportation fuel is taxed under a different system.) This tax is imposed at the consumer level. Originally, the Fund was to be limited to \$25 million; however, the government recently announced that it would extend the Fund even after the \$25 million was collected. ⁷ | Carbon capture technology has not been tested on a commercial scale, and British Columbia currently has no coal-fired plants. ⁸ Its 100% carbon capture and storage requirement thus does not advance CCS technology so much as preclude any new coal-fired plants from being built. British Columbia is the first jurisdiction to have such a requirement. ⁹ |
| All firms selling new vehicles in British Columbia | Phasing in of California's vehicle emissions standards between 2009 and 2016 ¹⁰ | Expected to reduce automobile CO2 emissions by 30% by 2016 ¹¹ | Unspecified. | |
| All fuel distributors in British Columbia | 5% ethanol standard in fuels by 2010. ¹² | MK Jaccard and Associates project an increase of 0.5 Mt CO2e in 2020 from the ethanol sector as a result of combined policies. ¹³ Nevertheless, as estimates are provided as a result of aggregate policies, it is impossible to tell exactly how much of the increase from the ethanol sector is a direct result of the 5% requirement. | Unspecified. | |
| To be determined. | Bill 18: Authorizes a cap-and-trade system and provides for the distribution of emissions allowances. ¹⁴ | N/A | Compliance options: * British Columbia Allowance Units: allowances distributed by government * BC Emission Reduction Units: offsets authorized by government * Recognized Compliance Units: units from other systems, e.g. Kyoto Protocol Clean Development Mechanism ¹⁵ | In contrast to federal and Alberta systems, there is no technology fund, and there does not appear to be credit for early action. ¹⁶ |

Notes

¹ As 2007 data for British Columbia wasn't available, I projected an emissions level of 68.4 Mt based on 2003-2005 data. Since emissions growth has decelerated over the past decade, it is likely that this is overestimated, implying that emissions reductions according to 1990 levels are underestimated.

² Government of British Columbia. How the Carbon Tax Works. Available at <http://www.fin.gov.bc.ca/scp/tp/climate/A4.htm> (accessed on November 12, 2008).

³ Government of British Columbia. Tax Cuts Funded by the Carbon Tax. Available at <http://www.fin.gov.bc.ca/scp/tp/climate/A2.htm> (accessed on November 12, 2008).

⁴ Government of British Columbia. Myths and Facts About the Carbon Tax. Available at <http://www.fin.gov.bc.ca/scp/tp/climate/A6.htm> (accessed on November 12, 2008).

⁵ Government of British Columbia. 2007. Speech from the Throne. Available at http://www.leg.bc.ca/38th3rd/Throne_Speech_2007.pdf (accessed on November 12, 2008).

⁶ Government of British Columbia. Climate Action Plan. Available at http://www.gov.bc.ca/premier/attachments/climate_action_plan.pdf (accessed on November 12, 2008). p. 112

⁷ Government of British Columbia. 2008. Notice to Sellers of Electricity, Natural Gas, Fuel Oil and Propane: Innovative Clean Energy (ICE) Fund Levy Extension. Available at http://www.sbr.gov.bc.ca/documents_library/notices/Notice_2008-033_ICE_Fund_Levy_Extension.pdf (accessed on November 12, 2008).

⁸ Environment News Service. 2007. British Columbia to Trim Greenhouse Gases, Go Carbon Neutral. Available at <http://www.ens-newswire.com/ens/feb2007/2007-02-14-02.asp> (accessed on December 12, 2008).

⁹ See note 6.

¹⁰ Environment Canada. 2008. Turning the Corner: Detailed Emissions and Economic Modelling. Available at http://www.ec.gc.ca/doc/virage-corner/2008-03/571/Annex3_eng.htm (accessed on November 12, 2008).

¹¹ See note 10.

¹² See note 10.

¹³ See note 6.

¹⁴ Michael R. Barrett, Gray E. Taylor. Canada: Key Federal & Provincial Actions to Address Greenhouse Gas Emissions. Bennett Jones LLP. Available at <http://www.bennettjones.com/Images/Guides/guide4063.pdf> (accessed on December 12, 2008).

¹⁵ See note 14.

¹⁶ See note 14.

¹⁷ Office of the Governor of California. British Columbia Adopts California's Low Carbon Fuel Standard. Available at <http://gov.ca.gov/index.php?fact-sheet/6504/> (accessed on March 11, 2009).

¹⁸ See note 17.

¹⁹ See note 17.

Manitoba - Summary of Climate Action

Emissions as a % of Canada's (2005): 3%
 Megatons GHG emissions (1990): 18
 Megatons GHG emissions (2005): 20.3

Manitoba GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels | Projected Reduction as a % of Canada's Target |
|------|---------------------|---|-------------------------------------|---|
| 2010 | Below 2000 levels | ~12% above 1990 levels | Almost none. | N/A |
| 2012 | Cuts by >3 megatons | 6% below ¹ | 3 | N/A |

Manitoba Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|-------------------------------------|---|---------------------------------------|---------------------------|---|
| Gasoline distributors and producers | 8.5 percent ethanol standard as of April 2008. ² | N/A | N/A | |
| Power companies | Proposal for an east-west power grid between Manitoba and Ontario for cheaper distribution of renewable energy ³ | Not projected. | Details not developed. | Manitoba gets 96% of provincial electricity from hydro power. It exports half the energy it produces, mostly to the U.S. ⁴ |

Notes

¹ Government of Manitoba. Meeting Our Commitments — Reducing Emissions in Manitoba and Beyond. Available at http://www.gov.mb.ca/asset_library/en/beyond_kyoto/executive_summary.pdf (accessed on November 12, 2008).

² Government of Manitoba. Ethanol Office. Available at <http://www.gov.mb.ca/stem/energy/biofuels/ethanol/index.html> (accessed on April 22, 2010).

³ Government of Manitoba. Climate and Green Initiatives: Hydropower. Available at http://www.gov.mb.ca/stem/climate/mb_doing/hydro_power.html (accessed on November 12, 2008).

⁴ See note 3.

New Brunswick - Summary of Climate Action

Emissions as a % of Canada's (2005): 3%
 Megatons GHG emissions (1990): 16.2
 Megatons GHG emissions (2005): 21.3

New Brunswick GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels | Projected Reduction as a % of Canada's Target |
|------|---|---|-------------------------------------|---|
| 2012 | 1990 levels (approx. 5.5 Mt reduction from 2004 levels) | No change | 5 | N/A |
| 2020 | 10% below 1990 levels | 10% below | 7 | 4% |

New Brunswick Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|---|---|---|---|
| Vehicle manufacturers and distributors | Commitment to vehicle emissions standards "consistent with California's." (Target date not given.) ¹ | In total, GHG reductions from transportation are projected to be 1.2 Mt by 2012. ² | N/A | |
| Fuel distributors | 5% ethanol standard for gasoline and diesel by 2010. ³ | See above. | Up to \$25m per project to help farmers construct/expand biofuel production facilities. ⁴ | New Brunswick's 2007 Climate Change Action Plan promises "incentives" for consumers to switch to alternative fuels, but it does not spell out what these incentives are. ⁵ |
| Companies selling electricity in New Brunswick | 10% renewable electricity standard by 2010. ⁶ | In total, energy efficiency and renewable energy measures are intended to reduce GHGs by 2.2 megatons by 2012. ⁷ | Synapse Energy Economics, a consulting firm employed by the New Brunswick Department of Energy, estimates that the cost impact of the standard with 20% imported electricity will be 2% in 2015. Without imported electricity, the cost impact will be 3% in 2015. ⁸ | Acceptable sources of electricity include biomass, solar, water, wind, biogas, and "alternative-use electricity." ⁹ |

Notes

¹ Government of New Brunswick. 2007. Climate Change Action Plan. Available at <http://www.gnb.ca/0009/0369/0015/0001-e.pdf> (accessed on November 12, 2008). p.17

² Environment Canada. 2008. Turning the Corner: Detailed Emissions and Economic Modelling. Available at http://www.ec.gc.ca/doc/virage-corner/2008-03/571/Annex3_eng.htm (accessed on November 12, 2008).

³ See note 2.

⁴ See note 2.

⁵ See note 1.

⁶ See note 2.

⁷ See note 2.

⁸ Tim Woolfe, et al. 2005. Potential Cost Impacts of A Renewable Portfolio Standard in New Brunswick. Synapse Energy Economics, Inc. Available at <http://www.synapse-energy.com/Downloads/SynapseReport.2005-10.NB-DOE.Potential-Costs-of-RPS-in-New-Brunswick.03-28.pdf> (accessed on November 12, 2008).

⁹ NEW BRUNSWICK REGULATION 2006-58 under the ELECTRICITY ACT (O.C. 2006-274). 2006. Available at <http://www.gnb.ca/0062/regs/2006-58.htm> (accessed on March 16, 2009).

Newfoundland

Emissions as a % of Canada's (2005): 1.4%

Megatons GHG emissions (1990): 9.87

Megatons GHG emissions (2005): 10.5

Newfoundland GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels | Projected Reduction as a % of Canada's Target |
|--|---------------|--|--|--|
| No provincial reductions standards – however, is a member of the New England Governors/ Eastern Canadian Premiers | N/A | N/A | N/A | N/A |

Nova Scotia - Summary of Climate Action

Emissions as a % of Canada's (2005): 3%

Megatons GHG emissions (1990): 19.5

Megatons GHG emissions (2005): 22.7

Nova Scotia GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels | Projected Reduction as a % of Canada's Target |
|------|-----------------------|---|-------------------------------------|---|
| 2020 | 10% below 1990 levels | 10% below | 5 | 3% |

Nova Scotia Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|--|---------------------------------------|---|---------------|
| Vehicle manufacturers and distributors | Adoption of California's automobile emissions standards by 2010 ¹ | Not projected. | N/A | |
| Distributors of electricity | 2007 Renewable Energy Standards Regulations - 18.5% of electricity must come from renewable sources by 2013 ² | Not projected. | Any source that can be replenished in eighty years or less is eligible under the standard. Sources include, but are not limited to, solar, wind, biomass, minimal-impact hydroelectric, ocean, tidal/wave, landfill gas, liquid biofuel, and biogas. ³ | |

Notes

¹ Environment Canada. 2008. Turning the Corner: Detailed Emissions and Economic Modelling. Available at http://www.ec.gc.ca/doc/virage-corner/2008-03/571/Annex3_eng.htm (accessed on November 12, 2008).

² See note 1.

³ Schedule "A" Regulations Respecting Renewable Energy Standards made under Section 5 of Chapter 25 of the Acts of 2004, the Electricity Act. Available at <http://www.gov.ns.ca/energy/resources/EM/renewable/Renewable-Energy-Standard-Regulations.pdf> (accessed on March 16, 2009).

Ontario - Summary of Climate Action

Emissions as a % of Canada's (2005): 27%

Megatons GHG emissions (1990): 175

Megatons GHG emissions (2005): 201

Ontario GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels | Projected Reduction as a % of Canada's Target |
|------|-----------------------|---|-------------------------------------|---|
| 2014 | 6% below 1990 levels | 6% below | 37 | N/A |
| 2020 | 15% below 1990 levels | 15% below | 52 | 31% |
| 2050 | 80% below 1990 levels | 80% below | 166 | 31% |

Ontario Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|---|---|--|---|--|
| Coal-fired generation plants | All coal-fired generation plants will be closed by 2014. ¹ Plants are currently being phased out gradually - one of the five existing coal plants has already been eliminated, and another third of emissions from coal will be eliminated between 2006 and 2011. ² | 30 Mt/year ³ | Ontario will spend \$150 million to double hydro, wind and solar energy by 2025, addressing the energy and job vacuum produced by the closures. ⁴ Nevertheless, alternative energy will be about 60% more expensive to produce in the short run, according to a analysis commissioned by the Ontario Ministry of Energy ⁵ , and these costs will presumably be borne by consumers. The Next Generation Jobs Fund will also provide \$1.15 billion over five years for jobs with positive social externalities, with an emphasis on green jobs, and could thus be used as a source of funding for renewable energy projects. ⁶ | Ontario is the first jurisdiction in North America to implement such an initiative. ⁷ |
| Public transit | MoveOntario 2020 - \$17.5b for rapid transit over 12 years ⁸ | In total, transportation measures are intended to achieve 10% of Ontario's 2014 emissions target. ⁹ | 2/3 of the program costs will be provided by the Ontario government; the remaining third will be provided by the Canadian federal government. ¹⁰ | |
| Fuel distributors | 5% ethanol content in gasoline and diesel by 2020. ¹¹ | See above. | 12-year, \$520 million Ethanol Growth Fund to assist producers and fund R&D. ¹² | |
| 1. All generators • over 25 MW capacity; • generating more than 20,000 MWh electricity per year; and • emitting more than trace amounts of NOx and SO2 | Baseline-and-credit emissions trading system for NOx and SO2. ¹⁴ | N/A | Emissions reduction credits can be bought from either Ontario or one of the 12 states in its Ozone Annex. They can also come from other states, if the generator in question can produce scientific evidence that such reductions benefit Ontario. ¹⁵ | |
| 2. All generators applying for and receiving emissions allowances ¹³ | | | | |
| "Multiple sectors" ¹⁶ | Joint cap-and-trade program with Quebec as early as 2010. ¹⁷ | Not projected. | Details not developed. | At the same meeting, Ontario and Quebec also agreed to further integrate their economies, which could be a step toward easing industrial competitiveness concerns. ¹⁸ |
| Transportation fuels | Memorandum of Understanding committing Ontario to adopting California's low carbon fuel standard. ¹⁹ | N/A | N/A | |
| Electric utilities | 10% of electricity generation must be from new renewables by 2010. ²⁰ | | | |

Notes

¹ Environment Canada. 2008. Turning the Corner: Detailed Emissions and Economic Modelling. Available at http://www.ec.gc.ca/doc/virage-corner/2008-03/571/Annex3_eng.htm (accessed on November 12, 2008).

² Government of Ontario. 2007. Go Green: Ontario's Action Plan on Climate Change. Available at <http://www.ene.gov.on.ca/publications/6445e.pdf> (accessed on November 12, 2008).

³ See note 2.

⁴ See note 2.

⁵ Government of Ontario. 2005. Cost Benefit Analysis: Replacing Ontario's Coal-Fired Electricity Generation. Available at http://www.energy.gov.on.ca/english/pdf/electricity/coal_cost_benefit_analysis_april2005.pdf (accessed on November 12, 2008).

⁶ See note 2.

⁷ See note 2.

⁸ Government of Ontario. 2007. MoveOntario 2020. Available at <http://www.premier.gov.on.ca/news/Product.asp?ProductID=1384> (accessed on November 12, 2008).

⁹ See note 1.

¹⁰ See note 7.

¹¹ See note 1.

¹² Government of Ontario. 2007. McGuinty Government Takes Next Step On Cleaner Air. Available at http://ogov.newswire.ca/ontario/GONE/2005/10/07/c8901.html?lmatch=&lang=_e.html (accessed on November 12, 2008).

