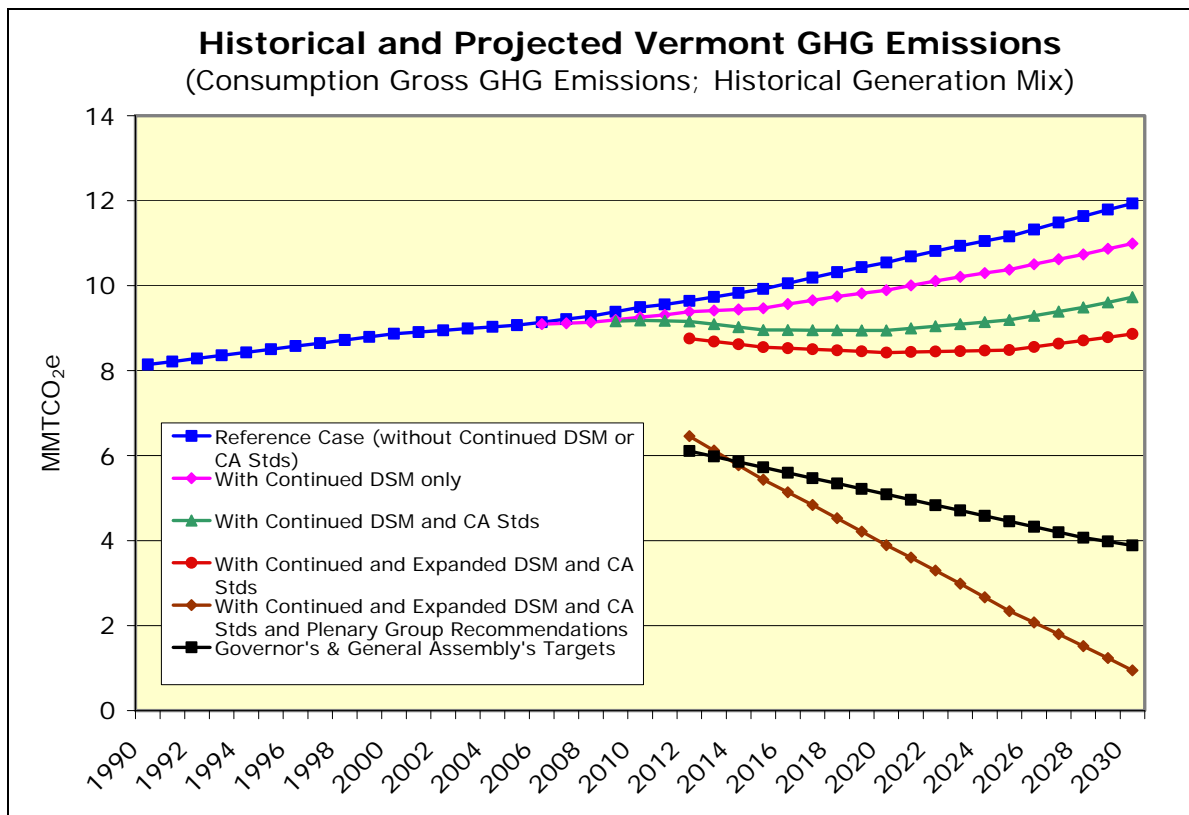




## Vermont Climate Plan Brief Summary

Recognizing the serious implications of climate change, Governor James Douglas signed Executive Order 07-05 on December 5, 2005, establishing the 6-member Governor's Commission on Climate Change (GCCC) to assess and recommend options for state action. This effort added to several initiatives already underway on low-emission vehicle standards; reducing greenhouse gas (GHG) emissions from state buildings and operations; work with electric utilities on efficiency and managing demand for power. The Order set a goal—the highest set by any state—of reducing emissions from the 1990 baseline by 25% by 2012, 50% by 2028 and, if practicable using reasonable efforts, 75% by 2050.

The GCCC convened a larger Plenary Group (PG) to diversify the expertise and perspectives of those involved in this effort. The Governor appointed 31 stakeholders, representing a broad range of interests to carry out a year-long process to provide analysis on GHG reduction options. The Plenary Group came to strong agreement on a set of 38 strategies that achieve the goal, as shown in the following chart.



