

Electricity Framework Review

Final Report on the Public Consultations

Prepared by the Public Consultation Subgroup of the
CASA Electricity Framework Review Project Team

May 7, 2009

Contents

1	Introduction	1
2	The Consultation Approach	1
3	Who We Heard From.....	2
4	What We Heard	2
4.1	Issues of Concern	2
4.2	Priority Issues for Action	3
4.3	Potential Solutions.....	4
4.4	Priority Solutions.....	4
4.5	Other Opinions about Electricity Generation.....	5
4.6	Town Hall Meetings.....	9
5	Conclusions and Recommendations.....	10
5.1	Conclusions	10
5.2	Recommendations to the EFR Project Team	11
Appendix A: Survey Questions.....		12
Appendix B: Survey Response Tables		17
Appendix C: Issues, Concerns and Recommendations from the Town Hall Meetings.....		23

1 Introduction

In 2003, CASA submitted its recommended framework for managing air emissions from the electricity sector to the Government of Alberta. Recommendation 29 committed the government to a five-year framework review, with the first review to be underway by April 2008. In early 2007, Alberta Environment asked CASA to establish a multi-stakeholder project team to lead the first review, of which public consultation was an important component. The project team established a Public Consultation subgroup, which oversaw the consultation activities and reported back to the team on a regular basis.

2 The Consultation Approach

Several tools were used to obtain public input for the framework review. In all cases, the deadline for input was February 28, 2009.

- **Discussion Guide and Survey.** A short pamphlet containing background on the project and a survey was printed and widely distributed in late 2008. Respondents could mail or fax the completed survey to the CASA office. The survey questions are noted in Appendix A.
- **Online Survey.** The same survey that was included in the discussion guide was made available online at www.electricair.ca. Survey respondents were not identified by any of their responses. An independent researcher analyzed the surveys and provided the results to the team.
- **Town Hall Meetings.** The team held two town hall meetings in January 2009, one in Hanna and one at Keephills. Three team members, one each from government, industry and non-government organizations, presented an overview of the framework and described the team's work to date. These meetings were led by an independent facilitator and detailed notes were taken of the comments.
- **Written Submissions.** Interested individuals could provide a short written submission describing their concerns and potential solutions.

CASA also corresponded with First Nations and Métis organizations across the province and invited them to participate.

3 Who We Heard From

Approximately 50 people attended the two town hall meetings, most of them at the Keephills event, and 90 completed surveys were received by the February 28 deadline. One written submission was also received and was incorporated into the survey results. No responses were received from First Nations or Métis organizations. Respondents and participants were not a representative sample of Albertans, thus results cannot be generalized to the population as a whole. The survey responses have been tabulated and appear in Appendix B. A summary of the issues, concerns and recommendations from the town hall meetings appears in Appendix C.

About two-thirds (64%) of survey respondents identified themselves as members of the general public. An informal show of hands at the town hall meetings suggested that approximately three-quarters of attendees were members of the public and the rest were affiliated with a company or with a government agency. Twelve percent of survey respondents represented a government department or agency, ten percent represented a public interest group, eight percent were professionals in the air quality/energy-environmental area, and the remaining five percent were representatives of a company.

Although people from all across the province responded to the survey (based on the first three characters of their postal code), more than three-quarters did not live near a coal- or gas-fired power plant.

Over half of the respondents were between 45 and 64 years of age (56%), 33% were 25 to 44 years, and the remaining 12% were evenly split between the “under 25s” or “65 and over.”

The survey specifically asked respondents how familiar they were with the CASA Electricity Management Framework, and 89% had at least heard of it. Of these, 19% were quite familiar with it, and 47% had looked at it but were only slightly familiar with it.

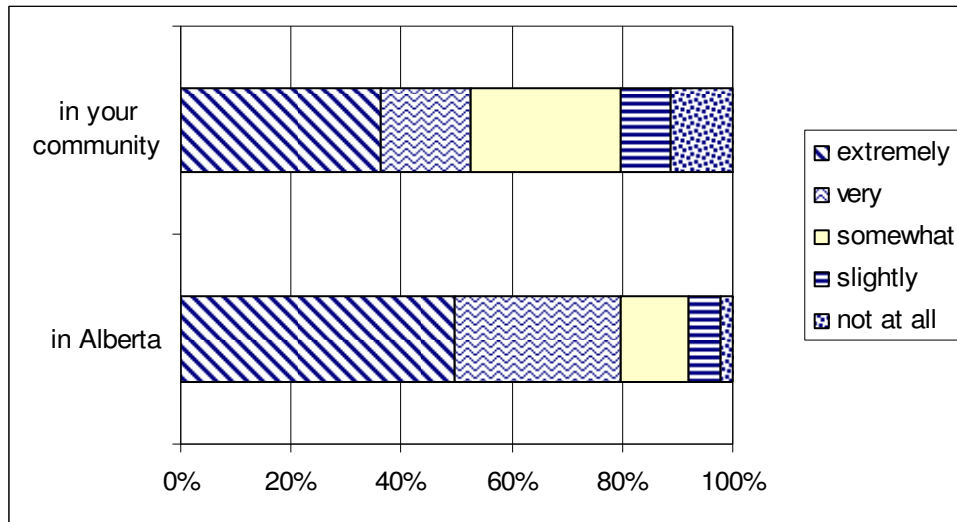
4 What We Heard

4.1 Issues of Concern

In two open-ended questions, more than half of survey respondents identified air pollution and air quality as the issue that concerned them most about electricity production in Alberta and in their region. This concern was named more than twice as often as the one(s) immediately following, which were lack of alternatives to fossil fuels, particularly coal, environmental and health damage related to production and transmission activities; at the regional scale, respondents were concerned about increased pressure and expansion in areas of existing generation.

Later in the survey, respondents were asked how concerned they were about air emissions specifically, from electricity generation a) in Alberta, and b) in their community, and why. The figure below shows the level of concern felt by respondents.

Figure 1. How concerned are you about air emissions from electricity production in Alberta, and in your community?



