

## CO<sub>2</sub> FROM FUEL COMBUSTION – FACT SHEET

In 2002 alone, global CO<sub>2</sub> emissions from fuel combustion rose by 2 per cent. The majority of this increase occurred in developing countries. In comparison, global CO<sub>2</sub> emissions increased by 0.8% in 2001. In the Annex I countries (developed countries and countries with economies in transition), energy-related emissions (including production, transportation and consumption) account for more than 80% of total greenhouse gas (GHG) emissions mainly in the form of CO<sub>2</sub>. The IEA provides data on energy-related emissions of carbon dioxide (CO<sub>2</sub>), up to the year 2002 for more than 140 countries and regions by sector and by fuel.

- Global emissions of CO<sub>2</sub> from fossil fuel combustion increased from 20.7 billion tonnes (Gt) in 1990 to 23.4 Gt in 2000 and reached 24.1 Gt in 2002 (i.e. a 16.4% increase from 1990 to 2002).
  - The regions that contributed most to the 1990-2002 increase (3.4 Gt CO<sub>2</sub>) in world energy-related CO<sub>2</sub> emissions were China, OECD North America and other Asia.
  - The statistics presented in this publication show that 80 percent of 2002 global energy-related CO<sub>2</sub> emissions were emitted by 22 countries – from all world regions, 12 of which are OECD countries. These 22 countries also produced 80% of the world's 2002 economic output (GDP) and represented 78% of the world's TPES (total primary energy supply).
  - In 2002, the public electricity and heat production sector was the largest contributor (i.e. 35%) to world emissions and its emissions have grown by 33% since 1990. The transport sector has become the second largest source (i.e. 24%) of energy-related CO<sub>2</sub> emissions worldwide, increasing by 28% since 1990 as a result of rising demand for mobility as economies grow.
- The group of Annex I countries collectively exceeded their 1990 emissions level by 1.2% in 2000 and by 1.6% in 2002 – amounting to 13.8 Gt CO<sub>2</sub>. However, if emissions of other gases are included, Annex I emission levels, collectively, are below the 1990 level.
  - Indeed, this collective picture masks great variations among the Annex I countries. Emissions in the economies in transition declined steeply between 1990 and 2002 (i.e. -31%), while collectively the OECD countries in Annex I have seen their emissions rise by 14%.
  - Based on current statistics, it appears that some developed countries are not on track to meet their Kyoto Protocol commitments and need to rely on the Kyoto Protocol's flexibility mechanisms. On the other hand, transition economies in Annex I are likely to have significant surplus emission allowances that could be traded via the mechanisms.
- These data, together with other IEA work, suggest that much stronger efforts are needed to bring global emissions down.