- **Fact Sheet on Mercury**

Taking Action on Mercury Emissions

Mercury and electricity

Mercury is a naturally occurring metallic element released into the environment through both human and natural activities. Mercury released into water from either the air or soil is a concern as it can be transformed into its most common organic form, methylmercury. In this form, mercury can bioaccumulate and pose a risk to human health when there is exposure to high enough levels through fish consumption.

Mercury is found in coal to varying degrees. When coal is burned to produce electricity, mercury is released into the environment. As one of the largest sources of mercury emissions, the companies in Canada's coal-fired electricity generation sector are committed to reducing these releases as part of their emission management strategies. The first priority is to reduce the significant scientific uncertainties around the measurement and control of mercury emissions from coal-fired electricity generation.

Reducing uncertainties

Building on significant efforts over the past few years, coal-fired electric generation companies in Canada, in cooperation with governments, are embarking on a three-year program to reduce these uncertainties. The program will:

- Improve emission inventories and the development of management options through an intensive two year coal, ash and stack sampling program;
- Promote effective stack testing through the development of guidance material and the support of on-site training on the Ontario Hydro Method for employees, government representatives and contractors, on an as-needed basis;
- Strengthen laboratory analytical capabilities through analysis and quality assurance programs;
- Create and maintain an information clearing house to ensure that all parties can keep informed on global mercury research and development activities.

The program will be implemented under agreements with governments, with regular, publicly available results reporting. The findings of this program will provide critical information for establishing and reviewing a mercury standard for Canada, and finding cost-effective and efficient management options for mercury emissions over the long-term.

Improving the mercury emission inventory

Sampling and Reporting

CEA believes the first priority is to improve the inventory of mercury emissions from coal-fired power plants across the country. Companies have already put significant effort into achieving this objective. To augment this ongoing work and to support discussion of effective mercury management and standards achievability, CEA members have committed to a program of mercury measurement and reporting. A mutually agreed upon set of guidelines has been developed for an intensive program to sample and analyse the mercury in coal, ash and flue gas over the next two years.

The program is designed with quality-assurance and information value as the

principal drivers. Sample collection, handling, and storage will follow standard procedures, where practicable, as agreed among the companies and the respective provincial governments. Quality-assured analyses will be conducted on mercury and other key substances associated with mercury. Results will be reported to governments and the public in a timely manner.

Stack Testing Training Course

Correct application of the Ontario Hydro mercury stack testing methodology is critical to the achievement of good results. CEA members will support this goal through the development of guidance material and the support of on-site training on the testing methodology for company staff, government employees and contractors on an as-needed basis.

Laboratory Round-Robin

Accurate laboratory analysis of the samples is another critical factor in obtaining an accurate mercury inventory. Because mercury concentrations in the samples tend to be near the level of detection, laboratory analysis often yields inconsistent results. Building on previous work, CEA member companies are adopting a two-phased analysis and quality assurance approach to strengthen laboratory analytical capabilities. Phase I will focus on the capabilities of participating laboratories through assessing their performance in analyzing standard samples over a 6 month period. Phase II will have laboratories participate in the Canspex program that runs an ongoing quality assurance program. Phase II will also benchmark the characteristics of a number of common Canadian coals.

Research and Development

Information Clearing House

There is a significant amount of research and development activity related to mercury issues taking place in Canada, the U.S. and internationally. CEA will co-ordinate the compilation and reporting on a quarterly basis, of Canadian and international mercury related research and development activities and findings. The information gathered will provide a foundation for informed decision-making in the Canadian context.

Emission Control Research and Development

CEA member companies are engaged in a number of initiatives to analyse the effectiveness of mercury pollution control and measurement technologies. Many of these programs involve key North American experts in the field. Member companies are working together under the Canadian Clean Power Coalition to conduct significant research in new technologies to minimize emissions of mercury as well as other pollutants and greenhouse gases from coal-fired boilers.

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