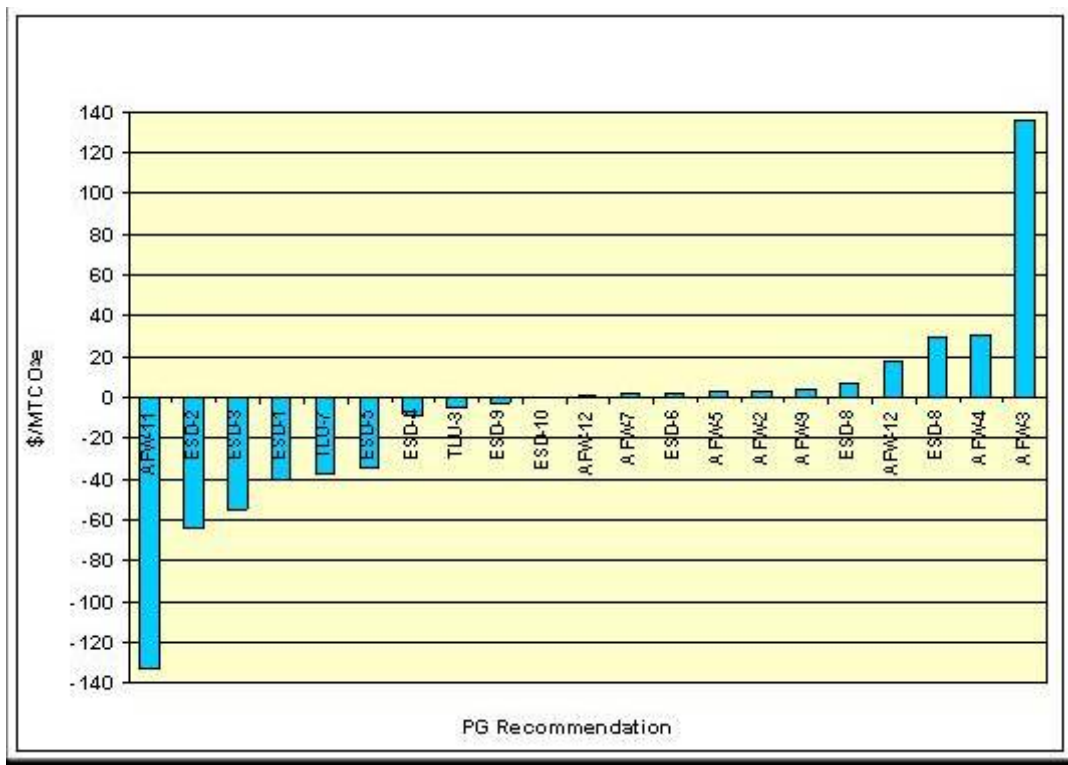
GHG = greenhouse gas; MMtCO<sub>2</sub>e = million metric tons carbon dioxide equivalent; DSM = demand-side management; CA Stds = California vehicle fuel efficiency/emission standards

The Vermont Department of Environmental Conservation (DEC) organized the analysis process and DEC’s Air Division managed logistics and provided technical reviews. The Plenary Group followed a consensus-building process designed and implemented by the nonprofit [Center for Climate Strategies \(CCS\)](#). Applying a design similar to those used in other successful state climate initiatives, CCS provided both facilitation and technical analysis services to the PG.

Four sector-based technical work groups (TWGs) were formed consisting of PG members and a number of additional experts. The TWGs developed initial recommendations in the areas of Energy Supply and Demand (ESD); Transportation and Land Use (TLU); Agriculture, Forestry, and Waste Management (AFW); and Cross-Cutting Issues (CC). Aggressive carbon sequestration provided by the AFW policy options could enable Vermont to approach near-zero GHG emissions or “carbon-neutral” status. The report also notes several co-benefits that could result from implementation of PG-recommended policies.

The varied costs (or cost savings) estimates per ton of GHG reduction for each policy recommendation for which cost estimates were available are shown in the following chart. (A cost saving is depicted as a negative number)

**Plenary Group policy recommendations ranked by dollars per ton**



The Summary Tables below present the Plenary Group’s recommendations by sector, showing reductions and cost data for each policy option as well as the strong consensus support for the measures. The record of the Governor’s Commission and Plenary Group’s work is at <http://www.vtclimatechange.us/>.

