IEA STATISTICS

2013 EDITION

CO_2 EMISSIONS FROM FUEL COMBUSTION

HIGHLIGHTS

International Energy Agency

2013
EDITION

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In the lead-up to the UN climate negotiations in Warsaw, the latest information on the level and growth of CO_2 emissions, their source and geographic distribution will be essential to lay the foundation for a global agreement. To provide input to and support for the UN process, the IEA is making available for free download the "Highlights" version of CO_2 Emissions from Fuel Combustion.

This annual publication contains, for more than 140 countries and regions:

- estimates of CO_2 emissions from 1971 to 2011,
- selected indicators such as CO_2/GDP, CO_2/capita, CO_2/TPES and CO_2/kWh,
- a decomposition of CO_2 emissions into driving factors,
- CO_2 emissions from international marine and aviation bunkers, key sources, and other relevant information.

The nineteenth session of the Conference of the Parties to the Climate Change Convention (COP 19), in conjunction with the ninth meeting of the Parties to the Kyoto Protocol (CMP 9), will be meeting in Warsaw, Poland from 11 to 22 November 2013. This volume of "Highlights", drawn from the full-scale study, was specially designed for delegations and observers of the meeting in Warsaw.

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INTERNATIONAL ENERGY AGENCY

The International Energy Agency (IEA), an autonomous agency, was established in November 1974. Its primary mandate was – and is – two-fold: to promote energy security amongst its member countries through collective response to physical disruptions in oil supply, and provide authoritative research and analysis on ways to ensure reliable, affordable and clean energy for its 28 member countries and beyond. The IEA carries out a comprehensive programme of energy co-operation among its member countries, each of which is obliged to hold oil stocks equivalent to 90 days of its net imports. The Agency's aims include the following objectives:

- Secure member countries' access to reliable and ample supplies of all forms of energy; in particular, through maintaining effective emergency response capabilities in case of oil supply disruptions.
- Promote sustainable energy policies that spur economic growth and environmental protection in a global context – particularly in terms of reducing greenhouse-gas emissions that contribute to climate change.
- Improve transparency of international markets through collection and analysis of energy data.
- Support global collaboration on energy technology to secure future energy supplies and mitigate their environmental impact, including through improved energy efficiency and development and deployment of low-carbon technologies.
- Find solutions to global energy challenges through engagement and dialogue with non-member countries, industry, international organisations and other stakeholders.

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The European Commission also participates in the work of the IEA.

International Energy Agency

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FOREWORD

In the lead-up to the UN climate negotiations in Warsaw, Poland, the latest information on the level and growth of CO_2 emissions, their source and geographic distribution will be essential to lay the foundation for a global agreement. To provide input to and support for the UN process, the IEA is making available for free download the "Highlights" version of *CO_2 Emissions from Fuel Combustion*. The PDF publication and an EXCEL file with the tables can be downloaded for free at *www.iea.org/statistics/topics/co2emissions*.

Recent years have witnessed a fundamental change in the way governments approach energy-related environmental issues. Promoting sustainable development and combating climate change have become integral aspects of energy planning, analysis and policy making in many countries, including all IEA member states.

The purpose of this volume is to put our best and most current information in the hands of those who need it, including in particular the participants in the UNFCCC process. The IEA Secretariat is a contributor to the official Intergovernmental Panel on Climate Change (IPCC) methodologies for estimating greenhouse-gas emissions. The IEA's energy data are the figures most often cited in the field. For these reasons, we felt it appropriate to publish this information in a comprehensive form.

These data are only for energy-related CO_2, not for any other greenhouse gases. Thus they may differ from countries' official submissions of emissions inventories to the UNFCCC Secretariat. However, the full-scale study contains data for CO_2 from non-energy-related sources and gas flaring, and emissions of CH_4, N_2O, HFC, PFC and SF_6. In addition, the full-scale study also includes information on "Key Sources" from fuel combustion, as developed in the *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*.

This report is published under my responsibility as Executive Director of the IEA and does not necessarily reflect the views of IEA member countries.

Maria Van der Hoeven
Executive Director

What's New?