¹³ Government of Ontario. 2001. Emissions Trading and NOx and SO2 Emissions Limits for Ontario's Electricity Sector. Available at http://www.ene.gov.on.ca/envision/env_reg/er/documents/2001/RA01E0020-C.pdf (accessed on November 12, 2008).

¹⁴ See note 12.

¹⁵ See note 12.

¹⁶ Government of Ontario. 2008. Memorandum of Understanding Between the Government of Ontario and the Government of Quebec. Available at <http://www.premier.gov.on.ca/news/Product.asp?ProductID=2281> (accessed on November 12, 2008).

¹⁷ See note 16.

¹⁸ CBC News. Ontario, Quebec unveil carbon cap-and-trade plan. Available at <http://www.cbc.ca/canada/story/2008/06/02/ont-que.html> (accessed on November 12, 2008).

¹⁹ Michael R. Barrett, Gray E. Taylor. Canada: Key Federal & Provincial Actions to Address Greenhouse Gas Emissions. Bennett Jones LLP. Available at <http://www.bennettjones.com/Images/Guides/guide4063.pdf> (accessed on December 12, 2008).

²⁰ Energy Roundtable. Information on Canadian Energy Opportunities. Available at http://www.energyroundtable.org/energy_opp.php (accessed on July 24, 2009).

Quebec - Summary of Climate Action

Emissions as a % of Canada's (2005): 12%

Megatons GHG emissions (1990): 85.3

Megatons GHG emissions (2005): 89.4

Quebec GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels | Projected Reduction as a % of Canada's Target |
|------|--|---|-------------------------------------|---|
| 2012 | 6% below 1990 levels (approx. 13.8 Mt below business as usual) | 6% below | 9 | N/A |
| 2020 | 20% below 1990 levels ¹ | 20% below | 21 | N/A |

Quebec Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|---|---|---|--|
| All fossil fuels distributed in Quebec | Carbon tax according to the following schedule: -- Gas: 0.8 cents per liter -- Diesel: 0.9 cents per liter -- Propane: 0.5 cents per liter -- Coke (used in steel making): 1.3 cents per liter -- Coal: \$8 per ton ² | The tax is likely too small to discourage fuel use, but it does raise money for other environmental initiatives. ³ | The tax is expected to raise about \$200 million per year and will be used to finance the state's plan to reduce GHGs and develop public transportation. ⁴ | |
| Public transit | Increase in public transportation use by 8% by 2012. ⁵ | 0.1 Mt/year ⁶ | \$120 million of the money raised by the carbon tax is slated for this initiative. ⁷ | |
| Automobile manufacturers and distributors | Adoption of California's automobile emissions standards between 2010 and 2016, 20% increase in fuel efficiency by 2012. ⁸ | 1.7 Mt/year ⁶ | | |
| "Multiple sectors" ¹⁰ | Joint cap-and-trade program with Ontario as early as 2010. ¹¹ | Not projected. | Details not developed. | At the same meeting, Ontario and Quebec also agreed to further integrate their economies, which could be a step toward easing industrial competitiveness concerns. ¹² |
| Fuel distributors | 5% cellulosic ethanol standard for fuels by 2012. ¹³ | 0.78 Mt/year ⁴ | \$30 million incentive to encourage local ethanol production ¹⁵ | |
| To be determined, although the broad categories of emitters will be consistent with commitments made by the Western Climate Initiative (WCI), of which Quebec is a member. | Bill 42: Authorizes a cap-and-trade system for Quebec ⁶ | | Bill seeks integration with international and provincial cap-and-trade systems. The bill also allows reduction targets and emission caps to vary by sector. | |

Notes

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² Environment Canada. 2008. Turning the Corner: Detailed Emissions and Economic Modelling. Available at http://www.ec.gc.ca/doc/virage-corner/2008-03/571/Annex3_eng.htm (accessed on November 12, 2008).

³ Pembina Institute. 2007. Highlights of Provincial Greenhouse Gas Reduction Programs. Available at <http://pubs.pembina.org/reports/provCCplans-moncton-cd.pdf> (accessed on November 12, 2008).

⁴ See note 2.

⁵ See note 2.

⁶ See note 3.

⁷ See note 2.

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¹⁰ Government of Ontario. 2008. Memorandum of Understanding Between the Government of Ontario and the Government of Quebec. Available at <http://www.premier.gov.on.ca/news/Product.asp?ProductID=2281> (accessed on November 12, 2008).

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Saskatchewan - Summary of Climate Action

Emissions as a % of Canada's (2005): 9.5%

Megatons GHG emissions (1990): 44.1

Megatons GHG emissions (2005): 70.9

Saskatchewan GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels | Projected Reduction as a % of Canada's Target |
|------|---|---|-------------------------------------|---|
| 2020 | 20 percent below 2006 levels ¹ | ~30% above 1990 levels | 15 | 9% |

Saskatchewan Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|-------------------|---|--|---|---------------|
| Fuel distributors | 7.5% average ethanol standard for fuels, as of 2007. ² | Not projected; Saskatchewan's 2007 Energy and Climate Change Plan graphs reductions by sector, but numbers are not exact, and reductions for specific policies are not given. ³ | In 2002, the Saskatchewan government announced a number of measures to encourage development of the ethanol industry, including: ⁴ -- An ethanol tax rebate, which is projected to grow from \$3.3 million to \$21 million "as industry production expands." ⁵ -- Removal of barriers on ethanol exports. | |
| SaskPower | New and replacement electrical generation facilities must be carbon neutral, i.e. either GHG-free or fully offset by emission credits, as of 2007. ⁶ | Not projected; see above. | Plan to establish a Saskatchewan Technology Fund for compliance with federal regulations ⁷ Moreover, the Investment Tax Credit for Manufacturing and Processing will be expanded to "certain types of renewable energy and energy conservation equipment used to generate electricity." ⁸ | |
| SaskPower | Demand-side management practices to reduce electricity demand from SaskPower by 300MW relative to business as usual levels by 2017. ⁹ | Not projected; see above. | * Energy efficient building standards * Extension of Home Energy Improvement Program, which reduces Energy use in low- to middle-income households. ¹⁰ | |

Notes

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² Environment Canada. 2008. Turning the Corner: Detailed Emissions and Economic Modelling. Available at http://www.ec.gc.ca/doc/virage-corner/2008-03/571/Annex3_eng.htm (accessed on November 12, 2008).

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⁵ Pembina Institute. 2007. Highlights of Provincial Greenhouse Gas Reduction Programs. Available at <http://pubs.pembina.org/reports/provCCplans-moncton-cd.pdf> (accessed on November 12, 2008).

⁶ See note 2.

⁷ See note 4.

⁸ See note 2.

⁹ See note 2.

¹⁰ See note 2.

United States - Summary of State Climate Action

US: Megatons GHG emissions CO₂e (1990): 6146.7

US: Megatons GHG emissions CO₂e (2006): 7075.6¹

Arizona - Summary of Climate Action

Emissions as a % of US's (2000): 1.3%

Megatons GHG emissions (1990): 66.7

Megatons GHG emissions (2000): 92.3²

Arizona Governor Janet Napolitano and the Arizona state legislature are currently waging a legislative battle over the governor's power to impose climate initiatives and participate in the WCI. On 5/12/08, the Arizona legislature passed House Bill 2017, which would prevent Governor Napolitano from taking any action on climate change not authorized by federal law or the state legislature, effectively overriding Governor Napolitano's executive order on emissions targets. On 5/15/08, Governor Napolitano vetoed HB 2017. Supporters of the bill did not have the numbers necessary to override.

Arizona GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|-----------------------------------|---|-------------------------------------|
| 2020 | 2000 levels ⁴ | 38% above 1990 levels | N/A |
| 2040 | 50% below 2000 level ⁵ | 31% below | N/A |

Arizona Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|---|--|---|---------------|
| Electric utilities in Arizona ⁶ | 15% renewable portfolio standard (RPS) by 2025. 30% electricity must come from distributed generation (non-utility-owned sources) by 2011. ⁷ | 7.7 Mt CO ₂ e annual reduction in 2020 46 Mt CO ₂ e cumulative reduction, 2006-2020. ⁸ | Increased cost of energy production will be offset by small Environmental Portfolio Surcharge paid by consumers. Caps for this surcharge are as follows: -- Residential: \$1.05/mo -- Non-residential, non-energy-intensive: \$39/mo. -- Non-residential, energy-intensive (e.g. mines, heavy-manufacturing): \$117/mo. ⁹ | |
| New vehicles sold in/to Arizona | Eventual adoption of CA LEV standards - executive order signed 9/8/06. ¹⁰ | 5.6 Mt CO ₂ e annual reduction in 2020 33 Mt CO ₂ e cumulative reduction, 2007-2020 ¹¹ | TBD | |

Notes

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California - Summary of Climate Action

Emissions as a % of US's (2004): 6.7%
 Megatons GHG emissions (1990): 427
 Megatons GHG emissions (2004): 480¹

California is the first US state to impose economy-wide, enforceable GHG targets.

California GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2004 levels |
|------|------------------------------------|---|-------------------------------------|
| 2010 | 2000 levels ² | 6% above 1990 levels | 28 |
| 2020 | 1990 levels ³ | No change | 53 |
| 2050 | 80% below 1990 levels ⁴ | 80% below | 395 |

California Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|---|---|--|---|---|
| According to draft regulations, the program would cover: 2012: Electricity generators and importers, oil refineries, industrial facilities and hydrogen plants that emit over 25,000 MMT CO ₂ e. 2015: Transportation fuels, commercial and industrial natural gas use. ⁵ | Global Warming Solutions Act: mandates Air Resources Board (ARB) to implement economy-wide cap-and-trade system and other regulation by 2012 in order to meet 2020 targets. ⁵ | Economy-wide reduction of 25% from 2006 levels by 2020. ⁷ | Implementation timeline: * June 30, 2007: List of discrete early action measures published * January 1, 2008: Adopt reporting and verification regulations for GHG emissions. * January 1, 2008: Determine the 1990 GHG emissions level (must be reached by 2020). ⁹ * January 1, 2009: Approve plan for achieving maximum feasible GHG reductions. * January 1, 2010: Adopt regulations to implement early action measures. * January 1, 2011: Adopt regulations setting GHG emission limits and establishing regulatory measures, to take effect starting 2012. * January 1, 2020: Emissions reduction target achieved ⁸ | Act could violate Commerce Clause of US Constitution if it causes out-of-state producers of electricity to be treated differently. ⁹ |
| Three major California electricity utilities - Pacific Gas & Electric, Southern Edison, and San Diego Gas & Electric ¹¹ | 20% of electricity must be produced from renewable sources by 2010. | | Acceptable sources: biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, and tidal current. | |
| All electricity retailers | Executive Order S-14-08: All electricity retailers must obtain 33% of their load from renewable sources by 2020 ¹ | 21.2 Mt CO ₂ e in 2020 ² | Acceptable sources: biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, and tidal current. | |
| New passenger vehicles, light-duty trucks sold in/to CA starting in 2009. ¹³ | New cars must have features including a discrete variable valve lift, dual cam phasing, turbocharging with engine downsizing, automated manual transmissions, and camless valve actuation. ¹⁴ California officials say that this will result in a 36.8 mpg fuel efficiency standard by 2016 ¹⁵ | 22% reduction in GHGs from new vehicles by 2012, 30% reduction by 2016. ¹⁶ The ARB predicts a 4.8 Mt CO ₂ e reduction in 2020. ¹⁷ | ARB - "Costs for the added technology needed to meet the rule are expected to average about \$325 per vehicle in 2012 and about \$1050 per vehicle to comply in 2016." ¹⁸ | Seventeen other US states have adopted California's LEV standard. However, these states waged a court battle with the EPA under the Bush Administration over the EPA's refusal to grant a Clean Air Act waiver for this initiative. ¹⁹ The Obama Administration has indicated its intention to reverse the EPA's decision. California's LEV standard recently withstood a lawsuit from the auto industry, when US District Judge Anthony Ishii ruled that California's law did not impinge upon federal jurisdiction. ²⁰ Supersedes ethanol standard. ²⁶ |
| Fuel distributed in California ²¹ | Low Carbon Fuel Standard: Fuel must achieve declining emissions intensity - 10% reduction by 2020. ²² | 16.5 Mt CO ₂ e in 2020 ²³ | Flexibility in implementation; firms' choices include: -- Blending more ethanol into gasoline products -- Buying credits from electric utilities supplying to electric passenger vehicles, -- Selling hydrogen for vehicles ²⁴ LCFS is still in the process of being developed. A set of draft regulations was posted in November 2008. ²⁵ | Ontario and British Columbia have adopted the standard, and Oregon, Washington, Arizona, New Mexico, Florida, Massachusetts, the Midwest Accord states and others are considering it. |

Gasoline producers in CA

All gas produced in CA must contain 10% ethanol by end 2009. (legislation enacted mid-2007)²⁷

2.4 Mt CO₂e in 2020²⁸

Superseded by Low Carbon Fuel Standard.²⁹**MOUs With Other Jurisdictions**

| Party | Agreement |
|--|--|
| Ontario | Coordination on low-carbon fuel standards: 10% reduction by 2020 ³⁰ |
| Victoria, Australia | Collaboration on GHG reductions from transportation, clean energy technology, clean building standards, economic assessments, and adaptation to climate change. Statement of intent to establish linkages between market-based emissions reduction systems ³¹ |
| British Columbia | Collaboration on cap-and-trade, clean technologies, hydrogen highway from British Columbia to Baja California, information sharing, coastal resources. ³² |
| Mexico | Commitment to information and technology sharing, capacity building toward environmental solutions. ³³ |
| UNDP, re: China | Commitment to assisting China with climate change mitigation and adaptation ³⁴ |
| Sonora; Baja California; Chihuahua; Coahuila; Nuevo Leon; Tamaulipas; Pacific Gas & Electric (PG&E); California Climate Action Registry | Collaboration between states and Pacific Gas and Electric in order to identify and carry out pollution offset projects that will benefit all parties. ³⁵ |
| Manitoba | Commitment to share information and promote trade partnerships for low- and no-emission vehicles, particularly hybrid and hydrogen buses and plug-in hybrid vehicles. Manitoba states its intention to enact legislation towards GHG reduction and set up a cap-and-trade system. ³⁶ According to Manitoba's official website, the MOU will also "explore the opportunity" for Manitoba to trade carbon credits through the Clean Air Resources Board and the California Climate Action Registry. ³⁷ |
| Maharashtra, India (Signed by Maharashtra Electricity Regulatory Commission, Berkeley Lab, California Energy Commission, California Public Utilities Commission) | Sharing of California's energy efficiency policies, demand-side management, resource planning, etc. ³⁸ |
| Sao Paulo, Brazil | Collaboration on climate change action. ³⁹ |
| Wyoming | Cooperation on advanced coal technologies. Following the signature of this MOU, utility executives have discussed incorporating Wyoming's Integrated Gasification Combined Cycle (IGCC) power plants into California's electrical supply. ⁴⁰ |
| Sweden | Cooperation on development of bioenergy, particularly biomethane, on which Sweden is an international leader. ⁴¹ |

Notes

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- ⁴ See note 2.
- ⁵ Kyle Danish, Shelley Fidler, Kevin Gallagher, Megan Ceronsky and Tomás Carbonell. 2009. Weekly Policy Update. Van Ness Feldman, December 15. Available at http://www.mondaq.com/unitedstates/article.asp?articleid=90640&email_access=on (accessed on April 22, 2010).
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- ⁸ Thomas M. Donnelly and Ryan D. Dahl. 2008. United States: California's Global Warming Solutions Act: Creating A Haze Of Uncertainty For Business. Jones Day. Available at <http://www.mondaq.com/article.asp?articleid=66426> (accessed on November 12, 2008).
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- ¹⁵ Keith Richburg. 2008. California Sues EPA Over Emissions Rules. Washington Post. Available at <http://www.washingtonpost.com/wp-dyn/content/article/2008/01/02/AR2008010202833.html> (accessed on November 12, 2008).
- ¹⁶ See note 13.
- ¹⁷ California Air Resources Board. 2008. Climate Change Draft Scoping Plan. Available at <http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.pdf> (accessed on November 12, 2008).
- ¹⁸ California Environmental Protection Agency. 2004. ARB Approves Greenhouse Gas Rule. Available at <http://www.arb.ca.gov/newsrel/nr092404.htm> (accessed on November 12, 2008).
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- ²³ See note 17.
- ²⁴ See note 21.
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- ³³ California Environmental Protection Agency. 2008. Memorandum of Understanding. Available at <http://www.calepa.ca.gov/Border/Documents/2008/021308MOU.pdf> (accessed on November 12, 2008).
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- ³⁷ Government of Manitoba. Climate and Green Initiatives: Leading the Way on Climate Change. Available at http://www.gov.mb.ca/stem/climate/mb_doing/lead_way.html (accessed on November 12, 2008).
- ³⁸ Berkeley Lab. Maharashtra at the Crossroads Berkeley Lab-Led Agreement Tackles India's Energy Shortage, Global Climate Change. Available at <http://www.lbl.gov/Science-Articles/Archive/sabl/2008/Feb/Maharashtra.html> (accessed on November 12, 2008).
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Connecticut - Summary of Climate Action

Emissions as a % of US's (2001): 0.6%

Megatons GHG emissions (1990): 41

Megatons GHG emissions (2001): 44¹

Connecticut is a member of the RGGI cap-and-trade program.

