

## The Acid Rain Task Group Long-term Strategic Plan to Implement *The Strategy*

The Acid Rain Task Group (ARTG) has developed this Long-term Strategic Plan to define the key commitments made in *The Canada-Wide Acid Rain Strategy for Post-2000* in terms of the more specific tasks or actions that need to be undertaken to accomplish them. This document will be used by the Acid Rain Task Group as a tool for planning their yearly work activities and ensuring these activities are targeted towards achieving the goals of *The Strategy*.

### Background – Goals and commitments of *The Strategy*

*The Canada-Wide Acid Rain Strategy for Post-2000* was signed in October 1998 by all 26 federal / provincial / territorial Energy and Environment Ministers. The primary long-term goal of *The Strategy* is “to meet the environmental threshold of critical loads for acid deposition across Canada”, thereby ensuring the health of our forests and aquatic ecosystems. In order to ensure that critical loads are achieved across Canada, *The Strategy* commits federal, provincial and territorial Ministers of Environment and Energy to:

- pursue further emission reduction commitments from the United States;
- establish new sulphur dioxide (SO<sub>2</sub>) emission reduction targets in eastern Canada;
- prevent pollution, and keeping “clean” areas clean;
- ensure the adequacy of acid rain science and monitoring programs; and,
- annually report on SO<sub>2</sub> and nitrogen oxides (NO<sub>x</sub>) emissions and forecasts, on compliance with international commitments, and on progress in implementing *The Strategy*.

*The Strategy*, along with its “Supporting Document”, describes the importance of these commitments – or Key Features – in terms of meeting critical loads. However, neither *The Strategy* nor the Supporting Document associate timeframes with each commitment or break down the commitments into the specific tasks that should be undertaken to see them achieved.

The Acid Rain Task Group (ARTG), consisting of representatives from federal and provincial governments, industry associations and non-governmental environmental organizations, is responsible for implementing *The Strategy* on behalf of the Air Management Committee of the Canadian Council of Ministers of the Environment. Since its inception, the ARTG has worked towards accomplishing commitments made in *The Strategy* by undertaking tasks within its purview, such as:

- Hosting a workshop to present the major conclusions of the *2004 Canadian Acid Deposition Science Assessment*, discuss and identify the implications of the latest science to *The Strategy* and obtain input on next steps to address acid rain.
- Funding work by consultants to advance knowledge of the role of nitrogen in acidification and to develop and map critical loads and exceedances for western Canada.

According to the latest acid rain science and a five-year review of *The Strategy*, acid deposition continues to exceed critical loads across a large part of eastern Canada, despite our actions to date. It seems clear then, that more concerted and targeted efforts are needed to achieve the commitments made in *The Strategy* – consequently, the ARTG suggests that the commitments be further defined in terms of the specific actions required to achieve them. This will hopefully facilitate work planning by governments and the ARTG that is focussed and goal-oriented upon achieving the commitments made in *The Strategy*.

### Overview of the Long-term Strategic Plan

The ARTG’s Long-term Strategic Plan is a vision of what should be accomplished over the next ~5 years in terms of the implementation of *The Strategy*, as identified by ARTG members. The ARTG has broken down the key commitments made in *The Strategy* into a number of “actions” so that the commitments can be implemented in a step-wise manner. The “Recommended Timeframe” column indicates that certain actions need to be done either before or in parallel with other actions in order to be effective.

The ARTG also recognizes that, although not written in *The Strategy*, a very important consideration is a “review of *The Strategy*” itself to ensure that Canada continues to manage acid rain as effectively as possible in the face of emerging science and policy developments.

Another important consideration addressed here and absent from *The Strategy* is that of the impacts of acid aerosols on human health and the fact that acidic pollution is a precursor to important health issues such as smog.

The ARTG considers this Long-term Strategic Plan dynamic and will continually update it as the knowledge and activities of the ARTG and its stakeholders’ progress. It is important to note that the ARTG has neither the resources nor the expertise to undertake all of the actions identified herein. Thus, while annual ARTG workplan items will be based upon actions from the Long-term Strategic Plan, the ARTG proposes that this document also be viewed by the governments that committed to *The Strategy* as recommended actions (by governments and other stakeholders best-suited to do the work) to ensure that *Strategy* commitments are fulfilled. This aspect of the LTSP is reflected in the “Responsible Party” column.