Decomposition of CO_2 emissions into drivers (Kaya identity): graphs and tables

In this edition, new graphs and tables present the decomposition of CO_2 emissions into drivers, following the "Kaya identity". CO_2 emissions are decomposed into the product of four factors: population, GDP/population (per capita economic output), TPES/GDP (energy intensity of the economic output), and CO_2/TPES (carbon intensity of the energy mix). Such decomposition helps to assess the relative contributions of those different factors towards trends in CO_2 emissions, at the country and global levels.

The layout of summary tables, and of graphs and tables for World has been modified accordingly. For a complete description of the methodology used, please see *Chapter 3: IEA emissions estimates*.

Regional totals

In this edition, several regions beyond the global total are presented individually. Chapter 7 *Regional totals* includes now tables and graphs for: World, Annex I Parties, Annex II Parties, Economies in Transition, Non-Annex I Parties and Annex I Kyoto Parties. Similar graphs and tables for over 140 countries and regions are available in the full-scale publication *CO_2 emissions from fuel combustion*.

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Important cautionary notes

The estimates of CO_2 emissions from fuel combustion presented in this publication are calculated using the IEA energy balances and the default methods and emission factors from the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.* There are many reasons why **the IEA Secretariat estimates may not be the same as the numbers that a country submits to the UNFCCC**, even if a country has accounted for all of its energy use and correctly applied the *IPCC Guidelines*.

In this publication, the IEA Secretariat presents CO_2 emissions calculated using both the IPCC Reference Approach and the IPCC Tier 1 Sectoral Approach. In some of the OECD non-member countries, there can be **large differences between the two sets of calculations** due to various problems in some energy data. As a consequence, this can lead to different emission trends between 1990 and 2011 for certain countries. Please see Chapter 3 for further details.

Energy data on OECD member and non-member countries[1] are collected by the Energy Data Centre (EDC) of the IEA Secretariat, headed by Mr. Jean-Yves Garnier. The IEA would like to thank and acknowledge the dedication and professionalism of the statisticians working on energy data in the countries. Mr. Aidan Kennedy was responsible for the CO_2 emissions from fuel combustion estimates and for the preparation of the publication. Desktop publishing support was provided by Ms. Sharon Burghgraeve. Ms. Roberta Quadrelli had overall responsibility for this publication.

CO_2 emission estimates from 1960 to 2011 for the Annex II countries and from 1971 to 2011 for all other countries are available on CD-ROM suitable for use on Windows-based systems. To order, please see the information provided at the end of this publication.

In addition, a data service is available on the Internet. It includes unlimited access through an annual subscription as well as the possibility to obtain data on a pay-per-view basis. Details are available at *www.iea.org*.

Enquiries about data or methodology should be addressed to:

Energy Data Centre - CO_2 emissions
Telephone: (+33-1) 40-57-66-01,
E-mail: emissions@iea.org.

1. This document is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. In this publication, "country" refers to a country or a territory, as the case may be.

1. RECENT TRENDS IN CO_2 EMISSIONS FROM FUEL COMBUSTION

The growing importance of energy-related emissions

Climate scientists have observed that carbon dioxide (CO_2) concentrations in the atmosphere have been increasing significantly over the past century, compared to the rather steady level of the pre-industrial era (about 280 parts per million in volume, or ppmv). The 2012 concentration of CO_2 (394 ppmv) was about 40% higher than in the mid-1800s, with an average growth of 2 ppmv/year in the last ten years. Significant increases have also occurred in levels of methane (CH_4) and nitrous oxide (N_2O).

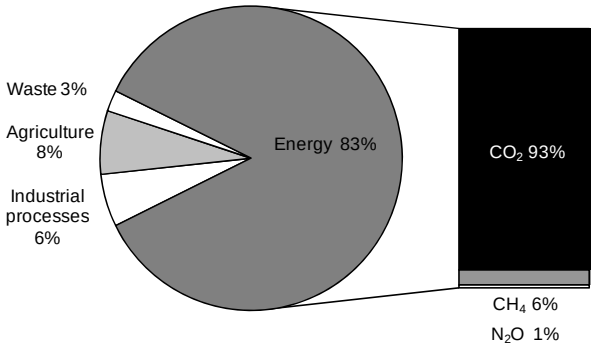
The *Fifth Assessment Report* from the Intergovernmental Panel on Climate Change (Working Group I) states that human influence on the climate system is clear (IPCC, 2013). Some impacts of the increased GHG concentrations may be slow to become apparent since stability is an inherent characteristic of the interacting climate, ecological and socio-economic systems. Even after stabilisation of the atmospheric concentration of CO_2, anthropogenic warming and sea level rise would continue for centuries due to the time scales associated with climate processes and feedbacks. Some changes in the climate system would be irreversible in the course of a human lifespan.