Connecticut GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2001 levels |
|------|------------------------------------|---|-------------------------------------|
| 2020 | 10% below 1990 levels ² | 10% below | 7 |
| 2050 | 80% below 2001 levels ³ | 78% below | 35 |

Connecticut Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|--|--|---|---|
| New motor vehicles sold in/to Connecticut ⁴ | Implementation of California's LEV 2010: 0.09 MMTCO _{2e} II standards, starting in 2008. CO ₂ 2020: 3.1 MMTCO _{2e} ⁶ will be added starting 2009; tailpipe (Pavley) standards phased in between 2009 and 2016. New vehicles required to emit 30% fewer GHGs on average. ⁵ | | | |
| Distributors of electricity in Connecticut | 27% renewable portfolio standard (RPS) by 2020. ⁷ | 2005 Estimate based on a 20% RPS by 2020: 2010: 1.3 MMTCO _{2e} 2020: 3.2 MMTCO _{2e} ⁸ | Three classes of renewables: -- Class I: solar, wind, new sustainable biomass, landfill gas, fuel cells (using renewable or non-renewable fuels), ocean thermal power, wave/tidal power, low-emission advanced renewable energy conversion technologies, new run-of-the-river hydropower facilities with no more than 5 MW capacity -- Class II: trash-to-energy facilities, biomass facilities not included in Class I, some hydropower facilities -- Class III: customer-sited CHP with at least 50% operating efficiency installed at commercial or industrial facilities on or after January 1, 2006; electricity savings from conservation and load management programs started on or after January 1, 2006; systems that recover waste heat or pressure from commercial and industrial processes installed on or after April 1, 2007 | 20% of generation must be from Class I, 3% must be from Class I or II, 4% must be from Class III ⁹ . |
| See RGGI entry | Regional cap-and-trade program | N/A | See RGGI entry | |

Notes

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⁵ See note 4.

⁶ See note 4.

⁷ Pew Center on Global Climate Change. Connecticut RPS. Available at <http://www.pewclimate.org/node/4662> (accessed on November 12, 2008).

⁸ See note 4.

⁹ See note 11.

Colorado - Summary of Climate Action

Emissions as a % of US's (2005): 1.6%

Megatons GHG emissions (1990): 86.9

Megatons GHG emissions (2005): 117.7¹

Colorado GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2001 levels |
|------|------------------------------------|---|-------------------------------------|
| 2020 | 20% below 2005 levels ² | 10% below | 7 |
| 2050 | 80% below 2005 levels ³ | 78% below | 35 |

Colorado Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|--|---|--|---------------|
| Automobiles sold in/to Colorado. | In November 2007, Governor Bill Ritter announced that he would direct the Colorado Air Quality Control Division to propose California automobile GHG emissions standards "within one to two years." ⁴ | N/A | N/A | |
| Investor-owned utilities ⁵ | House Bill 1281: Renewable portfolio standard of 30 percent by 2020. 3 percent of the requirement must include solar energy. ⁶ | | Intermediate schedule of 3% by 2007, 5% by 2008, 12% by 2011, and 20% by 2015. "Renewable energy" is defined as solar, wind, geothermal, biomass, new hydroelectricity with a nameplate rating of ten megawatts or less, and hydroelectricity in existence on January 1, 2005, with a nameplate rating of thirty megawatts or less. Renewable fuel cells and recycled electricity are eligible. Nuclear is not eligible. ⁷ | |
| Electric cooperatives with more than 40,000 customers ⁸ | House Bill 1281: Renewable portfolio standard of 10 percent by 2020. ⁹ | Goal is to reduce emissions from the utilities sector 20% by 2020 (baseline unclear). ¹⁰ | Intermediate schedule of 1% renewable energy by 2008, 3% by 2011, and 6% by 2015. "Renewable energy" is defined as solar, wind, geothermal, biomass, new hydroelectricity with a nameplate rating of ten megawatts or less, and hydroelectricity in existence on January 1, 2005, with a nameplate rating of thirty megawatts or less. Renewable fuel cells and recycled electricity are eligible. Nuclear is not eligible. ¹¹ | |
| Xcel Energy | Colorado Clean Air-Clean Jobs Act: Xcel Energy must submit a plan to the Public Utilities Commission for replacing or repowering coal-fired power plants with natural gas and/or renewable power. ¹¹ | N/A | In return, Xcel Energy will be able to use long-term contracts to mitigate natural gas price fluctuations. ¹² | |

Notes

¹ Center for Climate Strategies. 2007. Colorado Greenhouse Gas Inventory and Reference Case Projections 1990-2020. Available at <http://www.cdphs.state.co.us/ap/down/GHGEIJan07.pdf> (accessed on March 16, 2009).

² US EPA. Climate change - State and Local Governments: Colorado. Available at <http://epa.gov/climatechange/wycd/stateandlocalgov/states/co.html#ccap> (accessed on March 12, 2009).

³ See note 2.

⁴ Office of Governor Bill Ritter. 2007. Governor Ritter Releases Climate Action Plan. Available at <http://www.colorado.gov/cs/Satellite?c=Page&cid=1194261894265&pagename=GovRitter%2FGOVRLAYOUT> (accessed on March 12, 2009).

⁵ DSIRE USA Database. 2010. Available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CO24R&re=1&ee=1 (accessed on April 21, 2010).

⁶ See note 5.

⁷ Colorado Official State Web Portal. 2010. Implementing the Renewable Portfolio Standard. Available at <http://www.dora.state.co.us/PUC/rulemaking/RenewableEnergyStandard.htm> (accessed on April 21, 2010).

⁸ See note 5.

⁹ See note 7.

¹⁰ See note 8.

¹¹ Colorado Official State Web Portal. 2010. Press Release: Gov. Ritter Signs Historic Clean Air-Clean Jobs Act. Available at <http://www.colorado.gov/cs/Satellite/GovRitter/GOVR/1251573927379> (accessed on April 21, 2010).

¹² Greenwire. 2010. Colo. passes legislation to switch power plants to natural gas. Available at <http://www.eenews.net/Greenwire/2010/04/19/6> (accessed on April 21, 2010).

Delaware - Summary of Climate Action

Emissions as a % of US's (1990): 0.06%
Megatons GHG emissions (1990): 4.3¹

Delaware Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|---|--|--|---|---------------|
| All retail electricity sales in Delaware, except sales to an industrial customer with peak demand of more than 1.5 MW. ² | 20% renewable portfolio standard (RPS) by 2019, including 2% from photovoltaic sources. ³ | 1.2 Mt CO ₂ e (calculated based on University of Delaware's 0.06 Mt projection for a 1% RPS) ⁴ | Eligible sources: wind, ocean tidal, ocean thermal, fuel cells powered by renewable fuels, hydroelectric facilities (max 30 MW), sustainable biomass, anaerobic digestion, landfill gas. ⁵ | |
| See RGGI entry | Regional cap-and-trade program | N/A | See RGGI entry | |

Notes

¹ US Environmental Protection Agency. Delaware Greenhouse Gas Emissions and Sinks Inventory: Summary. Available at [http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/JSIN5DQSUS/\\$File/DESsummary.pdf](http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/JSIN5DQSUS/$File/DESsummary.pdf) (accessed on November 12, 2008).

² Delaware State Senate. Senate Bill No. 74. Available at <http://depdc.delaware.gov/electric/rpsact.pdf> (accessed on November 12, 2008).

³ Pew Center on Global Climate Change. Delaware RPS. Available at <http://www.pewclimate.org/node/4664> (accessed on November 12, 2008).

⁴ Center for Energy and Environmental Policy, University of Delaware. 2000. Delaware Climate Change Action Plan. Available at <http://ceep.udel.edu/publications/globalenvironments/reports/deccap/fullreport.pdf> (accessed on November 12, 2008).

⁵ See note 3.

Florida - Summary of Climate Action

Emissions as a % of US's (2005): 4%
 Megatons GHG emissions (1990): 210
 Megatons GHG emissions (2005): 294¹

Florida GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|------------------------------------|---|-------------------------------------|
| 2017 | 2000 levels ² | 27% above 1990 levels | 27 |
| 2025 | 1990 levels ³ | No change | 84 |
| 2050 | 80% below 1990 levels ⁴ | 80% below | 252 |

Florida Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|---|--|---|---|---------------|
| Distributors of vehicles in/to Florida | Adoption of California's low emissions vehicle standards ⁵ | N/A | | |
| Electric utilities | Electric sector emissions must be reduced to 2000 levels by 2017, 1990 levels by 2025, and 80% below 1990 levels by 2050. ⁶ | In total, Executive Order 07-127, which encompasses a number of provisions including this one, is expected to save a cumulative total of 108.7 Mt CO ₂ e by 2025. ⁷ | | |
| Economy wide | Proposed cap-and-trade system ⁸ | N/A | Development of cap-and-trade is currently in progress. According to the latest draft, the Action Team is considering the following features: -- Integration with the WCI cap-and-trade system -- Addressing of leakage -- Likely auctioning of a portion of allowances. ⁹ | |
| Electricity providers, except municipal utilities and rural cooperatives. ¹⁰ | House Bill 7135: Renewable portfolio standard must be developed by 2009. ¹¹ | 2017: 17 Mt CO ₂ e 2025: 24.5 Mt CO ₂ e ¹² | Draft schedule: 2010: 2% prior year's retail electricity sales must be renewable. 2017: 3.75% 2025: 6% 2050: 20% ¹³ | |
| Distributors of automobile gasoline in Florida | 10% ethanol standard by 2010. ¹⁴ | 12.6 Mt CO ₂ e in 2025 expected to come from "development and expansion of low-GHG fuels" ¹⁵ | | |

Notes

¹ Florida Department of Environmental Protection. 2008. Preliminary Inventory of Florida Greenhouse Gas Emissions: 1990-2005. Available at http://www.dep.state.fl.us/air/documentation/GHG_Inventory.doc (accessed on November 12, 2008).

² Pew Center on Global Climate Change. Florida Emissions Target. Available at <http://www.pewclimate.org/node/4571> (accessed on November 12, 2008).

³ See note 2.

⁴ See note 2.

⁵ Office of the Governor of Florida. 2007. Executive Order No. 07-127. Available at <http://www.flgov.com/pdfs/orders/07-127-emissions.pdf> (accessed on November 12, 2008).

⁶ See note 5.

⁷ Governor's Action Team on Energy and Climate Change. 2008. Draft Final Action Plan. Available at http://www.dep.state.fl.us/climatechange/files/101408_ExecutiveSummary.pdf (accessed on November 12, 2008).

⁸ Pew Center on Global Climate Change. Florida Utility-Sector Greenhouse Gas Cap-and-Trade Program. Available at <http://www.pewclimate.org/node/6020> (accessed on November 12, 2008).

⁹ Governor's Action Team on Energy and Climate Change. 2008. Draft Final Action Plan: Appendix B. Available at <http://www.flclimatechange.us/ewebeditpro/items/O12F19812.pdf> (accessed on November 12, 2008).

¹⁰ Pew Center on Global Climate Change. Florida to develop Renewable Portfolio Standard. Available at <http://www.pewclimate.org/node/6022> (accessed on November 12, 2008).

¹¹ See note 10.

¹² See note 7.

¹³ Florida Public Service Commission. 2008. Renewable Portfolio Standard Rule Development Workshop - August 20 and 26, 2008. Available at http://www.psc.state.fl.us/utilities/electricgas/RenewableEnergy/08_20_2008_index.aspx (accessed on November 12, 2008).

¹⁴ Pew Center on Global Climate Change. Florida Biofuel Mandate. Available at <http://www.pewclimate.org/node/6023> (accessed on November 12, 2008).

¹⁵ See note 7.

Illinois - Summary of Climate Action

Emissions as a % of US's (2003): 4%
 Megatons GHG emissions (1990): 237
 Megatons GHG emissions (2003): 275¹

Illinois GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2003 levels |
|------|------------------------------------|---|-------------------------------------|
| 2020 | 1990 levels ² | No change | 38 |
| 2050 | 60% below 1990 levels ³ | 60% below | 180 |

Illinois Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--------------------------------|--|---------------------------------------|--|---------------|
| Electric utilities in Illinois | 2% renewable portfolio standard (RPS) by 2008; 25% by 2025 ⁴ | N/A | Eligible sources: Solar Water Heat, Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Biodiesel. 75% of renewable energy must be from wind. | |
| Utilities | Illinois Energy Efficiency Reduction Standard (EERS): 0.2% of delivered energy in 2008 saved through energy efficiency, rising to 2% annually by 2015 ⁵ | See above. | | |

Notes

¹ World Resources Institute. 2007. Illinois Greenhouse Gas Emissions Inventory and Projections. Available at <http://www.epa.state.il.us/air/climatechange/documents/07-02-22/il-emissions-overview-v5.pdf> (accessed on November 12, 2008).

² Pew Center on Global Climate Change. Illinois Emission Targets. Available at <http://www.pewclimate.org/node/4573> (accessed on November 11, 2008).

³ See note 2.