The second part of these questions gave respondents an opportunity to name additional things that concern them. Many of the reasons for their concerns were similar to the issues they had noted previously, and focused on:

- Health and environmental effects of pollution, particularly emissions from coal-fired plants.
- Greenhouse gas emissions and climate change.

Many of these concerns are reflected in the priority assigned to both the issues that require action and improvement and potential solutions, as noted in the following sections. Although respondents clearly regard greenhouse gas emissions from the burning of fossil fuel as a serious concern, greenhouse gases and climate change are not part of the mandate for this framework review.

4.2 Priority Issues for Action

Survey respondents were asked to prioritize a list of potential issues; of the issues that were assigned a high or medium priority, they were then to rank the top four in relative order of priority. The results are shown in Table 1.

More than 90% of respondents felt that air toxins and acid deposition are at least a medium priority. Both of these important issues are addressed in detail in the 2003 Framework, which is now being implemented. Each five-year review of the Framework will provide an opportunity to consider new technology and approaches to respond to these issues.

Table 1. Priorities for Action and Improvement

Potential Issue	Percent of respondents assigning high priority	Percent of respondents assigning high or medium priority
Air toxins: mercury, heavy metals, fine particulates	75%	97%
Acid deposition/acid rain: sulphur dioxide and nitrogen oxide emissions	65%	92%
Ground-level ozone/smog: nitrogen oxide emissions	56%	84%
Climate change: CO ₂ and other greenhouse gas emissions	56%	80%
Dust: particulates	36%	70%
Aesthetic: visual	20%	50%
Odour	18%	46%

4.3 Potential Solutions

In an open-ended question, survey respondents were asked to identify the most important changes they would like to see implemented to address their concerns. Fewer than half of all respondents answered this question (41/95). Of these, 71% wanted to see emissions reduced through things like stronger regulations, technology requirements and fines. Almost half (49%) wanted to phase out facilities that use non-renewable resources, while nearly as many (46%) wanted more focus on renewable sources. Forty-four percent thought government should increase investment in research and development to promote alternative power sources. Public education or responsible power use, and development of micro-generation were also suggested.

4.4 Priority Solutions

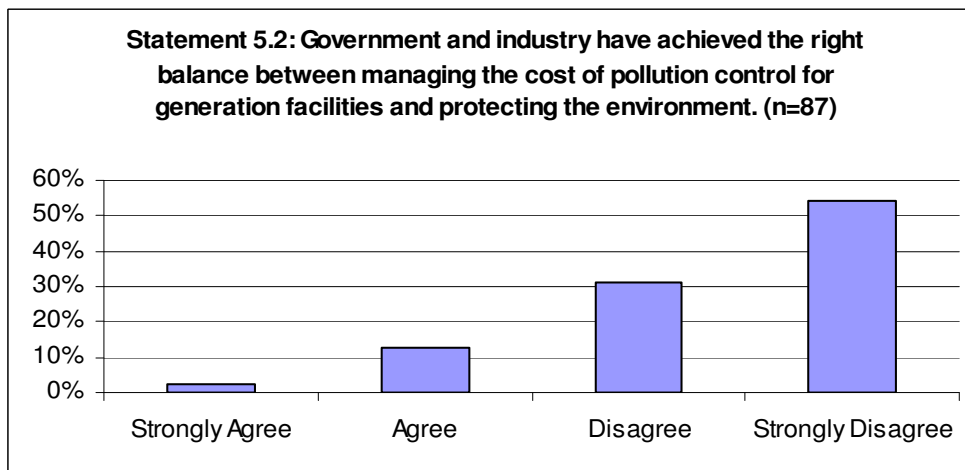
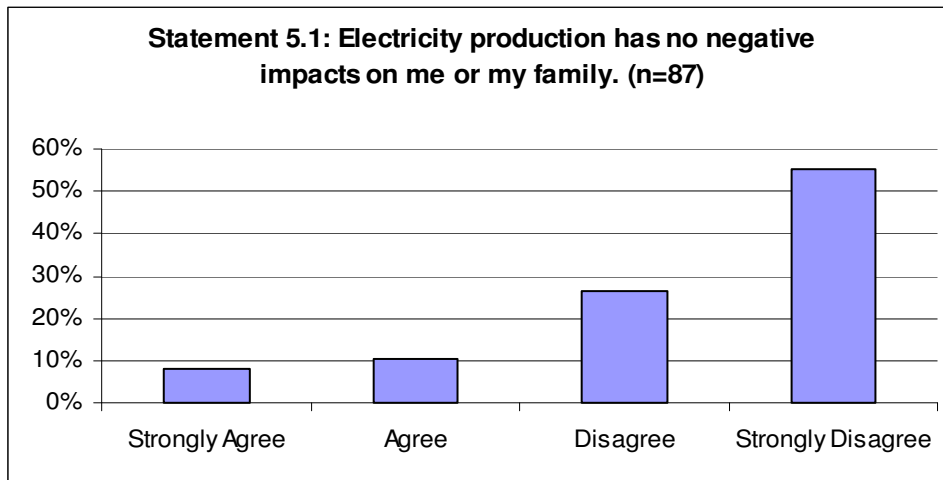
Similar to the issues questions, respondents were asked to prioritize a list of potential solutions; of the solutions that were assigned a high or medium priority, they were then to rank the top four in relative order of priority. Results are shown in Table 2. More than half the respondents assigned a high priority to all the potential solutions, with 53% saying increasing the efficiency of generation was a high priority. Sixty percent or more thought tougher standards on emitters, and reducing electricity use through more efficient technologies or conservation were a high priority. But respondents attached a notably higher priority to reducing emissions by not generating them in the first place; that is, increasing the amount of power that is derived from clean and renewable power sources and reducing end-use demand for electricity.

