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ENVIRONMENTAL DEFENCE

**CANADIAN ENVIRONMENTAL
LAW ASSOCIATION**

PollutionWatch
www.PollutionWatch.org

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PollutionWatch Fact Sheet **Canada's Pollution and Greenhouse Gas Emissions Highlights for 2005**

Pollutant Releases and Transfers and Greenhouse Gas Emissions on PollutionWatch

- The PollutionWatch web site (www.PollutionWatch.org) uses the 2005 pollutant releases and transfer data collected by the federal government under the National Pollutant Release Inventory (NPRI), and the 2005 greenhouse gas data collected by the federal government under the Greenhouse Gas Emissions Reporting program.
- The NPRI and Greenhouse Gas Emissions Reporting Program are the principal programs supported by the federal government to track pollutants and greenhouse gases from facilities across Canada. The data from these programs are released to the public annually. More than 8,000 facilities reported to NPRI in 2005. More than 300 facilities reported to the Greenhouse Gas Emissions Reporting Program in 2005.
- Under NPRI, facilities across Canada that meet certain thresholds are required to report annual releases and transfers of pollutants that can cause a range of environmental and health effects, including smog, acid rain, contamination and impacts on air and water quality.
- Under the Greenhouse Gas Emissions Reporting program, facilities across Canada that meet specific criteria are required to report six greenhouse gases which contribute to global warming: carbon dioxide (CO₂); methane (CH₄); nitrous oxide (N₂O); sulphur hexafluoride (SF₆); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs).

Air pollution and greenhouse gas emissions : 2005

- Most pollutants released by companies across Canada were emitted into the air in 2005, according to the latest NPRI data.
- More than **4 billion kilograms (4,004,785,204 kg) of pollutants were released into the air** from industrial facilities in 2005, including Criteria Air Contaminants and toxic pollutants.
- Of this total, more than 2.8 billion kilograms (2,824,310,897 kg) of pollutants released into the air in 2005 are considered toxic under Canada's national pollution law, the *Canadian Environmental Protection Act*.
- Facilities also reported emitting greenhouse gases into the air, totaling more than **279 million tonnes CO₂ equivalent (279,842,143) in 2005 for all gases**, according to Environment Canada's Greenhouse Gas Emissions Reporting Program.

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Alberta led country in air pollution and greenhouse gas emissions

Air Pollution Levels (see Table 1)

- **Alberta led the country in releases of air pollutants in 2005** (1,091,722,186 kilograms of combined air releases – toxic and Criteria Air Contaminants), accounting for about 27% of Canada's total air pollutants (4,004,785,204 kilograms) reported to NPRI.
- Ontario facilities reported about 21% of Canada's total air pollutants (836,061,754 kilograms of combined air releases), and led the country in air releases of cancer-causing pollutants accounting for 43% of the Canadian total (7,600,342 kilograms)
- Quebec facilities reported about 15% of Canada's total air pollutants (584,577,942 kilograms of combined air releases), making it the third highest ranking province for total air releases.

Greenhouse Gas Emission Levels (see Table 2)

- **Alberta also led the country in reported emissions of greenhouse gases in 2005** (112,937,907 tonnes CO₂ equivalent), accounting for 40% of emissions reported to the federal government's Greenhouse Gas Emissions Reporting program. For the second year in a row, Alberta was the highest ranking province for greenhouse gas emissions by reporting facilities across Canada.
- Ontario facilities reported about 28% of greenhouse gas emissions (78,399,997 tonnes CO₂ equivalent).
- Saskatchewan ranked third, reporting 8% of greenhouse gas emissions (23,607,447 tonnes CO₂ equivalent), up from a fourth place ranking of 2004 greenhouse gas emissions data.

Table 1: Provincial Rankings – Total air releases (combined toxics and CACs without VOCs) by province (2005)

