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## Catalog of State-Level GHG Reduction Policy Options Residential, Commercial, and Industrial

Prepared by The Center for Climate Strategies (CCS) for the Montana Climate Change Advisory Committee (CCAC) and its Scientific Advisory Panel (SAP) and Technical Work Groups (TWGs) based on actions undertaken or considered by all US states.

### Key to Future Rankings of Options in the Table that Follows:

Potential Emission Reductions <u>1/</u>	Potential Cost or Cost Savings <u>1/ 2/</u>
<b>High (H):</b> At least 1 Million Metric Tons (MMT) carbon dioxide equivalent (CO <sub>2</sub> e) per year by 2020 (~1% of current MT emissions)	<b>High (H):</b> \$50 per Metric Ton CO <sub>2</sub> e (MTCO <sub>2</sub> e) or above
<b>Medium (M):</b> From 0.1 to 1 MMT CO <sub>2</sub> e per year by 2020	<b>Medium (M):</b> \$5-50/MTCO <sub>2</sub> e
<b>Low (L):</b> Less than 0.1 MMT CO <sub>2</sub> e per year by 2020, or 1 MMT CO <sub>2</sub> e by 2050	<b>Low (L):</b> Less than \$5/MTCO <sub>2</sub> e
<b>Uncertain (U):</b> Not able to estimate at this time	<b>Uncertain (U):</b> Not able to estimate at this time
<p><small>1/ Several measures may overlap in terms of emissions reductions and/or cost impacts. Estimates assume measures would be implemented independently from other measures.</small></p> <p><small>2/ Costs are denoted by a positive number. Cost savings (i.e., “negative costs”) are denoted by a negative number.</small></p>	

### 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 will be marked with an asterisk (\*) at a later date to indicate options that are at least partially “base case” policies, i.e., that have been considered or undertaken at some level in Montana.

### Residential, Commercial, Industrial (RCI)

Option No.	GHG Reduction Policy Option	Priority for Analysis	Potential GHG Emissions Reduction	Potential Cost or Cost Savings	Ancillary Impacts, Feasibility Considerations	Notes
<b>RCI-1</b>	<b>ENERGY EFFICIENCY PROGRAMS, FUNDS, AND GOALS</b>					
1.1	Utility Demand Side Management (DSM) Programs for electricity, natural gas, propane, fuel oil					
1.2	Energy Efficiency Funds (e.g. Public Benefit Funds) administered by State agency, utility, or 3rd party (e.g. Energy Trust)					
<b>RCI-1</b>	<b>ENERGY EFFICIENCY PROGRAMS, FUNDS, AND GOALS (CONTINUED)</b>					
1.3	Energy Efficiency Requirements (e.g. Utility Savings Goals or Energy Portfolio Standards)					
1.4	Market transformation and technology development programs					
<b>RCI-2</b>	<b>APPLIANCE STANDARDS</b>					

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2.1	Expansion of State-level Appliance Efficiency Standards					
2.2	Support for Federal-level Appliance Efficiency Standards					
<b>RCI-3</b>	<b>BUILDINGS</b>					
3.1	Improved Building Codes					
3.2	Promotion and Incentives for Improved Design and Construction (e.g. LEED <sup>1</sup> , green buildings)					
3.3	Training and Education for Builders and Contractors (e.g. HVAC <sup>2</sup> sizing, duct sealing)					
3.4	Training of Building Code and other Officials in Energy Code Enforcement					
<b>RCI-3</b>	<b>BUILDINGS (CONTINUED)</b>					
3.5	Building Commissioning and Recommissioning, including Energy Tracking and Benchmarking					
3.6	Energy Management					

<sup>1</sup> LEED = Leadership in Energy Efficiency Design, a national building certification program.

<sup>2</sup> HVAC = Heating, Ventilation, and Air Conditioning

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	Training/Training of Building Operators					
3.7	Increased Use of Blended Cement (substituting fly ash or other pozzolans for clinker reduces CO <sub>2</sub> emissions)					
3.8	Reduction of Emissions from Diesel Engines Used in New Construction Developments					
<b>RCI-4</b>	<b>EDUCATION AND OUTREACH</b>					
4.1	Consumer education programs					
4.2	Introduce in School Curriculum					
<b>RCI-5</b>	<b>PRICING AND PURCHASING</b>					
5.1	Green Power Purchasing					
5.2	Bulk Purchasing Programs for Energy Efficiency or other Equipment (Public or Private sector)					
5.3	Net-metering policies					
5.4	Time of Use Rates					
<b>RCI-6</b>	<b>TECHNOLOGY-SPECIFIC POLICIES</b>					
6.1	Incentives for Renewable Energy Applications (Solar					

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	roofs, water heaters, etc.)					
6.2	Clean Combined Heat and Power					
6.3	Promotion and Tax or Other Incentives (e.g. EnergyStar, credits for solar hot water)					
6.4	Appliance Recycling/Pick-Up Programs					
6.5	White Roofs, Rooftop Gardens, and Landscaping (including Shade Tree Programs)					
<b>RCI-6</b>	<b>TECHNOLOGY-SPECIFIC POLICIES (CONTINUED)</b>					
6.6	Focus on specific end-uses/technologies: window AC units, lighting, water heating, plug loads, networked PC management, power supplies, motors, pumps, boilers, etc. Consumer products programs, may include incentives, retailer training, marketing and promotion, education, etc .					
<b>RCI-7</b>	<b>NON-ENERGY EMISSIONS (HFCS, PFCS, SF<sub>6</sub>, CO<sub>2</sub> PROCESS EMISSIONS</b>					

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7.1	Participation in Voluntary Industry-Government Partnerships					
7.2	Process Changes/Optimization					
7.3	Leak Reduction /Capture, Recovery and Recycling of Process Gases					
7.4	Use of Alternative Gases (other HFCs, hydrocarbon coolants/refrigerants, etc.)					
7.5	Cement Industry: Use of Alternative Fuels					
<b>RCI-8</b>	<b>GHG EMISSIONS-SPECIFIC GOALS AND POLICIES</b>					
8.1	Support for switching to less carbon-intensive fuels (coal and oil to natural gas or biomass)					
8.2	Industry-Specific Emissions Cap and Trade Programs					
8.3	Voluntary emissions targets					
8.4	Small-source Aggregation					
8.5	Negotiated Emissions or Energy Savings Agreements					

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<b>RCI-9</b>	<b>OTHER</b>					
9.1	Government Agency Requirements and Goals (including procurement)					
9.2	Focus on specific market segments: existing homes (weatherization), new construction, apartments, low income, etc.					
9.3	Reinvestment Fund					
9.4	Municipal Energy Management					
9.5	Focus on Small and Medium Enterprises (SMEs)					
9.6	Industrial ecology/ by-product synergy					
9.7	Industrial Audits					