

## Clean Air or Smokescreen?

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Financial Post Commentary  
October 24, 2006

At last, Canada has a Clean Air Act. Or, at least, a proposed Clean Air Act, which has little chance of becoming law in the current minority Parliament.

But at last we have a government willing to introduce clean air standards. Except, that is, for all the provincial governments that have had air pollution standards on the books for decades. Ontario Regulation 419/05, for instance, lists 344 substance-specific standards (<http://www.ene.gov.on.ca/envision/gp/2424e05.pdf>) based on the so-called Point of Impingement criterion. This means that if you emit a substance to the air, once it leaves your property and impinges on your neighbour the concentration has to be sufficiently low as not to be damaging.

OK, but at last we have a government willing to put fixed emission caps on large final emitters. Well, except for the fixed emission caps already imposed by provincial governments. In Ontario, for example, Regulation 194/05 ([http://www.e-laws.gov.on.ca/DBLaws/Regs/English/050194\\_e.htm#BK8](http://www.e-laws.gov.on.ca/DBLaws/Regs/English/050194_e.htm#BK8)) lists the large final emitters of sulphur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) and their specific emission limits. The Imperial Oil refinery at Sarnia, to pick one, is allowed to release 23,938 tonnes of SO<sub>2</sub> per year in 2006 and 2007, and must reduce those emissions to 9,200 by 2009 and thereafter. The same facility is allowed 3,164 tonnes of NO<sub>x</sub> emissions, which must be reduced to 2,660 by 2009.

Nor is the federal proposal to allow emissions trading anything new: Ontario already has an emissions trading system in place.

But at least the federal government is proposing an inspection staff to investigate emission infractions. Although what with all the provincial inspectors, compliance officers and environmental consultants currently doing the same job, they may need to drive around the block a few times waiting for a parking spot at the factory. Just last summer, for example, the Ontario Ministry of the Environment did an inspection sweep of the Sarnia petrochemical sector (the results are posted at [http://www.ene.gov.on.ca/programs/5069e\\_index.htm](http://www.ene.gov.on.ca/programs/5069e_index.htm)). So it is unclear why the federal Conservative government plans to fund a new investigative branch to do the same thing.

In fact it is unclear why the federal Conservative government is introducing new air pollution regulations at all. Their notice of intent of intent (NOI) to regulate certainly doesn't clear things up. Their explanation is that "Canada has historically relied on a variety of non-compulsory measures to reduce air emissions. However, these have not proved sufficient to reduce the health and environmental risks across the country." The idea that Canada's current pollution laws are non-compulsory would probably come as a surprise to the many firms and individuals who have been prosecuted under them. And air quality has improved substantially since the 1970s, as shown in the government's own data, much of which is archived at the National Air Pollution Surveillance web site, <http://www.etc-cte.ec.gc.ca/NAPSDData/Default.aspx>.

- Monthly average SO<sub>2</sub> levels have fallen dramatically since the 1970s. They were never high in prairie cities. In Toronto, SO<sub>2</sub> levels downtown have been monitored back to the early 1960s. Prior to 1970

they averaged over 100 parts per billion (ppb). By the late 1970s, SO<sub>2</sub> levels in eastern cities averaged 20 or 30 ppb and today they typically average 5 to 10 ppb.

- Monthly average Total Suspended Particulate (TSP) levels in Canadian cities were, on average, well over 120 micrograms per cubic metre (µg/m<sup>3</sup>) in the 1970s. Since then they have fallen in many places to near or below 60 µg/m<sup>3</sup>. Vancouver has typical levels of 10-30 µg/m<sup>3</sup>; Toronto and Montreal are slightly higher, usually coming in at 30—60. Calgary, Edmonton, Hamilton and Windsor continue to have TSP levels between 50 and 100 µg/m<sup>3</sup>. Halifax has always (back to 1974) had TSP readings below 50, and currently they are below 30.
- In all Canadian cities, monthly average Carbon Monoxide (CO) levels have been steady in recent decades at about 1 part per million (ppm). The 8 hour Environment Canada desirable standard is 8 ppm.
- The Environment Canada annual average desirable standard for NO<sub>x</sub> is 32 ppb. Most Canadian cities exceeded this standard for some months of the year up to the late 1980s, but since the mid-1990s they have had average levels between 20 and 30 ppb per month. Edmonton has a slight tendency to exceed the 32 ppb level, but otherwise Canadian cities are below 30 ppb.
- Canadian cities exhibit seasonal ozone patterns with monthly averages varying between 10 and 40 parts per billion. There was little or no trend in ozone levels from 1970—1990, but there is an upward trend after 1990 in some cities. The Canada-wide desirable annual average standard is 65 ppb. Ozone mainly becomes a concern during short episodes of intense summer sun and atmospheric inversions. Since the process of ozone formation is highly complex, it is not entirely clear what types of emission controls would succeed in reducing these temporary spikes, but to the extent NO<sub>x</sub> and Volatile Organic Compounds are at fault, they are already subject to regulation.

