

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

#	Name of Policy Option	Status
CC-1	GHG Inventories and Forecasts	Pending
CC-2	GHG Reporting	Pending
CC-3	GHG Registry	Pending
CC-4	Public Education and Outreach	Pending
CC-6	Options for Goals or Targets	Pending
CC-7	The State's Own GHG Emissions	Pending

## CC-1 GHG Inventories and Forecasts

### Policy Description

*NOTE: All red text is meant to reflect only an illustrative example.*

Greenhouse gas (GHG) emissions inventories and forecasts are essential to understanding the magnitude of all emission sources and sinks (both anthropogenic and natural), the relative contribution of various types of emission sources and sinks to total emissions, and the factors that affect trends over time. The initial use for inventories and forecasts will be to inform state leaders and the public on statewide trends, opportunities for mitigating emissions or enhancing sinks, and verifying GHG reductions associated with implementation of Montana's Climate Action Plan. However, it is expected that other uses of the data will be identified as the program evolves. The responsibility for preparing GHG inventories and sinks should reside with the Department of Environmental Quality (DEQ) which has the expertise needed to systematically compile information on GHG sources and sinks using established methods and data sources. Other state agencies as well as private facilities (sources) will need to provide data to DEQ on a periodic basis. This program should be integrated with existing DEQ inventory and forecast functions as seamlessly as possible. The inventory and forecast will be an on-going effort that will be improved over time based on improvements to the accuracy and completeness of data needed to support this effort.

### Policy Design

Recommendations for key program characteristics are noted in the *GHG Inventories and Forecasts Design Options Matrix*. Key elements include:

[Insert text as appropriate]

- **Goals:**
  - Develop a periodic, consistent, and complete inventory of emission sources and sinks on a continuing basis with forecasts to reasonable and realistic future years (5 and 10 years), to and including 2020 (and eventually beyond).
  - Inventory of all natural and man-made emissions generated within the boundaries of the state (i.e., production-based inventory approach) as well as emissions associated with energy imported and consumed in the state (i.e., consumption-based inventory approach).
  - Provide a projection of the emissions from the same source categories and on the same basis into the future for a realistic forecast of what the emissions will be in future years reflecting expected growth and application of scheduled and expected mitigation options.

- Provide a basis for documenting reductions and credits “by difference” from year to year.
- **Timing:** The program should be implemented as soon as possible as allowed by funding. The process should repeat as often as necessary to track significant reductions or increases, beginning with every year for major point (Title V) sources and every third year for other sources to be in agreement with routine EPA air emissions reporting requirements and regulations for other regulated air pollutants.
- **Coverage of parties:** All emission sources and sinks (both anthropogenic and natural) should be included.
- **Other:** [Insert text if/as appropriate]

### Implementation Mechanisms

[Insert text as appropriate]

### Related Policies/Programs in Place

[Insert text as appropriate]

### Types(s) of GHG Reductions

Establishing a GHG inventory and forecasting function within state government is an enabling policy to encourage tracking, management, and ultimately reduction of GHG emissions. It does not reduce GHG emissions itself per se. Public disclosure of GHG emissions may encourage sources to reduce emissions.

### Estimated GHG Savings and Costs per MTCO<sub>2e</sub>

This option could be considered an administrative and enabling function of the Climate Action Plan (including enabling any future cap and trade options) and will incur overhead costs but not directly reduce emissions per se except where these data motivate reductions for public relations by individual companies or sources.

- **Data Sources:** Many.
- **Quantification Methods:** Several – will be designed to follow standard, comparative and accepted approaches that allow exchange/sale of emission credits should this become a need in this state.
- **Key Assumptions:** [Insert text as appropriate]

### Key Uncertainties

- Adequacy of on-going funding for a statewide GHG inventory and forecasting function.

### Additional Benefits and Costs

[Insert text as appropriate]

### Feasibility Issues

[Insert text as appropriate]

**Status of Group Approval**

[Pending or Completed]

**Level of Group Support**

[Insert text as appropriate]

**Barriers to Consensus**

[Insert text as appropriate]



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## Cross-Cutting Issues Technical Working Group

### *Draft* GHG Inventories and Forecasts Design Characteristics Matrix

#### **Purpose and Goals of Inventories and Forecasts:**

1. Tracking GHG emissions trends
2. Identifying opportunities and areas for action
3. Others?

#	Design Element	Options	Design Considerations	Preliminary Recommendation
1.	<b>Responsibility for Preparing Periodic Inventories and Forecasts</b>	<ul style="list-style-type: none"> <li>• Sole responsibility with MT DEQ</li> <li>• Shared responsibility between DEQ and other state agencies</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose is to develop consistent, systematic inventories and forecasts from one year to the next.</li> <li>• Subject matter expertise is evolving rapidly.</li> </ul>	•
2.	<b>Inventory Frequency</b>	<ul style="list-style-type: none"> <li>• Annual</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Inventory reflects historical emissions.</li> <li>• Different sized sources currently required to report emissions on different schedules (e.g., major sources annually; minor sources every 5 years).</li> <li>• Must be consistent with any MT GHG Reporting Program, and should strive for consistency with other inventory and forecasting programs.</li> </ul>	•