⁴ Pew Center on Global Climate Change. Illinois RPS. Available at <http://www.pewclimate.org/node/4666> (accessed on November 12, 2008).

⁵ Pew Center on Global Climate Change. Illinois EERS. Available at <http://www.pewclimate.org/node/4940> (accessed on November 12, 2008).

Kansas - Summary of Climate Action

Emissions as a % of US's (2005): 1.5%
 Megatons GHG emissions (1990): 91.7
 Megatons GHG emissions (2005): 103.2

Kansas Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/Financing | Miscellaneous |
|---|---|---------------------------------------|--|---------------|
| Public electric utilities, not including municipal utilities ¹ | 10 percent of power must be generated from renewable sources by 2011, 15 percent by 2016, and 20 percent by 2020 ² | N/A | Legislation gives utilities a 10% discount; for every megawatt of renewable capacity installed, utilities receive a 1.1 megawatt compliance credit. ³ Cost increases are capped at 1%. Eligible sources include wind, solar thermal, solar photovoltaic, crops, cellulosic agricultural residues, plant residues, landfill/wastewater methane, clean and untreated wood, hydropower with 10 MW or less capacity, hydrogen fuel cells produced from renewable energy, and other sources not including nuclear that are certified by the commission. ⁴ | |

¹Kansas State Legislature. 2009. House Bill 2127. Available at <http://www.kslegislature.org/bills/2010/2127.pdf> (accessed on July 24, 2009).

² See note 1.

³Environment News Service. 2009. Kansas Enacts Renewable Energy Standard, Permits Disputed Coal Plant. Available at <http://www.ens-newswire.com/ens/may2009/2009-05-22-091.asp> (accessed on July 24, 2009).

⁴ See note 1.

Maine - Summary of Climate Action

Emissions as a % of US's (1990): 0.07%

Megatons GHG emissions (1990): 4.6¹

Maine GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels |
|------|------------------------------------|---|
| 2010 | 1990 levels ² | No change |
| 2020 | 10% below 1990 levels ³ | 10% below |

Maine Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU 103 | Implementation/ Financing | Miscellaneous |
|---|--|--|---|---------------|
| Electricity providers in Maine | 1999: 30% renewable portfolio standard (RPS) by 2000. 2006: 10% additional renewable capacity by 2017. ⁴ | 2010: 247 Mt CO2e 2020: 527 Mt CO2e ⁵ | Acceptable sources: fuel cells, tidal power, solar, wind, geothermal, hydroelectric, biomass, and generators fueled by municipal solid waste in conjunction with recycling. | |
| Distributors of light/medium duty passenger vehicles in/to Maine ⁶ See RGGI entry | Adoption of California's low emissions vehicle standards. ⁷ Regional cap-and-trade program | N/A 2010: 376 Mt CO2e 2020: 755 Mt CO2e ⁹ | Standards phased in from 2009 to 2016: ⁸ See RGGI entry. Maine expects to receive \$74/ton CO2 in 2010 and \$90/ton CO2 in 2020 from auctions. ¹⁰ | |

Notes

¹ US Environmental Protection Agency. Maine Greenhouse Gas Emissions and Sinks Inventory: Summary. Available at <http://www.epa.gov/climatechange/emissions/downloads/MESummary.PDF> (accessed on November 12, 2008).

² Pew Center on Global Climate Change. Maine RPS. Available at <http://www.pewclimate.org/node/4669> (accessed on November 12, 2008).

³ See note 2.

⁴ See note 2.

⁵ Maine Department of Environmental Protection. 2004. Climate Action Plan: Table 1. Available at <http://www.maine.gov/dep/air/greenhouse/table1.pdf> (accessed on November 12, 2008).

⁶ Maine Department of Environmental Protection. 2005. Notice of Agency Rulemaking Adoption. Available at <http://www.maine.gov/dep/air/regulations/docs/127MAPA4a.doc> (accessed on November 12, 2008).

⁷ See note 6.

⁸ See note 6.

⁹ See note 5.

¹⁰ See note 5.

Maryland - Summary of Climate Action

Emissions as a % of US's (2005): 1.4%

Megatons GHG emissions (1990): 77

Megatons GHG emissions (2005): 98¹

Maryland GHG Emissions targets as set out in SB 309 and HB 712, which are pending in the legislature.

| Date | Target | Projected Reduction Relative to 1990 Levels |
|------|---|---|
| 2012 | 10% reduction from 2006 levels ² | ~15% above 1990 levels ³ |
| 2015 | 15% reduction from 2006 levels ⁴ | ~8% above 1990 levels ⁵ |
| 2020 | 25% reduction from 2006 levels ⁶ | 4.5% below ⁷ |
| 2050 | 90% reduction from 2006 levels ⁸ | 87% below ⁹ |

Maryland Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/Financing | Miscellaneous |
|--|---|---------------------------------------|---|---------------|
| New cars sold and registered in Maryland ¹⁰ | Adoption of California's LEV standards by 2011. ¹¹ | 6 Mt by 2020 ¹² | N/A | |
| State Government, electrical utilities. | EnPOWER Maryland - intended to reduce per capita MD electrical use by 15% by 2015. ¹³ | 7 Mt by 2020 ¹⁴ | Electric utilities are responsible for a demand response program designed to reduce energy use by the target amount, in consultation with the Maryland Energy Administration. The State Government will also implement energy efficiency programs. ¹⁵ | |
| Electricity providers in Maryland | Renewable portfolio standard: 20% of energy from renewable sources by 2022, including 2% from solar energy. ¹⁶ | N/A | The RPS is being phased in between 2006 and 2022. "Tier 2" renewable sources (hydroelectric power other than pump storage generation, waste-to-energy) will be permitted to contribute to 2.5% of energy portfolios as part of the standard until 2019. ¹⁷ | |
| | | | "Tier 1" renewable sources, which must comprise most of a firm's renewable portfolio, include wind, qualifying biomass, methane from landfills/wastewater treatment plants, geothermal, ocean, biomass/methane fuel cell, and small hydroelectric power plants. ¹⁸ | |
| See RGGI entry | Regional cap-and-trade program | 8.7 Mt by 2020 ¹⁹ | See RGGI entry | |

Notes

¹ Randy Strait, et al. 2008. DRAFT Maryland Greenhouse Gas Inventory and Reference Case Projections 1990-2020. Center for Climate Strategies. Available at <http://www.mdclimatechange.us/ewebeditpro/items/O40F14745.pdf> (accessed on November 12, 2008).

² Maryland Commission on Climate Change. 2008. Legislative Update and Next Steps: Chapter 7. Available at <http://www.mde.state.md.us/assets/document/Air/ClimateChange/Chapter7.pdf> (accessed on November 12, 2008).

³ Calculated using 2005 levels as estimate for 2006 baseline.

⁴ See note 2.

⁵ See note 3.

⁶ See note 2.

⁷ See note 3.

⁸ See note 2.

⁹ See note 3.

¹⁰ Office of the Governor of Maryland. 2008. Governor O'Malley Urges EPA to Restore Maryland's Right to Reduce Auto Emissions. Available at <http://www.gov.state.md.us/pressreleases/080124.html> (accessed on November 12, 2008).

¹¹ Maryland Commission on Climate Change. 2008. Climate Action Plan Executive Summary. Available at http://www.mde.state.md.us/assets/document/Air/ClimateChange/Executive_Summary.pdf (accessed on November 12, 2008).

¹² See note 11.

¹³ Office of the Governor of Maryland. Governor O'Malley Signs Legislation to Protect Maryland's Environment, Chesapeake Bay; Help Secure Maryland's Energy Future. Available at <http://www.governor.maryland.gov/pressreleases/080424.asp> (accessed on November 12, 2008).

¹⁴ See note 11.

¹⁵ See note 13.

¹⁶ Pew Center on Global Climate Change. Maryland Accelerates its Renewable Portfolio Standard. Available at <http://www.pewclimate.org/node/6034> (accessed on November 12, 2008).

¹⁷ State of Maryland. 2007. Senate Bill 595, Chapter 119. Available at http://mlis.state.md.us/2007RS/chapters_noln/Ch_119_sb0595E.pdf (accessed on November 12, 2008).

¹⁸ See note 16.

¹⁹ See note 11.

Massachusetts - Summary of Climate Action

Emissions as a % of US's (1990): 0.3%
 Megatons GHG emissions (1990): 22¹

Massachusetts GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels |
|------|------------------------------------|---|
| 2010 | 1990 levels ² | No change |
| 2020 | 10% below 1990 levels ³ | 10% below |
| 2050 | 80% below 1990 levels ⁴ | 80% below |

Massachusetts Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|--|---|--|--|
| Six of the largest electrical plants in Massachusetts ⁵ | Limits emissions to 1,800 pounds of carbon per MWh in 2008. ⁶ | N/A | Firms may also comply by contributing to the Greenhouse Gas (GHG) Expendable Trust or purchasing GHG credits from other regulated facilities. On 6/1/08, the DEP ruled that firms may purchase ETS and CDM credits toward compliance. | |
| Electricity providers in Massachusetts | 4% of state electrical supply must come from new renewable sources (post-1997) by 2009; standard will increase by 1% per year thereafter. ⁸ | N/A | Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Municipal Solid Waste, (Cleanwood biomass technologies temporarily suspended under the MA RPS), Anaerobic Digestion, Small Hydroelectric, Tidal Energy, Wave Energy, Ocean Thermal, Renewable Fuels, Fuel Cells using Renewable Fuels ⁹ | Massachusetts was the first state to adopt a renewable portfolio standard. ¹⁰ |
| Distributors of fuel in Massachusetts | Clean Energy Biofuels Act: Gas tax exemption for biofuels; 2% biofuels standard for diesel and home heating oil in 2010, increasing by 1% per year to 5% in 2013. Bill states commitment to adoption of CA LCFS within the RGGI. ¹¹ | N/A | * Manufacturers and distributors of cellulosic biofuel must demonstrate a 60% reduction in lifecycle GHG emissions (per energy unit) in order to be eligible. * Manufacturers and distributors of petroleum distillate substitute fuel must demonstrate a 50% reduction in lifecycle GHG emissions (per energy unit) in order to be eligible. ¹² | |
| Vehicles sold, rented, purchased, registered in Massachusetts. ¹³ | Adoption of California's low emissions vehicle standards by 2009 ¹⁴ | 0.3 Mt CO ₂ e, calculated based on MASSPIRG's estimate ¹⁵ | | |
| Electric utilities | Green Communities Act: Incentives toward renewable energy development. ¹⁶ | N/A | * Provides \$10m for direct assistance toward renewable energy * Establishes net metering * Allows utility companies to own solar electric installations on customers' roofs * Requires utility companies to sign 10- to 15-year contracts with renewable energy developers. ¹⁷ | |
| Retail electricity suppliers | Alternative energy portfolio standard: 1% of electricity sales must be met through alternative energy; this target rises to rise to 5% by 2020, followed by an increase of 0.25% per compliance year. ¹⁸ | | Alternative energy includes coal gasification, including capture and permanent sequestration of carbon dioxide; combined heat and power (CHP); flywheel energy storage; paper-derived "fuel cubes"; and energy efficient steam technology. The alternative compliance payment for this standard is \$20 per Mwh. ¹⁹ | |
| See RGGI entry | Regional cap-and-trade program | N/A | See RGGI entry | |

Notes

¹ US Environmental Protection Agency. Massachusetts Greenhouse Gas Emissions and Sinks Inventory: Summary. Available at <http://www.epa.gov/climatechange/emissions/downloads/MASummary.PDF> (access on November 12, 2008).

² State of Massachusetts. 2004. Massachusetts Climate Protection Plan. Available at http://masstech.org/renewableenergy/public_policy/DG/resources/2004_MA_Climate_Protection_Plan.pdf (accessed on November 12, 2008).

³ See note 2.

⁴ See note 2.

⁵ Amy E. Boyd, Adam P. Kahn. 2008. Developments in US Climate Change Regulation: Massachusetts DEP Activates Carbon Offset Safety Valve Under CO2 Regulations. Foley Hoag, LLP. Available at http://www.foleyhoag.com/NewsCenter/Publications/Alerts/Environmental/Environmental_Alert-061608.aspx (accessed on November 12, 2008).

⁶ See note 5.

⁷ See note 5.

⁸ Pew Center on Global Climate Change. Massachusetts RPS. Available at <http://www.pewclimate.org/node/4667> (accessed on November 12, 2008).

⁹ DSIRE USA Database. Available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MA05R&re=1&ee=1 (accessed on February 17, 2010).

¹⁰ Massachusetts Executive Office of Energy and Environmental Affairs. 2008. Renewable Portfolio Standard. Available at <http://www.mass.gov/?pageID=eoeesubtopic&L=4&L0=Home&L1=Energy%2c+Utilities+%26+Clean+Technologies&L2=Renewable+Energy&L3=Renewable+Portfolio+Standard&sid=Eoeea> (accessed on November 12, 2008).

¹¹ State of Massachusetts. 2008. Chapter 206 of the Acts of 2008. Available at <http://www.mass.gov/legis/laws/seslaw08/sl080206.htm> (accessed on November 12, 2008).

¹² See note 11.

¹³ Government of Massachusetts. Low Emissions Vehicle Regulations. Available at <http://www.mass.gov/dep/air/laws/levregs.pdf> (accessed on November 12, 2008).

¹⁴ See note 13.

¹⁵ Tony Dutzik. 2003. Cars and Global Warming: Policy Options to Reduce Greenhouse Gas Emissions from Massachusetts Cars and Light Trucks. MASSPIRG Education Fund. Available at <http://static.masspirg.org/reports/carsglobalwarming03.pdf> (accessed on November 12, 2008).

¹⁶ Office of the Governor of Massachusetts. 2008. Governor Patrick Signs Energy Bill Promoting Cost Savings, Renewable and Clean Energy Technology. Available at http://www.mass.gov/?pageID=gov3pressrelease&L=1&L0=Home&sid=Agov3&b=pressrelease&f=080702_bill_energy_clean&csid=Agov3 (accessed on November 12, 2008).

¹⁷ See note 16.

¹⁸ Mintz Levin Energy and Clean Technology Group. 2009. "United States: Energy And Clean Technology Alert: Massachusetts Finalizes Renewable And Alternative Energy Regulations" Available at http://www.mondaq.com/unitedstates/article.asp?articleid=82634&email_access=on (accessed on February 17, 2010).

¹⁹ See note 18.