Table 2. Priority Solutions

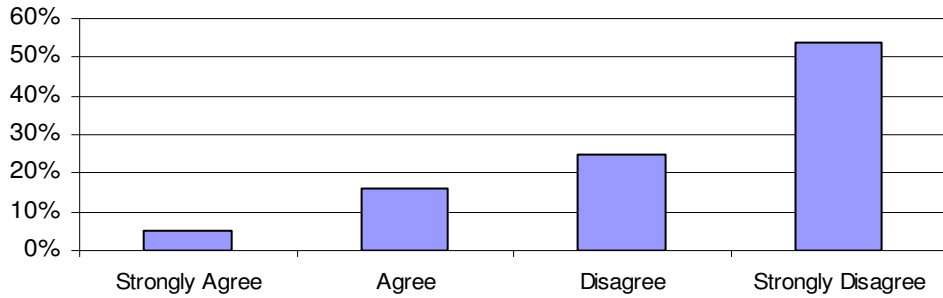
Potential Solution	Percent of respondents assigning high priority	Percent of respondents assigning high or medium priority
Increasing the proportion of clean and renewable electricity sources	80%	92%
Encouraging reduced use of electricity through adoption of more efficient technologies	62%	88%
Imposing tougher standards on the release of air emissions from generation facilities	62%	82%
Encouraging the reduction of end-use demand for electricity through behaviour change/conservation	60%	88%
Increasing the efficiency of coal and gas fired power generation	53%	85%

4.5 Other Opinions about Electricity Generation

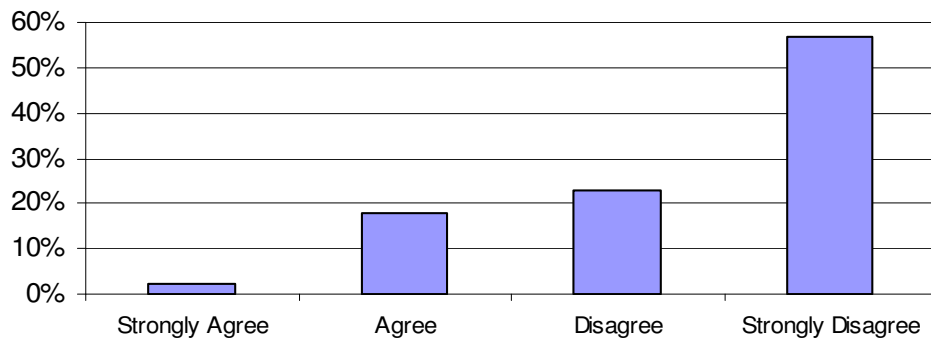
To gather additional information about people's views on electricity generation, respondents were asked to indicate their level of agreement with ten statements. The ten charts below reflect the extent to which respondents agreed or disagreed with each statement, and the number of respondents is shown for each statement. The information in the figures is consistent with the concerns reported in earlier survey responses about impacts from air emissions from electricity production. The project team was particularly pleased to see the extent to which respondents believe that the CASA electricity framework plays a valuable role in maintaining good air quality (statements 5.5 and 5.6). It is also notable that respondents indicated a willingness to pay significantly more on their electricity bills to achieve reduced air emissions (statement 5.9). A surprising result was the extent to which respondents said they plan to pursue the option of generating some or all of their own electricity in the near future (statement 5.10).



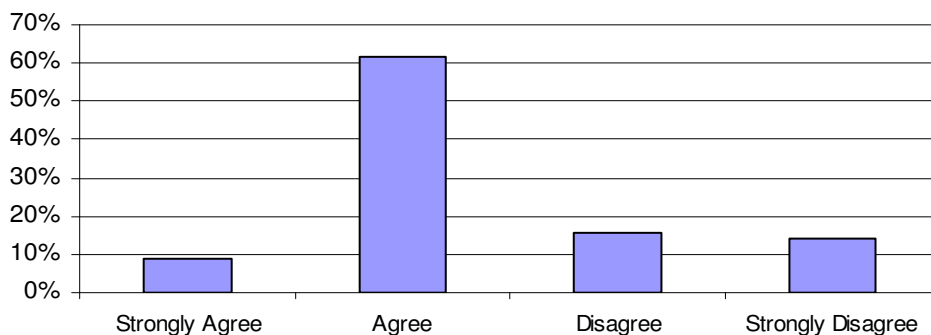
Statement 5.3: Air emissions from electricity production have no significant impact on human health in my family or community. (n=80)