Given the long lifetime of CO_2 in the atmosphere, stabilising concentrations of greenhouse gases at any level would require large reductions of global CO_2 emissions from current levels. The lower the chosen level for stabilisation, the sooner the decline in global CO_2 emissions would need to begin, or the deeper the emission reduction would need to be over time. The United Nations Framework Convention on Climate Change (UNFCCC) provides a structure for intergovernmental efforts to tackle the challenge posed by climate change. The Convention's ultimate objective is to stabilise GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The Conference of Parties (COP) further recognised that deep cuts in global GHG emissions are required, with a view to hold the increase in global average temperature below 2°C above preindustrial levels, and that Parties should take urgent action to meet this long-term goal, consistent with science and on the basis of equity.

Energy use and greenhouse gases

Among the many human activities that produce greenhouse gases, the use of energy represents by far the largest source of emissions. Smaller shares correspond to agriculture, producing mainly CH_4 and N_2O from domestic livestock and rice cultivation, and to industrial processes not related to energy, producing mainly fluorinated gases and N_2O (Figure 1).

Figure 1. Shares of anthropogenic GHG emissions in Annex I countries, 2011*



* Based on Annex I data for 2011; without Land Use, Land-Use Change and Forestry, and with Solvent Use included in Industrial Processes and "other" included with waste.

Source: UNFCCC.

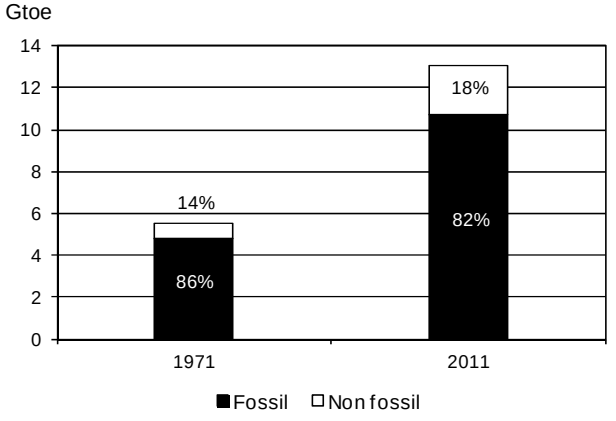
Key point: Energy emissions, mostly CO_2, account for the largest share of global GHG emissions.

Within the energy sector[2], CO_2 resulting from the oxidation of carbon in fuels during combustion dominates the total GHG emissions.

CO_2 from energy represents about three quarters of the anthropogenic GHG emissions for Annex I[3] countries, and over 60% of global emissions. This percentage varies greatly by country, due to diverse national structures.

Increasing demand for energy comes from worldwide economic growth and development. Global total primary energy supply (TPES) more than doubled between 1971 and 2011, mainly relying on fossil fuels (Figure 2).

Figure 2. World primary energy supply*

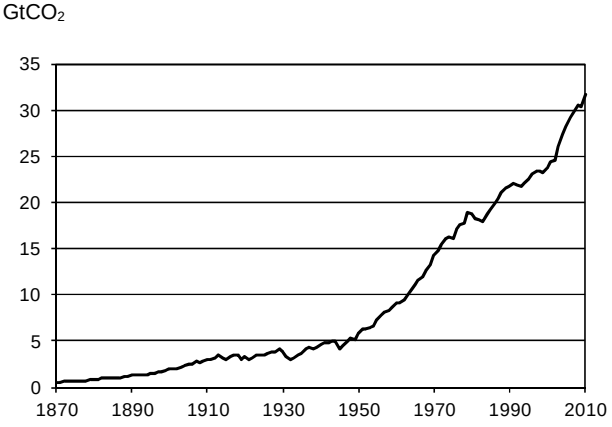


* World primary energy supply includes international bunkers.

