

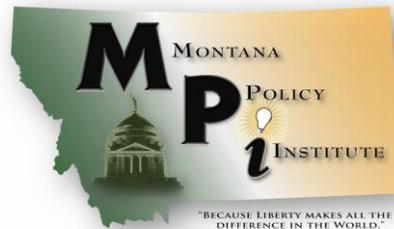
Continuing the Debate

Challenging the Economics of Montana's Climate Change Action Plan

A Peer Review

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“...the debate among the scientists is over. There is no more debate.”¹

The debate isn't over. Honest people still do disagree about the causes and consequences of climate change. For this reason, policy recommendations that rely upon debatable assumptions and flawed economic principles as a basis for drawing further conclusions deserve special scrutiny. This seems to be the case with the Montana Climate Change Advisory Group's recently released Montana Climate Change Action Plan (MCCAP).

The Advisory Group's plan was a collaborative effort with the Center for Climate Strategies (CCS), a Pennsylvania-based nonprofit. This partnership resulted in unstated going-in assumptions that greenhouse gases (GHG) are ruining our climate and that no cost is too great in reducing them. Given these assumptions, the Group's conclusions were predictable, even predetermined. But that's not science, it's advocacy. A group with a known predisposition was called in to assist in providing a predetermined outcome based upon predetermined “facts.” It's not only proper but necessary that these findings undergo some type of scrutiny, especially given the potentially enormous costs the MCCAP's recommendations could entail.

The purpose of this peer review is not to debate the science, but to examine the economic arguments behind the MCCAP proposals. Findings fall into three broad categories:

- Costs and benefits are not quantified in a way that allows them to be compared. Estimated costs to reduce GHGs of between \$93 million to \$691 million dollars are set against metric tons of GHG, without any attempt to weigh

the benefits of reducing those GHGs against the costs of reducing them.

- When estimating economic impacts, costs are misinterpreted as benefits, exhibiting a lack of understanding of basic economic principles.
- Cost estimates leave out important factors, including program expenses, alternative scenarios, demand-based consumer responses, and other factors, resulting in unrealistically low best-case figures.

Finally, many of the MCCAP's recommendations are alleged to make economic sense even absent government mandates. This begs the question: why do we need government intervention, mandates, and new bureaucracies to do what independent people acting in their own interests would do anyway? Either the costs and benefits are not accurately calculated, or the study contains yet another underlying assumption: that only the government is smart enough to fix the problem. This Peer Review argues the former case: that cost/benefit calculations are inadequate; and the Montana Policy Institute rejects the latter contention as an undue (and insulting) infringement on our basic rights and responsibilities as Montana citizens.

Unfortunately, these shortcomings disqualify the MCCAP as a scientifically sound basis for public policy. Many benefits of conservation and responsible environmental stewardship are self-evident and should be encouraged. But a real cost/benefit analysis using realistic assumptions and sound scientific methods and economic principles should be conducted before Montana policymakers decide to create new mandates, new bureaucracies, and new spending. The stakes are too high on both sides of the climate change issue to accept anything less. Let's continue the debate.

¹ Al Gore, “The Early Show,” May 31st, 2006

Introduction

The Montana Climate Change Advisory Group partnered with the Center for Climate Strategies (CCS) to create the Montana Climate Change Action Plan (MCCAP) to develop recommendations to reduce emissions of greenhouse gases (GHG) in Montana and to estimate the costs and benefits of their recommendations.

The Beacon Hill Institute has previously reviewed the cost-benefit methodology employed by CCS in four other states, and found three serious problems:

1. CCS failed to quantify benefits in a way that they can be meaningfully compared to costs;
2. CCS misinterpreted costs to be benefits when estimating economic impacts,; and
3. CCS understates the true costs of its recommendations because its estimates of costs left out important factors.

Unfortunately for Montana policy makers, these same three problems plague the MCCAP study, rendering it unsuitable for making any informed policy decisions.

In this brief document, we first summarize the main findings of the MCCAP report. We then briefly review problems (1) and (2), before providing a more detailed analysis of problem (3), where we examine the individual cost and benefit assumptions made in the four programs proposed in the MCCAP report which had the highest net savings associated with them.

The MCCAP Plan

The MCCAP report contains 54 recommended policy actions to reduce GHG emissions. These policy options are classified as falling into five areas:

- 1) Residential, Commercial, Institutional and Industrial;
- 2) Energy Supply;
- 3) Transportation and Land Use;
- 4) Agriculture, Forestry, and Waste Management;
- 5) Cross-Cutting Issues (policies that impact more than one of the above sectors).