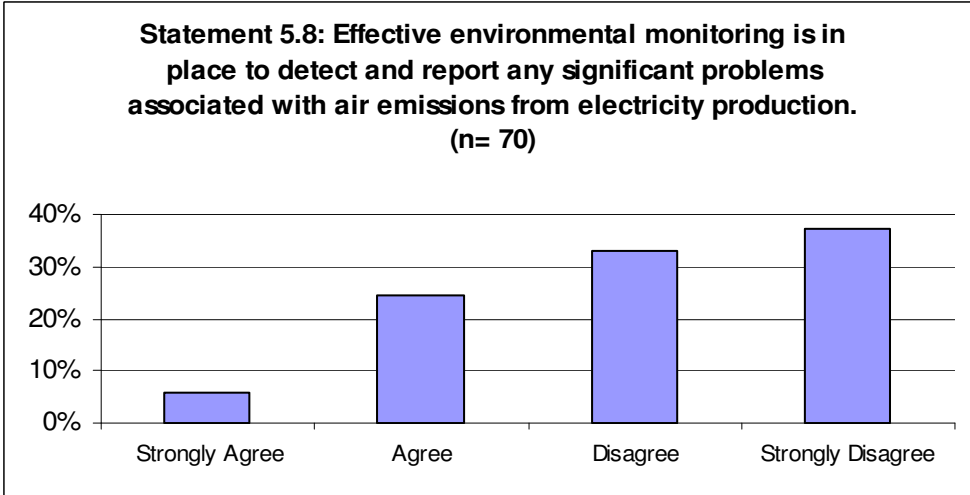
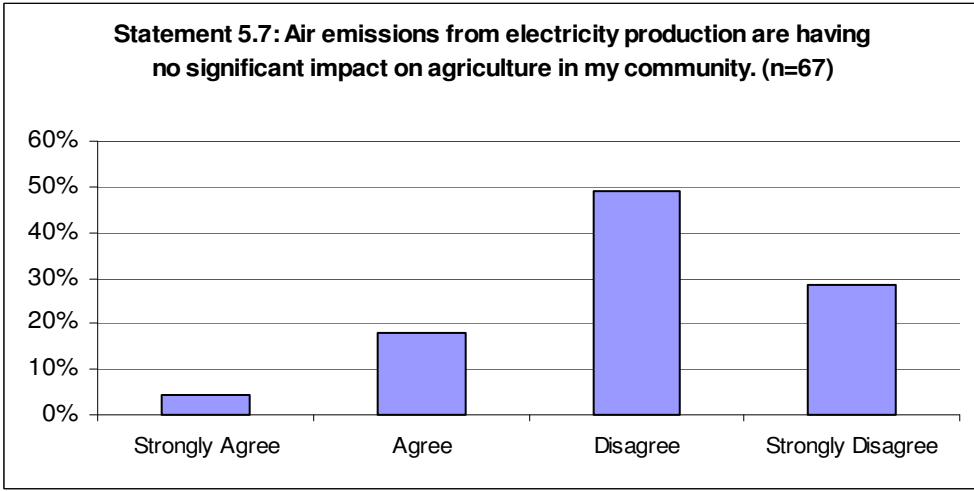
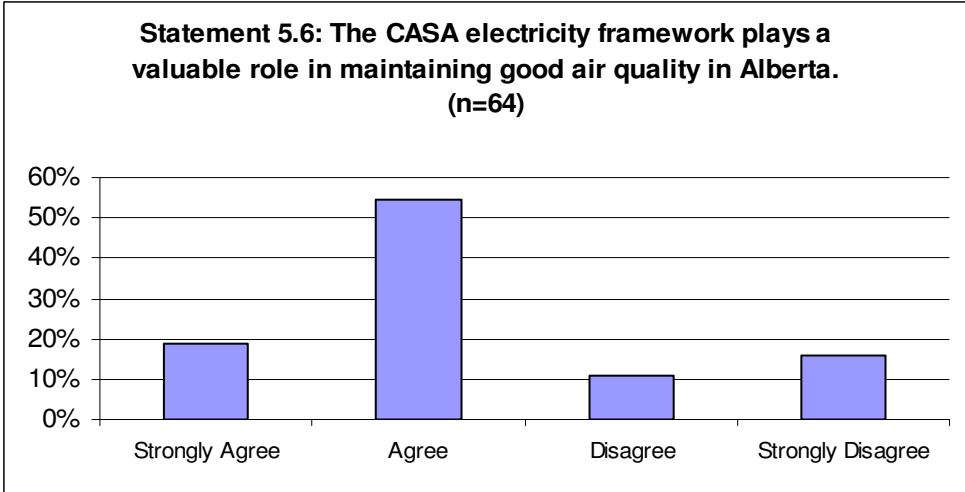


Statement 5.4: Air emissions from electricity production have no significant impact on the natural environment in my family or community. (n=83)

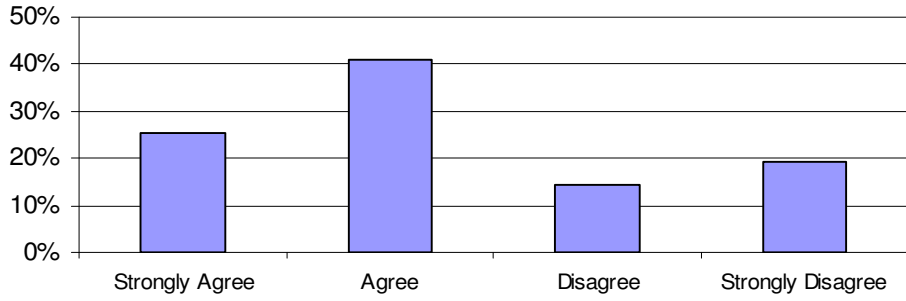


Statement 5.5: The CASA electricity framework plays a valuable role in maintaining good air quality in my community. (n=57)

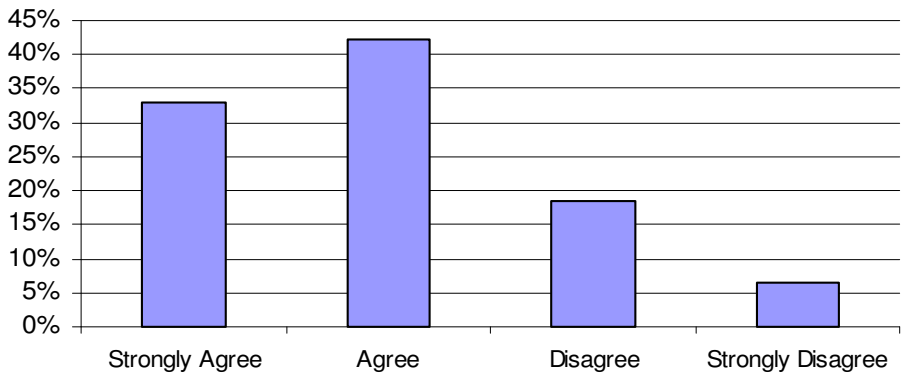




Statement 5.9: I would be prepared to pay up to 20 percent more for the electricity I consume to achieve significant reductions in air emissions. (n=83)



Statement 5.10: I plan to pursue the option of generating some or all of my own electricity in the near future. (n=76)



4.6 Town Hall Meetings

In general, the issues raised at the two town hall meetings reflected local concerns about electricity generation and how emissions are managed (see Appendix C). Several points raised at the meetings were outside the mandate of the Electricity Framework Review Project Team; these are not included in Appendix C, but have been forwarded to the correct agency where appropriate.

The potential impact of emissions trading in regions near power plants was raised at both Hanna and Keephills; participants were concerned that emissions could go up if those plants were allowed to trade with facilities that had reduced emissions elsewhere. Concerns about cumulative effects in areas where there is other industry development, particularly oil and gas activity, were also expressed.