#	Design Element	Options	Design Considerations	Preliminary Recommendation
3.	<b>Forecast Frequency and Periods</b>	<ul style="list-style-type: none"> <li>• Annual</li> <li>• Intervals</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Forecasts reflect estimates of future emissions.</li> <li>• Define future years for which emissions inventory is prepared (i.e., frequency and overall forecast period).</li> <li>• Define intervals for future year forecasts (e.g., annual, 5-year intervals relative to a base historical year).</li> <li>• Limitations exist on availability of activity data for projecting emissions (e.g., current Energy Information Administration (EIA) projections of fuel consumption only go to 2030).</li> <li>• Should strive for consistency with other inventory and forecasting programs.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
4.	<b>Greenhouse Gases Included</b>	<ul style="list-style-type: none"> <li>• Six “Kyoto gases” (CO<sub>2</sub>, HFCs, CH<sub>4</sub>, N<sub>2</sub>O, PFCs, SF<sub>6</sub>)</li> <li>• Black Carbon</li> </ul>	<ul style="list-style-type: none"> <li>• Must be consistent with any MT GHG Reporting Program, and should strive for consistency with other inventory and forecasting programs.</li> <li>• Broader array promotes inventory building, public information, identification of GHG strategies, etc.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

#	Design Element	Options	Design Considerations	Preliminary Recommendation
5.	<b>Basis for Calculating and Reporting Emissions</b>	<ul style="list-style-type: none"> <li>• Production based</li> <li>• Consumption based</li> </ul>	<ul style="list-style-type: none"> <li>• Production refers to emissions generated by sources in-state (e.g., emissions from power generated in-state whether consumed in-state or exported).</li> <li>• Consumption refers to “Production” based emissions plus imports and minus exports, at least for the energy sector.</li> </ul>	•
6.	<b>Emissions Quantification</b>	<ul style="list-style-type: none"> <li>• Calculation methods &amp; tools</li> <li>• Federal 1605(b) program details quantification of black carbon emissions.</li> </ul>	<ul style="list-style-type: none"> <li>• Apply current best practice methods (e.g., <i>GHG Protocol</i> and calculation tools).</li> <li>• Strive for consistency with other reporting and quantification programs.</li> <li>• Some “other” or “home grown” approaches may be necessary (e.g., Flashing emissions; IPIECA<sup>1</sup>, API’s<sup>2</sup> SANGEA™ GHG Emissions Software).</li> </ul>	•
7.	<b>Public Access &amp; Reports</b>	<ul style="list-style-type: none"> <li>• Internet access and/or Online reports</li> <li>• Paper reports</li> <li>• Both</li> </ul>	•	•

<sup>1</sup> IPIECA is the International Petroleum Industry Environmental Conservation Association.

<sup>2</sup> API is the American Petroleum Association.

#	Design Element	Options	Design Considerations	Preliminary Recommendation
8.	<b>Funding</b>	<ul style="list-style-type: none"> <li>• State-funded.</li> <li>• Emission-based fees (would require legislative approval).</li> <li>• Some combination?</li> <li>• Other?</li> </ul>	<ul style="list-style-type: none"> <li>• Inventories and forecasts can only be accomplished if adequate DEQ resources exist, so creative funding sources should be investigated (e.g., transaction fees, GHG credit sales, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
9.	<b>Periodic Reassessment of Inventory and Forecast Approach</b>	<ul style="list-style-type: none"> <li>• Authority</li> <li>• Purpose</li> <li>• Frequency</li> </ul>	<ul style="list-style-type: none"> <li>• DEQ and involved agencies should have the ability to periodically reassess and revise (if necessary) designs element of the inventory and forecasting program</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
10.	<b>Other?</b>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

## CC-2 State Greenhouse Gas Reporting

### Policy Description

*NOTE: All red text is meant to reflect only an illustrative example.*

GHG reporting reflects the measurement and reporting of GHG emissions at a statewide, sector, or sub-sector level to support tracking and management of emissions. GHG reporting can help sources identify emission reduction opportunities and reduce risks associated with possible future GHG mandates by moving “up the learning curve.” Tracking and reporting of GHG emissions would also help in the construction of periodic state GHG inventories. GHG reporting is typically a precursor for sources to participate in GHG reduction programs, opportunities for recognition, a GHG emission reduction registry, and to secure “baseline protection.” Further, developing a GHG reporting program could enable the state to influence the development of GHG reporting practices throughout the region and nation and build consistency with other state or regional GHG reporting programs.

### Policy Design

Recommendations for key program characteristics are noted in the *GHG Reporting Design Options Matrix*. Key elements include:

- Subject to consistently rigorous quantification, GHG reporting should not be constrained to particular sectors, sources, or approaches, in order to encourage GHG mitigation activities from all quarters.
- Mandatory GHG reporting should be phased in by sectors as rigorous, standardized quantification protocols, base data, and tools become available, and as responsible parties become clear. Entities should be allowed to report GHG emissions voluntarily before mandatory reporting applies to them; and the state, municipalities, and other jurisdictions should be allowed to report emissions associated with their own activities and any programs they may implement.
- Reporting should be applicable to all sources (e.g., combustion, processes, vehicles, etc.) but using common sense regarding de minimis emissions.
- The goal should be reporting of “organization-wide emissions within Montana” but with greatest possible “granularity” in order to facilitate baseline protection.
- Reporting should occur annually on a calendar-year basis for all six traditional GHGs and, to the extent possible, for black carbon.