CCS facilitated and provided technical assistance in studying the five sectors. The MCCAP report quantifies forecasted emissions reductions for 37 of their recommended policies. They estimate that, if fully implemented, their recommendations would reduce Montana's GHG emissions by the year 2020 to a level 11.5 MMtCO₂e lower than the level that would otherwise occur if the policies were not implemented.

The MCCAP report claims that the implementation of these measures would result in only a modest net cost for the State's economy. The MCCAP report quantifies costs for 31 of the 54 recommended options. Surprisingly MCCAP claims that 15 of these options would generate net cost savings. If all options were

implemented, the MCCAP estimates that the recommendations would cost the state of Montana between \$93 million and \$691 million² (in present value terms) between now and 2020.

The estimated cost of between \$93 million and \$691 million grossly underestimates the true costs of implementing the policy options recommended by the MCCAP for GHG mitigation. As we show below, the cost-benefit methodology employed by CCS omits significant costs and frequently misconstrues certain costs to be benefits causing them to underestimate the true costs of their recommendations.

Problem 1: MCCAP fails to quantify benefits in a way that can be meaningfully compared to costs

A scientifically-sound cost-benefit analysis should clearly spell out all of its assumptions, estimate the physical impacts that a particular policy change will have over time and then estimate the present value, in dollars, of both the benefits and the costs of the physical impacts. On this basis, a study should be able to conclude whether a given policy change is expected to provide benefits in excess of its costs.

However, the MCCAP report fails to estimate the dollar value of the main intended benefit – reduced GHG emission. The authors are explicit about this:

The principal benefit of the Climate Change Advisory Committee options is reduced GHG emissions, and this benefit was quantified simply as tons of emissions reduced. (p. 1-5)

However, without this information, the MCCAP report is unable to conduct a cost-benefit analysis at all. The goal, reduced GHG emissions, is measured in purely physical terms instead of dollars, which precludes a comparison of the value of reduced GHG emissions to the costs associated with reducing the emissions.

Are the mitigation options desirable? For a cost-benefit analysis to provide any guidance in answering this question, the MCCAP would need to compare the dollar value of reduced GHG emissions to the cost it estimates (incorrectly) of \$93 to \$691 million. Since they only quantify the physical benefits, we are left comparing reduced metric tons of GHG to dollars – essentially comparing apples and oranges.

Estimating a dollar value of reduced GHG emissions would require a number of steps. First, a full accounting of both societal costs and benefits from higher emissions would have to be constructed. Then the impact on these costs of the marginal changes in Montana’s emissions would have to be estimated. Because Montana’s GHG emissions are so small relative to the rest of the world’s emissions, it is quite possible that, even if there are large social costs associated with GHG emissions, no policy adopted by Montana would have any discernable impact on global climate change. Thus, no benefits can be assigned a dollar value.

² The variation in the cost estimates depends on whether the reference case or the high fossil fuel case is used in the determination of the net present value of implementation of the recommendations for the Energy Supply sector. The reference case estimates a cost in net present value terms of \$272 million and the high fossil fuel case estimates a cost of \$870 million for that sector.

Problem 2: When estimating economic impacts, MCCAP misinterprets costs to be benefits.

The MCCAP report sometimes mistakes costs for benefits. For the policy option RCII-1 Demand Side Management Programs, the MCCAP report cites numerous additional benefits beside the estimated \$141 million in net cost savings associated with adoption of the recommendation. The report cites “supporting local businesses” (p. F-9) as an additional benefit accruing to the citizens of Montana from adoption of RCII-1.

Certain local businesses may indeed benefit from participation in the proposed state-supported Alternative Energy Revolving Loan Program or by taking advantage of expanded tax credits for investment in energy efficiency. However, businesses are a means to an end – the production of valuable goods and services. Like jobs, the simple creation or support of a business is not a benefit. In fact, the business itself is a cost. In a market economy, value is added to society if the benefit of the goods and services a business provides are greater than the cost of the business.. However, any government program that seeks to add “support to local businesses” mistakes ends rather than the means central to the creation of value.

Problem 3: The estimates of costs leave out important factors, causing MCCAP to understate the true costs of its recommendations

Although the MCCAP report does not estimate the monetary value of benefits (reduced GHG emissions), it does attempt to quantify the monetary costs of 31 of their policy recommendations and it finds a net cost of between \$93 and \$691 million. But as mentioned above, the report also claims that there would actually be net savings, not net costs, for 15 of its mitigation recommendations.

