



**Bill 9: The Ending Coal for Cleaner Air Act**

Submission to the Standing Committee on General  
Government  
October 5, 2015



The Registered Nurses' Association of Ontario (RNAO) is the professional association representing registered nurses (RN), nurse practitioners (NP) and nursing students in all settings and roles across Ontario.

RNAO welcomes the introduction of Bill 9, which prevents backsliding on Ontario's huge success in stopping the use of coal for electricity generation. We thank the Standing Committee on General Government for this opportunity to offer recommendations and comment on the Bill.

## **The Importance of Ending Coal**

Coal plants used to emit very significant shares of Ontario's pollution. For example, in 2000, based on the National Pollutant Release Inventory, Ontario Power Generation (OPG) coal plants released:<sup>1</sup>

- 19 per cent of Ontario's releases to the air
- 14 per cent of Ontario's total releases to air, land and water
- 19 per cent Ontario's total dioxins and furans
- 14 per cent hexachlorobenzene releases
- 22 per cent mercury releases
- 68 per cent chromium releases
- 22 per cent nickel releases
- 28 per cent arsenic releases
- 92 per cent hydrogen chloride releases
- 87 per cent of hydrogen fluoride releases
- 18 per cent of sulphuric acid releases

Health effects arise from exposure to the above pollutants. Based on the impacts of coal plant releases of particulate matter and ozone alone, a study for the Ministry of Energy attributed about 668 premature deaths to Ontario's coal plants.<sup>2</sup>

Coal emissions attack the body in various ways, including:

- **Respiratory effects:** Respiratory effects arise particularly via fine particles (24,000 deaths/year in the US)<sup>3</sup> and via nitrogen oxides which help to form ozone. These emissions can adversely affect lung development in children, can trigger asthma attacks, and can contribute to chronic obstructive pulmonary disease (the latter through the process of inflammation). They are also linked with lung cancer.<sup>4</sup> In addition to inflammation, there is evidence that air pollutants produced by coal burning also contribute to an increased concentration of free radicals in cells, causing oxidative stress, which can then damage cell components like DNA and in turn contribute to a variety of chronic diseases.<sup>5</sup> In the U.S. , it is estimated that in 2004, 24-thousand deaths per year were related to the respiratory effects of coal.<sup>6</sup>
- **Cardiovascular effects:** The same mechanisms driving respiratory effects also drive cardiovascular outcomes: inflammation and oxidation stress. There is evidence that both acute and long-term cardiovascular risks are positively correlated with exposure to air contaminants.<sup>7</sup>
- **Neurological effects:** There is evidence of a positive of cerebrovascular disease and events with exposures to particulate matter and other air contaminants.<sup>8</sup> Heavy metals like arsenic, mercury and chromium are also released in abundance via the burning of coal. One route of exposure for mercury is through concentration in the food chain via fish and shellfish (methylmercury).<sup>9</sup> As it is, hundreds of thousands of American children are estimated to have been born with mercury levels sufficiently high as to impair performance on neurodevelopmental tests.<sup>10 11</sup>

Coal plants also emit large amounts of greenhouse gases, which contribute to climate change. In 2002, the five Ontario Power Generation (OPG) plants released 20 per cent of the province's carbon dioxide and 17 per cent of Ontario's total greenhouse gas emissions.<sup>12</sup> The climate change, in turn, has feedback effects that impact human health (e.g., due to the spread of vector-borne diseases like West Nile virus, particulate matter

from wildfires, dust from droughts, extreme weather events and ozone creation from higher temperatures).

### **The Coal Closure**

In 2003, Ontario was heavily reliant on coal, with 25 per cent of its electrical power coming from that source.<sup>13</sup> By 2014, it had closed its last coal-fired power plant, making Ontario the first North American jurisdiction to end its reliance on coal for power.<sup>14</sup>

RNAO was proud to be part of the coalition that helped Ontario take that step, and we are pleased that the benefits are already being seen. Over the period of the progressive coal closures, Ontario air quality improved sharply, with criteria air contaminant concentrations dropping sharply (2004 to 2013):<sup>15</sup>

- Nitrogen oxide down 40 per cent
- Sulphur dioxide down 46 per cent
- Carbon monoxide down 42 per cent
- Fine particulate matter (PM<sub>2.5</sub>) down 30 per cent

The report carrying these data stated the obvious: the coal closures were a factor in this success, and that is something to be celebrated.

### **Bill 9**

Bill 9 mandates the closure of the remaining coal-fired generating plants. That has already happened, to the benefit of people's health throughout the province. The bill also would bar any future generation of electricity from coal. This is a welcome precautionary measure, which nurses strongly endorse. It is both a powerful tool to protect air quality, to prevent toxic emissions and to help meet Ontario's reducing greenhouse gas (GHG) emissions targets.

However, the province must do more than rest on its laurels when it comes to air quality and climate change. It has achieved substantive progress, and there is much more to be done. The government is moving forward on reducing greenhouse gas (GHG) emissions, including carbon pricing. We urge the Wynne government to build the kind of comprehensive program that will allow it to reach all its GHG targets to enjoy the co-

benefits of much cleaner air and reduced environmental illness. That would mean both building a carbon pricing regime that would be consistent with those targets and supporting it with strategies for each major emitting sector.