- Reporting of direct emissions<sup>3</sup> should be required; reporting of emissions associated with purchased power and heat<sup>4</sup> should be phased in, and voluntary reporting of other indirect emissions<sup>5</sup> should be allowed.
- Every effort should be made to maximize consistency with federal, regional, and other states' GHG reporting programs.
- GHG emissions reports should be verified through self-certification and Montana DEQ spot-checks; to qualify for future registry purposes, reports should undergo third-party verification.
- Project-based emissions reporting should be allowed, when properly identified as such and quantified with equally rigorous consistency.
- The reporting program should provide for appropriate public transparency of reported emissions.
- **Goals:** Implementation of a Montana GHG Reporting Program as early as possible.
- **Timing:** As soon as possible, preferably by 2008.
- **Coverage of parties:** [Insert text as appropriate].

### Implementation Mechanisms

Reporting protocols, opportunities, and, in the case of mandatory reporting, underlying regulatory requirements.

### Related Policies/Programs in Place

Many sources in Montana report criteria pollutant emissions in order to comply with various federal and state regulatory programs. Most electric generating units are also required to report CO<sub>2</sub> emissions to the Energy Information Administration (EIA). Some sources may report GHG emissions on a voluntary basis to federal, state, or privately-run programs. Otherwise, there is no broad, statewide GHG reporting program in Montana.

### Types(s) of GHG Reductions

GHG reporting is an enabling policy to encourage management, and ultimately reduction, of GHG emissions. It does not reduce GHG emissions itself per se.

### Estimated GHG Savings and Costs per MTCO<sub>2</sub>e

The reporting and registry components of this policy option would help position Montana entities for participation in an emissions trading program should one develop in the future, leading to cost savings. Although establishment of a credible reporting and registry program is essential for participating in a trading program, these elements do not reduce GHG emissions themselves.

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<sup>3</sup> Defined as "Scope 1" emissions in the *GHG Protocol*.

<sup>4</sup> Defined as "Scope 2" emissions in the *GHG Protocol*.

<sup>5</sup> Defined as "Scope 3" emissions in the *GHG Protocol*.

### **Key Uncertainties**

Uncertainties exist with respect to quantification of some GHG emissions from some sources, but standard quantification protocols are rapidly being developed and accepted widely. There remain significant uncertainties with respect to how various state, regional, and/or federal GHG reporting programs may develop.

### **Additional Benefits and Costs**

Not applicable.

### **Feasibility Issues**

[Insert text as appropriate]

### **Status of Group Approval**

Pending.

### **Level of Group Support**

TBD.

### **Barriers to Consensus**

TBD.



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## Cross-Cutting Issues Technical Working Group *Draft* GHG Reporting Design Characteristics Matrix

### **WRI/WBCSD GHG Protocol's**

#### **Principles for GHG accounting and reporting:**

1. Relevance
2. Completeness
3. Consistency
4. Transparency
5. Accuracy
6. Enable other goals

#### **Potential Goals of GHG Reporting:**

1. Identifying reduction opportunities
2. Reducing risks (e.g., start learning curve)
3. Tracking GHG emissions, assisting the state in constructing annual inventories
4. Participating in voluntary programs
5. Participating in – or preparing for – mandatory programs
6. Precursor for registry participation
7. Opportunities for recognition
8. Public reporting
9. Consistency with other programs
10. Others?

#	Design Element	Characteristics	Design Considerations	Preliminary Recommendation
1.	Type of Program	<ul style="list-style-type: none"> <li>• Voluntary</li> <li>• Mandatory</li> </ul>	<ul style="list-style-type: none"> <li>• May need or want to constrain mandatory applicability to certain sectors and/or sources pending availability of accepted quantification protocols.</li> <li>• Mandatory reporting is in place in some states for permitted sources (ME, CT, etc.); anticipated soon for several others in Northeast and far West.</li> </ul>	•
2.	Sectors	<ul style="list-style-type: none"> <li>• All sectors eligible</li> <li>• Limited to certain sectors</li> </ul>	<ul style="list-style-type: none"> <li>• Participation may be limited by availability of quantification methods; may need to “stage” sector participation.</li> <li>• WRI calculation protocols: Stationary combustion, mobile, electric power, cement, iron &amp; steel, aluminum, pulp &amp; paper, wood products, lime, ammonia, purchased heat or power, others.</li> </ul>	•
3.	Sources	<ul style="list-style-type: none"> <li>• All</li> <li>• Stationary combustion emissions</li> <li>• Mobile combustion emissions</li> <li>• Process emissions</li> <li>• Fugitive emissions</li> </ul>	<ul style="list-style-type: none"> <li>• Could limit sources even within sectors, (e.g., via types, size thresholds, etc.).</li> <li>• Broader array promotes inventory building, public information, identification of GHG strategies, etc.</li> </ul>	•