Key point: Fossil fuels still account for most – over 80% – of the world energy supply.

Despite the growth of non-fossil energy (such as nuclear and hydropower), considered as non-emitting,[4] the share of fossil fuels within the world energy supply is relatively unchanged over the past 40 years. In 2011, fossil sources accounted for 82% of the global TPES.

Figure 3. Trend in CO_2 emissions from fossil fuel combustion



Source: Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, US Department of Energy, Oak Ridge, Tenn., United States.

Key point: Since 1870, CO_2 emissions from fuel combustion have risen exponentially.

Growing world energy demand from fossil fuels plays a key role in the upward trend in CO_2 emissions (Figure 3). Since the Industrial Revolution, annual CO_2 emissions from fuel combustion dramatically increased from near zero to over 31 $GtCO_2$ in 2011.

The next section provides a brief overview of recent trends in energy-related CO_2 emissions, as well as in some of the socio-economic drivers of emissions.

Recent emissions trends

In 2011, global CO_2 emissions were 31.3 $GtCO_2$. In line with the average annual growth rate since 2000, emissions rose by 2.7% in one year, two percentage points less than in 2010, year of initial recovery after the financial crisis.

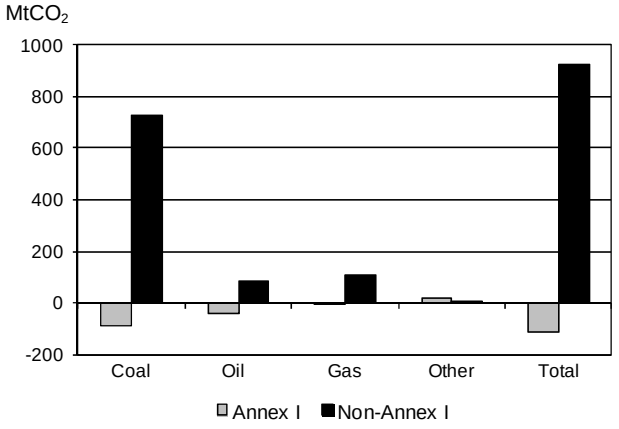
While emissions in non-Annex I countries continued to increase rapidly (5.8%), emissions in Annex I countries decreased by 0.8%. In absolute terms, global CO_2 emissions increased by 0.8 $GtCO_2$ in 2011, driven by the 0.7$GtCO_2$ increase of coal emissions in non-Annex I countries (Figure 4).

2. The energy sector includes emissions from "fuel combustion" (the large majority) and "fugitive emissions", which are intentional or unintentional releases of gases resulting from production, processes, transmission, storage and use of fuels (*e.g.* CH_4 emissions from coal mining).

3. The Annex I Parties to the 1992 UN Framework Convention on Climate Change (UNFCCC) are: Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, the Czech Republic, Denmark, Estonia, European Economic Community, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom and United States. See *www.unfccc.int.* For country coverage of Annex I Economies in Transition (EIT) and Annex II, see Geographical Coverage.

4. Excluding the life cycle of all non-emitting sources and excluding combustion of biofuels (considered as non-emitting CO_2, based on the assumption that the released carbon will be reabsorbed by biomass regrowth, under balanced conditions).

Figure 4. Change in CO_2 emissions (2010-11)



Key point: In 2011, coal drove a significant emissions increase in non-Annex I countries, while Annex I countries slightly decreased their emissions.

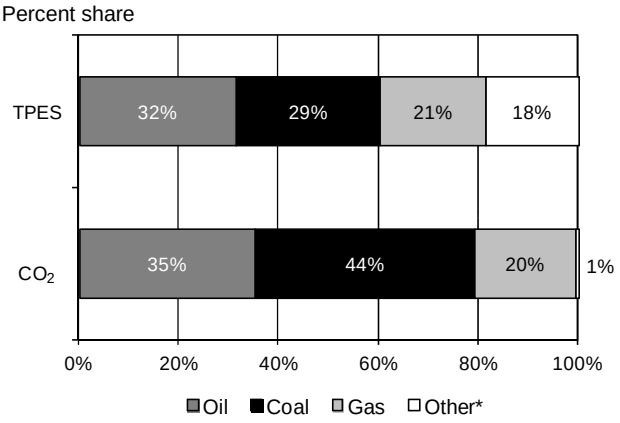
Early indications suggest that in 2012 CO_2 emissions continued to decline in the group of OECD countries, more than offset by a rapid increase in non-OECD countries. According to the same indications, total energy-related CO_2 emissions increased by about 1%.