Town hall attendees, like the survey respondents, noted:

1. The overall need to reduce emissions from power plants, including the use of stronger regulations and technology requirements.
2. The need to encourage, through incentives and other means:
 - The development of renewable and alternative energy to reduce reliance on fossil fuels, and
 - Conservation to reduce electricity demand.
3. Concerns about the adequacy of monitoring downwind of major facilities. The need for better access to data and information was also mentioned in town hall meetings.

5 Conclusions and Recommendations

5.1 Conclusions

Having considered the input obtained from the public consultations, the subgroup reached five main conclusions, which the EFR team may want to take into account in developing its final recommendations.

1. The 2003 *Emissions Management Framework for the Alberta Electricity Sector* is focused on the right priorities as expressed by those who participated in the consultations for the first five-year Framework review. Specifically, participants identified air toxins (such as mercury, heavy metals and fine particulates) and acidifying emissions as priorities. These issues were addressed in the 2003 Framework and solutions are being implemented. Only a few years have passed since appropriate regulations and other mechanisms were put in place to deal with these issues, and more time is needed to determine their impact on emissions from the electricity sector. Participants also voiced concerns about emissions trading and how the system now being implemented will affect communities that have power generation facilities. Again, the 2003 Framework envisioned how emissions trading should proceed and more time will be needed to see the impacts and determine if any adjustments are needed.
2. There is a need to focus more on developing clean, renewable sources of electricity and on increasing efficiency at generation units. Both of these approaches would reduce the generation of emissions in the first place.
3. The 2003 Framework encourages the right behaviour to support the development of renewable and alternative energy. Because the Framework requires best available technology economically achievable (BATEA) on new plants, the cost of generation from new facilities using conventional fuels is likely to increase. This is expected to make investment in renewables and alternatives more attractive, thereby increasing the expansion of this sector. Survey respondents indicated they would pay more for their power to achieve significant reductions in emissions, and this attitude supports both the increased development of renewable and alternative energy and the use of BATEA for new facilities. Incentives to encourage retrofits and the adoption of new technology to reduce pollution were suggested as approaches to be considered.
4. There is a need to improve conservation efforts and identify other solutions to reduce electricity demand and consumption. Participants in the consultations strongly supported such solutions, both through the adoption of more efficient technologies and through efforts to change consumer behaviour.
5. There is an ongoing need to share information, both in concerned communities and across Alberta, about what is being done to reduce emissions from electricity generation. This could entail a stronger role for a number of players, including airshed zones that have members from the power generation sector, CASA, Alberta Environment, and individual companies that generate electricity.

5.2 Recommendations to the EFR Project Team

Participants in the town hall meetings and those who responded to the survey provided many comments that gave the project team additional insight into their particular concerns and issues. However, many of the comments were not directly related to the 2003 Framework and its review, which was the focus on the EFR team's mandate. The Public Consultation Subgroup is of the view that additional work is needed in two areas to help Albertans, particularly members of affected communities, learn more about the Framework and its implementation prior to the next five-year review. These efforts could include workshops, a newsletter, a dedicated website, sessions or presentations at relevant conferences, and liaison with industry-community panels in affected areas.

More generally, town hall participants expressed the opinion that CASA has done good work but has a low profile. Increasing CASA's profile would also help raise awareness of the Electricity Framework and potentially enable the team doing the next five-year review to reach more participants.

These recommendations are given as advice to the project team and may or may not be included in the project team's final report which will be forwarded to CASA Board of Directors for their approval.

Draft Recommendation 1: Pre-consultation phase for next five-year review

The Public Consultation Subgroup recommends that the working group formed to develop terms of reference and timelines for the next five-year review build in a pre-consultation phase, which would involve focused public outreach about CASA as well as the Electricity Framework and progress in its implementation.

Draft Recommendation 2: Higher profile for the Electricity Emissions Management Framework

The Public Consultation Subgroup recommends that CASA maintain a website that is regularly updated with information about the Electricity Framework and its implementation.

Appendix A: Survey Questions

CASA welcomes your input on the management of emissions associated with electricity generation in Alberta. Your responses to this survey will be combined with those of others and reported in summary form only, as percentages or common themes. You will not be identified by any of your responses. A summary of comments received may appear in the final CASA report.

A: To help us analyze the survey responses, please tell us about yourself by answering the following questions.

1. Which category best reflects your role when answering this survey.
 - Individual – general public
 - Individual – air quality or energy-environmental issues professional
 - Representative of a company working in the electricity sector
 - Representative of any other company or business (not working in electricity or directly related service industry)
 - Representative of a government department or agency
 - Representative of a public interest group (e.g., environmental, agricultural, surface land owners, health)
 - Representative of an Aboriginal community or group
 - Other (please specify) _____

2. Which category best describes the location of your residence relative to electricity generation facilities:
 - I live, or own a seasonal property, close to a coal or gas fired power plant [within 50 km]
 - I live downwind of a coal or gas-fired power plant but more than 50 km away
 - I do not live or own property close to a coal or gas-fired power plant

3. Please provide the first three characters of your postal code (e.g., “T 5 K”)

4. How old are you?
 - Under 25 years
 - 25 to 44 years
 - 45 to 64 years
 - 65 and over

5. How familiar are you with the Alberta (CASA) Electricity Management Framework?
 - I have read the framework and am quite familiar with it
 - I have looked at some of the framework but am only slightly familiar with it
 - I have heard of it but haven’t ever reviewed it.
 - I have never heard of it.

B: Responses

1. Overall Perspective

1.1 What issues concern you most about the production of electricity in Alberta?

1.1.1. What issues concern you most about the production of electricity in your local community or immediate region?

1.2. How concerned are you about air emissions from electricity production in Alberta?

Extremely	Very	Somewhat	Slightly	Not at All
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Why ?

1.3. How concerned are you about air emissions from electricity production in your community?

Extremely	Very	Somewhat	Slightly	Not at All
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Why ?

2. Albertans are interested in a number of potential air quality issues and related emissions related to electricity production. In the table below, please assign your priority level based on your view of the need for action and improvement.

Please note – the CASA Electricity Management Framework does not currently address all of the issues and emissions included in this table. Some issues, such as Climate Change, are addressed through a separate strategic management framework.