#	Design Element	Characteristics	Design Considerations	Preliminary Recommendation
4.	<b>Organizational Boundary</b>	<ul style="list-style-type: none"> <li>• Entity-wide (e.g., corporation-wide)</li> <li>• Facility</li> <li>• Emissions unit or source point</li> <li>• Other (?)</li> </ul>	<ul style="list-style-type: none"> <li>• Clear definitions needed to avoid double counting where shared ownership exists.</li> <li>• Should strive to have design be consistent with possible future directions (e.g., mandatory reporting would not be enforceable above the facility level).</li> <li>• Combinations are possible (e.g., finer resolution aggregated to a greater whole).</li> </ul>	•
5.	<b>Reporting Period</b>	<ul style="list-style-type: none"> <li>• Annual               <ul style="list-style-type: none"> <li>- Calendar</li> <li>- Fiscal</li> </ul> </li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Should strive for consistency with other reporting programs.</li> </ul>	•
6.	<b>Greenhouse Gases Included</b>	<ul style="list-style-type: none"> <li>• Six “Kyoto gases” (CO<sub>2</sub>, HFCs, CH<sub>4</sub>, N<sub>2</sub>O, PFCs, SF<sub>6</sub>)</li> <li>• Black Carbon</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Should strive for consistency with other reporting programs.</li> <li>• Broader array promotes inventory building, public information, identification of GHG strategies, etc.</li> </ul>	•

#	Design Element	Characteristics	Design Considerations	Preliminary Recommendation
7.	<b>Scope of Emissions Covered</b>	<ul style="list-style-type: none"> <li>• Direct               <ul style="list-style-type: none"> <li>- “Scope 1”</li> </ul> </li> <li>• Indirect               <ul style="list-style-type: none"> <li>- “Scope 2” - Indirect from purchased Heat &amp; Electricity</li> <li>- “Scope 3” - other indirect (e.g., outsourced activities, employee travel, etc.)</li> </ul> </li> <li>• Both</li> </ul>	<ul style="list-style-type: none"> <li>• May need or want to “stage” coverage (e.g., start small &amp; expand).</li> <li>• Direct emissions most like current reporting requirements, but may omit GHG reduction opportunities or encourage direct-indirect trade-offs.</li> <li>• For many entities, most GHG emissions are from indirect emissions sources.</li> </ul>	•
8.	<b>Emissions Quantification &amp; Monitoring</b>	<ul style="list-style-type: none"> <li>• Calculation methods &amp; tools</li> <li>• Direct measurement (e.g., continuous emissions monitors (CEMs), stack testing)</li> </ul>	<ul style="list-style-type: none"> <li>• Should strive to use current best practice methods, such as <i>GHG Protocol</i> calculation tools, and to have consistency with other reporting programs.</li> <li>• Some “other” or “home grown” approaches may be necessary (e.g., Flashing emissions; IPIECA<sup>6</sup>, API’s<sup>7</sup> SANGEA™ GHG Emissions Software).</li> </ul>	•
9.	<b>Verification</b>	<ul style="list-style-type: none"> <li>• State verification</li> <li>• 3<sup>rd</sup> party verification</li> <li>• Self-certification</li> </ul>	<ul style="list-style-type: none"> <li>• If mandatory, the state may be able to use current verification procedures for criteria pollutants.</li> <li>• Montana DEQ does 3<sup>rd</sup> party verification?</li> </ul>	•

<sup>6</sup> IPIECA is the International Petroleum Industry Environmental Conservation Association.

<sup>7</sup> API is the American Petroleum Association.

#	Design Element	Characteristics	Design Considerations	Preliminary Recommendation
10.	<b>Public Access &amp; Reports</b>	<ul style="list-style-type: none"> <li>• Internet access and/or Online reports</li> <li>• Paper reports</li> <li>• Both</li> </ul>	<ul style="list-style-type: none"> <li>• “Confidential Business Information” (CBI) concerns</li> </ul>	•
11.	<b>Project Level Reporting or “Offsets”</b>	<ul style="list-style-type: none"> <li>• Yes/No</li> <li>• Constrain</li> </ul>	<ul style="list-style-type: none"> <li>• WRI: Raises quantification, baseline, “additionality,” secondary effects, reversibility, and double-counting issues.</li> <li>• Location of co-benefits achieved.</li> <li>• May be most useful when there is an externally-imposed constraint (e.g., a “Cap”).</li> </ul>	•
12.	<b>Funding</b>	<ul style="list-style-type: none"> <li>• State-funded</li> <li>• Mandated requirement</li> <li>• Emission-based fees (would require legislative approval).</li> <li>• Other? A combination?</li> </ul>	<ul style="list-style-type: none"> <li>• Reporting is a necessary cornerstone for a GHG registry, so it may be appropriate to have registry participants share support costs.</li> </ul>	•
13.	<b>Others?</b>	•	•	•

## CC-3 State Greenhouse Gas Registry

### Policy Description

*NOTE: All red text is meant to reflect only an illustrative example.*

A GHG registry enables measurement and recording of GHG emissions reductions at a macro- or micro-scale level in a central repository with a “transaction ledger” capacity to support tracking, management, and “ownership” of emission reductions as well as to encourage GHG reductions, to enable potential recognition, baseline protection, and/or the crediting of actions by implementing programs and parties in relation to possible emissions reduction goals, and to provide a mechanism for regional, multi-state, and cross-border cooperation. Subject to appropriately rigorous quantification, participation in a GHG registry should not be constrained to particular sectors, sources, or approaches so as to encourage GHG mitigation activities from all quarters. In particular, a GHG registry should be able to incorporate activities associated with all of the options that the CCAC approves, whether reflective of reductions in emissions of GHGs or increases in biological or geological sequestration of carbon.