This finding – that mitigating GHG emissions amounts to a free lunch in 15 of MCCAP’s proposals does not hold up under scrutiny, and is an artifact of MCCAP report’s unrealistic assumptions and incomplete listing of costs. To highlight these shortcomings, we now examine in more detail four policies that, according to the MCCAP report, would generate the greatest net cost savings. The four policies, which MCCAP estimates will save Montana a total of \$812 million, are listed in Table 1, next to the net cost savings that MCCAP claims would result if each of the policies were implemented.

	Program title	Net Cost Savings to MT by 2020 (\$ millions)
TLU - 1	Light Duty Vehicle Clean Car Standards	492
TLU - 2	Fuel Efficient Replacement Tires Program	86
RCI - 1	Demand Side Management Programs	141
RCI - 10	Industrial Energy Audits	93

Source: MCCAP report

TLU-1 Light-duty Vehicle Clean Car Standards

This proposal would require stricter California Clean Car standards for new light-duty vehicles in Montana. It would require new vehicles to emit less greenhouse gas and thus result in greater fuel efficiency.

The MCCAP report estimates that by implementing this program, the state would become more than \$492 million dollars wealthier between now and 2020. These gains are entirely attributable to cost savings associated with greater fuel efficiency that more than offset increased vehicle costs. Although unacknowledged in the MCCAP report, in other state studies CCS has conducted they have explicitly recognized that other studies estimate greater compliance costs that do not get offset by fuel savings and that others believe that manufacturers will have to reduce model choices in order to comply. For example, in its Minnesota Climate Change Advisory Group report, CCS cited another study which estimated California clean car standards would raise vehicle costs by \$3,000 and that fuel savings would offset less than half the cost to consumers (p. H37 of the Minnesota-CCAG Report). Had MCCAP used these estimates, the \$492 million in net cost savings would become a net cost to consumers. Given the range of estimates, a more responsible cost-benefit study would have constructed multiple scenarios and attached a probability to each in order to estimate an expected value. Instead the MCCAP report simply chose its favored estimate.

To illustrate: assume a project has a net present value if MCCAP's assumptions are correct of \$3 million and that there is a 60 percent chance the assumptions are correct. Further assume that there is a 40 percent chance that the payout will be negative \$8 million dollars because the assumptions didn't hold. MCCAP only uses their most likely forecast (\$3 million) but the correct approach would be to calculate the expected value which in this case would be negative \$1.4 million.

MCCAP makes no effort to construct scenarios that take account of the likelihood of differing outcomes. In fact, in the case of clean car standards when they have conflicting estimates in hand they only made use of their one favored estimate – essentially attaching a zero probability to forecasts from all other sources.

The failure to adjust for risk is not unique to this proposal. When looking at numerous speculative policies, MCCAP fails to forecast multiple scenarios and then adjust for their probability. All of the proposals are speculative in nature, but the uncertainty never makes it into the MCCAP's estimates. A more realistic approach to uncertainty would likely increase the net cost associated with the recommended mitigation options.

Moreover, if MCCAP is right that fuel savings will offset compliance costs without negatively impacting model choices, then surely drivers will demand such choices to reduce their fuel use out of their own self-interest thus undermining the need for the public policy. The appropriate counterfactual then is one where the market produces the recommended results without public policy and thus the benefits of the proposed program are zero. On the other hand, if we observe that people are not demanding these products, then there is good reason to believe that MCCAP's estimates of the cost savings are simply wrong; indeed, the presumption here is that the policy imposes a net cost.

TLU-2 Fuel Efficient Replacement Tires Program

Car manufacturers put low rolling resistance tires on their cars when feasible in order to better meet mandated fuel efficiency standards. However, when consumers replace tires they often buy less expensive and less fuel efficient replacement tires. This program would seek to get more consumers to replace tires with more fuel efficient tires.

To reach their cost savings estimate of \$86 million, MCCAP compares the increased cost of low rolling resistance tires to estimated fuel savings. Like the clean car standards, the authors never calculate multiple scenarios varying fuel cost and miles driven. However, in this case a major problem with their analysis is that they leave out all of the costs of the actual program. The cost of the tire and the fuel savings are the costs and benefits to the end consumer – not what the proposed program will cost.

What MCCAP proposes is an informational and research program to expand the voluntary use of these tires and to eventually mandate informational disclosures by the retailers. Costs of the program include (p. H-7):

- Developing a marketing program with tire dealers and consumers;
- University research;
- Technical assistance to manufacturers and distributors;
- Pilots and demonstrations to promote the technologies;
- Developing a state reporting system for tracking;
- Enforcement including spot checks to comply with mandatory labeling.