For the medium term, in its New Policies Scenario, the *World Energy Outlook (WEO 2013)*[5] projects that global CO_2 emissions from fuel combustion continue to grow unabated, albeit at a lower rate, reaching 37.2 $GtCO_2$ by 2035. This is an improvement over the WEO Current Policies Scenario, but still leads to a long-term temperature increase of 3.6°C, well above the 2°C target agreed by the Parties to the UNFCCC.

Emissions by fuel

Although coal represented 29% of the world TPES in 2011, it accounted for 44% of the global CO_2 emissions due to its heavy carbon content per unit of energy released, and to the fact that 18% of the TPES derives from carbon-neutral fuels (Figure 5). As compared to gas, coal is nearly twice as emission intensive on average.[6]

Figure 5. World primary energy supply and CO_2 emissions: shares by fuel in 2011

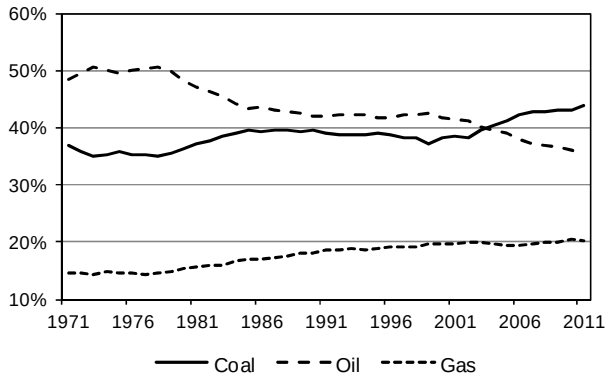


* Other includes nuclear, hydro, geothermal, solar, tide, wind, biofuels and waste.

Key point: Globally, coal combustion generates the largest share of CO_2 emissions, although oil has the largest share in energy supply.

Those shares evolved significantly during the last decade, following ten years of rather stable relative contributions among fuels. In 2001 in fact, the largest emissions share was still due to oil (42%), several percentage points ahead of coal (Figure 6).

Figure 6. Fuel shares in global CO_2 emissions



Key point: The fossil fuel mix changed significantly in the last 10 years, with a rapid growth of coal as the largest source of CO_2 emissions.

In 2011, CO_2 emissions from the combustion of coal increased by 4.9% to 13.7 $GtCO_2$. Currently, coal fills much of the growing energy demand of those developing countries (such as China and India) where energy-intensive industrial production is growing rapidly and large coal reserves exist with limited reserves of other energy sources.

Without additional abatement measures, beyond those already adopted or under discussion, the *WEO 2013*

5. Unless otherwise specified, projections from the *World Energy Outlook* refer to the New Policies Scenario from the 2013 edition. This scenario takes account of the broad policy commitments and plans that have been announced by countries around the world, including national pledges to reduce GHG emissions and plans to phase out fossil-energy subsidies – even where the measures to implement these commitments have yet to be identified or announced. These commitments are assumed to be implemented in a relatively cautious manner, reflecting their non-binding character and, in many cases, the uncertainty surrounding how they are to be put into effect.

6. IPCC default carbon emission factors from the *1996 IPCC Guidelines*: 15.3 tC/TJ for gas, 16.8 to 27.5 tC/TJ for oil products, 25.8 to 29.1 tC/TJ for primary coal products.

projects that emissions from coal will grow to 15.7 $GtCO_2$ in 2035. However, adopting a pathway towards limiting the long-term temperature increase to 2°C as in the *WEO 2013* 450 Scenario – through use of more efficient plants and end-use technologies as well as increased use of renewables, nuclear and carbon capture and storage (CCS) technologies – could see coal consumption drop and CO_2 emissions from coal reduced to 5.7 Gt by 2035.