### Policy Design

Recommendations for key program characteristics are noted in the *GHG Registry Design Options Matrix*. Key elements include:

- **Goals:** The TWG recommends that Montana actively engage with other states in developing a regional or national GHG registry that will comprehensively meet the state’s needs. If no regional or national multi-state registry option will fully meet Montana’s needs, the state should still join and participate to the greatest extent possible, and develop whatever supplemental registry capacity is required to meet the remaining specific needs of Montana sources (e.g., registration of carbon sinks associated with reforestation). Together, these approaches should incorporate the activities associated with all options the CCAC recommends, provide adequate quality verification, and allow project-level reporting. Costs should be borne primarily by participants. Recommendations for key registry design characteristics build off the GHG Reporting mitigation option (CC-2). Key elements include:
  - Geographic applicability at least at the statewide level and as broadly (i.e., regionally or nationally) as possible.
  - Allowing sources to start as far back chronologically as good data exists, as affirmed by third-party verification, and allowing registration of project-based reductions or “offsets” that are equally rigorously quantified.

- Incorporating adequate safeguards to ensure that reductions aren't double-counted by multiple registry participants, and providing appropriate transparency.
  - Striving for maximum consistency with other state, regional, and/or national efforts; greatest flexibility as GHG mitigation approaches evolve; and providing guidance to assist participants.
  - Allowing the state to be a valid participant for reductions associated with its programs, direct activities, or efforts, including ownership of emission reductions associated with the properties (stationary and mobile) it owns or leases. The state should also be allowed to register emission reductions and participate in emission trading. The revenue associated with the sale of emission reduction credits generated by the state could be used to support the GHG emission inventory, forecasting, and reporting functions within state government.
- **Timing:** As soon as possible after a GHG reporting program is operating.
  - **Coverage of parties:** Coverage should include all entities that can verify ownership of GHG emission reductions.

#### Implementation Mechanisms

The program should probably be overseen by MT DEQ; costs should be shared by participants benefiting from the registry.

#### Related Policies/Programs in Place

[Insert text as appropriate]

#### Types(s) of GHG Reductions

[Insert text as appropriate]

#### Estimated GHG Savings and Costs per MTCO<sub>2e</sub>

Not applicable.

#### Key Uncertainties

There remain significant uncertainties with respect to how various state, regional, and/or federal GHG registry programs may develop. Involvement in early registry implementation – as issues are deliberated among states – will advantage Montana in their ultimate outcome.

#### Additional Benefits and Costs

None cited.

#### Feasibility Issues

[Insert text as appropriate]

#### Status of Group Approval

Pending.

**Level of Group Support**

TBD.

**Barriers to Consensus**

TBD.



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## Cross-Cutting Issues Technical Working Group *Draft* GHG Registry Design Characteristics Matrix

### Notes:

- Builds upon GHG Reporting Design Characteristics Matrix
- Some Reporting preferences could be outweighed by Registry preferences (e.g., if a regional registry has different specs).

### Potential Goals of GHG Registry:

1. Recording of GHG reductions (vs. emissions)
2. A central, independent repository for credible info about emissions activities
3. A “transaction ledger” – providing data management & accounting critical for trading (with or without a cap)
4. “Baseline protection” – enabling early action current or future credit for trading
5. An incentive to track & manage emissions, seek productivity and energy efficiency gains, accelerate learning curve regarding competitiveness & carbon markets
6. Enhance public recognition and demonstrate corporate citizenship
7. Possible vehicle for regional, multi-state, & cross-border cooperation
8. Others?

#	Design Element	Characteristics	Design Considerations	Preliminary Recommendation
<b>1.</b>	<b>Key Design Criteria (beyond GHG Reporting Design Characteristics Matrix)</b>			
1.1	Define geographical boundaries	<ul style="list-style-type: none"> <li>• State-only</li> <li>• Regional (or broader)</li> </ul>	<ul style="list-style-type: none"> <li>• Span of control</li> <li>• Cost, economies of scale, &amp; broader = better?</li> </ul>	•
1.2	Verification	<ul style="list-style-type: none"> <li>• State verification</li> <li>• Third-party verification</li> </ul>	<ul style="list-style-type: none"> <li>• See GHG Reporting Design Characteristics Matrix</li> </ul>	•
1.3	Base Year	<ul style="list-style-type: none"> <li>• Single specified year</li> <li>• Single entity-chosen year</li> <li>• Average of multiple years</li> <li>• Adjustment rules?</li> </ul>	<ul style="list-style-type: none"> <li>• Flexibility vs. Simplicity</li> <li>• Must have good data for Base Year.</li> </ul>	•
1.4	Project-level submittals	<ul style="list-style-type: none"> <li>• Yes / No / Constrain</li> </ul>	<ul style="list-style-type: none"> <li>• Against what baseline?</li> <li>• Additionality issues (what would have happened anyway)?</li> </ul>	•
1.5	“Offsets”	<ul style="list-style-type: none"> <li>• Yes / Some / No</li> </ul>	<ul style="list-style-type: none"> <li>• Co-benefits location?</li> <li>• Nature / character?</li> </ul>	•
1.6	Start Date	•	<ul style="list-style-type: none"> <li>• Establish a “to be in operation” date?</li> </ul>	•
1.7	Ownership	•	<ul style="list-style-type: none"> <li>• Risk of double-counting</li> </ul>	•
1.8	Transparency	•	•	•

