

Environment and Sustainable Resource Development—Climate Change Follow-up

SUMMARY

Background

Climate change has far-reaching impacts on Alberta's environment, economy and infrastructure, and on human health. With the release of its climate change strategy in 2008, the Government of Alberta recognized the need to reduce greenhouse gas emissions in Alberta.¹ The strategy sets Alberta's emissions reduction targets for 2020 and 2050.

In 2008 we audited systems the government used to develop and report on the strategy. We concluded that the targets were based on an economic model that anticipated actions that were not part of the strategy. We also concluded that the Department of Environment and Sustainable Resource Development did not have a plan that identified specific actions to meet the targets and monitor the results.

In 2009 we audited the department's implementation of the *Specified Gas Emitters Regulation*,² a key component of the strategy. The *SGE Regulation* sets emission intensity limits for facilities that collectively produce half of greenhouse gas emissions in Alberta.

What we examined

We followed up on three of the ten recommendations from our 2008 and 2009 audits: planning to implement the strategy, monitoring performance against its targets, and reviewing technical reports the facilities submit under the *SGE Regulation*.³

What we found

The department has not implemented our recommendations on planning and monitoring its climate change strategy. It has implemented our recommendation on reviewing facility reports.

We found no evidence that the department regularly monitored performance between 2008 and 2012 against the 2008 strategy targets. The department is only now preparing its first public report on the progress made on its 2008 strategy. Four years after the release of the strategy, the department completed an implementation plan with the intention to update the plan annually. The plan identified government-funded actions to reduce emissions. It also estimated the reductions, timing and allocated resources for each action. However, the plan has not been updated since it was first developed. Also, the plan lacked the information necessary to monitor performance of actions and the government's overall progress with reducing greenhouse gas emissions and meeting its strategic targets. The department's processes to ensure the accuracy and completeness of the plan's data were ineffective.

The department has not yet developed criteria for selecting new climate change actions and evaluating existing ones.

¹ Alberta's 2008 Climate Change Strategy, <http://environment.gov.ab.ca/info/library/7894.pdf>

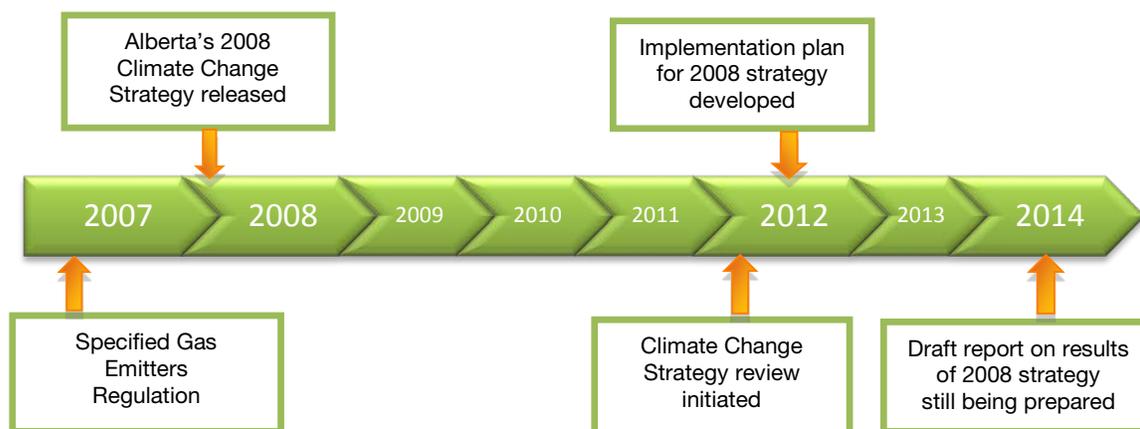
² *Climate Change and Emissions Management Act*, S.A. 2003, Alberta Regulation 139/2007.

³ *Specified Gas Emitters Regulation*, Alberta Regulation 139/2007, Section 11 (1).

Despite a lack of effective planning and monitoring, by 2012 the department recognized that Alberta was not on track to meet its 2020 target.⁴ It was apparent to the department that the expected reductions from carbon capture and storage will not be achieved. Carbon capture and storage in the 2008 strategy represents the majority of forecasted emission reductions (see appendix). However, with only two carbon capture and storage projects planned, the total emissions reductions are expected to be less than 10% of what was originally anticipated.