Michigan - Summary of Climate Action

Emissions as a % of US's (2002): 1%
 Megatons GHG emissions (1990): 57
 Megatons GHG emissions (2002): 63¹

Michigan Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|---|---------------------------------------|---|--|
| Utilities | Senate Bill 213: 10% renewable portfolio standard (RPS) by 2015; energy efficiency resource standard (EERS) for electric utilities and natural gas providers (goal: reduce energy use 5% by 2015) ² | N/A | Renewable energy credits are tradeable. As part of the EERS, the government must reduce energy use 20% by 2015. Utilities have the choice of developing a PSC-approved energy plan or paying between 0.75% and 2% of revenue (depending on the year) to an independent energy efficiency administrator. ³ | The bill's abrupt jump from a 4% renewable energy requirement in 2014 to a 10% renewable energy requirement in 2015 has drawn criticism from environmental groups, who argue that because the state already gets 4.6% of its energy from renewables, the bill offers no incentive toward investment in renewables for the next seven years. ⁴ |
| Department of Environmental Quality; Public Service Commission ⁵ | Directive to consider "all feasible and prudent alternatives before approving new coal-fired power plants in Michigan" ⁶ | N/A | * Distributed generation: Residents of Michigan may install solar or wind generators and sell excess electricity to utility companies. * Decoupled electricity rates to incentivize demand-side management * Michigan Energy Corps - weatherization, green building and installation jobs * Michigan Saves - Michigan residents may weatherize buildings with no up-front charge. ⁷ | |
| Department of Environmental Quality; Public Service Commission; electric utilities ⁸ Public Service Commission ¹⁰ | 45 percent less fossil fuel-fired electricity in use by 2020 ⁹ Decoupled electricity rates ¹¹ | | Will incentivize utility companies to implement demand-side management ¹² | |

Notes

¹ Center for Sustainable Systems, University of Michigan. 2005. Michigan Greenhouse Gas Inventory 1990 and 2002. Available at <http://www.deq.state.mi.us/documents/deq-aqd-air-aqe-greenhouse-gases.pdf> (accessed on November 12, 2008).

² Michigan Senate. 2007. Senate Bill 213. Available at <http://www.legislature.mi.gov/documents/2007-2008/billanalysis/Senate/pdf/2007-SFA-0213-U.pdf> (accessed on November 12, 2008).

³ See note 2.

⁴ Glenn Puit. 2008. Different Shade of Green Stalls State Energy Reform. Available at <http://www.mlui.org/print.asp?fileid=17255> (accessed on November 12, 2008).

⁵ Michigan Governor Jennifer Granholm. 2009. Priorities for Michigan's Economic Future: State of the State Address. Available at http://www.michigan.gov/documents/gov/SOS2009_265915_7.pdf (accessed on February 4, 2009).

⁶ See note 5.

⁷ See note 5.

⁸ See note 5.

⁹ See note 5.

¹⁰ See note 5.

¹¹ See note 5.

¹² See note 5.

Minnesota - Summary of Climate Action

Emissions as a % of US's (2005): 2%
 Megatons GHG emissions (1990): 116
 Megatons GHG emissions (2005): 152¹

Minnesota GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|------------------------------------|---|-------------------------------------|
| 2015 | 15% below 2005 levels ² | 11% above 1990 levels | 23 |
| 2025 | 30% below 2005 levels ³ | 9% below | 46 |
| 2050 | 80% below 2005 levels ⁴ | 74% below | 122 |

Minnesota Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|--|--|---|---|
| Electric utilities | 25% renewable portfolio standard (RPS) by 2025 ⁵ | Projected reduction from all recent action is expected to be 20.8 Mt CO ₂ e in 2015 and 37.8 Mt CO ₂ e in 2025. ⁶ | Eligible sources: solar, wind, small hydroelectric plants, hydrogen from renewable resources, some biomass. | |
| Xcel Energy (about half of Minnesota's electricity supply) | 30% renewable portfolio standard by 2020 ⁷ | See above. | See above. | |
| Distributors of gasoline in Minnesota | 20% ethanol standard by 2013 ⁸ | See above. | | |
| Utilities | Energy efficiency reduction standard (EERS): mandatory 1.5% annual reduction in electricity and natural gas sales beginning in 2010, including 1% from energy efficiency savings. ⁹ | See above. | | Public utilities are required to invest a portion of revenues into the state Conservation Improvement Program. Natural gas utilities must contribute 0.5%, Xcel Energy must contribute 2%, and other electric utilities must contribute 1.5%. A portion of CIP funds must be spent on low-income people. Up to 10% of CIP funds may be spent on R&D projects for energy conservation, and up to 5 percent of CIP funds may be spent on renewable energy and distributed generation. Improved building codes and financial incentives are also intended to contribute to energy savings. ¹⁰ |

Notes

¹ Randy Strait, et al. 2007. Greenhouse Gas Inventory and Reference Case Projections 1990-2020. Center for Climate Strategies. Available at <http://www.mnclimatechange.us/ewebeditpro/items/O3F13507.pdf> (accessed on November 12, 2008).

² Minnesota Climate Change Advisory Group. 2008. Final Report: Executive Summary. Available at <http://www.mnclimatechange.us/ewebeditpro/items/O3F16812.pdf> (accessed on November 12, 2008).

³ See note 2.

⁴ See note 2.

⁵ Pew Center on Global Climate Change. Minnesota RPS. Available at <http://www.pewclimate.org/node/4670> (accessed on November 12, 2008).

⁶ See note 2.

⁷ See note 5.

⁸ Pew Center on Global Climate Change. Minnesota Biofuel Standard. Available at <http://www.pewclimate.org/node/4753> (accessed on November 12, 2008).

⁹ Minnesota Department of Commerce. Energy Utilities. Available at <http://www.state.mn.us/portal/mn/jsp/content.do?subchannel=-536881736&programid=536886614&sc3=null&sc2=-536881993&id=-536881351&agency=Commerce> (accessed on November 12, 2008).

¹⁰ See note 9.

Montana - Summary of Climate Action

Emissions as a % of US's (2005): 0.2%
 Megatons GHG emissions (1990): 6.8
 Megatons GHG emissions (2005): 11.4¹

Montana GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|------------------------------------|---|-------------------------------------|
| 2020 | 15% below 2005 levels ² | 42.5% above 1990 levels. | 5 |

Montana Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|---|---------------------------------------|--|---------------|
| Public utilities in Montana ³ | 5% renewable portfolio standard (RPS) by 2008; 10% by 2010; 15% by 2015. ⁴ | N/A | Eligible sources: wind; solar; geothermal; existing small hydroelectric projects; landfill or farm-based methane gas; wastewater-treatment gas; "low-emission, nontoxic biomass"; and hydrogen derived from any of the above. ⁵ | |
| Distributors of gasoline in Montana | 10% ethanol standard as of 2005 ⁶ | N/A | N/A | |

Notes

¹ Alison Bailie, et al. 2007. Montana Greenhouse Gas Inventory and Reference Case Projections 1990-2020. Center for Climate Strategies. Available at <http://www.mtclimatechange.us/ewebeditpro/items/O127F14011.PDF> (accessed on November 12, 2008).

² Target part of WCI commitment.

³ Montana Legislature. 2005. Senate Bill 415. Available at <http://data.opi.state.mt.us/bills/2005/billhtml/SB0415.htm> (accessed on November 12, 2008).

⁴ See note 3.

⁵ See note 3.

⁶ Pew Center on Global Climate Change. Montana Biofuel Standard. Available at <http://www.pewclimate.org/node/4755> (accessed on November 11, 2008).

New Hampshire - Summary of Climate Action

Emissions as a % of US's (1990): 0.05%

Megatons GHG emissions (1990): 3.1¹

New Hampshire GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels |
|------|------------------------------------|---|
| 2010 | 1990 levels ² | No change |
| 2020 | 10% below 1990 levels ³ | 10% below |

New Hampshire Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing |
|--|---|--|---|
| Three existing fossil fuel plants in NH ⁴ | Clean Power Act: * CO2 emissions capped at 1990 levels as of 2006 * SO2 capped at 87% below 1990 levels as of 2006 * NOx capped at 70% below 1990 levels as of 2006 * Recommends a cap for mercury. ⁵ | Cuts emissions from fossil fuel plants by 3% ⁶ , or about 168 Kt CO2 in 2006 ⁷ | Emissions trading and offset purchases allowed for NOx, SO2, CO2 ⁸ |
| Electricity providers in New Hampshire | 25% renewable portfolio standard by 2025 ⁹ | 580 Kt by 2025 ¹⁰ | Phased in between 2008 and 2025. Renewable energy certificates may be traded. Class I sources (16%): wind, geothermal, hydrogen from biomass fuels or methane gas, ocean thermal, wave, current, tidal energy, methane gas, technologies using biomass as the primary fuel. Solar also eligible. Class II sources (0.3%): solar Class III sources (6.5%): existing biomass, methane Class IV (1%): existing small hydroelectric sources. Penalties for non-compliance: (a) Class I - \$57.12/MWh (b) Class II - \$150/MWh (c) Class III&IV - \$28/MWh ¹¹ |
| See RGGI entry | Regional cap-and-trade program | N/A | See RGGI entry |

Notes

¹ US Environmental Protection Agency. New Hampshire Greenhouse Gas Emissions and Sinks Inventory: Summary. Available at <http://www.epa.gov/climatechange/emissions/downloads/NHSummary2.PDF> (accessed on November 12, 2008).

² Target part of New England Governors/Eastern Canadian Premiers commitment.

³ See note 2.

⁴ New Hampshire Department of Environmental Services. The New Hampshire Clean Power Act. Available at http://des.nh.gov/organization/divisions/air/tsb/tps/aetp/clean_power_act.htm (accessed on November 12, 2008).

⁵ See note 4.

⁶ Cat Lazaroff. 2002. New Hampshire Passes Nation's First CO2 Cap. Environment News Service. Available at <http://www.ens-newswire.com/ens/apr2002/2002-04-22-06.asp> (accessed on November 12, 2008).

⁷ Calculated based on Mt emissions cap: <http://des.nh.gov/organization/divisions/air/tsb/tps/climate/rggi/documents/description.pdf>

⁸ See note 4.

⁹ New Hampshire Legislature. 2007. HB 873. Available at <http://www.gencourt.state.nh.us/legislation/2007/hb0873.html> (accessed on November 12, 2008).

¹⁰ Office of the Governor of New Hampshire. 2007. Governor Signs The Renewable Energy Act. Available at <http://www.governor.nh.gov/news/2007/051107.html> (accessed on November 12, 2008).

¹¹ See note 9.

¹² Ross Gittell, Matt Magnusson. 2007. Economic Impact of a New Hampshire Renewable Portfolio Standard. University of New Hampshire. Available at http://des.nh.gov/organization/divisions/air/tsb/tps/climate/documents/unh_rps_report.pdf (accessed on November 12, 2008).

New Jersey - Summary of Climate Action

Emissions as a % of US's (2005): 2%
 Megatons GHG emissions (1990): 123
 Megatons GHG emissions (2005): 135¹

New Jersey GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|------------------------------------|--|-------------------------------------|
| 2020 | 1990 levels ² | No change | 12 |
| 2050 | 80% below 2006 levels ³ | 78% below 1990 levels (based on 2005 levels) | ~108 |

New Jersey Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--------------------------------|---|---------------------------------------|---|---------------|
| Providers of electricity to NJ | Global Warming Response Act: caps emissions from electricity generation to 1990 levels by 2020, 80% below 2006 levels by 2050 ⁴ | N/A | The NJ Clean Energy Program provides financial incentives toward energy efficiency and renewable energy. ⁵ | |
| Providers of electricity to NJ | 6.5% renewable portfolio standard (RPS) by 2009, 20% by 2020. ⁶ | N/A | The Clean Energy Program provides grants and rebates toward renewables development, commercialization, and installation. ⁷ | |
| New vehicles sold in/to NJ | Adoption of California LEV standards in 2009; fleet GHG emissions must be reduced by 30% by 2016. ⁸ | N/A | | |
| See RGGI entry | Regional cap-and-trade program | N/A | See RGGI entry | |

Notes

¹ New Jersey Department of Environmental Protection. 2008. New Jersey Greenhouse Gas Inventory and Reference Case Projections 1990-2020. Available at <http://www.nj.gov/globalwarming/home/documents/pdf/20081031inventory-report.pdf> (accessed on November 12, 2008).

² Pew Center on Global Climate Change. New Jersey Emissions Target. Available at <http://www.pewclimate.org/node/4578> (accessed on November 12, 2008)

³ See note 2.

⁴ State of New Jersey. What is NJ doing about climate change? Available at <http://www.state.nj.us/globalwarming/initiatives/> (accessed on November 12, 2008).

⁵ See note 4.

⁶ See note 4.

⁷ See note 4.

⁸ See note 4.

New Mexico - Summary of Climate Action

Emissions as a % of US's (2000): 0.7%

Megatons GHG emissions (1990): 34

Megatons GHG emissions (2000): 49¹

New Mexico GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels |
|------|------------------------------------|---|
| 2012 | 2000 levels ² | 43% above 1990 levels |
| 2020 | 10% below 2000 levels ³ | 29% above 1990 levels |
| 2050 | 75% below 2000 levels ⁴ | 64.2% below |

New Mexico Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU Implementation/ Financing | Miscellaneous |
|--|--|--|---|
| New Mexico public utilities ⁵ | 10% renewable portfolio standard (RPS) by 2011, 15% by 2015, 20% by 2020 ⁶ | 2.6 Mt CO ₂ e annual reduction in 2020 17.8 Mt CO ₂ e cumulative reduction, 2007-2020 ⁷ | |
| Producers of renewable energy ⁸ | Establishes Renewable Energy Transmission Authority, which has the power to issue bonds to finance transmission from renewable energy facilities not already served by the state utilities. ⁹ | N/A | The stated goal of the legislation is to help New Mexico export renewable energy. ¹⁰ |
| New vehicles sold in/to New Mexico | Adoption of low emissions vehicle standards "consistent" with those in other states ¹¹ | 1.9 Mt CO ₂ e annual reduction in 2020 10.4 Mt CO ₂ e cumulative reduction, 2007-2020 ¹² | |

Notes

¹ New Mexico Climate Advisory Group. 2006. Final Report. Available at <http://www.nmclimatechange.us/ewebeditpro/items/O117F10150.pdf> (accessed on November 12, 2008).

² Targets and emissions levels obtained from <http://www.nmclimatechange.us/ewebeditpro/items/O117F10151.pdf>

³ See note 2.

⁴ See note 2.

⁵ US Department of Energy. 2007. New Mexico Mandates More Renewable Power and Helps to Transmit It. Available at http://www1.eere.energy.gov/femp/news/news_detail.html?news_id=10641 (accessed on November 12, 2008).

⁶ Office of the Governor of New Mexico. 2007. Governor Bill Richardson Enacts Landmark Clean Energy Bills to Create Jobs, Keep Air Clean. Available at http://www.governor.state.nm.us/press/2007/march/030507_01.pdf (accessed on November 12, 2008).

⁷ See note 1.

⁸ See note 5.

⁹ See note 5.

¹⁰ State of New Mexico Office of the Governor. Governor Bill Richardson Enacts Landmark Clean Energy Bills to Create Jobs, Keep Air Clean. Available at http://www.governor.state.nm.us/press/2007/march/030507_01.pdf (accessed on November 11, 2008).

¹¹ Office of the Governor of New Mexico. 2006. Governor Bill Richardson Signs Historic Climate Change Executive Order. Available at http://www.governor.state.nm.us/press/2006/dec/122806_01.pdf (accessed on November 12, 2008).

¹² See note 1.