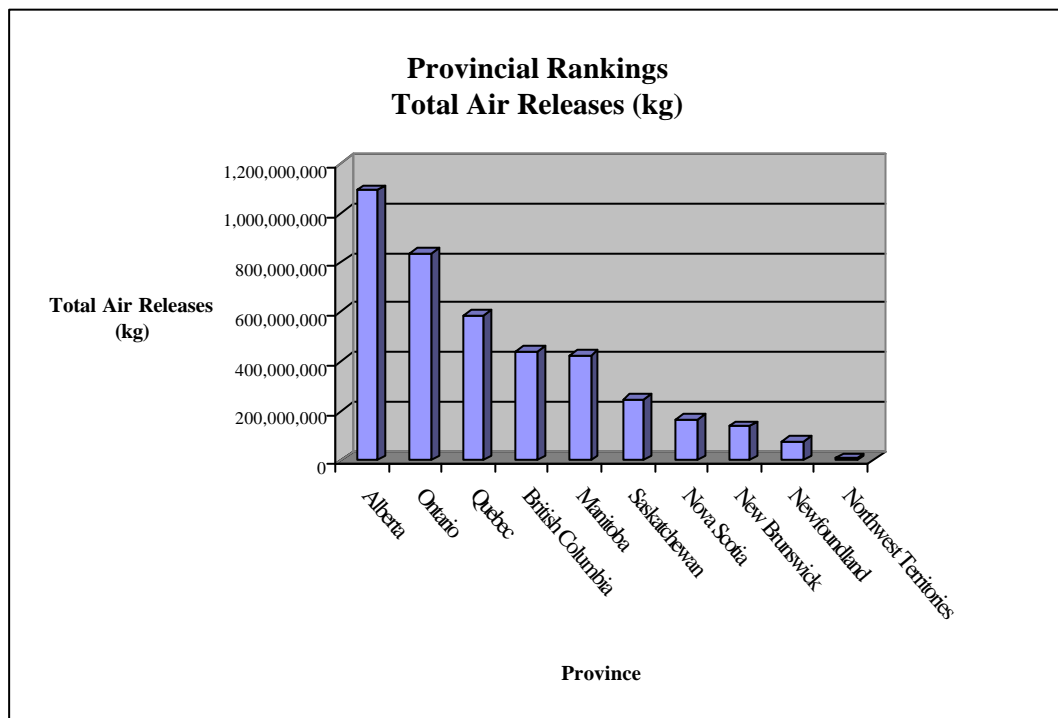
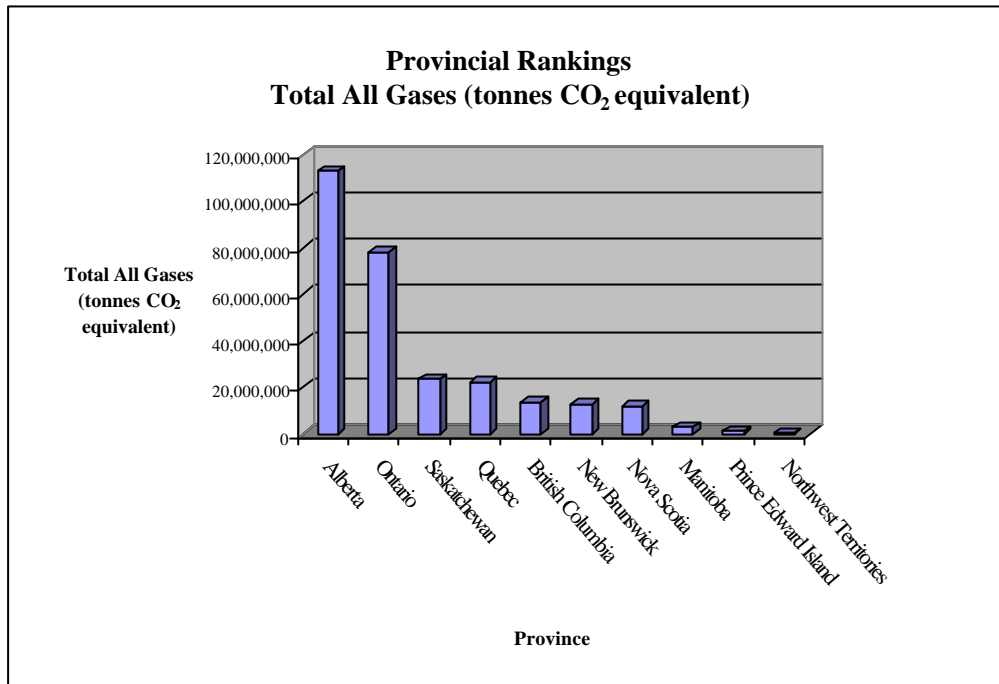


Table 2: Provincial Rankings – Total emissions of greenhouse gases by province (2005)



Top Companies and Facilities in Canada Reporting Air Releases and Greenhouse Gas Emissions

Top 10 Companies Across Canada Reporting Air Releases in 2005 (kg)