As for the health and environmental risks, the NOI makes far stronger claims than the underlying science assessments warrant. The 1999 Health Canada Science Assessment of then-proposed National Ambient Air Quality Objectives for particulate matter noted that while epidemiological studies have generated a range of small and uncertain correlations between air pollution and health indicators (such as mortality and hospital admissions), controlled human and animal exposure trials do not back up the claim that current air pollution levels are a health risk. They concluded:

- “Despite the fact that the ranges of particle concentrations [in laboratory experiments] usually exceed those experienced by the general population, little evidence for a dose–response relationship has been documented in the clinical toxicological literature... Overall, the clinical data does not lend much support to the observations seen in the epidemiology studies, particularly to the observations that high ambient particulate concentrations are associated with mortality within hours or a few days at most.” (Health Canada, 1999).

An updated assessment in 2004 ([http://www.ccme.ca/assets/pdf/prrvw\\_pm\\_fine\\_rvsd\\_es\\_e.pdf](http://www.ccme.ca/assets/pdf/prrvw_pm_fine_rvsd_es_e.pdf)) offered cautious support for the small effects in epidemiological studies, but also reported on a significant error discovered in a widely-used statistical algorithm, that added an upward bias to many published risk estimates. It restated the conflict between epidemiological and experimental results without resolution.

The federal Conservative government rightly places a lot of emphasis on aiming for “measurable” results. Yet they are conspicuously indifferent to the relevant measurements on air pollution trends and impacts already available. The day the new Act was announced I was a guest on a phone-in show for CKNW in

Vancouver. John Bennett of the Sierra Club was the other guest. Even he agreed (to my surprise) that air pollution is not an urgent issue in Canada.

The Clean Air Act tidies up some loose ends in federal air quality regulation, but nothing that needed eight months of hype to motivate. So people naturally speculate about what the real motives are. Perhaps the over-hyped air pollution provisions are a cover for what many (though not me) see as a disappointing lack of greenhouse gas emission controls.

But conflating different issues can backfire. One of the callers to CKNW that morning complained that all this air pollution she is choking on won't be regulated now until 2050. I tried to correct her, within the time limits of a talk radio format. Regulations are already in place, Vancouver has pretty good air quality, and it has gotten better, not worse, over recent decades. The caller's confusion was understandable though. She was merely echoing the government's premises, namely that air pollution is killing us and there are no regulations in place to stop it. The reference to 2050 was muddled: that's when the long-run greenhouse gas targets are supposed to be met, not the air pollution targets. But of course she had them confused. That was the whole point, wasn't it?

On climate change, the Conservatives, like the Liberals before them, find it much easier to say what they don't want to do than what they do want to do. They don't want to do Kyoto, they don't want to impose costly emission caps, and they want to wait a decade before imposing anything on specific industries. These are rational positions to take, but the relentless drumbeat of hype and alarm about global warming makes rational choices sound controversial. So they deflected criticism by wrapping them up in some irrational air pollution initiatives. It might just work.

Perhaps what they really want is for the dilemma to go away. If so, ten years is about right. In ten years people will not be debating global warming anymore. All the lurid threats about an imminent 'tipping point' leading to freakish climate chaos will have been proven right or discredited, and discussion can begin to take place amidst less hyperbole. If, as I expect, winter 2016 is roughly as long and cold as winter 2006, it may be possible to talk about a reasonable course of action without the alarmist noise in the background.

Of course, maybe I'm wrong and Al Gore is right. Maybe the Arctic is heating up and winter will soon cease to exist around Hudson Bay, as they warned on the CBC a few years ago. So here's a proposal. Schedule the talks on greenhouse gas emission targets at an outdoor location in Churchill Manitoba for, say, February 2017. If the day comes and the meeting has to be canceled because the participants will freeze to death, then we will have a strong hint that the targets were not really needed after all.