Potential Issue and Associated Emissions	Priority Level			
Acid Deposition/ Acid Rain: <i>Sulphur dioxide and nitrogen oxide emissions</i>	Hi	Med	Low	None
Air Toxins: <i>Mercury, heavy metals, fine particulates</i>	Hi	Med	Low	None
Climate Change: <i>CO² and other greenhouse gas emissions</i>	Hi	Med	Low	None
Ground-level ozone / Smog: <i>Nitrogen oxide emissions</i>	Hi	Med	Low	None
Odour	Hi	Med	Low	None
Dust <i>Particulates</i>	Hi	Med	Low	None
Aesthetic (Visual):	Hi	Med	Low	None
Other: please specify	Hi	Med	Low	None

For issues above to which you assigned a **high or medium** priority – please now rank them in relative **order** of priority:

Potential Issue and Associated Emissions	Priority Rank			
Acid Deposition/ Acid Rain: <i>Sulphur dioxide and nitrogen oxide emissions</i>	1	2	3	4
Air Toxins: <i>Mercury, heavy metals, fine particulates</i>	1	2	3	4
Climate Change: <i>CO² and other greenhouse gas emissions</i>	1	2	3	4
Ground-level ozone / Smog: <i>Nitrogen oxide emissions</i>	1	2	3	4
Odour	1	2	3	4
Dust <i>Particulates</i>	1	2	3	4
Aesthetic (Visual):	1	2	3	4
Other: please specify	1	2	3	4

3. What are the most important changes you would like to see implemented to address your concerns?
4. Albertans are interested in a number of potential **solution strategies** for further improving air quality and reducing emissions, which are listed below. Please assign a priority level related to electricity production, based on your view of the need for action and improvement.

Potential Solutions	Priority Level			
Increasing the efficiency of coal and gas fired power generation	Hi	Med	Low	None
Increasing the proportion of clean renewable electricity sources	Hi	Med	Low	None
Encouraging reduction of end-use demand for electricity through behavior change / conservation	Hi	Med	Low	None
Encouraging reduced use of electricity through adoption of more efficient technologies	Hi	Med	Low	None
Imposing tougher standards on the release of air emissions from generation facilities	Hi	Med	Low	None
Other: please specify [text entry]	Hi	Med	Low	None

For issues above to which you assigned a **high or medium** priority – please now rank them in relative **order** of priority:

Potential Solutions	Priority Rank			
Increasing the efficiency of coal and gas fired power generation	1	2	3	4
Increasing the proportion of clean renewable electricity sources	1	2	3	4
Encouraging reduction of end-use demand for electricity through behavior change / conservation	1	2	3	4
Encouraging reduced use of electricity through adoption of more efficient technologies	1	2	3	4
Imposing tougher standards on the release of air emissions from generation facilities	1	2	3	4
Other: please specify [text entry]	1	2	3	4

5. Please review the following statements and indicate to what degree you agree or disagree with each:

5.1. Electricity production has no negative impacts on me or my family.

Strongly agree	agree	disagree	Strongly disagree	Don't know	Not relevant
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5.2. Government and industry have achieved the right balance between managing the cost of pollution control for generation facilities and protecting the environment.

Strongly agree	agree	disagree	Strongly disagree	Don't know	Not relevant
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5.3. Air emissions from electricity production have no significant impact on human health in my family or community.

Strongly agree	agree	disagree	Strongly disagree	Don't know	Not relevant
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5.4. Air emissions from electricity production have no significant impact on the natural environment in my family or community.

Strongly agree	agree	disagree	Strongly disagree	Don't know	Not relevant
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5.5. The CASA electricity framework plays a valuable role in maintaining good air quality in my community.

Strongly agree	agree	disagree	Strongly disagree	Don't know	Not relevant
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5.6. The CASA electricity framework plays a valuable role in maintaining good air quality in Alberta.

Strongly agree	agree	disagree	Strongly disagree	Don't know	Not relevant
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5.7. Air emissions from electricity production are having no significant impact on agriculture in my community.

Strongly agree	agree	disagree	Strongly disagree	Don't know	Not relevant
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5.8. Effective environmental monitoring is in place to detect and report any significant problems associated with air emissions from electricity production.

Strongly agree	agree	disagree	Strongly disagree	Don't know	Not relevant
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5.9. I would be prepared to pay up to 20 percent more for the electricity I consume to achieve significant reductions in air emissions.

Strongly agree	agree	disagree	Strongly disagree	Don't know	Not relevant
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5.10. I plan to pursue the option of generating some or all of my own electricity in the near future.

Strongly agree	agree	disagree	Strongly disagree	Don't know	Not relevant
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6. Please provide any general comments or explanations you wish to share.

Thanks for taking time to provide CASA with your input.

If you would like to receive future information or updates from CASA on this topic, please provide your contact information. This information will not be connected or stored with your responses to the questionnaire that you have just submitted:

Name _____

Postal Address _____

Or

Email _____

Appendix B: Survey Response Tables

Question A1: Which category best reflects your role when answering this survey? (n=90)

Category	n	%
Individual - general public	58	64%
Representative of a government department or agency	11	12%
Representative of a public interest group (e.g., environmental, agricultural, surface land owners, health)	9	10%
Individual - air quality or energy-environmental issues professional	7	8%
Representative of any other company or business (not working in electricity or directly related service industry)	3	3%
Representative of a company working in the electricity sector	2	2%
Representative of an Aboriginal community or group	0	-

Question A2: Which category best describes the location of your residence relative to electricity generation facilities? (n=87)

Category	n	%
Do not live or own property close to a coal or gas-fired power plant	46	53%
Live, or own a seasonal property, close to a coal or gas fired power plant (within 50 km)	21	24%
Live downwind of a coal or gas-fired power plant but MORE than 50 km away	20	23%

Question A3: Please provide the first three characters of your postal code (n=86)

Region	n	%
Edmonton, St. Albert, Sherwood Park	22	26%
Central	21	24%
Calgary, Airdrie, Cochrane	17	20%
Southern Alberta	12	14%
Northern Alberta	10	12%