Rank	Company Name*	Prov.	Air Releases of Combined (Without VOC) (kg)
1	Inco	MB	386,268,284
2	Hudson Bay Mining & Smelting	MB	204,801,958
3	Ontario Power Generation	ON	180,006,243
4	Alcan	AB	169,030,722
5	SaskPower	SK	139,776,538
6	Nova Scotia Power	NS	139,269,131
7	Syncrude Canada	AB	129,741,321
8	Falconbridge Limited	NB	101,253,452
9	TransAlta Utilities	AB	98,521,427
10	Alberta Power (2000) Ltd.	AB	86,441,893

Source: www.PollutionWatch.org

*Note: may have more than one facility reporting

Top 10 Facilities Across Canada Reporting Air Releases in 2005 (kg)

Rank	Facility Name	Company Name	Prov.	Air Releases of Combined (Without VOC) (kg)
1	HBM&S Co., Ltd. - Metallurgical Complex	Hudson Bay Mining & Smelting	MB	204,770,394
2	Copper Cliff Smelter Complex	Inco	ON	196,976,941
3	Thompson Operations	Inco	MB	183,079,920
4	Mildred Lake Plant Site	Syncrude Canada	AB	128,750,435
5	Nanticoke Generating Station	Ontario Power Generation	ON	107,689,470
6	Boundary Dam Power Station	SaskPower	SK	69,839,611
7	Kitimat Works	Alcan Primary Metal - British Columbia	BC	66,289,853
8	Sundance Generating Facility	TransAlta Utilities	AB	61,916,436
9	Lingan Generating Station	Nova Scotia Power	NS	57,912,277
10	Poplar River Power Station	SaskPower	SK	55,457,841

Source: www.PollutionWatch.org

Top 10 Companies Across Canada Reporting GHG Emissions in 2005 (total all gases, tonnes CO₂ equivalent)

Rank	Company Name*	Prov.	Total of All Gases (tonnes - CO ₂ equivalent)
1	Ontario Power Generation	ON	30,342,339
2	TransAlta Utilities Corporation	AB	24,694,452
3	Saskatchewan Power Corporation	SK	13,892,766
4	Alberta Power (2000) Ltd.	AB	12,037,559
5	Nova Scotia Power Incorporated	NS	10,648,422
6	Syncrude Canada Ltd.	AB	10,357,330
7	EPCOR Power Development Corporation	AB	8,949,492
8	Suncor Energy Inc. Oil Sands	AB	7,694,458
9	Stelco Inc	ON	6,741,889
10	Duke Energy Gas Transmission	BC	6,109,912

Source: www.PollutionWatch.org

*Note: may have more than one facility reporting

Top 10 Facilities Across Canada Reporting GHG Emissions in 2005 (total all gases)

Rank	Facility Name	Company Name	Prov.	Total of All Gases (tonnes - CO ₂ equivalent)
1	Nanticoke Generating Station	Ontario Power Generation	ON	17,629,437
2	Sundance Generating Plant	TransAlta Utilities Corporation	AB	16,181,007
3	Mildred Lake and Aurora North Plant Sites	Syncrude Canada Ltd.	AB	10,357,330
4	Genesee Thermal Generating Station	EPCOR Power Development Corporation	AB	8,949,492
5	Lambton Generating Station	Ontario Power Generation	ON	8,738,072
6	Suncor Energy Inc. Oil Sands	Suncor Energy Inc. Oil Sands	AB	7,694,458
7	Boundary Dam Power Station	Saskatchewan Power Corporation	SK	6,751,088

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8	Sheerness Generating Station	Alberta Power (2000) Ltd.	AB	6,522,557
9	Keephills Generating Plant	TransAlta Utilities Corporation	AB	6,143,809
10	Battle River Generating Station	Alberta Power (2000) Ltd.	AB	5,498,404

Source: www.PollutionWatch.org

National Overview – pollutant releases and transfers and greenhouse gas emissions reported in 2005

- Total releases and transfers of pollutants in 2005: **4,721,040,568 kilograms.**
- Combined air releases of toxic pollutants (such as mercury and lead) and Criteria Air Contaminants (smog-forming pollutants) in 2005: **4,004,785,204 kilograms.**
- Total water releases of pollutants in 2005: **116,417,389 kilograms.**
- Total greenhouse gas emissions in 2005: **279,842,143 tonnes CO₂ equivalent (total all gases)**

