

A Checklist for Alberta's Climate Change Plan: What to Look for in a Comprehensive Action Plan for Alberta to Fight Global Warming

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Context:

- The Government of Alberta completed a public consultation process in 2007 to help develop a provincial action plan to reduce greenhouse gas (GHG) pollution.
- The government has stated that it will release its climate change plan early in 2008.
- This backgrounder describes the criteria that the Pembina Institute will use to objectively assess the government's plan.

The responses to the following three key questions will form the basis of our assessment of Alberta's plan:

1. Is the plan comprehensive and effective in covering key sources of emissions?
2. How does the plan compare to the emission reduction activities and targets in peer provinces such as British Columbia, Ontario and Québec?
3. Does the plan lay out its expectations and assumptions for emission reductions in a transparent way, and does it ensure clear accountability for the delivery of those reductions?

These questions will allow us to determine whether Alberta's plan is comprehensive, effective and transparent, and whether it ensures Alberta is a leader among Canadian provinces.

In assessing Alberta's plan, it will be important to keep in mind the breakdown of the province's sources of GHG pollution, shown in Table 1 (next page).

1. Elements of a comprehensive and effective action plan

There are four main types of policies that the province can use to directly reduce GHG emissions:

- regulated targets and standards
- financial incentives
- investments in infrastructure, and
- improvement of government operations (although they account for only a fraction of 1% of emissions).

A comprehensive climate action plan for Alberta must include policies that cover all the main sources of GHG pollution in the province's economy.

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Table 1. Alberta's main sources of GHG emissions^{2,3}

Source	% of emissions (1990)	Emissions (Mt CO ₂ e ⁴ , 2005)	% of emissions (2005)	% change in emissions (1990–2005)
Industrial facilities	71.4	168	72.2	39
<i>Electricity generation</i>	23.6	53	22.9	33
<i>Oil and gas production, transmission and distribution</i>	36.6	84	36.2	35
<i>Other industrial facilities</i>	11.2	31	13.2	61
Transportation	12.8	31	13.2	42
<i>Passenger cars and light trucks</i>	4.6	8	3.5	5
<i>Freight trucks</i>	3.2	13	5.5	131
<i>Railways</i>	1.2	3	1.3	50
<i>Aviation (domestic)</i>	0.6	2	0.6	36
<i>Other (off-road, marine, buses etc.)</i>	3.1	5	2.3	2
Buildings	6.8	13	5.5	11
<i>Residential buildings</i>	3.9	7	3.2	12
<i>Commercial buildings</i>	2.9	5	2.3	10
Agriculture (apart from energy use)	7.6	18	7.7	38
Landfills	1.1	3	1.2	50
Other	0.5		0.2	
Government operations ^a	0.3		^b 0.2	
Total	100	233	100	37

^a These emissions have already been counted once in the preceding sources.

^b Targeted in 2001.

We will also assess Alberta's use of the three main indirect ways that the province can stimulate reductions in GHG emissions:

- setting targets both for total emissions and for individual policies
- investments in technology development, and
- investments in public awareness.

Table 2 (next page) provides a comprehensive checklist of direct and indirect policies that the provincial government can implement to reduce GHG emissions from the main sources of emissions. Once Alberta's plan is released, we will check to see whether each policy described in the table is present in the plan. We will also assess whether the emission reductions targeted for each policy are in keeping with the amounts of GHG pollution generated by the respective segment of Alberta's economy. For example, given that 72% of Alberta's emissions come from industry, we would expect the plan to assign responsibility for a comparable proportion of reductions to Alberta's industrial emitters.

² All data has been derived from Environment Canada's *National Inventory Report*, except for the cars and trucks data which has been derived from the Natural Resources Canada's *Comprehensive Energy Use Database*, and the government operations data, derived from the government's 2001 submission to the Voluntary Challenge and Registry.

³ Note that emissions from forests are not normally included in GHG emission inventories. Forests can be major sources or sinks of carbon dioxide, depending on both human activities and natural factors.

⁴ Megatonnes of carbon dioxide equivalent.