RNAO also acknowledges progress on toxics. Action was and is urgent, as Ontario ranks very high in terms of total toxic releases, relative to its American and Canadian counterparts.<sup>16</sup> As we previously pointed out in our submission on the *Great Lakes Protection Act* (GLPA) to this very Standing Committee, measures the government has taken include the introduction and partial implementation of the *Toxics Reduction Act* (TRA), the ban on the non-essential use of pesticides, the program to reduce releases of bee-killing neonicotinoids, and the inclusion of measures in the proposed GLPA to regulate or eliminate pollutants in the Great Lakes-St. Lawrence Basin.<sup>17</sup> The government must make full use of these tools to sharply reduce Ontarians' exposure to toxics.

### **RNAO's Recommendations**

RNAO offers the following recommendations arising out of Bill 9:

- 1. Pass Bill 9 without amendments that could weaken its intent to bar future coal-fired power plants.**
- 2. Design and implement a comprehensive program that will meet or exceed Ontario's emission reduction targets of 15 per cent below 1990 levels by 2020 and 80 per cent below by 2050. Integrate a greenhouse gas reduction perspective into policy in all relevant areas, including across all ministries.**
- 3. Design and implement a carbon pricing mechanism that is as comprehensive as possible, including transportation fuels, and that minimizes exemptions.**
- 4. Use all available tools to move the bar on toxics in Ontario, including:**
  - a. setting pollutant reduction targets under the Great Lakes Protection Act and**
  - b. bringing into force all the parts of the Toxics Reduction Act, including**
    - i. penalties and enforcement sections,<sup>18</sup>**
    - ii. a mechanism to deal with unlisted substances of concern,<sup>19</sup>**

- iii. **section 50 (1)(o.1) regulating the manufacture, sale or distribution of a toxic substance, substance of concern or other prescribed substance.<sup>20</sup>**
- iv. **section 50 (1)(o.2) requiring manufacturers, vendors and distributors of the above substances to notify the public about those products.<sup>21</sup>**

We thank the Standing Committee on General Government for this opportunity to offer recommendations on Bill 9, the *Ending Coal for Cleaner Air Act* and look forward to seeing our recommendations accounted in the final Bill.

## References:

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- <sup>2</sup> DSS Management Consultants Inc. and RWDI Air Inc. (2005). *Cost Benefit Analysis: Replacing Ontario's Coal-Fired Electricity Generation*. P. 26. Retrieved October 1, 2015 at [http://www.energy.gov.on.ca/en/files/2014/10/coal\\_cost\\_benefit\\_analysis\\_april2005.pdf](http://www.energy.gov.on.ca/en/files/2014/10/coal_cost_benefit_analysis_april2005.pdf).
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- <sup>4</sup> Lockwood, A., Welker-Hood, K., Rauch, M. and Gottlieb, B. (2009). *Coal's Assault on Human Health*. Physicians for Social Responsibility. P. vii. Retrieved October 1, 2015 at <http://www.psr.org/assets/pdfs/psr-coal-fullreport.pdf>.
- <sup>5</sup> Ibid, p. 15.
- <sup>6</sup> Clean Air Task Force. (n.d.). *Death and Disease from Power Plants*. Retrieved October 5, 2015 at [http://www.catf.us/fossil/problems/power\\_plants/](http://www.catf.us/fossil/problems/power_plants/).
- <sup>7</sup> Lockwood et al, op. cit., pp. 21-26.
- <sup>8</sup> Ibid, pp. 27-30.
- <sup>9</sup> World Health Organization. (2013). *Mercury and health*. Retrieved October 1, 2015 at <http://www.who.int/mediacentre/factsheets/fs361/en/>.
- <sup>10</sup> Lockwood et al., op cit., p. 32.
- <sup>11</sup> Trasande, L., Landrigan P., and Schechter, C. (2005). Public health and economic consequences of methyl mercury toxicity to the developing brain. *Environmental Health Perspectives* 2005. Vol. 113, No. 5. Pp. 590–596. Retrieved October 1, 2015 at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1257552/>.
- <sup>12</sup> Ontario Clean Air Alliance. (2005). *More than hot air: Greenhouse Gas Emissions from Ontario Power Generation's Coal-Fired Power Plants*. February. P. 10. Retrieved October 1, 2015 at <http://www.cleanairalliance.org/wp-content/uploads/2015/03/ghgfinal.pdf>.
- <sup>13</sup> Ontario Ministry of Energy. (2013). *Ontario Getting Out of Coal-fired Generation*. Retrieved October 1, 2015 at <http://news.ontario.ca/mei/en/2013/01/ontario-getting-out-of-coal-fired-generation.html>.
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- <sup>16</sup> Council for Environmental Cooperation. (2006). *Toxic Chemicals and Children's Health in North America*. May. In 2002, Ontario ranked second in total releases of recognized developmental and reproductive toxicants, and fifth in terms of carcinogens, of all US states and Canadian provinces. Retrieved September 21, 2015 at <http://www3.cec.org/islandora/en/item/2280-toxic-chemicals-and-childrens-health-in-north-america-en.pdf>.
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- <sup>18</sup> For sections of the TRA that are not yet in force, see highlighted sections of: Ontario. (2013). *Toxics Reduction Act, 2009*. Retrieved September 21, 2015 at [http://www.e-laws.gov.on.ca/html/statutes/english/elaws\\_statutes\\_09t19\\_e.htm#BK16](http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_09t19_e.htm#BK16).
- <sup>19</sup> Section 11 on reporting substances of concern has not been proclaimed by Cabinet. Ibid.
- <sup>20</sup> Section 50 (1)(o.1) has not been proclaimed by Cabinet. Ibid.
- <sup>21</sup> Section 50 (1)(o.2) has not been proclaimed by Cabinet. Ibid.