**Summaries of PG policy recommendations by sector**

	Policy Option	GHG Reductions (MMtCO <sub>2</sub> e)			Net Present Value 2008–2030 (Million \$)	Cost-Effectiveness (\$/tCO <sub>2</sub> e)	Level of Support
		2012	2028	Total 2008–2028			
<b>ENERGY SUPPLY AND DEMAND</b>							
ESD-1	Evaluation and Continuation/ Expansion of Existing DSM for Electricity and Natural Gas	0.7	1.7	21.5	-\$850	-\$40	UC
ESD-2	Evaluation and Expansion of DSM to Other Fuels	0.1	0.5	5.3	-\$335	-\$64	Super-Majority
ESD-3	Building Efficiency Codes, Training, Tracking	0.02	0.2	2.0	-\$107	-\$55	UC
ESD-4	Evaluate Potential for Contracting Nuclear Power						Super-Majority
	(Scenario 1)	0.5	1.1	16.7	-\$140	-\$8	
	(Scenario 2)	0.3	0.7	10.2	-\$70	-\$7	
ESD-5	Support for Combined Heat and Power	0.1	0.2	2.6	-\$86	-\$34	UC
ESD-6	Incentives and/or Mandate for Renewable Electricity						Super-Majority
	(Scenario 1)	0.1	0.4	5.4	\$9	\$2	
	(Scenario 2)	0.2	1.2	15.7	\$38	\$2	
ESD-7	GHG Cap-and-Trade and/or GHG Tax	Referred to the GCCC as primarily a funding mechanism.					
ESD-8	Incentives for Clean Distributed Technologies for Electricity or Heat						UC
	Natural Gas Fuel Switching	0.1	0.1	2.2	\$15	\$7	
	Solar Thermal Water Heating	0.05	0.2	2.3	\$67	\$29	
ESD-9	Wind-Specific Support Measures						UC
	(New Wind, Scenario 1)	0.03	0.2	2.1	-\$6	-\$3	
	(New Wind, Scenario 2)	0.1	0.5	6.3	\$10	\$2	
ESD-10	Hydro-Specific Support Measures						UC
	(Continued Large Hydro, Scenario 1)	0.02	1.1	14.9	\$0	\$0	
	(Continued Large Hydro, Scenario 2)	0.01	0.6	8.7	\$0	\$0	
	(New Hydro, Scenario 1)	0.01	0.06	0.8	-\$22	-\$27	
	(New Hydro, Scenario 2)	0.03	0.2	2.4	-\$64	-\$27	
	<b>Total</b>						
	<b>Scenario 1 (Generation of Nuclear and Hydro at Historic Levels)</b>	<b>1.56</b>	<b>5.48</b>	<b>72.75</b>	<b>-\$1,427</b>	<b>-\$20</b>	
	<b>Scenario 2 (Generation of Nuclear and Hydro at 50% of Historic Levels)</b>	<b>1.56</b>	<b>5.37</b>	<b>70.35</b>	<b>-\$1,328</b>	<b>-\$19</b>	
<b>TRANSPORTATION AND LAND USE</b>							
TLU-1	Compact and Transit-Oriented Development Bundle	0.26	0.99	10.88	Net savings		UC
TLU-2	Alternatives to Single-Occupancy Vehicles (SOVs)	0.28	0.32	6.57	Net savings		UC
TLU-3	Vehicle Emissions Reductions Incentives	0.11	0.63	7.73	-\$42	-\$10	Majority
TLU-4	Pay-as-You-Drive Insurance	0.20	0.32	5.30	Net savings		Super-Majority
TLU-5	Alternative Fuels and Infrastructure (LCFS)	0.12	0.42	5.75	N/A		UC
TLU-6	Regional Intermodal Transportation System – Freight and Passenger	0.05	0.20	2.22	N/A		UC
TLU-7	Commuter Choice/Commute Benefits	0.06	0.19	1.86	-\$1	-\$1	UC
TLU-8	Plug-in Hybrids [part of TLU-5]	–	–	–	–		UC