Table 2. Provincial policy checklist

Note: “Financial incentives” do not necessarily involve net government spending — they can include negative incentives (fees); they can be implemented through revenue-neutral tax changes; or they can be created through offset credits^a that are sold to emitters subject to mandatory GHG targets.

Policies	% of Alberta's emissions ^b	Part of the plan?	Sufficient level of effort?
Industrial facilities (including electricity generation)	72.2		
Regulations to set mandatory GHG targets (combined with emissions trading) for heavy industry, or an equally effective alternative system of emissions pricing			
Requirement that new industrial facilities be approved only if they capture and permanently store all major point sources of CO ₂ ^c			
Feed-in-tariffs and/or renewable portfolio standards for electricity produced from low-impact renewable sources, with targeted measures for small scale production			
Financial incentives for co-generation of heat and electricity			
Provision of energy management assistance to small and medium-sized enterprises			
Regulations to strengthen standards for the energy efficiency of appliances and equipment			
Financial incentives for the most energy-efficient appliances and equipment ^d			
Passenger cars and trucks	3.5		
Regulations to set standards for fuel economy or GHG emissions from cars and light trucks			
Financial incentives for the production/consumption of ethanol fuel with low life-cycle impacts			
Regulations to maximize ethanol in gasoline (with an increasing portion of low-impact ethanol)			
Freight transportation	7.4		
A system of emissions pricing for freight and intercity passenger transportation, or equally effective regulations to set mandatory GHG targets, combined with emissions trading			
Direct investments in lower-emission freight and intercity passenger transportation infrastructure			
Financial incentives for the production/consumption of biodiesel with low life-cycle impacts			
Regulations to maximize biodiesel content in diesel fuel			
Residential buildings	3.2		
Strengthened energy efficiency requirements in the building code for new residential buildings			
Financial incentives for energy efficiency retrofits to existing residential buildings, with targeted measures for low-income households and multi-family units			
Financial incentives for production of renewable heat for use in residential buildings			
Commercial buildings (including institutional and industrial buildings)	2.3		
Strengthened energy efficiency requirements in the building code for new commercial buildings			
Financial incentives for energy efficiency retrofits to existing commercial buildings			
Provision of energy management assistance to building managers			
Financial incentives for the production of renewable heat for use in commercial buildings			

Policies	% of Alberta's emissions ^b	Part of the plan?	Sufficient level of effort?
Agriculture	7.7		
Financial incentives for GHG emission reductions and enhanced carbon storage in agriculture			
Forestry			
Financial incentives for enhanced carbon storage in forests			
Government operations			
Regulations to require capture of methane at landfills	1.2		
Improvement of provincial government operations to reduce GHG emissions	0.2		
Direct investments in, and/or conditional transfers to municipal governments to support, infrastructure and municipal policies that reduce GHG emissions			
Numerical targets			
Adoption of a target for absolute provincial GHG emissions in the near term (e.g., 2012)			
Adoption of a target for absolute provincial GHG emissions in the medium-term (e.g., 2020)			
Adoption of a target for absolute provincial GHG emissions in the long term (e.g., 2050)			
Adoption of clear numerical targets for the short- and medium-term for each of the policies above			
Other indirect policies			
Investments in development of low-GHG technology for future deployment			
Investments in public awareness about climate change and actions to reduce GHG emissions			

^a To avoid "emissions fraud," offset credits must meet strict rules for "additionality," i.e., credits must be granted only to projects that would not have occurred without the ability to earn credits.

^b The numbers are taken from Table 1.

^c Implementation of a strong regulatory framework to ensure permanence, public safety, adequate monitoring and clear attribution of liabilities is essential before any CO₂ capture and storage operations are approved. Other conditions that we believe should be attached to such operations are outlined in *The Pembina Institute's Perspective on Carbon Dioxide Capture and Storage (CCS)*, available online at <http://climate.pembina.org/pub/1542>.

^d This policy is placed here because it reduces emissions mainly from electricity generation facilities.