Profile of pollutant releases and transfers by potential health and environmental effects:

- Air releases of pollutants considered to be toxic under the *Canadian Environmental Protection Act* in 2005: **2,824,310,897 kilograms.**
- Air releases of pollutants with suspected respiratory effects in 2005: **3,903,609,949 kilograms.**
- Air releases of pollutants that cause cancer in 2005: **7,600,342 kilograms.**
- Total releases (on and off site) of pollutants that cause cancer in 2005: **42,169,853 kilograms.**
- Air releases of pollutants associated with developmental and reproductive effects in 2005: **1,035,300,848 kilograms.**

Other health effects lists, such as endocrine disrupters, are available on www.PollutionWatch.org

National Trends

- PollutionWatch trends of toxic pollutants are based on analyses of 158 core pollutants that have been consistently reported to Environment Canada's NPRI program since 1995. Recycling and energy recovery are not included in these toxic pollutant time trends as reporting only became mandatory in 1998.
- PollutionWatch trends of Criteria Air Contaminants are based on analyses of CACs reported between 2002 and 2005; reporting of CACs to the NPRI program began in 2002.
- PollutionWatch trends of greenhouse gas emissions are based on analyses for greenhouse gases reported in 2004 and 2005; reporting to the federal government Greenhouse Gas Emissions Reporting Program began in 2004.
- The PollutionWatch trends are presented in two ways: first, using all facilities that reported in each year throughout the given time period; secondly, using only those core facilities that reported in each year throughout the given time period. Both trends use core pollutants – only those pollutants that have been consistently reported each year.

National Trends: Core Pollutants¹ and Greenhouse Gases

- Reported releases and transfers of toxic pollutants continue to increase in Canada. From 1995 to 2005, releases and transfers of pollutants increased from 198,038,625 kilograms to 444,527,196 kilograms, an increase of 124% .
- Air releases increased from 92,187,422 kilograms in 1995 to 92,308,283 kilograms in 2005, an increase of 0.1%
- Releases of Criteria Air Contaminants increased from 4,134,756,357 kilograms in 2002 to 4,150,579,171 kilograms in 2005, an increase of 0.4% .
- Emissions of greenhouse gases increased from 278,890,313 tonnes CO₂ equivalent in 2004 to 279,842,143 tonnes CO₂ equivalent, a increase of 0.3% .

National Trends: Core Pollutants and Greenhouse Gases from Core Facilities²

- Trends in toxic pollution from core facilities reporting core pollutants were similar to the overall trends in pollution described above. From 1995 to 2005 , releases and transfers of core pollutants from core facilities increased from 158,170,784 kilograms, to 314,926,767 kilograms, an increase of 99% .
- Air releases of core pollutants from core facilities decreased from 78,911,335 kilograms in 1995 to 70,299,504 kilograms in 2005, a decrease of 10% .
- Releases of Criteria Air Contaminants from core facilities reporting between 2002 and 2005 decreased from 4,014,952,356 kilograms to 3,577,990,233 kilograms, a decrease of 11% .
- Emissions of greenhouse gases from core facilities reporting in 2004 and 2005 decreased from 271,955,288 tonnes CO₂ equivalent to 270,724,817 tonnes CO₂ equivalent, a decrease of 0.4% .
- Air releases of some specific smog pollutants have increased:
 - Oxides of Nitrogen, associated with smog, increased by 19%, from 518,016,347 kilograms in 2002 to 615,652,281 kilograms in 2005 .
 - Particulate Matter 2.5, linked to respiratory illnesses such as asthma and bronchitis, increased by 7%, from 48,373,815 kilograms in 2002 to 51,907,476 kilograms in 2005 .
- Emissions of some specific toxic pollutants have decreased:
 - Air releases of mercury decreased by 9% between 2000 and 2005 (from 5,183 kg to 4,711 kg). However, releases of mercury to land increased by 848% between 2000 and 2005 (from 3,850 kg to 36,536 kg)
 - Air releases of lead decreased by 45% between 2002 and 2005 (from 399,394 kg to 219,398 kg).

¹ Note: Timelines are determined for core pollutants by tracking pollutants for which consistent reporting has been required under NPRI since 1995. From year to year, the list of core pollutants may change due to changes in reporting requirements under NPRI. For additional information, please see “Understanding the Data” on the PollutionWatch web site. (<http://www.pollutionwatch.org/tools/understandData.jsp>)

² Note: Timelines are determined for core pollutants and core facilities for which facilities have consistently reported under NPRI since 1995 on a list of core pollutants for which consistent reporting has been required under NPRI since 1995. For Greenhouse Gases, reporting has been required since 2004 for six gases.