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	Policy Option	GHG Reductions (MMtCO <sub>2</sub> e)			Net Present Value 2008–2030 (Million \$)	Cost-Effectiveness (\$/tCO <sub>2</sub> e)	Level of Support
		2012	2028	Total 2008–2028			
TLU-9	Fuel Tax Funding Mechanism [TWG recommends examining as part of a funding package after reductions policies are chosen]	–	–	–	–	–	UC
	<b>Sector total before adjusting for overlaps</b>	<b>1.09</b>	<b>3.07</b>	<b>40.31</b>	<b>N/A</b>	<b>N/A</b>	
	<b>Reductions from recent policy actions</b>						
	<b>Sector total plus recent policy actions</b>	<b>1.09</b>	<b>3.07</b>	<b>40.31</b>	<b>N/A</b>	<b>N/A</b>	
	<b>AGRICULTURE, FORESTRY, AND WASTE MANAGEMENT</b>						
AFW-1	Programs to Support Local Farming/Buy Local	0.004	0.02	0.20	Not quantified	Not quantified	UC
AFW-2	Agricultural Nutrient Management Programs	0.08	0.10	1.6	\$4.2	\$3	UC
AFW-3	Manure Management Methods to Achieve GHG Benefits	0.01	0.02	0.3	\$34	\$136	UC
AFW-4	Protect Open Space/Agricultural Land	0.06	0.11	1.80	\$56	\$31	UC
AFW-5	Forestry Programs to Enhance GHG Benefits <sup>1</sup>	0.03	0.12	1.30	\$4	\$3	UC
AFW-6	Increased Forest Biomass Energy Use	Quantified under AFW-5 and ESD options					UC
AFW-7	Forest Protection – Reduced Clearing and Conversion to Non-Forest Cover	0.40	2.00	22.00	\$34	\$2	UC
AFW-8	Expanded Use of Durable Wood Products (Especially From Vermont Sources)	0.09	0.05	1.40	Not quantified	Not quantified	UC
AFW-9	Advanced/Expanded Recycling and Composting	0.16	0.88	9.10	\$37	\$4	UC
AFW-10	Programs to Reduce Waste Generation	0.34	0.73	10.00	Not quantified	Not quantified	UC
AFW-11	Waste Water Treatment – Energy Efficiency Improvements	0.00	0.01	0.14	–\$19	–\$133	UC
AFW-12	In-State Liquid Biofuels Production						
	Ethanol Production	0.03	0.42	3.7	\$5.0	\$1	UC
	Biodiesel Production	0.004	0.24	2.2	\$40	\$18	UC
	<b>Sector Total After Adjusting For Overlaps</b>	<b>1.2</b>	<b>4.7</b>	<b>54.0</b>	<b>\$190</b>	<b>\$4</b>	
	<b>Reductions From Recent Actions</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
	<b>Sector Total Plus Recent Actions</b>	<b>1.2</b>	<b>4.7</b>	<b>54.0</b>	<b>\$190</b>	<b>\$4</b>	
	<b>CROSS-CUTTING ISSUES</b>						
CC-1	GHG Inventories and Forecasts	Not quantified					UC
CC-2	GHG Reporting	Not quantified					UC
CC-3	GHG Registry	Not quantified					UC
CC-4	Public Education and Outreach	Not quantified					UC
CC-5	Adaptation	Not quantified					UC
CC-6	Options for Goals or Targets	Not quantified					UC
CC-7	The State’s Own GHG Emissions	Not quantified					UC
	<b>Sector total after adjusting for overlaps</b>						
	<b>Reductions from recent policy actions</b>						
	<b>Sector total plus recent policy actions</b>						

MMtCO<sub>2</sub>e= million metric tons carbon dioxide equivalent; UC = unanimous consent; Majority = simple majority; DSM = demand-side management; LCFS = low carbon fuel standard; N/A = not applicable; GHG = greenhouse gases.

Total number of options voted upon = 37. For ESD, positive numbers for Net Present Value (NPV) and Cost-Effectiveness reflect net costs. Negative numbers reflect net cost **savings**.