Failure to stay on track to meet the target, as well as the September 2014 expiry and planned update of the *SGE Regulation*, prompted the government to review its strategy. The review included an analysis of performance against the strategy targets. The outcome of the review—which includes economic modeling and stakeholder consultations—will be to propose changes to the climate change strategy and *SGE Regulation*, for the consideration of government decision makers.

Overall, the department’s progress implementing our recommendations since 2008 has been slow. This pace does not reflect the significance that effectively managing climate change has for the economy and environmental performance in Alberta and in Canada. Effective planning and regular performance monitoring will continue to be key to Alberta’s success in effectively managing climate change.



Why this is important to Albertans

Planning for and monitoring the status of key actions and overall progress toward emissions reduction targets is key to the success of Alberta’s climate change strategy. Because of the environmental, economic and social significance of climate change, Albertans need to know how well the government’s strategies for reducing emissions are working.

⁴ Reduce emissions by 50 Mt below business as usual. Alberta’s 2008 Climate Change Strategy. <http://environment.gov.ab.ca/info/library/7894.pdf>

AUDIT OBJECTIVES AND SCOPE

Our audit objective was to determine if the department has implemented our recommendations related to:

- planning⁵
- monitoring processes⁶
- technical review⁷

We conducted our field work from July 2013 to March 2014 and focused on the department's actions since our 2008 and 2009 reports. We conducted our audit in accordance with the *Auditor General Act* and the standards for assurance engagements set by the Chartered Professional Accountants of Canada.

FINDINGS AND RECOMMENDATIONS

Planning—repeated

RECOMMENDATION 2: IMPROVE PLANNING—REPEATED

We again recommend that the Department of Environment and Sustainable Resource Development improve Alberta's response to climate change by:

- establishing overall criteria for selecting climate change actions
- creating and maintaining an implementation plan for the actions necessary to meet the emissions intensity target for 2020 and the emissions reduction target for 2050
- corroborating—through modeling or other analysis—that the actions chosen by the ministry result in Alberta being on track for achieving its targets for 2020 and 2050

Background

In our 2008 audit we found that the government set measurable goals and targets but the department lacked evidence that the actions in the strategy would actually achieve them. The strategy needed an implementation plan with deadlines and monitoring in order for Albertans to have confidence that Alberta could achieve the targets cost-effectively. We also reported that the department had not developed overall criteria for selecting actions to meet the targets. For example, there was no established maximum amount the government would pay per tonne of emissions reduction.

The strategy identified the following targets:

- 2010 – reduce emissions by 20 Mt (meet emissions intensity target established in 2002 plan⁸)
- 2020 – reduce emissions by 50 Mt below business as usual⁹
- 2050 – reduce emissions by 200 Mt below business as usual and 14 per cent below 2005 emissions

Within the strategy, the government expected Alberta's absolute emissions¹⁰ to increase until 2020 and then begin to decline (see appendix). The economic modeling done in 2008 to develop the current strategy targeted Alberta's emissions to be as follows:

- 2010 – 235 Mt
- 2020 – 260 Mt
- 2050 – 184 Mt

⁵ *Report of the Auditor General of Alberta—October 2008*, no. 9, page 97.

⁶ *Report of the Auditor General of Alberta—October 2008*, no. 10, page 100.

⁷ *Report of the Auditor General of Alberta—October 2009*, page 45.

⁸ Albertans and Climate Change: Taking Action. <http://environment.gov.ab.ca/info/library/6123.pdf>

⁹ Business as usual means emission levels in the absence of any new government policy.

¹⁰ Absolute emissions are the total greenhouse gas emissions produced, usually measured annually.

To achieve these targets, the government put in place policies and actions aimed at reducing greenhouse gas emissions. Carbon capture and storage was a key action expected to provide 70 per cent of the 2020 and 2050 reductions.

In our 2008 audit we found that the department had not decided how it would evaluate free rider¹¹ and rebound effects¹² when forecasting emissions from incentive programs.

Criteria: the standards for our audit

The department should:

- set measurable goals and targets for its approach to climate change and should plan how it will achieve them
- assess cost-effectiveness and consider social, economic and other environmental impacts when choosing projects to fulfill the strategy
- consider free rider and rebound effects when forecasting emissions reductions it expects from incentive programs
- put in place an implementation plan for the strategy that indicates, for each focus area, the major actions required and each action's:
 - deliverables and timing
 - required resources
 - planned effect towards meeting Alberta's emissions targets

Our audit findings

KEY FINDINGS

- The department completed an implementation plan in 2012. However:
 - the plan lacks key information needed to monitor progress
 - the plan has not been updated annually as intended
 - processes to ensure accurate data and no double counting of reductions were ineffective
- Criteria for selecting new climate change actions and evaluating existing ones have not been developed.