New York - Summary of Climate Action

Emissions as a % of US's (2005): 1%
 Megatons GHG emissions (1990): 63
 Megatons GHG emissions (2005): 66¹

New York GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|-------------------------------------|---|-------------------------------------|
| 2010 | 5% below 1990 levels. ² | 5% below | 6 |
| 2020 | 10% below 1990 levels. ³ | 10% below | 9 |
| 2050 | 50% below 1990 levels ⁴ | 50% below | 35 |

New York Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|---|---|--|---|---|
| Providers of electricity to NY | 25% renewable portfolio standard by 2013 ⁵ | N/A | Main tier (24%): medium-to-large-scale operations; biogas, biomass, liquid biofuel, fuel cells, hydroelectric, solar, ocean/tidal power, wind. Customer-sited tier (1%): smaller, less competitive operations requiring funding; fuel cells, solar, wind. ⁶ | Cost to the state: \$580-750 million. ⁷ Maximum bill increase: 2% Phased in between 2009 and 2016. ¹¹ |
| New vehicles sold, registered, rented and otherwise acquired in NY ⁸ | Adoption of California's vehicle emissions standards. ⁹ | 2020: 14 Mt CO ₂ e 2030: 26 Mt CO ₂ e ¹⁰ | | |
| Utilities; citizens through government-provided incentives. ¹² | Energy efficiency reduction standard (EERS): 15% reduction of total forecasted sales by 2015. (This is equivalent to a 7.5% reduction from current levels.) ¹³ | N/A | Utilities must collect \$172 million per year in System Benefits Charges toward energy efficiency measures, about half of which will be used for fast-track NYSERDA programs and half of which will be used for utility-administered programs. Other methods of satisfying the requirement include home retrofitting, installation of energy-efficient equipment, and education. ¹⁴ | |

Notes

¹ Center for Clean Air Policy. 2003. Recommendations to Governor Pataki for Reducing New York State Greenhouse Gas Emissions. Available at http://www.ccap.org/docs/resources/534/NYGHG_Report.pdf (accessed on November 12, 2008).

² Pew Center on Global Climate Change. New York Emissions Target. Available at <http://www.pewclimate.org/node/4580> (accessed on November 12, 2008).

³ See note 2.

⁴ http://www.mondaq.com/unitedstates/article.asp?articleid=84518&email_access=on

⁵ New York Public Service Commission. 2004. Order Regarding Retail Renewable Portfolio Standard. Available at [http://www3.dps.state.ny.us/pscweb/WebFileRoom.nsf/Web/85D8CCC6A42DB86F85256F1900533518/\\$File/301.03e0188.RPS.pdf?OpenElement](http://www3.dps.state.ny.us/pscweb/WebFileRoom.nsf/Web/85D8CCC6A42DB86F85256F1900533518/$File/301.03e0188.RPS.pdf?OpenElement) (accessed on November 12, 2008).

⁶ See note 5.

⁷ American Wind Energy Association. 2004. Renewable Portfolio Standard Adopted by New York State. Available at <http://www.awea.org/news/news040924nys.html> (accessed on November 12, 2008).

⁸ NY Dept of Environmental Conservation. 2005. Subpart 218-8: Greenhouse Gas Exhaust Emission Standards. Available at <http://www.dec.ny.gov/regs/4243.html> (accessed on November 12, 2008).

⁹ NY Dept of Environmental Conservation. 2005. State Environmental Board Approves New Vehicle Emissions Standards. Available at <http://www.dec.ny.gov/press/12560.html> (accessed on November 12, 2008).

¹⁰ See note 9.

¹¹ See note 9.

¹² New York Public Service Commission. 2008. Historic Energy Efficiency Program Gets Underway. Available at [http://www3.dps.state.ny.us/pscweb/WebFileRoom.nsf/Web/599B3E42019C39298525746C00710FB1/\\$File/pr08072.pdf](http://www3.dps.state.ny.us/pscweb/WebFileRoom.nsf/Web/599B3E42019C39298525746C00710FB1/$File/pr08072.pdf) (accessed on November 12, 2008).

¹³ Pew Center on Global Climate Change. New York Launches Energy Efficiency Portfolio Standard. Available at <http://www.pewclimate.org/node/6047> (accessed on November 12, 2008).

¹⁴ See note 12.

North Carolina - Summary of Climate Action

Emissions as a % of US's (2005): 2.7%
 Megatons GHG emissions (1990): 136
 Megatons GHG emissions (2005): 192¹

North Carolina Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/Financing | Miscellaneous |
|---|--|---------------------------------------|---|---|
| Investor-owned utilities ² | 12.5% of the previous year's retail sales must be met through a new (2007 or later) renewable energy facility or energy efficiency by 2021. ³ | N/A | Standard ramps up from 3% in 2012 to 6% by 2015, 10% in 2018. Acceptable sources include solar, wind, small hydropower, geothermal, ocean current/wave energy resource, biomass, waste heat derived from a renewable energy resource, and hydrogen derived from a renewable energy resource. Peat, fossil fuels, and nuclear are not acceptable. Energy efficiency can meet up to 25 percent of the standard before 2021 and up to 40% after 2021. | Trading of renewable energy credits is permitted. No more than 25 percent of credits can be from out of state. ⁴ |
| Electric membership coops and municipalities that retail electricity ⁵ | 10% of the previous year's retail sales must be met through a new (2007 or later) renewable energy facility or energy efficiency by 2018. ⁶ | N/A | Standard ramps up from 3% in 2012 to 6% by 2015. Acceptable sources include solar, wind, small hydropower, geothermal, ocean current/wave energy resource, biomass, waste heat derived from a renewable energy resource, and hydrogen derived from a renewable energy resource. Peat, fossil fuels, and nuclear are not acceptable. | Trading of renewable energy credits is permitted. No more than 25 percent of credits can be from out of state. ⁷ |

Notes

¹ Center for Climate Strategies. 2007. Final North Carolina Greenhouse Gas Inventory and Reference Case Projections 1990-2020. Available at <http://www.ncclimatechange.us/ewebeditpro/items/O120F13620.pdf> (accessed on March 16, 2009).

² GENERAL ASSEMBLY OF NORTH CAROLINA, SESSION LAW 2007-397, SENATE BILL 3. Available at <http://www.ncga.state.nc.us/Sessions/2007/Bills/Senate/HTML/S3v6.html> (accessed on March 16, 2009).

³ See note 2.

⁴ See note 2.

⁵ See note 2.

⁶ See note 2.

⁷ See note 2.

Oregon - Summary of Climate Action

Emissions as a % of US's (2005): 1%
 Megatons GHG emissions (1990): 56 Mt
 Megatons GHG emissions (2005): 70 Mt¹

Oregon GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|------------------------------------|---|-------------------------------------|
| 2010 | Emissions stabilized ² | N/A | N/A |
| 2020 | 10% below 1990 levels ³ | 10% below | 20 |
| 2050 | 75% below 1990 levels ⁴ | 75% below | 56 |

Oregon Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|--|--|---|--|
| New power plants | New plants must offset 17% of expected CO ₂ emissions. ⁵ | N/A | | |
| Power plants that contribute more than 3% of state energy load ⁶ | 25% renewable portfolio standard (RPS) by 2025 ⁷ | 0.8 Mt CO ₂ e from BAU in 2025 (projection for a 20% standard by 2020) ⁸ | If legislation causes cost increases of more than 4%, utilities are not required to comply. | Smaller firms will be required to meet a 5% or 10% standard depending on their size. ⁹ |
| New passenger vehicles sold, registered, rented in Oregon after 2009 ¹⁰ | Such vehicles must adopt California LEV II standards, Pavley standards ¹¹ | 0.24 Mt CO ₂ e from BAU in 2025 ¹² | | |
| Fuel distributors in Oregon | Ethanol, biodiesel standard ¹³ | 1 Mt CO ₂ e from BAU in 2025, assuming a certain timeline. ¹⁴ | | All gasoline to contain 10% ethanol once Oregon ethanol production reaches 40 million gallons per year; All diesel fuel to contain 2% biodiesel after the production of biodiesel from sources in Oregon, Washington, Idaho and Montana reaches 5 million gallons per year. To be increased to 5% when production reaches 15 million gallons per year. ¹⁵ |

Notes

¹ Government of Oregon. 2008. Revision and Update to Oregon Greenhouse Gas Inventory. Available at http://oregon.gov/ENERGY/GBLWRM/Oregon_Gross_GhG_Inventory_1990-2005.htm (accessed on November 12, 2008).

² Pew Center on Global Climate Change. Oregon Emissions Target. Available at <http://www.pewclimate.org/node/4581> (accessed on November 12, 2008).

³ See note 2.

⁴ See note 2.

⁵ Pew Center on Global Climate Change. Oregon Power Plant Cap or Offsets. Available at <http://www.pewclimate.org/node/4588> (accessed on November 12, 2008).

⁶ Office of the Governor of Oregon. 2007. Governor Kulongoski Signs Renewable Portfolio Standard into Law. Available at http://governor.oregon.gov/Gov/P2007/press_060607.shtml (accessed on November 12, 2008).

⁷ See note 6.

⁸ Governor's Advisory Group on Global Warming. 2004. Oregon Strategy for Greenhouse Gas Reductions. Available at <http://www.oregon.gov/ENERGY/GBLWRM/docs/GWRReport-FInal.pdf> (accessed on November 12, 2008).

⁹ See note 6.

¹⁰ Oregon Department of Environmental Quality. 2006. Oregon Low Emission Vehicles Regulations. Available at http://arcweb.sos.state.or.us/rules/OARs_300/OAR_340/340_257.html (accessed on November 12, 2008).

¹¹ See note 10.

¹² See note 8.

¹³ Pew Center on Global Climate Change. Oregon Biofuel Standard. Available at <http://www.pewclimate.org/node/4756> (accessed on November 11, 2008).

¹⁴ See note 8.

¹⁵ See note 13.

Pennsylvania - Summary of Climate Action

Emissions as a % of US's (2000): 4.4%
 Megatons GHG emissions (1990): 305
 Megatons GHG emissions (2000): 317

Pennsylvania GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|---|---|-------------------------------------|
| 2020 | 30 percent below 2000 levels ² | 27% | N/A |

Pennsylvania Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|---|--|---------------------------------------|--|---------------|
| Vehicles sold in/to Pennsylvania | Adoption of California automobile GHG emissions standards ³ | N/A | N/A | |
| Electricity sold in Pennsylvania ⁴ | 18.5 percent of generation must come from alternative energy by 2020. ⁵ | N/A | Tier 1 sources - must comprise at least 8 percent of generation: wind, solar, coalmine methane, low-impact hydropower, geothermal, biomass, fuel cells, and biologically derived methane. Solar must comprise 0.5 percent of generation. Tier 2 sources: waste coal, demand side management, large hydropower, municipal solid waste, coal integrated gasification combined cycle, and waste from pulping and wood manufacturing. Standard is phased in; initial alternative energy portfolio requirement was 2.5 percent in 2004, rising to 3 percent after three years and 1 percent per year thereafter. Trading of credits is allowed. ⁶ | |

Notes

¹ Center for Climate Strategies. 2006. Pennsylvania Greenhouse Gas Inventory and Reference Case Projections. Available at http://www.dcnr.state.pa.us/info/carbon/documents/08-03-06pa_ghg_inv_forecast.pdf (accessed on March 15, 2009).

² Recommendation of Pennsylvania's Climate Change Advisory Committee established under Senate Bill 266. See Pennsylvania's Climate Action Plan, 2009, available at <http://www.elibrary.dep.state.pa.us/dsweb/View/Collection-10677> (accessed on April 22, 2010).

³ US EPA. Climate Change - State and Local Governments: Pennsylvania. Available at <http://www.epa.gov/climatechange/wycd/stateandlocalgov/states/pa.html#sghgt> (accessed on March 15, 2009).

⁴ Pennsylvania Statutes Title 73. Trade And Commerce Chapter 18F. Alternative Energy Portfolio Standards Act 73 P.S. § 1648.1. Available at <http://www.dsireusa.org/documents/Incentives/PA06Ra.htm> (accessed on March 15, 2009).

⁵ See note 3.

⁶ See note 3.

Rhode Island - Summary of Climate Action

Emissions as a % of US's (1990): 0.03%

Megatons GHG emissions (1990): 2.4¹

Rhode Island GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|------------------------------------|---|-------------------------------------|
| 2010 | 1990 levels ² | No change | |
| 2020 | 10% below 1990 levels ³ | 10% below | |

Rhode Island Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|--|---|---|---------------|
| Sellers of electricity to Rhode Island customers. ⁴ | 3% renewable portfolio standard (RPS) in 2006, rising 1% per year until 2020. ⁵ | 140 Kt from BAU in 2020 - tentative estimate based on generic RPS ⁶ | Alternate payment: \$50/MWh Eligible sources: solar, wind, ocean, geothermal, small hydro, biomass, renewable fuel cells. ⁷ | |
| Distributors of new vehicles in/to Rhode Island starting 2009 ⁸ | Adoption of CA vehicle emissions standards ⁹ | Will reduce GHG emissions from vehicles by 30% after fully implemented. ¹⁰ | Standards phased in from 2009 to 2016. ¹¹ | |

Notes

¹ Brown University Center for Environmental Studies. 2000. Greenhouse Gas Emissions Inventory for Rhode Island. Available at http://www.brown.edu/Research/EnvStudies_Theses/GHG/Executive_Summary.htm (accessed on November 12, 2008).

² Target part of New England Governors/Eastern Canadian Premiers commitment.

³ See note 2.

⁴ Rhode Island State Legislature. 2004. House bill 7375A. Available at <http://www.rilin.state.ri.us/BillText/BillText04/HouseText04/H7375A.htm> (accessed on November 12, 2008).

⁵ See note 4.

⁶ Rhode Island Department of Environmental Management. 2002. Rhode Island Greenhouse Gas Action Plan. Available at <http://rihgh.raabassociates.org/Articles/GHGPlanBody7-19-02FINAL.pdf> (accessed on November 12, 2008).

⁷ See note 4.

⁸ Office of the Governor of Rhode Island. 2005. Carrieri Announces Plans to Adopt New California Vehicle Emissions Standards. Available at <http://www.ri.gov/GOVERNOR/view.php?rss=1&id=682> (accessed on November 12, 2008).

⁹ See note 8.

¹⁰ See note 8.

¹¹ See note 8.

Texas - Summary of Climate Action

Emissions as a % of US's (1990): 2.9%
 Megatons GHG emissions (1990): 178

Texas Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|--|--|---|--|
| Texas investor-owned utilities, retail suppliers of electricity ¹ | Renewable portfolio standard: 5880 MW of electricity (about 5% of supply) must come from renewable sources by 2015. ² | N/A | Solar Water Heat, Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Geothermal Heat Pumps, Tidal Energy, Wave Energy, Ocean Thermal ³ | |
| State utilities ⁴ | Energy efficiency portfolio standard: HB3693 20% of the electric utility's annual growth in demand of residential and commercial customers must be met through energy efficiency by December 31, 2009. | N/A | "Each electric utility will provide, through market-based standard offer programs or limited, targeted, market-transformation programs, incentives sufficient for retail electric providers and competitive energy service providers to acquire additional cost-effective energy efficiency for residential and commercial customers." Escape clause: Program cost in 2009 cannot be more than 150 percent above the utility's program budget for 2007. ⁶ | Texas has required utilities to use efficiency to reduce load growth by 10% since 2001. ⁷ |

Notes

¹ US EPA. 2002. Texas Greenhouse Gas Emissions and Sinks Inventory: Summary. Available at http://www.epa.gov/climatechange/emissions/downloads/TXsummary_v2.PDF (accessed on March 12, 2009).

