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Environment Fact Sheets

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by Environment, Energy and Transportation Statistics Division

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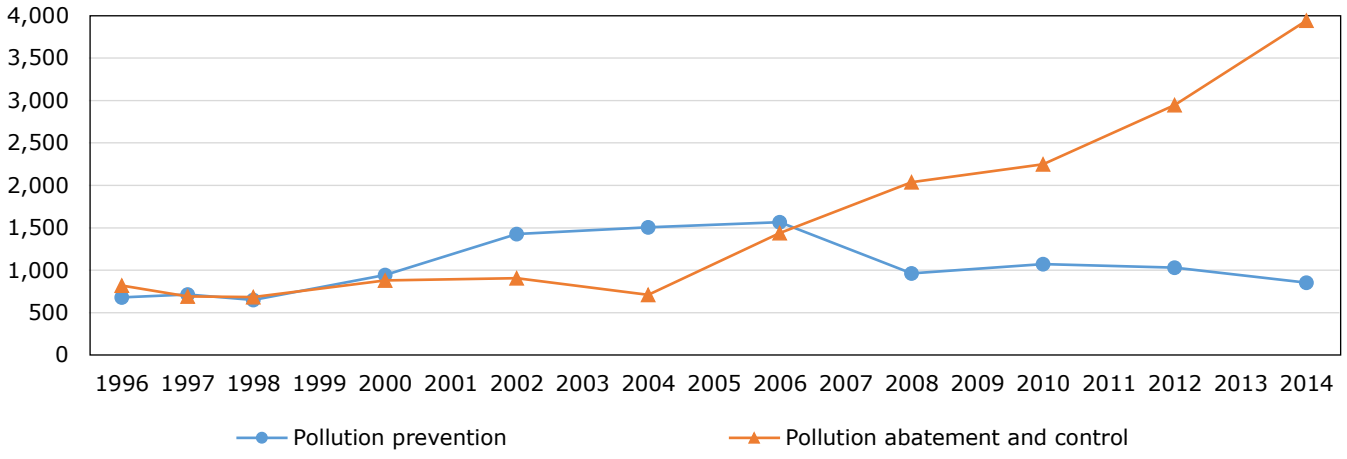
*by Environment, Energy and Transportation Statistics Division*

To comply with various environmental rules[1], Canadian businesses invest in processes and technologies that eliminate or reduce pollution before it is created (pollution prevention), or before it is released into the environment (pollution abatement and control, including waste management and sewerage). Between 1996 and 2000, Canadian industries spent as much on pollution prevention as they did on pollution abatement and control (Chart 1). However, following the revision of the *Canadian Environmental Protection Act* (CEPA) in 1999, the adoption of new regulations and legislation resulted in additional investments. Between 2000 and 2006, industry invested primarily in pollution prevention, reaching the highest point in 2006. Since 2008, however, investment in pollution abatement and control has been higher and continued its upward trend through to 2014, meaning that industries were spending more to clean up pollution after it was created (end-of-pipe processes) than to prevent it from being created in the first place.

**Chart 1**
**Capital expenditures on pollution prevention or pollution abatement and control by Canadian industries, 1996 to 2014**

millions of current dollars




**Sources:** Statistics Canada, Survey of Environmental Protection Expenditures, 1996, 1997, 1998, 2000, 2002 and 2004. 2006 to 2014 data: CANSIM table 153-0052.

1. Environmental rules refers to federal and provincial laws and regulations, as well as conventions and voluntary agreements between business and government.

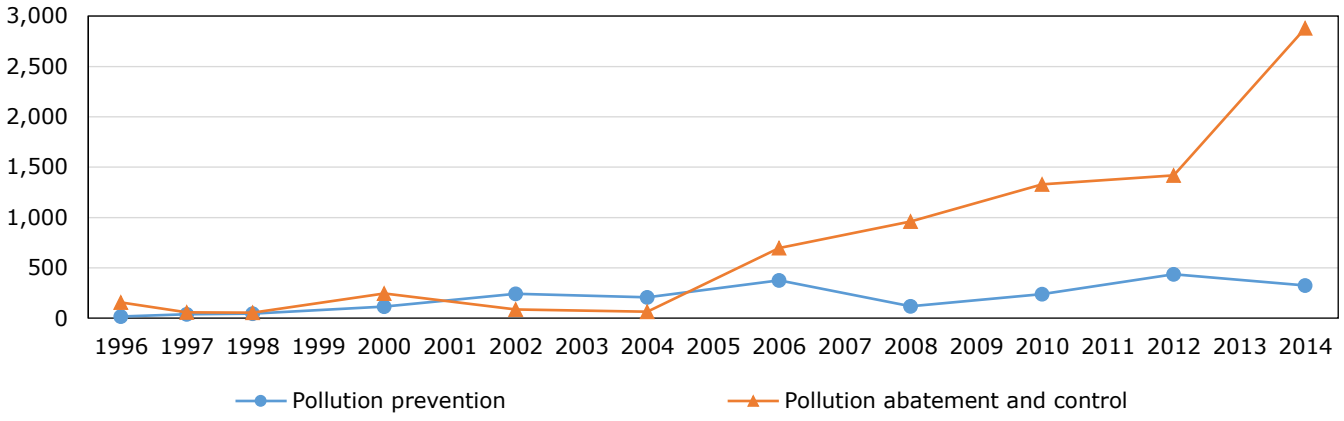
The various industries surveyed do not all spend at the same rate and do not all use the same techniques. The amount spent and techniques used depend on current and anticipated regulations and on economic growth in the industry, among other factors. The following sections describe the trends in environmental protection expenditures by the three industries with some of the highest environmental protection spending in Canada: oil and gas extraction; petroleum and coal product manufacturing; and electric power generation, transmission and distribution.