Question A4: How old are you? (n=89)

Category	n	%
Under 25 years	5	6%
25 to 44 years	29	33%
45 to 64 years	50	56%
65 years and over	5	6%

Question A5: How familiar are you with the Alberta (CASA) Electricity Management Framework? (n=89)

Response	n	%
I have read the framework and am quite familiar with it	17	19%
I have looked at some of the framework but am only slightly familiar with it	42	47%
I have heard of it but haven't ever reviewed it	20	23%
I have never heard of it	10	11%

Question B1.1: What issues concern you most about the production of electricity in Alberta? (n=82)

Issue	n	%
Use of coal in electricity production means significant emissions of pollutants, GHGs, both in mining and burning	49	60%
Lack of alternatives: Insufficient government interest in developing alternative sources and technologies; continued reliance on inefficient methods and non-renewable resources	21	26%
Damage caused to our environment and our health by production and transmission activities	21	26%
Support for (through financial help, incentives) and promotion of small residential producers	13	16%
Reliability and affordability of power supply	11	13%
Insufficient government monitoring and regulation of both production and use of power	4	5%
Impacts of recovering natural gas: danger from pipelines, loss of forests on leases, loss of agricultural land	3	4%

Question B1.2: What issues concern you most about the production of electricity in your local community or immediate region? (n=75)

Issue	n	%
Air emissions, air quality and the impact on health and environment	39	52%
More regional generation to address inefficiencies, dangers inherent in transmission: e.g. developing hydro generation where feasible (more environmentally friendly, could address other water issues); make better use of open spaces, such as farm fields, for wind and solar power installations; would reduce the "clustering" of generating stations to meet province-wide needs	20	27%
Aboveground power lines	8	11%
Proposed nuclear power plant in Peace River region	6	8%
No local concerns	6	8%
Waste of energy by large consumers	4	5%

Question B1.3a: How concerned are you about air emissions from electricity production in Alberta? (n=89)

	n	%
Extremely	44	49%
Very	27	30%
Somewhat	11	12%
Slightly	5	6%
Not at all	2	2%

Question B1.3b: Why? (n=73)

Reason	n	%
Pollution and air quality are not being adequately addressed by government and industry; there do not appear to be any controls on emissions of NO ₂ , SO ₂	42	58%
Emissions of GHGs are a concern; we have a responsibility to the world and the future	22	30%
Health concerns are not being addressed	16	22%
Non-sustainability of current practices	8	11%
Don't know of any negative effects; emissions are a minor concern	3	4%

Question B1.4a: How concerned are you about air emissions from

electricity production in your community? (n=88)

	n	%
Extremely	32	36%
Very	14	16%
Somewhat	24	27%
Slightly	8	9%
Not at all	10	11%

Question B1.4b: Why? (n=66)

Reason	n	%
No electrical generation facilities in my community; no noticeable impacts in my community; Don't really know what kind of power generation occurs in my community	19	29%
Air pollution and global warming are not community level issues; they affect everyone, no matter where the emissions originate	18	27%
Health concerns	17	26%
Lack of government monitoring and controls of these emissions	11	17%
The facilities are expensive, inefficient; there are too many generating stations in my community	7	11%
Local ecosystem is negatively impacted	5	8%

Question B2a: Albertans are interested in a number of potential air quality and related emissions related to electricity production. In the table below, please assign your priority level based on your view of the need for action and improvement.

	High		Medium		Low		None	
	n	%	n	%	n	%	n	%
Acid deposition/acid rain: sulphur dioxide and nitrogen oxide emissions	57	65%	24	27%	6	7%	1	1%
Air toxins: mercury, heavy metals, fine particulates	66	75%	19	22%	3	3%	0	0%
Climate change: CO2 and other greenhouse gas emissions	50	56%	22	24%	11	12%	4	4%
Ground-level ozone/smog: nitrogen oxide emissions	50	56%	25	28%	9	10%	2	2%
Odour	16	18%	29	32%	28	31%	11	12%
Dust: particulates	32	36%	31	34%	21	23%	3	3%
Aesthetic (visual)	18	20%	23	26%	33	37%	11	12%
Other: Ecosystem degradation/habitat fragmentation	5		1					
Other: Consumer overuse/waste	1		1					

Question B2b: For the issues above to which you assigned a HIGH or MEDIUM priority, please rank your top four in relative ORDER of priority.

	Total n	1st (n)	2nd (n)	Mean*	Median
Acid deposition/acid rain: sulphur dioxide and nitrogen oxide emissions	61	8	28	2.39	2
Air toxins: mercury, heavy metals, fine particulates	77	32	25	1.91	2
Climate change: CO2 and other greenhouse gas emissions	62	30	9	2.15	2
Ground-level ozone/smog: nitrogen oxide emissions	58	4	9	3.19	3
Odour	11	1	3	3	3
Dust: particulates	25	2	5	3.12	3
Aesthetic (visual)	7	1	5	2.86	3
Other: Ecosystem degradation/habitat fragmentation	2				
Other: Consumer overuse/waste	0				

*Note: Mean is measured on a 4-point scale, where 1=1st, 2=2nd, 3=3rd, 4=4th. Lower mean means higher rank.

Question B3: What are the most important changes you would like to see implemented to address your concerns? (n=41)

	n	%
Government mandated reductions in overall emissions; more effective government monitoring and control over emissions; mandate industry to use up-to-date "scrubber" technology; use industry "fines" to pay for health costs related to their pollution	29	71%
Phasing out existing facilities that use non-renewable resources, non-BATEA coal	20	49%
Using renewable sources of power; power generated through burning (coal, natural gas) should burn renewable resources (wood, other plants, waste)	19	46%
R&D investment by government to promote development and use of alternative power sources, quickly, that will make it immediately affordable for all	18	44%
Public education on responsible power use, local and provincial air quality	11	27%
Development of small-scale suppliers of renewable sources of power	10	24%
Implementation of "cap and trade" and "carbon tax" on GHG emissions	3	7%
No change is necessary; keep the supply of electricity affordable, using existing plants and technology	2	5%

Question B4a: Albertans are interested in a number of potential solution strategies for further improving air quality and reducing emissions, which are listed below. Please assign a priority level related to electricity production, based on your view of the need for action and improvement.