Implementation plan

In 2012 the department completed an implementation plan that identified actions the government was taking and funding to reduce emissions. The plan also estimated reductions, timing and resources allocated for each action. This was an important step towards effectively implementing the strategy; however, it was completed four years after the 2008 strategy was released, was not subsequently updated, and had problems related to design and accuracy.

As part of its plan the department required other departments¹³ responsible for each action to provide data and estimates about the resulting reductions in greenhouse gas emissions and the processes they used to monitor entities' progress with government-funded actions. The department provided a template to the other departments to help ensure the information they gathered was consistent and complete. The department also required designated authorities at each of the other departments to validate the

¹¹ When the government offers a financial incentive to buy a product or service, everyone pays the lower price even though some people would have bought the product or service without the price incentive. Those who pay the lower price even though they would have paid the higher price are called free riders. If evaluations of incentive programs do not consider these effects, they may overestimate the effect the incentives had on reducing emissions.

¹² Energy savings from improved efficiency are sometimes less than forecast because higher efficiency can lead to increased use. If evaluations of incentive programs do not consider these effects, they may underestimate future energy use and overestimate emissions reductions.

¹³ These were other Alberta government departments – Transportation, Municipal Affairs and Energy.

information. The department intended to use this reporting process to update the implementation plan annually.

However, the department did not update the implementation plan in 2013, thus limiting its usefulness for monitoring and reporting on performance of actions.

Implementation plan—design and accuracy

We found deficiencies in the design of the implementation plan. It lacked key information necessary to monitor progress with specific actions. It also lacked the information necessary to monitor the province's overall progress toward the 2020 and 2050 annual reduction and absolute emission targets. For example, the plan did not consider the annual reductions each action actually achieved and it presented forecasted reductions inconsistently—as annual reductions for some actions and as cumulative for others. The plan also omitted comparison of the total annual reductions from all actions to overall targets.

The department stated that it used an informal process to review the plan for accuracy and completeness. We found the review to be ineffective. We examined the data for a sample of actions and found that the data in the plan was not always consistent with the information the other departments submitted to the department.

Implementation plan—potential for overestimating reductions

The plan showed reductions from offsets both as reductions from the *SGE Regulation* and from the offsets program, thus creating the potential for double counting.

Reductions from the offset program included those from no-till activities, which may not be appropriate. Our understanding is that management decided to treat no-till activities as offsets even though adoption rates for this practice in Alberta already exceeded the rate that could be considered business as usual. It is our view that only reductions that result from government policy should be counted as valid reductions toward the strategy targets.

Two of seven incentive programs we examined did not consider free rider and rebound effects when forecasting emissions, thus creating a potential for overestimating reductions from these programs.

Public report on strategy progress

The department is preparing its first public report on the progress made toward the 2008 strategy. The department did not require the other departments to formally report on progress with specific actions using the guidance and processes they provided for development of the 2012 implementation plan. Instead, the department asked them to provide direct input into the public report.

This informal approach did not require key information about data and processes for each action. For example, the other departments did not have to provide information about the methods the entities used to calculate emissions. This information is necessary to substantiate the reliability of the data they report. This approach also lacked formal approval from each of the other government departments to confirm the validity of their claims.

Criteria for selecting and evaluating actions

Six years after it introduced the current strategy, the department is still developing criteria for deciding on actions and evaluating their success. Since the strategy's release in 2008, a number of actions, such as those funded with bioenergy grants, have concluded. No new actions have been added.

Implications and risks if recommendation not implemented

Without an implementation plan that includes criteria to select and evaluate actions, the government cannot know whether the actions it is funding will help Alberta achieve its targets to reduce greenhouse gas emissions and whether it is doing so cost-effectively.

Monitoring processes—repeated**RECOMMENDATION 3: IMPROVE MONITORING PROCESSES—REPEATED**

We again recommend that for each major action in the 2008 Climate Change Strategy, the Department of Environment and Sustainable Resource Development evaluate the action's effect in achieving Alberta's climate change goals.

Background

In 2008 the department did not have an overall system to track the status of the actions it funded to support the strategy or to monitor their expected contribution to achieving the overall targets. At that time, the department was still developing a governance structure for implementing its strategy.