## Oil and gas extraction industry

Between 1996 and 2004, the oil and gas extraction industry invested in both pollution prevention and pollution abatement and control at similar levels (Chart 2). However, in 2006, the industry began investing more heavily in pollution abatement and control, increasing to a high of nearly $3 billion in 2014. Factors that might have encouraged the industry to invest in pollution abatement and control include the implementation of a number of regulations and incentive programs to reduce greenhouse gases (GHGs) or prohibit certain toxic substances; several voluntary environmental agreements and pollution prevention plans; and, in some provinces, either planned or actual carbon pricing. Another factor that cannot be overlooked is the industry's growth. Investments in environmental protection grew as the industry's overall revenues and expenditures increased as well.

**Chart 2**
**Capital expenditures on pollution prevention or pollution abatement and control by the oil and gas extraction industry, 1996 to 2014**

millions of current dollars

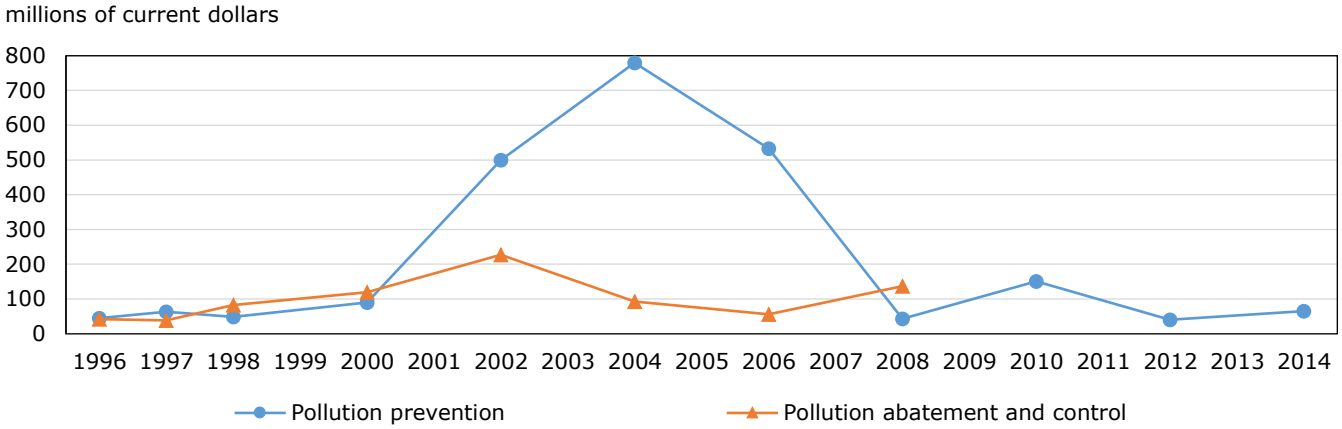



**Sources:** Statistics Canada, Survey of Environmental Protection Expenditures, 1996, 1997, 1998, 2000, 2002 and 2004. 2006 to 2014 data: CANSIM table 153-0052.

## Petroleum and coal product manufacturing industry

Investments by the petroleum and coal product manufacturing industry in environmental protection were primarily between 2000 and 2008. At that time, the industry invested heavily in pollution prevention, peaking at just under $800 million in 2004 (Chart 3). There was also a slight increase in expenditures on pollution abatement and control between 2000 and 2002. This corresponds to Environment Canada implementing the Sulphur in Gasoline Regulations in 1999, which primarily affected refineries. The increase in environmental protection expenditures coincides with the two stages of the regulations' implementation (2002 and 2005).

**Chart 3**
**Capital expenditures on pollution prevention or pollution abatement and control by the petroleum and coal product manufacturing industry, 1996 to 2014**