#	Design Element	Characteristics	Design Considerations	Preliminary Recommendation
1.9	Others?	•	•	•
<b>2.</b>	<b>Technical Issues</b>			
2.1	Treatment of minority ownership	•	• <i>GHG Protocol</i>	•
2.2	Merger & acquisition issues	•	• <i>GHG Protocol</i>	•
2.3	Quality Assurance; Uncertainty Analysis	•	• <i>GHG Protocol</i>	•
2.4	Regulatory guidance (Protocols, guidance documents, etc.)	•	•	•
2.5	Data flow; filing methods, etc.	•	• Confidential business information (CBI), legal authority, etc.	•
2.6	Others?	•	•	•
<b>3.</b>	<b>Ancillary, Administrative, &amp; Operational Issues</b>			
3.1	Location (Agency)	<ul style="list-style-type: none"> <li>• MT DEQ?</li> <li>• Other?</li> </ul>	• Regional potential	•
3.2	Software; Web Interface, etc.	<ul style="list-style-type: none"> <li>• State-specific</li> <li>• CCAR, RGGR, CCX, ERT, EATS?</li> <li>• Other?</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple needs (emissions inventory, allowances, mandatory, voluntary, etc.)</li> <li>• Rapidly changing “state of the art”</li> </ul>	•

#	Design Element	Characteristics	Design Considerations	Preliminary Recommendation
3.3	Cost	<ul style="list-style-type: none"> <li>• Transaction fee</li> <li>• Publicly supported?</li> <li>• Other?</li> </ul>	<ul style="list-style-type: none"> <li>• Development costs</li> <li>• Ongoing operating costs</li> </ul>	•
3.4	Oversight & Management	<ul style="list-style-type: none"> <li>• MT DEQ</li> <li>• Publicly appointed board</li> <li>• Other?</li> </ul>	•	•
3.5	Reporting of Results; Recognition	•	•	•
3.6	Others?	•	•	•

## CC-4 State Climate Public Education and Outreach

### Policy Description

*NOTE: All red text is meant to reflect only an illustrative example.*

Public education and outreach can support GHG emissions reduction efforts at the macro or micro-scale level in relation to emissions reduction programs, policies, or goals. Public education and outreach is vital to fostering a broad awareness of climate change issues and effects (including co-benefits, such as clean air and public health) among the state's citizens. Such awareness is necessary to engage citizens in actions to reduce GHG emissions. Public education and outreach efforts should integrate with and build upon existing outreach efforts involving climate change and related issues in the state. Ultimately, public education and outreach will be the foundation for the long-term success of all the mitigation actions proposed by the CCAC as well as those which may evolve in the future.

### Policy Design

The TWG recommends that the State lead by example in its own education and outreach activities by establishing a pro-active public education and outreach capability, and using it to target education and outreach activities to five specific audiences:

- Policymakers (legislators, regulators, executive branch, agencies) – because implementation of climate actions hinges on policymakers' approval.
- Younger Generations – by integrating climate change into educational curricula, post-secondary degree programs, and professional licensing programs.
- Community Leaders & Community-Based Organizations (e.g., institutions, municipalities, service clubs, social & affinity groups, non-governmental organizations, etc.) – in order to recognize leadership; share success stories and role models; and expand climate involvement and participation within civic society.
- General Public – to increase awareness and engage citizens in climate actions in their personal and professional lives.
- Industrial and Economic Sectors – in order to recognize leadership; share success stories and role models; and expand climate involvement and participation within the business community.

Specific public education and outreach suggestions are provided in the accompanying *GHG Education Design Options Matrix*.

- **Goals:** Not applicable.

- **Timing:** Public education and outreach efforts should commence as rapidly as possible.
- **Coverage of parties:** Probably overseen largely by Montana DEQ, but involving many parties.

**Implementation Mechanisms**

Public education and outreach.

**Related Policies/Programs in Place**

None cited.

**Types(s) of GHG Reductions**

Not applicable.

**Estimated GHG Savings and Costs per MTCO<sub>2e</sub>**

Not applicable.

**Key Uncertainties**

None cited.

**Additional Benefits and Costs**

None cited.

**Feasibility Issues**

None cited.

**Status of Group Approval**

Pending

**Level of Group Support**

TBD.

**Barriers to Consensus**

TBD.



[www.mtclimatechange.us](http://www.mtclimatechange.us)

## Cross-Cutting Issues Technical Working Group *Draft* Education Design Characteristics Matrix

### Goals of Public Education & Outreach:

1. Overarching goal: Promote awareness among citizens about the impacts of climate change, solutions, and co-benefits of action.
2. Education provides a foundation essential for all climate action.
3. Others?

### General Approach:

1. Target the key general audiences and efforts below:
  - a. “Walking the Talk” in terms of the State’s own efforts and outreach activities
  - b. Policymakers (legislators, executive, agencies, regulators, etc.)
  - c. Future Generations
  - d. Community Leaders and Organizations
  - e. Business and Industry
  - f. The General Public
2. Ensure long-term sustenance of education and outreach efforts regarding climate change.