² DSIRE. 2008. Texas Incentives for Renewables and Efficiency. Available at http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=TX03R&state=TX&CurrentPageID=1&RE=1&EE=1 (accessed March 12, 2009).

³ See note 1.

⁴ See note 1.

⁵ US EPA. Texas - State Best Practices: Clean Energy. Available at <http://www.epa.gov/cleanenergy/energy-programs/state-and-local/states/tx.html#oer> (accessed on March 12, 2009).

⁶ See note 4.

⁷ Texas Legislature Online. 2007. House Bill 3693. Available at <http://www.capitol.state.tx.us/tlodocs/80R/billtext/html/HB03693F.htm> (accessed on March 12, 2009).

⁸ See note 4.

Utah - Summary of Climate Action

Emissions as a % of US's (2005): 0.8%
 Megatons GHG emissions (1990): 37
 Megatons GHG emissions (2005): 57¹

Utah GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|--------------------------|---|-------------------------------------|
| 2020 | 2005 levels ² | 54% above 1990 levels | 0 |

Utah Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|---|---------------------------------------|---|---------------|
| Electrical corporations, municipal electric utilities ³ | 20% renewable portfolio standard (RPS) by 2025. ⁴ | N/A | Firms are required to meet the standard if and only if it is "cost effective." Renewable energy certificates may be traded and banked. ⁵ | |
| Distributors of vehicles in/to Utah | Commitment to adoption of California's low emissions vehicle standards ⁶ | N/A | N/A | |

Notes

¹ Center for Climate Strategies. 2007. Final Utah Greenhouse Gas Inventory and Reference Case Projections, 1990-2020. Available at http://www.deq.utah.gov/BRAC_Climate/docs/Final_Report/Sec-B-GHG_INVENTORY.pdf (accessed on November 12, 2008).

² Pew Center on Global Climate Change. Utah Announced Greenhouse Gas Reduction Goal. Available at <http://www.pewclimate.org/node/6026> (accessed on November 11, 2008).

³ Utah State Legislature. 2008. Senate Bill 202. Available at <http://le.utah.gov/~2008/bills/sbillenr/sb0202.pdf> (accessed on November 12, 2008).

⁴ See note 3.

⁵ See note 3.

⁶ Pew Center on Global Climate Change. Utah Vehicle Standards. Available at <http://www.pewclimate.org/node/5482> (accessed on November 12, 2008).

Vermont - Summary of Climate Action

Emissions as a % of US's (2005): 0.1%
 Megatons GHG emissions (1990): 8.1 (gross)
 Megatons GHG emissions (2005): 9.1 (gross)¹

Vermont GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|------------------------------------|---|-------------------------------------|
| 2010 | 1990 levels ² | No change | |
| 2020 | 10% below 1990 levels ³ | 10% below | |

Vermont Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|--|--|---------------------------------------|---|---|
| Retail electricity providers | Renewable portfolio standard ⁴ | N/A | 2005-2012: New renewable energy/credits must be provided in an amount equal to the lower of the two standards: -- % incremental energy growth -- 10% of 2005 sales | Renewable credits can be traded. Eligible sources: wind, solar, small hydropower, methane except that from municipal solid waste. Vermont utilities may build generators out of state in order to comply. ⁵ |
| New passenger vehicles and light duty trucks/medium-duty vehicles sold in Vermont or bought/rented by Vermont residents ⁶ | Adoption of California's low-duty trucks/medium-duty vehicles emissions vehicle standards ⁷ | N/A | | |
| Efficiency Vermont | Government contract with Efficiency Vermont towards energy efficiency savings. ⁸ | N/A | Goals established by competitive contract rather than regulation. By the end of 2004, 3% of electricity demand was met by efficiency savings. 2006-2008 goal: 1% energy efficiency savings per year. ⁹ | |

Notes

¹ Randy Strait, et al. 2007. Final Vermont Greenhouse Gas Inventory and Reference Case Projections, 1990-2030. Center for Climate Strategies. Available at <http://www.anr.state.vt.us/air/Planning/docs/Final%20VT%20GHG%20Inventory%20&%20Projection.pdf> (accessed on November 12, 2008).

² Target part of New England Governors/Eastern Canadian Premiers commitment.

³ See note 2.

⁴ Vermont State Legislature. Title 30, Chapter 89: Renewable Energy Programs. Available at <http://www.leg.state.vt.us/statutes/fullchapter.cfm?Title=30&Chapter=089> (accessed on November 12, 2008).

⁵ See note 4.

⁶ State of Vermont. 2005. Adopted Rule. Available at <http://www.anr.state.vt.us/air/docs/Adopted%20GHG%20Rule.pdf> (accessed on November 11, 2008).

⁷ See note 6.

⁸ Steven Nadel. 2006. Energy Efficiency Resource Standards: Experience and Recommendations. American Council for an Energy-Efficient Economy. Available at <http://aceee.org/pubs/e063.pdf?CFID=128530&CFTOKEN=31276509> (accessed on November 12, 2008).

⁹ See note 8.

Washington - Summary of Climate Action

Emissions as a % of US's (2005): 1%
 Megatons GHG emissions (1990): Net: 58
 Megatons GHG emissions (2005): Net: 65¹

Washington GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2005 levels |
|------|------------------------------------|---|-------------------------------------|
| 2020 | 1990 levels ² | No change | 7 |
| 2035 | 25% below 1990 levels ³ | 25% below | 22 |
| 2050 | 50% below 1990 levels ⁴ | 50% below | 36 |

Washington Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/ Financing | Miscellaneous |
|---|--|---------------------------------------|---|--|
| New power plants | Must offset 20% of expected CO ₂ emissions ⁵ | N/A | | |
| All utilities serving 25,000 or more people ⁶ | 15% renewable portfolio standard (RPS) by 2020 ⁷ | N/A | | |
| New passenger vehicles and light trucks sold to Washington residents ⁸ | Adoption of California's low emissions vehicle standards ⁹ | N/A | Contingent upon Oregon's adoption of the standard ¹⁰ | |
| Fuel distributed in Washington | 2% ethanol and biodiesel standard by 2008. ¹¹ | N/A | | Ethanol standard will be increased to 10% if ozone pollution levels remain low and raw materials within the state are sufficient; biodiesel standard will be increased to 5% if in-state production is sufficient. ¹² |
| Washington utilities | Ballot Initiative I-937: utilities must implement all cost-effective energy efficiency measures. ¹³ | N/A | | Northwest Power and Conservation Counsel plan will serve as a model. 2004 NWPCC plan: 10.6% efficiency improvement by 2025. ¹⁴ |
| Department of Ecology | Executive Order 09-05: The Department of Ecology must: * Negotiate with facilities emitting over 25,000 tons of CO ₂ e per year in order to devise reduction strategies * Establish emissions benchmarks with these facilities in order to determine how federal credits will be distributed * Negotiate with TransAlta Centralia Generation LLC, the state's biggest coal-fired power plant, in order to reduce its emissions by more than half. * Work with other Departments to assess whether to adopt a low-carbon fuel standard. ¹⁵ | N/A | TBD | |
| Department of Transportation | Executive Order 09-05: The Department of Transportation must develop strategies to reduce emissions from the transportation sector and install infrastructure for electric vehicles. ¹⁶ | N/A | TBD | |

Notes

¹ Washington State Department of Ecology, Center for Climate Strategies. 2007. Greenhouse Gas Inventory and Reference Case Projections, 1990-2020. Available at http://www.ecy.wa.gov/climatechange/docs/WA_GHGInventoryReferenceCaseProjections_1990-2020.pdf (accessed on November 12, 2008).

² Pew Center on Global Climate Change. Washington Emissions Target. Available at <http://www.pewclimate.org/node/4584> (accessed on November 12, 2008).

³ See note 2.

⁴ See note 2.

⁵ Pew Center on Global Climate Change. Washington Power Plant Cap or Offsets. Available at <http://www.pewclimate.org/node/4589> (accessed on November 12, 2008).

⁶ Pew Center on Global Climate Change. Washington RPS. Available at <http://www.pewclimate.org/node/4685> (accessed on November 12, 2008).

⁷ See note 6.

⁸ Washington State Legislature. 2005. House Bill 1397. Available at <http://www.leg.wa.gov/pub/billinfo/2005-06/Pdf/Bills/Session%20Law%202005/1397-S.SL.pdf> (accessed on November 12, 2008).

⁹ See note 8.

¹⁰ See note 8.

¹¹ Pew Center on Global Climate Change. Washington Biofuel Standard. Available at <http://www.pewclimate.org/node/4757> (accessed on November 12, 2008).

¹² See note 11.

¹³ Pew Center on Global Climate Change. Washington EERS. Available at <http://www.pewclimate.org/node/5818> (accessed on November 12, 2008).

¹⁴ See note 13.

¹⁵ Office of the Governor of Washington. Executive Order 09-05. Available at http://www.governor.wa.gov/execorders/eo_09-05.pdf (accessed on July 24, 2009).

¹⁶ See note 15.

Wisconsin - Summary of Climate Action

Emissions as a % of US's (2003): 1.8%

Megatons GHG emissions (1990): 106

Megatons GHG emissions (2003): 123¹

Wisconsin Climate Legislation

| Regulated Entity | Legislation | Level of Projected Reduction from BAU | Implementation/Financing | Miscellaneous |
|--------------------|---|---------------------------------------|--|---------------|
| Electric utilities | 10% renewable portfolio standard by 2015 ² | N/A | Eligible sources: solar, wind, hydropower, biomass, geothermal, tidal/wave energy, renewable fuel cells ³ | |

Notes

¹ John Larsen and Tom Damassa. 2007. Wisconsin Greenhouse Gas Emissions Inventory and Projections. World Resources Institute. Available at http://dnr.wi.gov/environmentprotect/gtfgw/documents/WI_GHG_inventory_07.pdf (accessed on November 12, 2008).

² Pew Center on Global Climate Change. Wisconsin RPS. Available at <http://www.pewclimate.org/node/4686> (accessed on November 12, 2008).

³ See note 2.

Mexico - Federal Climate Action

Megatons GHG emissions (1990): 424

Megatons GHG emissions (2002 - last year of inventory): 548^d

Federal GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from 2002 levels ³³ |
|------|--|---|---|
| 2014 | Reduce emissions by 126 Mt (23% reduction from 2002 levels) ^c | ~No change | 126 |
| 2050 | Reduce emissions 50% from 2002 35% below levels | | 274 |

Federal Climate Legislation

| Regulated Entity | Legislation |
|---|---|
| Machinery/equipment that reduces GHG emissions | Import tariff exemption ³ |
| Renewable energy producers | Exemption from duties for electrical energy permits ⁴ |
| State-run enterprises - public transport, power generation. | <ul style="list-style-type: none"> * 2008 - eliminate all trucks and buses that are more than 10 years old * Plant 250 million trees in 2007 * Introduce independent power generation * Increase capacity of the La Venta windfarm by 10 times in six years * Increase goods transportation by rail by 10% before 2012⁵ |

Proposed Federal Climate Action ⁶

| Regulated Entity | Action | Level of Projected Reduction from BAU | Implementation/ Financing |
|--|---|---------------------------------------|--|
| PEMEX | Install CHP plants within National Refining System, other PEMEX facilities. | 7.7 Mt CO2e by 2014. | |
| PEMEX | Increase PEMEX's energy efficiency target by 5%. | 2.7 Mt CO2e by 2014. | |
| Thermoelectric plants on the Pacific coast, National Refining System | Repowering and conversion to natural gas of thermoelectric plants on the Pacific coast, modernization of the National Refining System | 21 Mt CO2e by 2014. | The government proposes to phase out and reorient fuel oil production incentives, install a gasification terminal on the Pacific coast for imported liquefied natural gas, and convert fuel oil-fired thermoelectric plants to combined cycle. |
| Responsibility will presumably fall to Federal Electricity Commission, SEMARNAT, SENER (Federally owned electric company, federal environmental agency, and federal energy agency, respectively) | Install 7,000 MW of renewable energy capacity, generating 16,000 GWh per year in total. | 8 Mt CO2e by 2014. | This initiative is in addition to the El Cajon and La Parota hydroelectric plants. |
| Land management | Increase the area under sustainable forest management by 2.6 million hectares per year. | 6000-12,000 Mt CO2e by 2012. | |
| Certain sectors such as cement and oil refining ⁷ | Cap and trade proposed; Mexican government hopes to establish by 2012. ⁸ | | N/A |

MOUs

SEMARNAT, Mexico's environmental agency, has signed a climate MOU with California (see above) and is working on one with Arizona.

Veracruz

The Mexican State of Veracruz is currently working with the National Institute of Ecology (INE) on a model State Climate Change Strategy and Action Plan.

Special Program on Climate Change⁷

| | | |
|--|---|--------------------------------------|
| SENER | Re-injection of sour gas at Cantarell Oil Field | 6.9 Mt CO ₂ e in 2012 N/A |
| SEDESOL, SEMARNAT, and local governments | Landfill management | 4.5 Mt CO ₂ e in 2012 N/A |
| SEMARNAT | Sustainable forestry management | 4.4 Mt CO ₂ e in 2012 N/A |
| SENER, private sector | Self-supply renewable electricity projects | 3.6 Mt CO ₂ e in 2012 N/A |
| SEMARNAT | Reduction of emissions from deforestation and degradation (REDD) | 3.0 Mt CO ₂ e in 2012 N/A |
| Certain sectors such as cement and oil refining ⁸ | Cap and trade proposed; Mexican government hopes to establish by 2012. ⁹ | N/A |

MOUs

SEMARNAT, Mexico's environmental agency, has signed a climate MOU with California (see above) and is working on one with Arizona.

Veracruz

The Mexican State of Veracruz is currently working with the National Institute of Ecology (INE) on a model State Climate Change Strategy and Action Plan.