All of these costs are directly listed in the MCCAP report but they were explicitly left out of the projected cost of the program. Based on the available information in the report, the MCCAP study did not even attempt to make a forecast of the program's cost.

MCCAP has created a program to promote low rolling resistance tires – a product which already exists and consumers currently have the option to purchase. Then they forecast net savings from their program based on forecasts of consumer savings without including the program costs. Consumers already have the option of these savings but neglect to take advantage of them. MCCAP is essentially estimating the gains consumers could have taken advantage of (but didn't) and creating a program to encourage consumers to take advantage of these savings and in their forecast MCCAP leaves out the cost of the very program they create!

There could be some consumer ignorance of the availability of benefits from fuel saving tires. If so, the manufacturers already have an incentive to provide the relevant information so that they can increase their sales while consumers capture the benefits of fuel savings. No program is needed. The proposed program will be redundant and not create net benefits. Alternatively, consumers may dislike other features of low rolling resistance tires and that is why they choose not to purchase them. If that is the case, then the extra spending (which MCCAP leaves out) would be a net cost and consumers would not increase their use of the product. In either case the forecast \$86 million is incorrect.

RCII-1 Demand Side Management Programs

The entire gain from this program results from money saved from improved energy efficiency in buildings in excess of the cost of making the buildings more energy efficient. This raises a fundamental problem that arose with the both the clean car standards and low rolling resistance tires programs: if the private benefits are really so large, why are people not taking advantage of them already? If the savings are as great as the program estimates, consumers, who rationally maximize benefits, should already be making them. Either the program matters because consumers would not adopt these changes on their own, in which case the program imposes costs; or it is irrelevant because the changes would have been made anyway, in which case the policy generates no benefits. In either case, there is not the \$141 million in cost savings that the MCCAP report estimates.

RCII-10 Industrial Energy Audits

This program would set up a new agency of experts who will visit industrial sites to assess their power usage and provide recommendations to help them reduce greenhouse gas emissions and save on power costs. The agency would offer both information and financial incentives in the form of low or zero interest loans and tax incentives. The entirety of the \$93 million in savings is derived from avoided power costs.

Businesses are greedy profit maximizing enterprises. If this policy is really going to produce \$93 million in savings then these businesses are systematically leaving profits on the table. If the fuel savings could really offset the cost of hiring energy consultants to conduct audits the businesses already have an incentive to hire them. State funding of such an agency is unnecessary. Furthermore, if the fuel savings really justify conversion costs no tax incentives or subsidized loan programs need be offered.

This program again confronts the problem of the relevant counterfactual. Either the forecast costs are correct and the businesses would adopt these policies anyway so the net savings of the program is zero; or the estimates are incorrect and the free consultants and financial incentives are necessary in order to get the businesses to convert and the program has net costs, not net savings.

Conclusion

When it comes to the desirability of policies aimed at reducing GHG emissions, the MCCAP report provides zero guidance to policy makers. It fails to perform the most basic task of any cost-benefit analysis – quantifying both the costs and benefits in monetary terms so that they can be directly compared. The MCCAP report also finds net economic savings from many policies intended to reduce greenhouse gasses, even *without* counting the value of those reduced emissions.

In this peer review, we briefly examined the cost-benefit assumptions for the four proposed policies that are forecast to generate the largest net cost savings. In each case, we have found the analysis is seriously flawed. Despite the MCCAP claim that these four programs have a net benefit of \$812 million, we can find no sound scientific basis for their claim. MCCAP's cost savings estimates are not just wildly optimistic; they are the product of a purely fictitious analysis. MCCAP's cost (savings) estimates of other mitigation options suffer from similar problems causing their estimate of a \$93 to \$691 million cost to their overall package to grossly understate the true costs. In fact, by just eliminating the savings from the four policies analyzed above, the cost of MCCAP's proposed package more than doubles.

For policy makers, there is no worthwhile guidance in the MCCAP report. Its cost-savings estimates cannot be believed. Moreover, it fails to quantify the monetary benefits of reduced carbon emissions. As a result, policy makers are left with no basis on which to judge the merits of the MCCAP recommendations on how to mitigate the emissions of greenhouse gases.

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The Montana Policy Institute is a nonpartisan 501(c)(3) policy research organization that equips Montana citizens and decision makers to better evaluate state public policy options from the perspective of limited government, individual rights, and individual responsibility.

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