

Memo

To: Montana Climate Change Action Committee

From: The Center for Climate Strategies

CC: Montana Department of Environmental Protection

Subject: Preparation for the Fifth Meeting of the Montana Climate Action Committee on May 11, 2007

Date: May 11, 2007

At the fifth meeting of the Montana Climate Action Committee (CCAC) on May 11, 2007, the CCAC will review and begin approval of 57 draft climate change policy options developed since the launch of the CCAC process in July 2006. The CCAC will review, discuss and modify options as needed to reach final approval. Those options not fully agreed to at this meeting will be referred to the Technical Work Groups (TWGs) for further development and presentation at the final CCAC meeting.

A summary of the 57 pending draft policy options is attached, and a detailed description of each and related background is posted to the CCAC website at: www.mtclimatechange.us. Please review these documents prior to the meeting.

A summary of draft policy options is attached below:

Table #	Technical Work Group	# Policy Options
1	Residential, Commercial and Industrial Pending Options List	13
2	Energy Supply Pending Options List	13
3	Transportation and Land Use Pending Options List	13
4	Agriculture and Forestry Pending Options List	12
5	Cross Cutting Issues Pending Options List	6
Total		57

Table 1.
Residential, Commercial, Institutional and Industrial Technical Work Group
Summary List of Pending Policy Options

	Mitigation Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2020	Total 2007-2020			
RCII-1	Demand Side Management Programs, Efficiency Funds and Requirements	0.04	1.15	6.6	-\$141	-\$21	Pending
RCII-2	Market Transformation and Technology Development Programs	0.03	0.30	1.9	-\$43	-\$23	Pending
RCII-3	State Level Appliance Efficiency Standards and State Support for Improved Federal Standards	0.05	0.20	1.5	-\$55	-\$36	Pending
RCII-4	Building Energy Codes	0.0	0.3	1.6	-\$15	-\$10	Pending
RCII-5	“Beyond Code” Building Design Incentives and Mandatory Programs	<i>Quantification in Progress</i>					Pending
RCII-6	Consumer Education Programs	<i>Not Quantified</i>					Pending
RCII-7	Support for Implementation of Clean Combined Heat and Power	<i>Quantified in Coordination with ES</i>					Pending
RCII-8	Support for Renewable Energy Applications	<i>Quantified in Coordination with ES</i>					Pending
RCII-9	Carbon Tax	<i>Not Quantified</i>					Pending
RCII-10	Industrial Energy Audits and Recommended Measure Implementation	0.07	0.56	3.6	-\$93	-\$26	Pending

	Mitigation Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2020	Total 2007–2020			
RCII-11	Low Income Energy Efficiency Programs	0.04	0.58	3.6	-\$63	-\$18	Pending
RCII-12	State Lead by Example	0.03	0.27	1.7	-\$10	-\$6	Pending
RCII-13	Metering Technologies with Opportunity for Load Management and Choice	0.01	0.03	0.2	-\$3	-\$12	Pending

Table 2.
Energy Supply Technical Work Group
Summary List of Pending Policy Options

	Mitigation Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007-2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2020	Total 2007-2020			
ES-1	Environmental Portfolio Standard (Renewables and Energy Efficiency)	<i>Quantification in Progress</i>					
	Efficiency/Conservation (electricity)	0.03	0.92	5.4	-\$79	-\$15	Pending
	Renewable Energy	0.8	2.5	16.9	\$53	\$3	Pending
ES-2	Renewable Energy Incentives (Biomass, Wind, Solar, Geothermal)	<i>Not Quantified Separately (see ES-1 and ES-4)</i>					Pending
ES-3	Research and Development (R&D), Including R&D for Energy Storage and Advanced Fossil Fuel Technologies	<i>Not Quantified</i>					Pending
ES-4	Incentives and Barrier Removal (Including Interconnection Rules and Net Metering Arrangements) for Combined Heat and Power (CHP) and Clean Distributed Generation (DG)	<i>Quantification in Progress</i>					
	Distributed Renewables	0.03	0.10	0.8	\$16	\$21	Pending
	Combined Heat and Power	0.3	0.7	5.0	\$81	\$16	Pending

	Mitigation Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2020	Total 2007–2020			
ES-5	Incentives for Advanced Fossil Fuel Generation and Carbon Capture and Storage (CCS), Including Combined Hydrogen and Electricity Production with Carbon Sequestration	<i>Quantification in Progress</i>					Pending
	Reference Case - <i>Illustrative</i>	0	2.5	11.1	\$334	\$30	Pending
	High Fossil Scenario - <i>Illustrative</i>	0	12.9	60.5	\$1,814	\$30	Pending
ES-6	Efficiency Improvements and Repowering of Existing Plants	<i>Not Quantified</i>					Pending
ES-7	Demand-Side Management (RCI TWG will take lead for analysis, with ES TWG providing review)	<i>Not Quantified Separately (see ES-1 and RCII-1)</i>					Pending
ES-8	CO ₂ Tax (to be considered jointly with RCI TWG)	<i>Not Quantified</i>					Pending
ES-9	GHG Cap-and-Trade	<i>Not Quantified</i>					Pending
ES-10	Generation Performance Standards or GHG Mitigation Requirements for New (and/or Existing) Generation Facilities, with/without GHG Offsets	<i>Quantification in Progress</i>					Pending
	Reference Case – Compliance Mix	0.1	0.8	4.7	\$60	\$20	Pending
ES-11	Methane and CO ₂ Reduction in Oil and Gas Operations, Including Fuel Use and Emissions Reduction in Venting and Flaring	<i>Quantification in Progress</i>					Pending
	Reference Case - <i>Illustrative</i>	0.1	0.5	3.9	Not yet estimated	Likely net benefit	Pending
	High Fossil Scenario - <i>Illustrative</i>	0.3	0.8	6.6	Not yet estimated	Likely net benefit	Pending