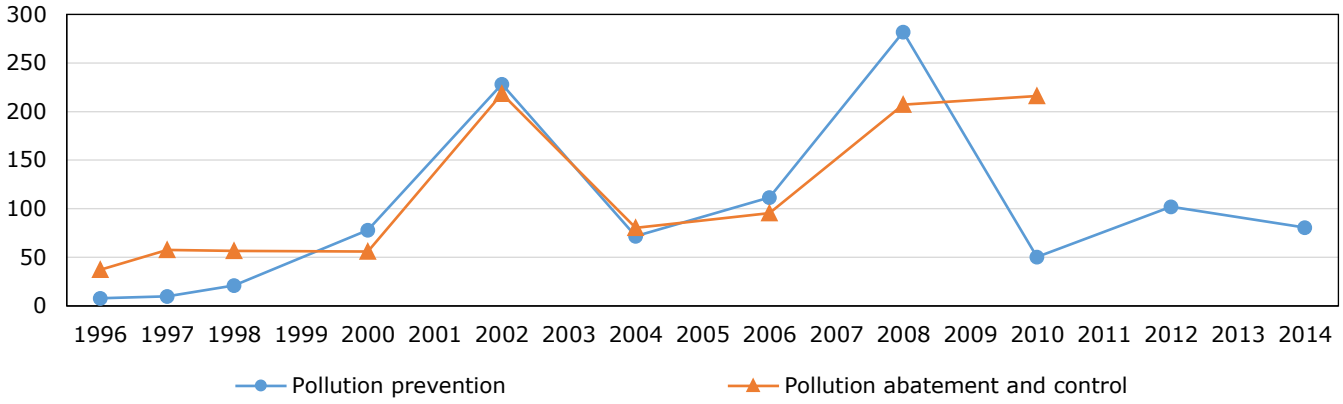

**Note:** For confidentiality reasons, pollution abatement and control estimates cannot be inserted into the table for the 2010, 2012 and 2014 cycles.
**Sources:** Statistics Canada, Survey of Environmental Protection Expenditures, 1996, 1997, 1998, 2000, 2002 and 2004. 2006 to 2014 data: CANSIM table 153-0052.

## Electric power generation, transmission and distribution industry

The electric power generation, transmission and distribution industry invested as much in pollution prevention as it did in pollution abatement and control between 1996 and 2008 (Chart 4). The peaks in 2002 and 2008 show that both types of methods were used. This could reflect the various means of generating electric power in Canada. Several regulations and agreements were developed over the years following the *Canadian Environmental Protection Act*. For example, several Canada-wide environmental standards were adopted regarding particulate matter and ozone (2000) as well as mercury (2005). The provinces may also have played a role in the type of environmental protection methods used by the industry through the adoption of certain policies, regulations and legislation, such as the elimination of the use of coal in electric power generation in Ontario between 2001 and 2014.

**Chart 4**
**Capital expenditures on pollution prevention or pollution abatement and control by the electric power generation, transmission and distribution industry, 1996 to 2014**

millions of current dollars




**Note:** For confidentiality reasons, pollution abatement and control estimates cannot be inserted into the table for the 2012 and 2014 cycles.
**Sources:** Statistics Canada, Survey of Environmental Protection Expenditures, 1996, 1997, 1998, 2000, 2002 and 2004. 2006 to 2014 data: CANSIM table 153-0052.

### About the Survey of Environmental Protection Expenditures

This release presents data from the Survey of Environmental Protection Expenditures from 1996 to 2014. The survey has been biennial since 1998 and was redesigned in 2006. It is now conducted with just over 3,500 establishments in selected primary industries and in the manufacturing sector. This survey produces estimates of the capital and operating expenditures of Canadian businesses to protect the environment. Measures of industrial spending on environmental protection are restricted to spending to comply with current or anticipated regulations, conventions or voluntary agreements.

## Definitions

**Environmental protection expenditures:** Environmental protection expenditures are defined as all operating expenses and capital and repair expenditures incurred to anticipate or comply with Canadian or international environmental regulations, conventions, or voluntary agreements.

**Environmental regulations:** Environmental regulations refer to any Canadian federal, provincial or municipal law or international legislation intended to protect or to restore the environment in Canada.

**Capital expenditures:** Include all relevant capitalized expenditures for machinery and equipment and their installation and repair, as well as for the construction of non-residential facilities (contractors or own employees).

**Operating expenses:** Include all expenses related to environmental protection incurred for labour, materials and supplies, maintenance and repairs, and purchased services (including fuel and electricity expenses for machinery and equipment whose sole purpose is to protect the environment). Exclude depreciation on machinery and equipment.

**Waste management and sewerage services:** Waste is material that is unwanted by its producer. The unwanted materials may be by-products of a production process, such as fly ash from a furnace. Alternatively, they might be products, the inherent value of which has been consumed from the perspective of the current holder—for example, a newspaper that has been read, a package that has been opened and emptied of its contents, or an apple eaten to the core are all similar insofar as they have lost their original inherent value from the consumer's perspective.

**Pollution abatement and control (end-of-pipe processes):** Pollution abatement and control (end-of-pipe processes) can be described as equipment and processes that treat pollution and waste after they have been created. Examples of these types of equipment or processes include scrubbers at the end of emission stacks, biological and chemical systems for treating water (such as a water treatment plant), filtration systems, cyclones or other barrier systems.

**Pollution prevention:** Pollution prevention involves the use of technologies, equipment or processes that reduce or eliminate pollution and/or waste at the source—rather than at the end-of-pipe or stack—before the pollution or waste is created. Examples include implementing more efficient processes that consume less energy or inputs, restructuring or redesigning the production process to reduce pollution or emissions, or reusing, recirculating or recycling materials on site (does not include materials sent off-site for recycling).