#	Measures & Strategies	Tasks & Examples	Notes & Elaborations
<b>1.</b>	<b>State Government Actions</b> The State should lead by example (i.e., “walk the talk”) regarding education and outreach.		
1.1	Create a multi-agency body to oversee on-going state climate efforts, starting with the implementation of CCAC policies adopted by the Governor; report progress to the public annually.	<ul style="list-style-type: none"> <li>Assemble annual progress reports &amp; make them publicly available.</li> </ul>	<ul style="list-style-type: none"> <li>Staff the effort adequately; should have one or more “outreach coordinators” specifically tasked with outreach and coordination among agencies and organizations.</li> </ul>
1.2	Establish an Education & Outreach Subcommittee of the body established in §1.1 to educate audiences regarding CCAC policies, and to oversee those relating to education.	<ul style="list-style-type: none"> <li>Lead implementation of education &amp; outreach measures.</li> <li>First task: Identify already existing resources &amp; programs.</li> <li>Identify additional needs and potential funding sources.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
1.3	Include state public education and higher education officials in the bodies established in §1.1 & §1.2.	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>A “two-way street”: education officials bring research &amp; info to the body, act as outreach arm for reaching students and others.</li> </ul>
1.4	Educate state employees across-the-board, and assign “point persons” to do so on an on-going basis.	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
1.5	Disaggregate the State’s GHG emissions to the agency level and require annual agency-specific reports on GHG reduction progress.	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Make agency-specific reports public as part of the report in §1.1.</li> </ul>

#	Measures & Strategies	Tasks & Examples	Notes & Elaborations
<b>2.</b>	<b>Target Audience: Policymakers (legislators, regulators, executive branch, agencies)</b> Implementation of climate actions hinges on policymakers' understanding and approval.		
2.1	Educate policy makers on climate change & CCAC policies in order to promote acceptance and implementation.	<ul style="list-style-type: none"> <li>• Conduct regular legislative briefings.</li> <li>• Identify &amp; offer agency-specific information on climate issues &amp; opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Use input derived from policy maker interactions to develop new mitigation measures going forward.</li> </ul>
2.2	Provide continuing outreach & assistance to Governor's office, legislature, and implementing agencies on a regular basis.	<ul style="list-style-type: none"> <li>• Educate press liaisons from agencies, etc.</li> <li>• Provide regular press releases or updates on reductions, events, etc.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<b>3.</b>	<b>Target Audience: Future Generations</b> Integrate climate change into educational curricula, post-secondary degree programs, and professional licensing.		
3.1	Organize groups of educators to identify, assemble, and employ climate change curricula appropriate to age groups.	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Check out British Petroleum's <a href="http://www.aplusforenergy.org">www.aplusforenergy.org</a></li> </ul>
3.2	Public Education Department: include climate change in science and social studies performance standards; identify (a) gaps in climate change education, and (b) curriculum to fill any gaps.	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
3.3	Integrate "best practices" into public school design & construction to educate student (and parent's) first-hand in their communities & colleges (i.e., walk the talk).	<ul style="list-style-type: none"> <li>• Investigate whether Montana could provide bonding for school districts to fund energy efficient construction.</li> <li>• Include in-building signage &amp; displays to explicitly point out efficiency aspects built in to public buildings.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

#	Measures & Strategies	Tasks & Examples	Notes & Elaborations
3.4	Promote research into climate change and solutions at state universities.	•	•
3.5	Integrate climate change into existing and/or new educational competition programs (e.g., Envirothon, science fairs, etc.).	•	•
3.6	Work with science centers, zoos, and museums to include a climate science focus appropriate to their core mission.	• A key area for an Outreach Coordinator to focus on	<ul style="list-style-type: none"> <li>• Examples exist in other regions (e.g., Clean Air-Cool Planet science center initiative)</li> <li>• Could provide speaking opportunities for teachers; have college professors host forums for high school students on weekend, etc.</li> </ul>
3.7	Introduce core competencies on climate change into professional licensing programs (e.g., energy efficiency in building design and construction, use of recycled materials, etc.)	•	•
<b>4.</b>	<b>Target Audience: Community Leaders &amp; Community-Based Organizations</b> (Institutions, municipalities, service clubs, social & affinity groups, NGOs, etc.) Recognize leadership; share success stories & role models; expand involvement and participation; within civic society.		
4.1	Identify individual community leaders who are acting effectively on climate change; showcase and share their successes.	<ul style="list-style-type: none"> <li>• Enlist/encourage them to be a de facto “speakers’ Bureau.”</li> <li>• Host discussion forums featuring them.</li> </ul>	<ul style="list-style-type: none"> <li>• Include all walks of work &amp; life (retail, services, manufacturing, healthcare, auto, facilities, etc.)</li> <li>• Put examples, guidance, links, contacts, etc. up on the web clearinghouse.</li> </ul>

#	Measures & Strategies	Tasks & Examples	Notes & Elaborations
4.2	Identify “late bloomer” individuals and target a special effort to include, educate, and prod them to act.	•	•
4.3	Engage associations and participate in their meetings periodically to educate them about climate change and sector-specific mitigation actions.	•	•
4.4	Develop statewide recognition program(s) for community leaders and entities.	•	•
4.5	Organize & host outreach events that focus on leading by example, sharing how-to, co-benefits, illuminating financial risks and opportunities, etc.	•	•
4.6	Identify, assist, and leverage community-based organizations with expertise or interest in climate-related issues	<ul style="list-style-type: none"> <li>• Faith community</li> <li>• Service clubs; sportsmen; recreational/hobbyist groups</li> <li>• Metropolitan planning organizations</li> <li>• environmental, social, &amp; civic advocacy organizations</li> </ul>	•
4.7	Work with community-based organizations to identify & build upon climate issues related to their core mission	<ul style="list-style-type: none"> <li>• Public health vs. new disease vectors?</li> <li>• Low-income vs. additional stressors?</li> </ul>	•