The *SGE Regulation* requires facilities that emit more than 100,000 tonnes of carbon dioxide equivalent emissions annually to reduce their emissions intensity by 12 per cent below a baseline established between 2003 and 2005. It sets a carbon price of \$15 per tonne for emissions in excess of the target. The *SGE Regulation* is due for an update in Fall 2014.

Criteria: the standards we used for our audit

The department should carry out the actions in its strategy and monitor progress against emissions reductions targets.

Our audit findings**KEY FINDINGS**

- There is no evidence of regular monitoring of progress toward strategy targets between 2008 and 2012.
- There is no clear link between the implementation plan and monitoring and reporting.
- The department's 2012 strategy review involved analysis of major actions and overall performance against targets.
- The department has no clear guidance or effective monitoring to ensure strategy review deliverables and timelines are being met.

We found no evidence that the department regularly monitored performance against the strategy targets between 2008 and 2012. In early 2012 the department determined that Alberta was not on track to meet its 2020 target. At that time, Alberta had committed over \$1 billion to two carbon capture and storage projects that were expected to collectively contribute total reductions of three megatonnes in 2020. This was less than 10 per cent of the 35 Mt expected under the strategy. As a result, and in addition to the upcoming expiry and update of the *SGE Regulation*, Alberta's strategy has come under review by the government.

As part of the review, the department hired contractors who specialize in economic modeling, to:

- conduct a quantitative analysis of options for strengthening the *SGE Regulation*
- identify other policy options that would allow Alberta to achieve its targets

At the conclusion of our audit, the department's processes to develop policy options for a new strategy were underway. Thus, we could not examine whether the options chosen for the strategy were supported by the modeling results.

Governance structure

In 2013 the department implemented a governance model for reviewing and revising its strategy. The model included working groups¹⁴ organized by key greenhouse gas emitting sectors and a steering committee.

Department's documents describing roles and responsibilities indicate that the steering committee will:

- provide oversight to the working groups
- ensure timelines, deliverables and milestones are achieved
- meet with the working groups regularly
- be responsible for decision making and for updating the cross-ministry deputy ministers' group and their respective ministries

Key tasks for the working groups include outlining their sector's emissions profile, evaluating the success of current policies or actions to reduce emissions, and proposing policy options to achieve the strategy targets based on information from the modeling. At the conclusion of our audit, each of the working groups were in various stages of completing their tasks to propose policy options that would allow the government to meet its targets.

The department also intends to use this governance model for regular monitoring and reporting progress against the strategy targets once the new strategy is in place. However, it was not clear how the monitoring and reporting will link to the implementation plan.

Strategy review

We found weaknesses in the processes related to the government's review of the strategy. The department created a work plan for the strategy review with deliverables, responsibilities and timelines. We found only one of the working groups created detailed work plans showing how they would meet their responsibilities and timelines.

We also noted that the plan contained internal inconsistencies. For example, working groups had deliverables with target completion dates that were past the due dates for submitting those deliverables to the steering committee. We also noted that the work plan did not identify due dates for key actions such as submitting proposed policy options to the steering committee.

We found no evidence of formal monitoring by the steering committee of the working groups to ensure they were meeting timelines and deliverables. The department stated that the monitoring was delegated to one member of the committee. This was inconsistent with the approved monitoring structure. We found no evidence of regular meetings between the steering committee and the working groups or documentation of key discussions or decisions. At the conclusion of our audit, the department stated that the steering committee is now documenting its meetings and provided minutes of its February 2014 meeting.

The department developed a template indicating the deliverables it expected from the working groups. The template lacked clarity. For example, it was not clear what information source the working groups should use to create an emissions profile for their sector or whether they should use common criteria to evaluate policy options—such as a maximum price per tonne of emissions reductions. The department

¹⁴ Oil and gas, electricity generation, agriculture, transportation, buildings, forestry, other industry, adaptation, cross-cutting themes.

stated that it provided clarification verbally. At the conclusion of our audit, the department was still finalizing the template. It is our view that clear guidelines are necessary for a consistent and efficient process.

Implications and risks if recommendation not implemented

Without a clear process for monitoring its progress, the government cannot know if the actions it is funding are yielding the results it expects.

