

Canada

Historical emissions data have been developed for sulfur dioxide and nitrogen oxides for the years 1955 and 1965. Information regarding production and fuel consumption was obtained from various federal government departments. Other data were obtained from internal files and other available sources (1). Generally, emission factors (either Canadian or U.S. adapted to Canadian conditions) were applied to the basic data, except from copper-nickel smelters and some power plants, for which actual emission data were obtained (2,3).

Emissions data on 1976 have been taken from the document "A Nationwide Inventory of Emissions of Air Contaminants" (4). This report is published biennially to estimate emissions from 70 various sectors.

Total Canadian emissions of SO₂ and NO_x for each of the years 1955, 1965 and 1976 are given in Table B.1.5. Table B.1.6 presents this information for eastern Canada (i.e.-Manitoba and east). Total SO₂ emissions in Canada for 1976 were approximately 5.3 million tonnes, 6.6 million tonnes in 1965 and 4.5 million tonnes in 1955. The major changes in emissions were due to the copper-nickel smelting industry which contributed 64%, 59% and 49% of total SO₂ emissions in the years 1955, 1965 and 1976 respectively. Since all copper-nickel smelters are in eastern Canada, the contribution of smelter emissions to total emissions are 67%, 70%, and 59% for 1955, 1965 and 1976 respectively.

Sulfur dioxide emissions from power plants were 0.05 million tonnes in 1955, before increasing to 0.25 million tonnes in 1965 and 0.55 million tonnes in 1976. Over 90% of the total was emitted in eastern Canada for each year considered.

Sulfur dioxide emissions from non-utility fuel combustion decreased slightly from 1955 to 1965 (from 1.2 to 1.1 million tonnes). A significant decrease occurred as a result of fuel switching from coal to oil, but increased as a result of high fuel combustion emissions in the petroleum refining sector. In 1976, emissions were slightly lower at 0.9 million tonnes. The decrease between 1965 and 1976 was mainly due to the control of emissions at petroleum refineries. Industrial fuel combustion contributed 72% of total non-utility combustion emissions in 1976, compared to 92% and 82% in 1955 and 1965, respectively. Emissions from transportation sources decreased between 1955 and 1965, largely due to the reduction in coal consumption by railroads, and then increased in 1976 again to the 1955 level, mainly due to the larger number of vehicles on the road.

Iron ore processing emissions of sulphur dioxide increased by approximately 75% between 1955 and 1976 (from 0.1 million tonnes to almost 0.2 million tonnes). Other industrial processes, classified as "others" in the tables, had significantly higher SO₂ emissions in 1965 (1.1 million tonnes) compared to