Most importantly, we will assess whether Alberta's plan and each of its components is sufficiently effective. There is wide agreement that prevention of impacts amounting to dangerous climate change will require the increase in average global surface temperature, relative to the pre-industrial level, to be kept within 2°C. For the world to have a chance of staying within this limit, science shows that industrialized countries' GHG emissions must fall to 25–40% below the 1990 level by 2020 and to 80–95% below the 1990 level by 2050.^{5,6} Alberta's plan must explain how its targets for total provincial emissions represent a fair contribution by the province towards reductions on this scale, and the level of effort of each policy in the plan must be in keeping with achieving them.

2. Becoming a Canadian leader in reducing GHG pollution

Alberta is a wealthy province with significant influence in Canada. Many of its provincial peers — including British Columbia, Ontario and Québec — have recently announced ambitious plans to combat climate change. If Alberta truly wishes to be a leader in Canada, its climate action plan must at least be competitive with those of its fellow provinces.

Our assessment of whether Alberta's plan is sufficiently effective will therefore also include a comparison with announced and existing policies in British Columbia, Ontario and Québec.

We will look to see if Alberta's plan matches, or preferably exceeds:

British Columbia's:

- commitment in law to the following targets:
 - by 2020 and for each subsequent calendar year, BC GHG emissions will be at least 33% less than the level of those emissions in 2007;
 - by 2050 and for each subsequent calendar year, BC GHG emissions will be at least 80% less than the level of those emissions in 2007;
 - by December 31, 2008, the minister must, by order, establish BC GHG emissions targets for 2012 and 2016;
- commitment to develop a “Green Building Code” by February 2008;
- commitment to adopt a Low Carbon Fuel Standard that matches California's;
- membership in the Western Climate Initiative, a regional GHG-reduction partnership whose members also include the states of Arizona, California, New Mexico, Oregon, Utah and Washington, and the province of Manitoba;
- requirement that all new and existing electricity sources have net zero emissions by 2016;
- requirement for 100% carbon sequestration for any coal-fired power project;
- commitment to phase in California's vehicle emission standards between 2009 and 2016;
- commitment to update energy efficiency standards for equipment; and
- commitment in law to making all public sector organizations carbon neutral by 2010.

⁵ Gupta et al., “Policies, Instruments and Co-operative Arrangements,” in Metz et al., eds, *Climate change 2007: Mitigation. Contribution of Working group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, 2007), 776. Also available online at http://www.mnp.nl/ipcc/pages_media/AR4-chapters.html.

⁶ These emission reductions are based on stabilizing the atmospheric GHG concentration at 450 parts per million CO₂e, which corresponds to only about a 50% probability of respecting the 2°C limit.

Ontario's:

- commitment to reduce GHG pollution to 6% below the 1990 level by 2014, 15% below 1990 by 2020, and 80% below 1990 by 2050;
- commitment to develop new renewable energy projects to meet 10% of Ontario's electricity needs by 2010;
- requirement in the building code for new homes to meet the EnerGuide for Homes 80 standard by 2011; and
- requirement of 5% ethanol blending in sales of gasoline by January 1, 2007.

Québec's:

- commitment to reduce GHG pollution to 6% below the 1990 level by 2012;
- endorsement of the 2°C limit on average global warming;
- introduction of regulations to adopt California's vehicle emission standards; and
- commitment to amend its building code with new energy efficiency standards by 2008.

3. Transparency and accountability

A climate change action plan for Alberta will only be meaningful if it presents a credible and transparent account of the impact that each policy is expected to have. In addition, a credible plan must explain who is accountable for the delivery of each of its policies, and for the cuts in GHG pollution that each of these policies aims to deliver. A credible plan must also provide for a robust mechanism to publicly monitor implementation.

Our expectations for transparency and accountability are that:

- Each policy measure has an expected target for emission reductions relative to a clearly defined and transparent baseline (or, in the case of indirect GHG reduction policies, another type of appropriate numerical target).
- A third party will have reviewed and verified that the targeted amount of reductions for each policy is reasonable. This third party's report is made public.
- Assumptions and calculations for the targeted amount of reductions for each policy are made public.
- An independent body, such as a commissioner within the Alberta Auditor General's office, is assigned to produce and publish an annual evaluation of progress against the government's stated objectives and commitments.