Nuevo Leon - State Climate Action¹⁰

The State of Nuevo Leon is currently working with the National Institute of Ecology (INE), the British Embassy, and the ITESM Campus Monterrey on a state Climate Change Action Plan.

| Regulated Entity | Action | Level of Projected Reduction from BAU | Implementation/ Financing |
|--|--|---------------------------------------|---------------------------|
| State landfill, SIMEPRODE | Capture of methane gas | N/A | N/A |
| Servicios de Agua y Drenaje de Monterrey (Water and Sewage Services) | Burning off of methane emissions | N/A | N/A |
| Public transport system | Use of greener motors mandated by law | N/A | N/A |
| Taxi fleet | Conversion to natural gas-powered vehicles | N/A | 2500 units involved. |

Mexico City - Proposed Municipal Climate Action¹¹

Municipal GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels | Megatons Reduction from Business as Usual |
|------|---|---|---|
| 2012 | Reduce emissions by 7 Mt (approximately 20%) below business as usual. | N/A | 7 Mt |

| Regulated Entity | Action | Level of Projected Reduction from BAU | Implementation/ Financing |
|---|---|---------------------------------------|--|
| Bordo Poniente Stage 4 landfill | Capture and exploitation of biogas | 1.4 Mt CO ₂ e | Will require approximately 3.9 billion pesos between 2008 and 2012. |
| Public school students | Obligatory use of public transportation rather than private automobiles. | 0.5 Mt CO ₂ e | "Gradual" phase-in. |
| Transportation authority | Construction of new subway line. | 0.4 Mt CO ₂ e | Will require approximately 13.7 billion pesos between 2008 and 2012. |
| Mexico City biological treatment plants | Reduction of mud emissions. | 0.4 Mt CO ₂ e | Will require approximately 1.2 billion pesos between 2008 and 2012. |
| Taxi fleet | Replacement of 75,000 taxi vehicles | 0.2 Mt CO ₂ e | Will require approximately 1.1 billion pesos between 2008 and 2012. |
| Metrobus | Nine new rapid bus lines; replacement of 3000 microbuses with 800 tandem buses. | 0.2 Mt CO ₂ e | Will require approximately 11.3 billion pesos between 2008 and 2012. |

Notes

¹ UNFCCC. Greenhouse Gas Inventory Data - Detailed data by Party. Available at <http://unfccc.int/di/DetailedByParty/Event.do?event=go> (accessed on November 12, 2008).

² Oliver Balch. Latin America: Mexico's flimsy raft of climate change measures. Ethical Corporation. Available at <http://www.ethicalcorp.com/content.asp?ContentID=6039> (accessed on November 11, 2008).

³ Carlos de Icaza Neiros, Ximena Aguirre Franco, "Emissions Trading in Mexico," *North American Free Trade & Investment Report* 18, no. 20 (2008): 3.

⁴ Carlos de Icaza Neiros, Ximena Aguirre Franco, "Emissions Trading in Mexico," *North American Free Trade & Investment Report* 18, no. 20 (2008): 4.

⁵ See note 2.

⁶ Taken from the National Strategy on Climate Change, proposed as part of National Development Plan. The full document is available in Spanish online: http://www.semarnat.gob.mx/queessearnat/politica_ambiental/cambioclimatico/Pages/estrategia.aspx.

There are many more initiatives proposed than the ones listed here. The full list can be read in English online:

http://www.semarnat.gob.mx/queessearnat/politica_ambiental/cambioclimatico/Documents/enac/sintesis/sintesisjecutiva/Executive%20Summary.px

⁷ Taken from the Special Program on Climate Change. As in the National Strategy on Climate Change, there are many more initiatives proposed; the full list is available Spanish at http://www.semarnat.gob.mx/queessearnat/politica_ambiental/cambioclimatico/Documents/pecc/090828_PECC.Capitulos_DO.pdf (accessed on April 23, 2010).

⁸ Vanessa Gera. Mexico pledges greenhouse gas cuts. Associated Press. Available at

http://www.google.com/hostednews/ap/article/ALeqM5jpOWN_kr_fb4qOx_hrA34eg67LgD950I75O0 (accessed on December 11, 2008).

⁹ See note 8.

¹⁰ Special thanks to Idolina de la Cerda Hinojosa of the environmental protection agency of the state of Nuevo Leon for the information listed here.

¹¹ More initiatives proposed by Mexico City can be found online at http://www.sma.df.gob.mx/sma/links/download/archivos/paccm_summary.pdf. The initiatives listed here are those that offer the largest projected GHG reductions.

Summary of Regional Climate Initiatives

New England Governors/Eastern Canadian Premiers - Summary of Regional Agreement

Connecticut, Maine, Massachusetts, New Brunswick, New Hampshire, Newfoundland and Labrador, Nova Scotia, Prince Edward Island, Québec, Rhode Island, Vermont

Regional GHG Emissions Targets

| Date | Target | Projected Reduction Relative to 1990 Levels |
|------|------------------------------------|---|
| 2010 | 1990 levels ¹ | No change |
| 2020 | 10% below 1990 levels ² | 10% below |

Specific action is not part of this agreement.

Notes

¹ New England Governors/Eastern Canadian Premiers. 2001. Climate Change Action Plan. Available at <http://www.negc.org/documents/NEG-ECP%20CCAP.PDF> (accessed on November 11, 2008).

² See note 1.

Western Climate Initiative - Summary of Regional Agreement

Canadian members: British Columbia, Manitoba, Quebec, Ontario
 American members: California, Montana, New Mexico, Oregon, Utah, Washington
 Observers: Mexican Northern Border States (Baja California, Chihuahua, Coahuila, Nuevo Leon, Sonora, Tamaulipas).

Regional GHG Emissions Targets

| Date | Target |
|------|------------------------------------|
| 2020 | 15% below 2005 levels ¹ |

Regional Climate Action

| Regulated Entity | Action | Implementation/ Financing | Miscellaneous |
|--|---|--|---|
| <p>Electrical generators distributing within WCI region (including emissions imported from non-WCI jurisdictions), large industrial and commercial combustion, large industrial process emissions - starting 2012</p> <p>Residential, small industrial/commercial combustion; transportation fuel combustion - starting 2015</p> <p>In general, regulation is as close to the point of emission as possible, with the exception of fuels for small-scale combustion (transportation, residential, small industrial/commercial), where regulation is upstream (where the fuels "enter commerce in the WCI partner jurisdictions")²</p> <p>The point of regulation schedule can be found at: http://www.westernclimateinitiative.org/ewebeditpro/items/O104F18808.PDF</p> | <p>Cap-and-trade system to reduce emissions 15% below 2005 levels by 2012</p> | <p>Up to 49% of obligations may be offset, through either projects in North America or CDM projects that have been certified by the WCI</p> <p>-- 10% minimum percentage of auctioned allowances at the outset, increasing to 25% by 2020. However, if the WCI finds that a specific industry would benefit from a standardized cap across states, allowance distribution will also be standardized across states for that industry. This is likely to occur for high-emissions sectors such as oil refining, steel, cement, aluminum and paper.⁴</p> | <p>The WCI is the largest carbon trading market in North America - five times the size of the RGGI. It has been designed to accommodate linkages to other regions as well as California's GHG plan.⁵</p> <p>The program has been criticized, however, for failing to address competitiveness with firms outside regulated regions, ⁶ as well as for its low auction and high offset thresholds.⁷</p> |

Notes

¹ Western Climate Initiative. 2008. US States, Canadian Provinces Announce Regional Cap-and-Trade Program to Reduce Greenhouse Gases. Available at <http://www.westernclimateinitiative.org/ewebeditpro/items/O104F19871.PDF> (accessed on November 11, 2008).

² Western Climate Initiative. 2008. Draft Design of the Regional Cap-and-Trade Program. Available at <http://www.westernclimateinitiative.org/ewebeditpro/items/O104F18808.PDF> (accessed on November 12, 2008).

³ See note 2.

⁴ Environment and Energy: ClimateWire. 2008. WCI unveils its market design to applause, despite low auction threshold. Available at <http://www.eenews.net/climatewire/print/2008/09/24/1> (accessed on November 12, 2008).

⁵ See note 4.

⁶ Pembina Institute, et al. 2008. Letter to Western Climate Initiative Partners. Available at <http://pubs.pembina.org/reports/response-to-wci-draft.pdf> (accessed on November 12, 2008).

⁷ See note 4.

Regional Greenhouse Gas Initiative - Summary of Regional Agreement

Members: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont.

Observers: Ontario, Quebec, Eastern Canadian Provinces (New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland)

Participants in first auction, 9/25/08: Connecticut, Maine, Maryland, Massachusetts, Rhode Island, Vermont

Regional GHG Emissions Targets

| Date | Target |
|------|--|
| 2018 | Emissions from the electrical sector 10% below 2009 levels. ² |

Regional Climate Action

| Regulated Entity | Action | Time Frame | Implementation/ Financing | Miscellaneous |
|--|--|--|---|---|
| The program initially covers only electric power generators but may expand later. Generators of over 25 MW - about 95% of the electrical sector - are subject to the program. ³ | Multi-state cap-and-trade program with a regional auction platform for emissions credits | Emissions stabilized from 2009 to 2014; 2.5% decline in emissions per year from 2015 to 2018, for a total of 10% decline by 2018 ⁴ The first auction will take place on September 25, 2008. ⁵ | <ul style="list-style-type: none"> • 25% of a given state's allowances must be auctioned, and 5 out of 10 states have decided to auction all allowances . • According to the RGGI overview, revenue from auctions will be used to fund incentives for end-use efficiency, lowering the cost of the program to the consumer, although it is up to individual states exactly how this revenue will be allocated. • Allowances will be retired with the production of renewable energy in an amount equivalent to the emissions avoided. • Flexibility will be provided in case of price spikes – if price goes over a trigger amount, a greater percentage of reductions can be provided by offsets. • Allowance banking is permitted. • Offset allowances are permitted for 3.3% of compliance obligation. • Early reduction allowances will be provided for reductions made between 2006 and 2008.⁶ | <p>Emissions from RGGI-regulated plants have actually fallen in 2008, possibly depressing emissions credit prices under the scheme.</p> <p>However, all RGGI states have learned a lesson from Europe, where allocation of allowances to industry caused prices to fall to near zero, auctioning well above 25% of their allowances.⁷</p> <p>Modeling projections however estimate potential emissions leakage of eighteen to 27 percent through 2015.⁸</p> |
| Transportation, potentially heating fuels. | Memorandum of Understanding to create a low-carbon fuel standard. ⁹ | Framework will be developed by early 2011. | N/A | N/A |

Notes

¹ RGGI, Inc. 2008. Regional Greenhouse Gas Initiative Auction Process Goes Live Today. Available at http://www.rggi.org/docs/press_release_7_24_08_final.pdf (accessed on November 12, 2008).

² RGGI. 2007. Overview of RGGI CO2 Budget Trading Program. Available at http://rggi.org/docs/program_summary_10_07.pdf (accessed on November 12, 2008).

³ See note 2.

⁴ See note 2.

⁵ See note 1.

⁶ See note 2.

⁷ PointCarbon News. 2008. Lower '08 RGGI emissions could dampen allowance prices: report. Available at http://www.pointcarbon.com/polopoly_fs/1.969643!CMNA20080910.pdf (accessed on November 12, 2008).

⁸ James Bushnell, et al. 2007. Local Solutions to Global Problems: Policy Choice and Regulatory Jurisdiction. National Bureau of Economic Research. Available at <http://www.nber.org/papers/w13472.pdf> (accessed on November 12, 2008).

⁹ Northeast and Mid-Atlantic Low Carbon Fuel Standard: Memorandum of Understanding. 2009. Available at <http://thehill.com/images/stories/blogs/lowcarbon.pdf> (accessed on April 23, 2010).

Midwest Accord - Summary of Regional Agreement

Members: Iowa, Illinois, Kansas, Manitoba, Michigan, Minnesota, Wisconsin
 Observers: Indiana, Ohio, Ontario, South Dakota

Regional GHG Emissions Targets

| Date | Target |
|------|--------------------------|
| 2020 | 18-20% below 2005 levels |
| 2050 | 80% below 2005 levels |

Regional Climate Action

| Regulated Entity | Action | Level of Projected Reduction from BAU | Implementation/Financing |
|--|---|---|--|
| Multiple sectors. Details currently unclear. | Develop reduction targets and cap and-trade mechanism, as well as other measures such as a possible regional fuel standard or regional transportation infrastructure. ¹ | Details currently unclear. | The Midwestern region's GHG emissions are currently the highest among the three regions that have signed accords. In particular, the economy's agricultural and industrial sectors are highly GHG-intensive. -- 60% of the region's electricity is derived from coal. -- Five Midwestern states (Illinois, Iowa, Kansas, Minnesota, and Wisconsin) are among the nation's top 12 agricultural emitters. ² |
| Electricity distributors | Renewable electricity goal: 10 percent by 2015, 20 percent by 2020, 30 percent by 2030 ³ | Working groups have been established to outline transmission investments needed to meet the standard. The Accord states that Renewable Energy Zones will be established. A working group will make recommendations for a smart grid by December 2010. | |
| Coal-based energy facilities | Carbon capture and storage will be incorporated into all coal-based energy facilities by 2020. ⁴ | | |
| Fuel distributors | Regional goal to have biofuel blends and other low-carbon advanced transportation fuels be available at 15 percent of retail fueling stations by 2015, 20 percent by 2020 and 33 percent by 2025 ⁵ | | |
| Fuel distributors | Regional goal to have 50 percent of transportation energy consumed in the region be supplied by regionally produced biofuels and other low-carbon advanced transportation fuels by 2025. ⁶ | | |

Notes

¹ Midwest Greenhouse Gas Accord. 2007. Available at <http://www.midwesternaccord.org/midwesterngreenhousegasreductionaccord.pdf> (accessed on November 11, 2008).

² Thomas Damassa. 2007. The Midwest Greenhouse Gas Accord By The Numbers. World Resources Institute. Available at <http://www.wri.org/stories/2007/11/midwest-greenhouse-gas-accord-numbers> (accessed on November 11, 2008).

³ Midwestern Governors' Association. 2009. Midwestern Energy Infrastructure Accord. Available at <http://www.midwesterngovernors.org/Publications/InfrastructureAccord.pdf> (accessed on April 22, 2010).

⁴ See note 3.

⁵ See note 3.

⁶ See note 3.

Border 2012 - Summary of Regional Initiative

Joint program between US EPA and SEMARNAT, the Mexican environmental ministry, to facilitate cooperation between border states on varied types of pollution, including water, air, land contamination, environmental health, emergency preparedness and response, and environmental stewardship. Most air quality initiatives within this program deal with particulate matter, toxic emissions, and air quality standards, but a couple address climate change. Projects may apply to the EPA for competitive grants.⁶⁵

No GHG Emissions Targets

| Participating Entity | Action | Level of Projected Reduction from BAU | Implementation/ Financing |
|--|---|--|---|
| Collaboration by Arizona, Sonora governments | Regional inventory of greenhouse gases. ¹ | N/A | Arizona has a GHG inventory in place as of 2005. Currently, Arizona, Sonora's Commission of Ecology and Sustainable Development (CEDES), Mexico's National Institute of Ecology (INE), the University of Sonora (UNISON) and the Center for Climate Strategies (CCS) are collaborating to develop a similar inventory and forecast for Sonora. ² |
| Texas, New Mexico, and Chihuahua border region; project led by the Ysleta del Sur Pueblo Tribe in El Paso, Texas. ³ | Production of a pilot biodiesel fuel from waste vegetable oil. ⁴ | N/A | Funded by EPA grant. |

Notes

¹ Texas Commission on Environmental Quality. 2008. Local Projects Get Support. Available at http://www.tceq.state.tx.us/comm_exec/forms_pubs/pubs/pd/020/07-02/spotlightontheborder.html#lp (accessed on November 13, 2008).

² US Environmental Protection Agency. 2008. Arizona-Sonora Air. Available at <http://www.epa.gov/usmexicoborder/regional/workgroup-az.html#air> (accessed on November 13, 2008).

³ US Environmental Protection Agency. 2008. New Mexico-Texas-Chihuahua Air. Available at <http://www.epa.gov/usmexicoborder/regional/workgroup-nm.html#air> (accessed on November 13, 2008).

⁴ See note 3.