

B.2.2 Canada

The data base for the baseline 1980 emission estimates of SO₂ and NO_x are a mixture of data covering the years 1978 and 1980. For sulfur dioxide, area source information represents 1978 annual emission rates. Major point sources are at their 1980 annual emission rates, accounting for approximately 67% of the Canadian total, for SO₂. These sources are in the following sectors: non-ferrous smelting, power generation, iron ore sintering, natural gas processing and tar sands operations. For nitrogen oxides, expressed as NO_x, all area sources and most point source emissions are from the 1978 base year. Emissions estimates for power plants east of Manitoba are at their 1980 levels. It is anticipated that the NO_x emissions inventory for 1980 will not be significantly different than that presented in this report.

Emissions have been estimated for SO₂ and NO_x according to the following categories:

- 1) Non-ferrous smelting - This includes copper/nickel smelters, lead/zinc smelters and primary aluminum smelters;
- 2) Power generation by utilities;
- 3) Non-utility fuel combustion - This includes combustion emissions from the use of fuels for residential, commercial and industrial purposes. Fuelwood combustion emissions have also been included here;
- 4) Transportation - This category gives estimates of SO₂ and NO_x emissions from the following transportation sectors: gasoline-powered motor vehicles, railroads, marine, aircraft, off-road use of gasoline and diesel-powered engines;
- 5) Petroleum refining - Emissions from the refineries' process operations are included in this category; fuel combustion emissions are included under the non-utility fuels combustion sector;
- 6) Natural gas processing - This category includes emissions from natural gas processing plants, the bulk of which are located in the province of Alberta;
- 7) Tar Sands operations - Emissions from Canada's two synthetic crude oil plants, located in Alberta, are estimated under this category; and
- 8) Other - Other industrial processes and incineration plants have been combined in this category.

A description of the methodologies used in the estimation of SO₂ and NO_x emissions, in addition to the assumptions and references used, is given for each of the categories listed above in Appendix 2.