	High		Medium		Low		None	
	n	%	n	%	n	%	n	%
Increasing the efficiency of coal and gas fired power generation	48	53%	29	32%	7	8%	2	2%
Increasing the proportion of clean and renewable electricity sources	72	80%	11	12%	5	6%	2	2%
Encouraging the reduction of end-use demand for electricity through behaviour change/conservation	54	60%	25	28%	8	9%	1	1%
Encouraging reduced use of electricity through adoption of more efficient technologies	56	62%	23	26%	6	7%	2	2%
Imposing tougher standards on the release of air emissions from generation facilities	56	62%	18	20%	12	13%	4	4%
Other: Govt regulation of consumption levels	4		1					

Question B4b: For the issues above to which you assigned a HIGH or MEDIUM priority, please rank the top four in relative ORDER of priority.

	Total n	1st (n)	2nd (n)	Mean*	Median
Increasing the efficiency of coal and gas fired power generation	48	11	16	2.48	2
Increasing the proportion of clean and renewable electricity sources	74	34	15	2	2
Encouraging the reduction of end-use demand for electricity through behaviour change/conservation	63	15	20	2.37	2
Encouraging reduced use of electricity through adoption of more efficient technologies	65	5	17	2.89	3
Imposing tougher standards on the release of air emissions from generation facilities	58	14	11	2.66	3
Other: Govt regulation of consumption	2		1		

*Note: Mean is measured on a 4-point scale, where 1=1st, 2=2nd, 3=3rd, 4=4th. Lower mean means higher rank.

Question B5: Please review the following statements and indicate to what degree you agree or disagree with each.

	Total n	SA (1)	A (2)	D (3)	SD (4)	Mean*	Median
Electricity production has no negative impacts on me or my family.	87	7	9	23	48	3.29	4
Government and industry have achieved the right balance between managing the cost of pollution control for generation facilities and protecting the environment.	87	2	11	27	47	3.37	4
Air emissions from electricity production have no significant impact on human health in my family or community.	80	4	13	20	43	3.28	4
Air emissions from electricity production have no significant impact on the natural environment in my family or community.	83	2	15	19	47	3.34	4
The CASA electricity framework plays a valuable role in maintaining good air quality in MY COMMUNITY.	57	5	35	9	8	2.35	2
The CASA electricity framework plays a valuable role in maintaining good air quality IN ALBERTA.	64	12	35	7	10	2.23	2
Air emissions from electricity production are having no significant impact on agriculture in my community.	67	3	12	33	19	3.01	3
Effective environmental monitoring is in place to detect and report any significant problems associated with air emissions from electricity production.	70	4	17	23	26	3.01	3
I would be prepared to pay up to 20 percent more for the electricity I consume to achieve significant reductions in air emissions.	83	21	34	12	16	2.28	2
I plan to pursue the option of generating some or all of my own electricity in the near future.	76	25	32	14	5	1.66	2

*Note: Mean is measured on a four-point scale, where 1=SA, 2=A, 3=D, 4=SD. Lower mean indicates higher level of agreement.

Question B6: Please provide any general comments or explanations you wish to share. (n=21)

	n	%
Using more efficient, environmentally-friendly technologies should not cost the consumer more than conventional technologies; generating companies should have to re-invest profits from higher prices into constantly improving technologies	8	38%
CASA, the government and industry make it difficult to bring the necessary changes to power generation in Alberta	5	24%
It's time to start a public discussion of nuclear power in Alberta	5	24%
Government needs to have a comprehensive plan for electricity production, consumption and export, to assure future needs and challenges can be met.	5	24%

Appendix C: Issues, Concerns and Recommendations from the Town Hall Meetings

Key words	Location	Comment, Concern or Recommendation
Emissions trading	Hanna, Keephills	<ul style="list-style-type: none"> Emissions trading is unlikely to bring emissions down in communities near plants. Emissions trading will cause emissions in some areas to go up. The focus should be on reducing, not trading, emissions.
Incentives/ Conservation	Keephills	<ul style="list-style-type: none"> Conservation programs should be given incentives to encourage retrofits. The Government of Alberta must create incentives to conserve.
Decision making	Hanna Keephills	<ul style="list-style-type: none"> The government approach to managing air quality is too fragmented and should be more integrated. It should reduce emissions by focusing on conservation, efficiency, ways to reduce line losses, and developing alternative generation sources to reduce the reliance on coal. Deregulation is part of the problem. Regulations should be at the point where emissions are simply not allowed. Then we won't need monitors.
Prescribe dates for new technology installation	Hanna	Installation of new technology in 2011 will lead to a step change in mercury reductions. Why can we not expect another step change in 20 years or so? Industry always responds to regulation so there should be regulations and/or standards that drive innovation rather than just predict the status quo.
Incentives/ Pollution control	Hanna	Government should provide incentives or tax credits to individual companies to install new pollution control technology as soon as it is available.
Incentives/ Alternatives	Keephills	Incentives are needed to generate renewable and alternative energy, especially for microgeneration.
Data and information	Hanna	Data and information on emissions and emission reductions should be reported on a more local or regional level to be more meaningful, and should be easily accessible to the public.
Monitoring	Keephills	Consider if more monitoring is needed downwind of major generation sources, and share data gathered downwind to more fully describe the impacts of generation facilities.
Cumulative effects	Keephills	New projects and new oil and gas activity will create more emissions on a cumulative basis. These need to be factored in when new standards for power plants are being developed.
R&A	Keephills	Government should more strongly pursue renewable energy. The R&A target should be increased 3% per year.
PM control	Keephills	PM control needs to be implemented in a more timely manner.
Grandfathering	Keephills	Grandfathering of existing plants should be reconsidered.

Note: The bullets in the first three rows reflect that the points were raised more than once. Otherwise, the issues are not in any priority order.