Technical review—implemented

Background

In October 2009 we recommended that the department strengthen its technical review processes by:¹⁵

- requiring facilities to provide a process map with their compliance reporting
- ensuring staff document their follow-up activity and decisions in the department's regulatory database

The department's reviewers are professional engineers who examine facility baseline and compliance reports and associated verification reports. The reviewers use a checklist to document their review and findings, and make recommendations to management on which reports should be subject to re-verification.

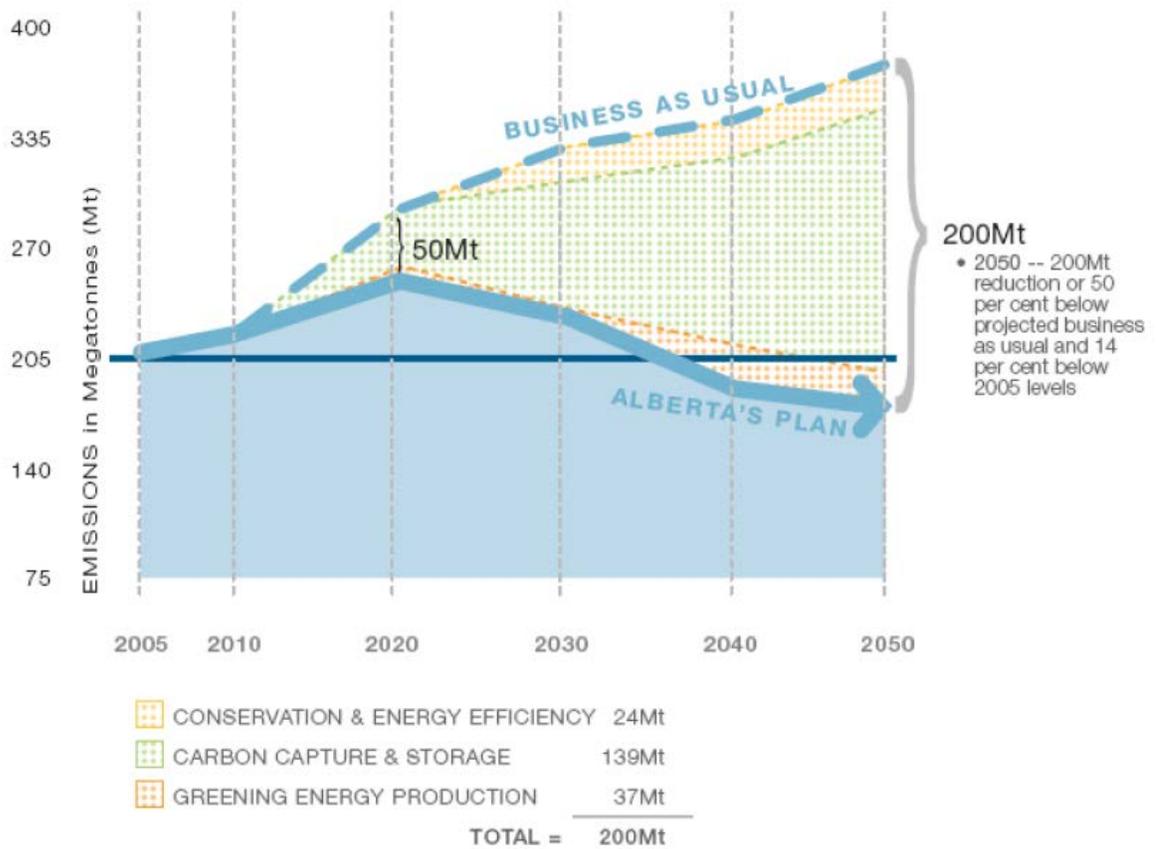
Our audit findings

The department's guidelines for facilities require them to submit process maps with their reports. The department developed guidelines for how reviewers should maintain the supporting documents that facilities provide in response to their follow-up. Informal guidelines also exist for what reviewers should do to verify the accuracy of additional evidence the facilities provide. The department's review checklists were amended to include pertinent information about the reviewer and how the reviewer resolved issues. The reviewers and facilities complied with the department's guidelines for all samples we tested.

The reviewers contacted facilities when they required additional information about the submitted reports. The facilities contacted their verifiers as needed to respond to the department's queries. For all samples we tested, this process allowed the department to obtain all the information necessary to review facility reports.

¹⁵ *Report of the Auditor General of Alberta—October 2009*, page 45.

Alberta's Emissions Reduction Targets



Source: Alberta's 2008 Climate Change Strategy

