

## -More costly than we think-

***By Henry David Venema and Stephan Barg***

Our power suppliers and governments are not thinking “outside the box” as the management mantra goes. In fact, they are missing a box completely. On our monthly electricity bills, there are tidy boxes tracking usage, rates, taxes and a grand total that we must pay by month end. But in reality, our costs spill outside of this little box because we ignore the most important costs of all – the impacts on our health, our air quality and our climate. This amounts to about \$1.8 billion a year.

With Canada’s recent ratification of the Kyoto protocol coupled with the 11th smog advisory day in Ontario, the time is ripe to rethink how we produce our energy and how we can restructure our energy supply system, so that the full costs of our energy supply choices are reflected.

It is well documented that North Americans are among the biggest air polluters in the world—chiefly because we are among the highest per capita consumers of fossil fuels. And this consumption pattern only looks to rise. NAFTA governments predict that demand for electricity will grow by 14% in Canada, 66% in Mexico and 21% in the U.S. from 2000 to 2009. We will have to meet this demand, but how we choose to meet it, is a key issue.

The price we pay for a product (in this case electricity produced from coal) does not reflect its full cost – particularly with regard to environmental and health costs borne by society from electricity production.

Burning fossil fuels such as coal is not a cheap option. The air pollution (burning coal produces mercury, sulphur oxides, nitrogen oxides and carbon dioxide) has damaging health and climate change impacts that are not accounted for in the price of the electricity produced when coal is burned.

A recent study conducted by the Winnipeg-based International Institute for Sustainable Development (IISD), as part of the India-Canada Energy Efficiency Project, is the first to quantify the health impacts, air quality and climate change externalities associated with thermal power generation across Eastern Canada.

The study traced the passage of pollutants from the electricity sector to their impacts on people. The economic costs of the increased risks of mortality, chronic respiratory disease, and child bronchitis as well as the cost of increased respiratory and cardiac hospital admissions, emergency room visits, and the cost of

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degraded quality of life due to air pollution were calculated to total \$700 million a year (1996 dollars) in Eastern Canada alone.

Coal is not only the main fossil fuel used in electricity production; it is the worst offender in exposing people to sulphate aerosols, with the result of elevating mortality and chronic respiratory disease risks.

Quantifying the costs of future damages due to climate change is difficult because impacts occur everywhere in the world, not just in Canada. But a conservative estimate based on the international literature indicates that the global damages from electricity generation in Eastern Canada are \$1.1 billion/year (1996 dollars). Coal is again the worst offender because of its high rate of greenhouse gas emissions.

Ontario, in particular, needs to use full cost principles as it makes critical decisions regarding the current electricity infrastructure, how to meet Kyoto commitments and how to secure future electricity supplies. Better energy investment decisions will be made if externalities—which reflect the true societal costs—are considered. Non-polluting sources may not be as expensive as they seem if they are compared to the full costs of “cheap” coal-based electricity. Furthermore, when choosing how to meet our Kyoto targets we can both curb our domestic emissions with the huge co-benefit of cleaner air and thereby reduce our health costs, or we can forego these benefits by purchasing emission reduction credits on the international market.

The infamous Nanticoke coal-fired power plant provides another interesting illustrative example of the effects of externalities on investment decision-making. Nanticoke has some very dubious claims to fame. It is the single largest thermal power plant in Canada; the single largest CO<sub>2</sub> emissions source; and the single largest source of all air pollutants (by total mass) in Canada. The IISD study suggests that the cost of converting Nanticoke to cleaner-burning natural gas is no more expensive than doing nothing if full costs are considered. Furthermore, replacing Nanticoke with a combination of energy conservation and renewable energy *is by far the least cost option*.

The numbers that this study has revealed highlight the need to critically examine our plans regarding both current and future electricity needs and how we will supply them. The study dispels the illusory notion that coal is cheap. It isn't. It affects our health, our air quality and our quality of life.

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*The full IISD report is available at <http://www.iisd.org>*

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