#	Measures & Strategies	Tasks & Examples	Notes & Elaborations
4.8	Support and facilitate outreach and education within community-based organization regarding climate change issues and actions	<ul style="list-style-type: none"> <li>• Provide content for websites, newsletters, listservs?</li> <li>• Coach &amp; assist Community Outreach coordinators?</li> </ul>	•
4.9	Develop & coordinate a network of community-based organizations acting on climate change so they can link up, organize joint events, etc.	<ul style="list-style-type: none"> <li>• Community Outreach coordinators?</li> <li>• Assistance in organizing</li> </ul>	•
4.10	Encourage cities to join ICLEI's <sup>8</sup> Cities for Climate Protection program	•	•
4.11	Encourage cities to join the U.S. Mayors Climate Protection Agreement <sup>9</sup>	•	•
<b>5.</b>	<b>Target Audience: Business and Industry</b> Promote best practices, recognize leadership; share success stories & role models; expand involvement and participation.		
5.1	Extend training programs for RCI building and facility operators	•	•
5.2	Promote energy-tech economic development	•	•
5.3	Promote R&D & demo projects for economic development	•	•

<sup>8</sup> See [www.iclei.org](http://www.iclei.org).

<sup>9</sup> See <http://www.ci.seattle.wa.us/mayor/climate/>.

#	Measures & Strategies	Tasks & Examples	Notes & Elaborations
5.4	Promote combined heat and power (CHP) in order expand its use and technological penetration	•	•
5.5	Inform sources of the advantages of registering GHG emission reductions	•	•
5.6	Develop and provide concrete information on co-benefits to entities in order to boost their climate efforts	•	•
<b>6.</b>	<b>Target Audience: General Public</b> Increase awareness and engage in climate actions in personal and professional lives.		
6.1	Educate broadcasters, reporters, editorial boards, etc. about climate change, the risks it imposes, and solutions	•	•
6.2	Work with state broadcasters and print media associations to develop & run climate change public service announcements	•	•
6.3	Conduct public polling to benchmark strength and depth of climate understanding; track over time to measure progress and better tailor outreach efforts	•	•

#	Measures & Strategies	Tasks & Examples	Notes & Elaborations
6.4	Keep a high profile on climate change issues and actions through regular public mention by Governor and other public leaders	•	•
6.5	Develop and use a state-based “brand” on climate awareness and action	•	•
6.6	Develop & maintain a state climate change website for the public; establish & maintain a web-based clearinghouse for climate change information and education resources.	• Link to scientific developments, What you can do, How you can help, What the state is doing, etc.	•
6.7	Build recognition of the sources (causes) of GHG emissions	•	•
6.8	Work with existing company outreach efforts to customers (e.g., utilities) to enhance awareness of climate change issues & actions	<ul style="list-style-type: none"> <li>• Retail advertising and/or “bill stuffers”</li> <li>• Environmental disclosure of electricity fuel mix/emissions; recycled content, etc.</li> <li>• Product messages (e.g., yogurt labels)</li> </ul>	•
6.9	Promote local farm produce	•	•
6.10	Promote clean fuel technologies	•	•
6.11	Promote green power in order to expand subscription	•	•

#	Measures & Strategies	Tasks & Examples	Notes & Elaborations
6.12	Require environmental disclosure on utility bills	•	•
6.13	Add GHG to Air Awareness efforts	•	•

## CC-6 Options for State Greenhouse Gas Goals or Targets

### Policy Description

*NOTE: All red text is meant to reflect only an illustrative example.*

Statewide GHG emissions reduction goals and/or targets for future time periods.

### Policy Design

[Insert text as appropriate]

- **Goals:** [Insert text as appropriate]
- **Timing:** [Insert text as appropriate]
- **Coverage of parties:** [Insert text as appropriate]

### Implementation Mechanisms

[Insert text as appropriate]

### Related Policies/Programs in Place

[Insert text as appropriate]

### Types(s) of GHG Reductions

[Insert text as appropriate]

### Estimated GHG Savings and Costs per MTCO<sub>2e</sub>

[Insert text as appropriate]

### Key Uncertainties

Future growth rate in emissions, particularly after 2020, as well as the timing and scope of implementation of the CCAC recommendations for specific policy options.

### Additional Benefits and Costs

[Insert text as appropriate]

### Feasibility Issues

[Insert text as appropriate]

### Status of Group Approval

Pending

### Level of Group Support

TBD.

### Barriers to Consensus

TBD.

## CC-7 The State's Own GHG Emissions

### Policy Description

*NOTE: All red text is meant to reflect only an illustrative example.*

[Insert text as appropriate]

### Policy Design

[Insert text as appropriate]

- **Goals:** [Insert text as appropriate]
- **Timing:** [Insert text as appropriate]
- **Coverage of parties:** [Insert text as appropriate]

### Implementation Mechanisms

[Insert text as appropriate]

### Related Policies/Programs in Place

[Insert text as appropriate]

### Types(s) of GHG Reductions

[Insert text as appropriate]

### Estimated GHG Savings and Costs per MTCO<sub>2e</sub>

[Insert text as appropriate]

### Key Uncertainties

Future growth rate in emissions, particularly after 2020, as well as the timing and scope of implementation of the CCAC recommendations for specific policy options.

### Additional Benefits and Costs

[Insert text as appropriate]

### Feasibility Issues

[Insert text as appropriate]

### Status of Group Approval

Pending

### Level of Group Support

TBD.

### Barriers to Consensus

TBD.