



FIGURE 3.2 TRENDS IN PER CAPITA CARBON DIOXIDE EMISSIONS AND GROSS DOMESTIC PRODUCT, 1990-1995

and their substitutes). However, other photochemically important gases, such as carbon monoxide, oxides of nitrogen, and NMVOCs, although not direct greenhouse gases, do contribute indirectly to the greenhouse effect by creating tropospheric ozone and, as such, are included under the FCCC. Direct effects occur when the gas itself is a greenhouse gas, whereas indirect radiative forcing occurs when chemical transformation of the original gas produces a gas or gases that are greenhouse gases, or when a gas influences the atmospheric lifetimes of other gases.

The concept of GWP has been developed to allow scientists and policy-makers to compare the ability of each greenhouse gas to trap heat in the atmosphere relative to another gas. By definition, a GWP is the time-integrated change in radiative forcing due to the instantaneous release of 1 kg of a trace gas expressed relative to the radiative forcing from the release of 1 kg of carbon dioxide. In other words, a GWP is a relative measure of the warming effect that the emission of a radiative gas might have on the surface troposphere. The GWP of a

greenhouse gas takes into account both the instantaneous radiative forcing due to an incremental concentration increase and the lifetime of the gas. Although any time period can be chosen for comparison, the 100-year GWPs recommended by the IPCC are used in this report (IPCC, 1996) (Table 3.2).

### Structure of the Inventory

Canada's national greenhouse gas emission inventory has been structured to match the reporting requirements of the IPCC and has been divided into six major categories: Energy, Industrial Processes, Agriculture, Land-Use Change & Forestry, Waste, and Solvents & Other Products (Figure 3.3). Each of these categories is further subdivided within the inventory — for example, energy into fuel combustion and fugitive fuel-related emissions, and industrial processes into non-combustion-related emissions from the production, processing, and use of various mineral, chemical, metal, and non-energy products — and care has been taken to ensure that no double-counting of emissions has taken place between or within categories. For