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Long term goal: Ensure critical loads are achieved across Canada thereby ensuring the health of our forests and aquatic ecosystems (p5, Supporting Document for <i>The Canada-Wide Acid Rain Strategy for Post-2000</i> )						
Key Features of <i>The Strategy</i>	Actions		Recommended timeframe		Responsible party	Outcomes
			Start	Finish		
<b>1. Identify critical loads and exceedances</b>	1a	Establish sulphur and nitrogen forest critical loads for western and northern Canada	April 2005	March 2009	ARTG (through contracts)	<ul style="list-style-type: none"> <li>• Critical loads of acidity (sulphur and nitrogen) for forests soils and surface waters across Canada</li> <li>• Knowledge of sensitive areas</li> <li>• Knowledge of where acid deposition needs to be reduced</li> <li>• Critical loads to enable establishment of emission reduction targets</li> <li>• Alternative indicator of ecosystems response and recovery to acid deposition that could be tracked/reported</li> <li>• Knowledge of impacts to biodiversity, habitat loss</li> <li>• Up-to-date critical loads for Canada</li> <li>• Exceedance maps</li> <li>• Knowledge of the need for an ecosystem-based indicator besides critical loads</li> <li>• All acid rain stakeholders</li> </ul>
	1b	Establish aquatic critical loads for western and northern Canada	April 2008	March 2010	ARTG (through contracts)	
	1c	Encourage a review of broader indicators of recovery (beyond critical loads) and their establishment if appropriate	Ongoing		ARTG consideration as they implement <i>The Strategy</i>  F / P / T governments	
	1d	Review and update critical loads for all of Canada	Ongoing		ARTG (through contracts)	
	1e	Map exceedances of critical loads	Ongoing		ARTG (output of contracts let in 1a, b, and d)	
<b>2. Reduce emissions in Canada</b>	2a	Improve emission inventories and forecasts	Ongoing		Environment Canada, P / T governments	<ul style="list-style-type: none"> <li>• Knowledge of current and projected SO<sub>2</sub> and NO<sub>x</sub> emissions</li> <li>• Knowledge of where critical loads continue to be exceeded</li> <li>• Knowledge of where emission reductions need to be made, by how much, to achieve CLs</li> <li>• Knowledge of how far current US and Canadian SO<sub>2</sub> and NO<sub>x</sub> emission reduction commitments (Ozone Annex, CAIR, CAVR, jurisdictional implementation plans for PM and ozone CWS, etc.) go towards reducing acid deposition</li> <li>• Knowledge of costs of further reducing acidifying emissions and benefits to environmental receptors</li> <li>• Recommendations for potential targets and timelines for reductions</li> <li>• Increased understanding of linkages between acid rain and other air pollution problems</li> <li>• Knowledge of the benefits of coordinated action</li> <li>• Longer term: protect health of forests and aquatic ecosystems</li> <li>• Integrated management of air issues</li> </ul>
	2b	Identify areas of critical load exceedance where further emission reductions may be required (using 1e)	September 2006	March 2008	ARTG (in house)	
	2c	Assess the performance of current acidifying emission reduction programs and other air pollution/climate change initiatives in terms of impacts on deposition levels and exceedances	October 2006	February 2008	Environment Canada scientists, ARTG has advisory role	
	2d	Develop scenarios for emission reductions beyond current commitments/programs and estimate the result of these scenarios on deposition levels and exceedances (i.e., how much do emissions need to be reduced to achieve critical loads?)	September 2007	March 2009	Environment Canada scientists, ARTG	

**Long term goal: Ensure critical loads are achieved across Canada thereby ensuring the health of our forests and aquatic ecosystems (p5, Supporting Document for *The Canada-Wide Acid Rain Strategy for Post-2000*)**

Key Features of The Strategy	Actions		Recommended timeframe		Responsible party	Outcomes
			Start	Finish		
	2e	Contribute to cost-benefit analyses of emission reductions identified in 2d	March 2008	March 2009	F / P/ T governments ARTG has advisory role	
	2f	Based on results of 2d, recommend targets and timelines for emission reductions	March 2008	September 2009	F / P/ T governments ARTG has advisory role	
	2g	Review and recommend regional and national caps for sulphur and nitrogen	March 2008	September 2009	F / P/ T governments ARTG has advisory role	
	2h	Encourage negotiations among jurisdictions to commit to further reductions	March 2008	Until further commitments are adopted	F / P/ T governments ARTG has advisory role	
<b>3. Reduce emissions in the US</b>	3a	Encourage negotiations with the US to secure further emission reduction commitments	Ongoing		F / P/ T governments ARTG has advisory role	<ul style="list-style-type: none"> <li>Federal negotiations of possible further emission reduction commitments under the Canada-US Air Quality Agreement</li> <li>Longer term: Reductions in transboundary flow of acidifying pollutants</li> </ul>
<b>4. Keep clean areas clean</b>	4a	Review and consider developing a guidance document or other tool(s) to aid jurisdictions in keeping clean areas clean and (if developed) actively promote the use of this tool across Canada	Ongoing		ARTG (in house and through contracts)	<ul style="list-style-type: none"> <li>Actions taken to prevent acid deposition in areas that do not exceed the critical load</li> <li>Guidance document adopted</li> </ul>
	4b	Ensure that KCAC receives more focus in the biennial progress reports of <i>The Strategy</i>	Ongoing		ARTG (in house)	
<b>5. Prevent Pollution</b>	5a	Review the processes, practices, materials and energy used to avoid or minimize air pollution	Ongoing		F / P/ T governments	<ul style="list-style-type: none"> <li>Actions taken to minimise acid deposition in Canada</li> </ul>
	5b	Promote pollution prevention	Ongoing		F / P/ T governments	
<b>6. Review compliance with international commitments</b>	6a	Review current emissions and targets to ensure compliance with international commitments and provide warning of the need for corrective action	Ongoing		F / P/ T governments	<ul style="list-style-type: none"> <li>Canada is compliant with international SO<sub>2</sub> and NO<sub>x</sub> emission reduction commitments</li> <li>Emission reduction targets and caps are achieved</li> </ul>