Recommendations

- Release each of the two parliamentary committee reports on the *Canadian Environmental Protection Act* (CEPA) before March 31, 2007.
- Develop or accelerate reduction and elimination targets for CEPA toxic substances and require that targets are met using pollution prevention methods.
- Establish mandatory national emission standards, through global best practices, for all criteria air contaminants.
- Set timelines to virtually eliminate releases of carcinogens to the air and water by 2015.
- Ensure resources are directed to enhance and expand the National Pollutant Release Inventory program, including the requirement for mandatory pollution prevention plans from all facilities and closing reporting loopholes, such as the exemption for mining waste.
- Ensure Canada recommits to its obligations under the Kyoto Protocol and establishes regulated targets and timelines for reducing greenhouse gases from large final emitters.

Notes on PollutionWatch Analysis

National Pollutant Release Inventory (NPRI) Releases and Transfers

- The air pollution analysis was generated using the PollutionWatch web site (www.PollutionWatch.org) which provides Canadians with the most complete picture to date of reported releases and transfers in their communities and across Canada between 1995 and 2005, the latest data available. PollutionWatch uses data from Environment Canada's national reporting program – the National Pollutant Release Inventory (NPRI) – to track releases and transfers of pollutants.
- Because NPRI data only reflect a portion of pollution in Canada, the PollutionWatch analyses are very conservative estimates of the total amount of pollutants released and transferred across the country. NPRI data do not include all pollutants (about 300 pollutants are reported) or all sources (mobile sources such as cars and trucks, agricultural sources and small facilities are some sources not included in NPRI).
- Environment Canada notes that the number of facilities reporting increased from 2001 to 2005 due to changes in reporting requirements (including the addition of Criteria Air Contaminants) and increased compliance promotion activities.
- This increase in the number of facilities may be a factor in some time trends. In addition, a number of sectors (such as pulp and paper) have changed their reporting methods over time, which may be a factor in some time trends.
- Facilities may also report increases or decreases over time for a variety of reasons: change in process, chemical use or production; recently started or gone out of business; change in reporting requirements, estimation methods or guidance materials; and, increased education, outreach and enforcement of the NPRI reporting program.

Greenhouse Gas Emissions Reporting Program

- Facilities that emit the equivalent of 100,000 tonnes (100 kt) or more of carbon dioxide (CO₂) per year are required to report their greenhouse gas emissions. Emissions were reported in June 2006, which covered greenhouse gas emissions for 2005.
- Greenhouse gas emissions ranked and analyzed on the PollutionWatch web site include only facility-level data reported by large industrial facilities across Canada. The greenhouse gas emissions are calculated and reported by industry.
- Greenhouse gases are also emitted by other sectors, including transportation and agriculture, which are not included on the PollutionWatch web site. Estimates of the amounts from these

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sources can be found in Canada's National Greenhouse Gas Inventory (http://www.ec.gc.ca/pdb/ghg/ghg_home_e.cfm)

- The 6 reported greenhouse gases each have a different potential to contribute to global climate change. The data are therefore expressed as carbon dioxide equivalents (CO₂ equivalent), which takes into consideration the different global warming potentials of different gases. For a more detailed discussion of global warming potential, visit the "Understanding the Data" section of the PollutionWatch web site (<http://www.pollutionwatch.org/tools/understandData.jsp>)

Detailed facility and company information for all provinces and communities across Canada is available on the PollutionWatch web site – **www.PollutionWatch.org**.

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About PollutionWatch (www.PollutionWatch.org) is a collaborative project of Environmental Defence and the Canadian Environmental Law Association. The web site tracks releases and transfers of pollutants across Canada based on data collected by Environment Canada through the National Pollutant Release Inventory (NPRI) and emissions of greenhouse gases based on the federal government's mandatory Greenhouse Gas Emissions Reporting Program. NPRI and the Greenhouse Gas Emissions Reporting program do not include data from all pollutants or sources. Visitors to the PollutionWatch web site can identify facilities in their home towns by searching by postal code or by a specific street address, access "quick lists" of the facilities reporting the largest releases and transfers of pollutants and greenhouse gases in the country, or create their own ranked lists of facilities by province, industrial sector, or corporation.

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