



www.mnclimatechange.us

Catalog of State Actions

Energy Supply (ES) Working Group

Draft Prepared for Climate Change Advisory Group (CCAG)

Meeting #2 – June 14, 2007

A catalog of state-level, GHG-reducing actions and policy options based on actions undertaken or considered by state, local and private actors.

Key to Future Rankings of Options in the Tables that Follow:

Potential GHG Emission Reductions <u>1/</u>	Potential Cost or Cost Savings <u>1/ 2/</u>
High (H): At least 1.0 million metric tons (MMt) carbon dioxide equivalent (CO ₂ e) per year by 2020 (~1% of current MN emissions)	High (H): \$50 per metric ton CO ₂ e (tCO ₂ e) or above
Medium (M): From 0.1 to 1.0 MMtCO ₂ e per year by 2020	Medium (M): \$5-50/tCO ₂ e
Low (L): Less than 0.1 MMtCO ₂ e per year by 2020, or 1 MMtCO ₂ e by 2050	Low (L): Less than \$5/tCO ₂ e
Uncertain (U): Not able to estimate at this time	Negative (Neg): Net cost savings
	Uncertain (U): Not able to estimate at this time
<u>1/</u> Several measures may overlap in terms of emissions reductions and/or cost impacts. Estimates assume measures would be implemented independently from other measures.	
<u>2/</u> Costs are denoted by a positive number. Cost savings (i.e., “negative costs”) are denoted by a negative number.	

Definition of “Priorities for Analysis”:

- **High:** High priority options will be analyzed first.
- **Medium:** Medium priority options will be analyzed next, time and resources permitting.
- **Low:** Low priority options will be analyzed last, time and resources permitting.

Notation of Options:

- **Options marked in bold an asterisk (*) indicate some of the related state actions that are approved or underway, as described further in the companion options description document. TWG members are encouraged to provide information on other relevant actions.**

Energy Supply (ES)

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Other Considerations: Jobs, Fuel Imports, Externalities, Feasibility	Priority for Analysis	Notes
ES-1 EMISSIONS POLICIES AND OVERARCHING ITEMS						
1.1	GHG cap and trade					
1.2	Carbon (GHG) tax					
1.3	Generation Performance Standards or Mitigation Requirements					
1.4	Voluntary GHG targets					
1.5	Technology R&D					
1.6	Metro Emissions Reduction Project *(S)					From MN Recent Action List
ES-2 RENEWABLE ENERGY AND ENERGY EFFICIENCY						
2.1	Renewable and/or Environmental Portfolio Standard *(S)					<u>From MN Recent Action List</u> Renewable Energy Objective 25 X 25
2.2	Grid-based Renewable Energy Incentives and/or Barrier Removal					
2.3	Distributed Renewable Energy Incentives and/or Barrier Removal *(S)					<u>From MN Recent Action List</u> Renewable Energy Production Incentive
2.4	Green Power Purchases and Marketing *(S)					<u>From MN Recent Action List</u> Green Power Pricing Options
2.5	Combined Heat and Power (CHP) Incentives and/or Barrier Removal					

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Other Considerations: Jobs, Fuel Imports, Externalities, Feasibility	Priority for Analysis	Notes
2.6	Pricing strategies to promote renewable energy and/or CHP (e.g. net metering)					
2.7	Renewable energy development issues (zoning, siting, etc.) *(S)					<u>From MN Recent Action List</u> Renewable Energy Production Incentive Community-Based Renewable Energy Development
2.8	Demand-side energy efficiency (RCI focus)					
2.9	Technology-focused initiatives (biomass, energy storage, etc.)					
2.10	Wind Energy Development *(S)					From MN Recent Action List
2.11	Solar or Wind Easements *(S)					From MN Recent Action List
2.12	Biomass for Electricity (i.e. District Energy St Paul, Laurentian) *(S)					From MN Recent Action List
ES-3	FOSSIL FUEL AND NUCLEAR ELECTRICITY					
3.1	Advanced fossil fuel technology incentives, support, or requirements (IGCC, CCS, etc.)					
3.2	Nuclear Power Support and Incentives					
3.3	Efficiency Improvements and Repowering Existing Plants					

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Other Considerations: Jobs, Fuel Imports, Externalities, Feasibility	Priority for Analysis	Notes
3.4	Biomass co-firing at fossil fuel power stations					
3.5	Technology-focused initiatives (fuel cells, energy storage, etc.)					
ES-4	Fuel Production, Processing, and Delivery					
4.1	Oil and Gas Production: GHG Emission Reduction Incentives, Support, or Requirements					
4.2	Natural Gas Transmission and Distribution					
4.3	Oil Refining: GHG Emission Reduction Incentives, Support, or Requirements					
4.4	Coal Production: GHG Emission Reduction Incentives, Support, or Requirements					
4.5	Coal-to-liquids Production: GHG Emission Reduction Incentives, Support, or Requirements					
4.6	Low-GHG Hydrogen production incentives and support					
ES-5	Carbon Capture and Storage or Reuse (CCSR)					
5.1	CCSR enabling policies					

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Other Considerations: Jobs, Fuel Imports, Externalities, Feasibility	Priority for Analysis	Notes
	(administration, regulation, liability, incentives)					
5.2	CCSR incentives					
5.3	R&D for CCSR					
ES-6	Other Energy Supply Options					
6.1	Transmission System Upgrading					
6.2	General Distributed Generation Support (Interconnection Rules, Net Metering, etc.)					
6.3	Reduce Transmission and Distribution Line Loss					
6.4	Environmental (emissions) Disclosure					