	Mitigation Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007-2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2020	Total 2007-2020			
ES-12	GHG Reduction in Refinery Operations, Including in Future Coal-to-Liquids Refineries	<i>Quantification in Progress</i>					Pending
	Petroleum Refining - Reference Case	0.07	0.24	1.5	Not est.	Not est.	Pending
	Petroleum Refining - High Fossil Case	0.09	0.38	2.2	Not est.	Not est.	Pending
	Coal-to-Liquids - - High Fossil Case						Pending
ES-13	CO ₂ Capture and Storage or Reuse (CCSR) in O&G Operations, Including Refineries and Coal-to-Liquids Operations	<i>Quantification TBD</i>					Pending

Table 3.
Transportation and Land Use Technical Work Group
Summary List of Pending Policy Options

	Mitigation Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2020	Total 2007–2020			
TLU-1	Light Duty Vehicle Clean Car Program	0.0	0.9	5.2	TBD	-\$100	Pending
TLU-2	Fuel Efficient Replacement Tires	0.0	0.027	0.096	TBD	-\$90	Pending
TLU-3	Vehicle MPG Consumer Information	<i>Included in TLU-1 and TLU-2</i>					Pending
TLU-4	Financial and Market Incentives for Low GHG Vehicle Ownership and Use	<i>Not Quantified</i>					Pending
TLU-5	Growth and Development Bundle	0.0	0.047	0.260	< 0	< 0	Pending
TLU-6	Low Carbon Fuels	<i>In Progress</i>					Pending
TLU-7	Heavy Duty Vehicle Emissions Standards and Retrofit Incentives	0.0	0.020	0.162	\$12.8	TBD	Pending
TLU-8	Heavy-Duty Vehicle and Locomotive Idle Reduction	0.005	0.015	0.127		TBD	Pending
TLU-9	Procurement of Efficient Fleet Vehicles	<i>Included in other policy options</i>					Pending

	Mitigation Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2020	Total 2007–2020			
TLU-10	Transportation System Management	<i>In Progress</i>					Pending
TLU-11	Intermodal Freight Transportation	<i>0.023</i>	<i>0.091</i>	<i>0.589</i>	<i>TBD</i>	<i>TBD</i>	Pending
TLU-12	Off-Road Engines and Vehicles GHG Emissions Reductions	<i>Not Quantified</i>					Pending
TLU-13	Reduced GHG Emissions from Aviation	<i>Not Quantified</i>					Pending
	SECTOR TOTAL AFTER ADJUSTING FOR OVERLAPS	<i>0.028</i>	<i>1.100</i>	<i>6.434</i>	<i>TBD</i>	<i>TBD</i>	Pending
	SECTOR TOTAL PLUS RECENT POLICY ACTIONS	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>	Pending

Table 4.
Agriculture, Forestry, and Waste Management Technical Work Group
Summary List of Pending Policy Options

	Mitigation Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Level of Support
		2010	2020	Total 2007–2020			
AFW-1	Agricultural Soil Carbon Management – Conservation/No-Till Agricultural Soil Carbon Management – Organic Farming	0.06	0.20	1.4	0	0	TBD
AFW-2	Biodiesel Production (Incentives for Feedstocks and Production Plants)	0.03	0.39	3.0	79	27	TBD
AFW-3	Ethanol Production	0.02	0.39	2.2	10	4	TBD
AFW-4	Incentives for Enhancing GHG Benefits of Conservation Provisions of Farm Bill Programs						TBD
AFW-5	Preserve Open Space and Working Lands						TBD
AFW-6	Forest Health Programs for Carbon Management						TBD
AFW-7	Expanded Use of Biomass Feedstocks for Energy Use						TBD
AFW-8	Afforestation and Reforestation Programs						TBD
AFW-9	Improved Management and Restoration of Existing Stands						TBD
AFW-10	Expanded Use of Wood Products for Building Materials						TBD
AFW-11	Programs to Promote Local Food and Fiber						TBD
AFW-12	Enhanced Solid Waste Recovery and Recycling	0.24	0.74				TBD
	SECTOR TOTAL AFTER ADJUSTING FOR OVERLAPS						

	Mitigation Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Level of Support
		2010	2020	Total 2007–2020			
	REDUCTIONS FROM RECENT ACTIONS (table to be added below)						
	SECTOR TOTAL PLUS RECENT ACTIONS						

Table 5.
Cross-Cutting Issues Technical Work Group
Summary List of Pending Policy Options

	Policy Option	GHG Reductions (MMtCO ₂ e)			Net Present Value 2007–2020 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Status of Option
		2010	2020	Total 2007–2020			
CC-1	GHG Inventories and Forecasts	<i>Not Quantified</i>					Pending
CC-2	State GHG Reporting	<i>Not Quantified</i>					Pending
CC-3	State GHG Registry	<i>Not Quantified</i>					Pending
CC-4	State Climate Public Education and Outreach	<i>Not Quantified</i>					Pending
CC-6	Options for State GHG Goals or Targets	<i>Not Quantified</i>					Pending
CC-7	The State’s Own GHG Emissions	<i>Not Quantified</i>					Pending