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Key Features of <i>The Strategy</i>	Actions		Recommended timeframe		Responsible party	Outcomes
			Start	Finish		
<b>7. Ensure an adequate science and monitoring program</b>	7a	Develop a coordinated national Science Plan, with prioritized list of activities	April 2005	October 2006	ARTG in house, with input from acid rain stakeholders (F / P / T governments, academia)	<ul style="list-style-type: none"> <li>• Knowledge of who is doing what, who needs to do what, by when</li> <li>• Improved cooperation in science and monitoring activities</li> <li>• Awareness of the need to expand science and monitoring programs</li> <li>• Improved research and monitoring capacity</li> <li>• Improved scientific basis for more informed policy decisions</li> <li>• Awareness of the effectiveness of emission control programs in reducing damage to Canadian ecosystems and the health of the environment</li> <li>• Increased understanding of linkages between acid rain and other air pollution problems</li> <li>• Knowledge of role of nitrogen in acidification</li> <li>• Collaborative assessment of the impact of emission reductions on nitrogen deposition</li> <li>• Awareness of the most recent knowledge of the impacts of acid deposition on human health via expert advice</li> </ul>
	7b	Promote the Science Plan	Ongoing, for specific tasks see the Science Plan		ARTG and acid rain stakeholders	
	7c	Assess the role of nitrogen in acidification and determine if further actions are required to reduce NOx emissions	Ongoing		ARTG (through contracts)	
	7d	Follow current and emerging research into the human health effects of acid deposition	Ongoing		ARTG (in house)	
<b>8. Reporting &amp; communicating</b>	8a	Prepare biennial reports on the implementation of <i>The Strategy</i> (Progress Reports)	Ongoing, every 2 years		ARTG (in house)	<ul style="list-style-type: none"> <li>• Decision makers and the public are aware of progress implementing <i>The Strategy</i></li> <li>• Scientists share latest information about acid rain issue in Canada</li> <li>• Improved coordination and cooperation among scientists, jurisdictions and stakeholders</li> <li>• Increased awareness and knowledge among Canadians, the scientific community and decision/policy-makers of acid deposition impacts</li> <li>• Science Assessment Report every 7 years (next one in 2011)</li> </ul>
	8b	Facilitate informal Science Network	Ongoing		ARTG (in house)	
	8c	Facilitate information exchange among jurisdictions and stakeholders with workshops, fact sheets etc.	Ongoing		ARTG (in house) and Environment Canada	
	8d	Conduct another acid deposition science assessment	2008	2011	F / P/ T governments, academia	

Proposed Feature currently not in <i>The Strategy</i>	Action Items		Recommended timeframe		Responsible party	Outcomes
			Start	Finish		
9. Review of <i>The Strategy</i>	9a	Conduct reviews every 7 years of <i>The Strategy</i> , including reviews of acid rain science and monitoring programs <sup>1</sup>	April 2012	March 2013	ARTG (in house) and Environment Canada	<ul style="list-style-type: none"> <li>• Decision makers and the public are aware of progress implementing The Strategy</li> <li>• Policy and decision-makers take into account the impacts of acid deposition to ecosystem health in making decisions, changing policies and making changes in their activities</li> <li>• Ensure effectiveness of long-term acid rain management in Canada</li> <li>• Revised Strategy</li> </ul>
	9b	Recommend revisions to <i>The Strategy</i> as required	October 2006	March 2007	ARTG (in house)	

<sup>1</sup> Follow-up to “The 1999 Review of Acid Rain Science Programs in Canada”, Federal/Provincial/Territorial Ministers of Energy and the Environment, 2001.