CO_2 emissions from oil rose to 11.1 $GtCO_2$ in 2011, an increase of 0.6%. *WEO 2013* projects that emissions from oil will grow to 12.5 $GtCO_2$ in 2035, principally due to increased transport demand.

Emissions of CO_2 from gas were 6.3 $GtCO_2$ in 2011, 1.7% higher than in the previous year. Again, the *WEO 2013* projects emissions from gas will continue to grow, rising to 9.1 $GtCO_2$ in 2035.

Emissions by region

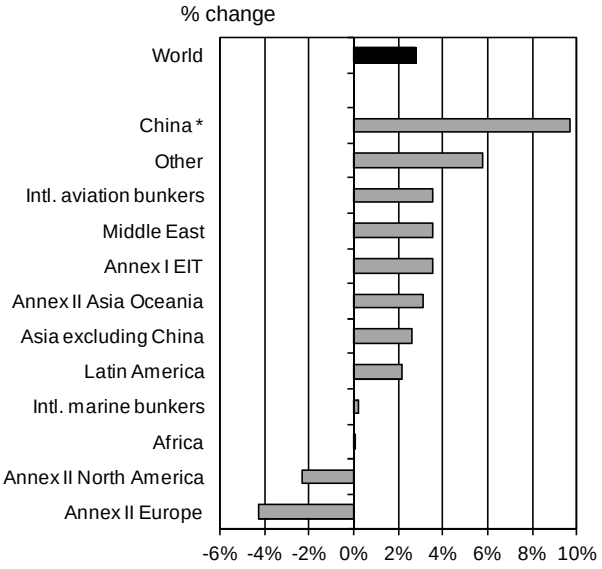
Non-Annex I countries, collectively, represented 54% of global CO_2 emissions in 2011. At the regional level, annual growth rates varied greatly: on the one hand, emissions in China grew strongly (9.7%), while on the other hand, emissions in Annex II countries decreased (-2.4% in North America and -4.3% in Europe). Other regions, like the Middle East, Annex II Asia Oceania, Asia and Latin America[7], experienced moderate growth (2% to 4%), while emissions in Africa remained stable (Figure 7).

Regional differences in contributions to global emissions conceal even larger differences among individual countries. Nearly two-thirds of global emissions for 2011 originated from just ten countries, with the shares of China (25.4%) and the United States (16.9%) far surpassing those of all others. Combined, these two countries alone produced 13.2 $GtCO_2$. The top-10 emitting countries include five Annex I countries and five non-Annex I countries, with the entry in 2011 of Saudi Arabia displacing the United Kingdom from the group (Figure 8).

As different regions and countries have contrasting economic and social structures, the picture would change significantly when moving from absolute emissions to indicators such as emissions per capita or per GDP. A more comprehensive analysis is given in the section *Coupling emissions with socio-economic indicators* later in this chapter.

7. For the purposes of this discussion, Latin America includes non-OECD Americas and Chile.

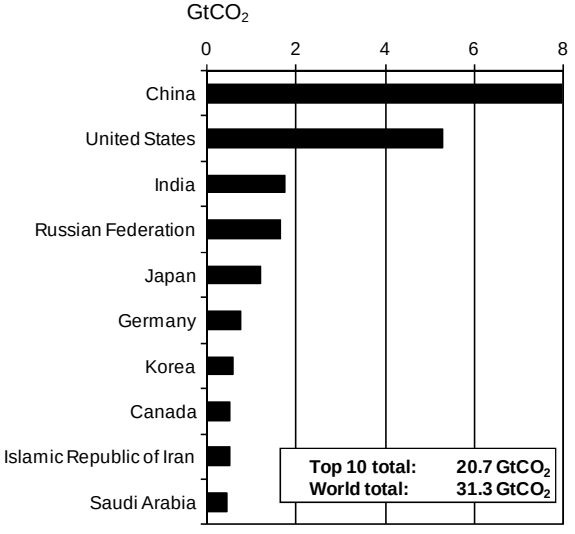
Figure 7. Change in CO_2 emissions by region (2010-11)



* China includes Hong Kong.

Key point: Annex II Europe and North America decreased their emissions in 2011; all other regions increased, with China showing the largest trend.

Figure 8. Top 10 emitting countries in 2011

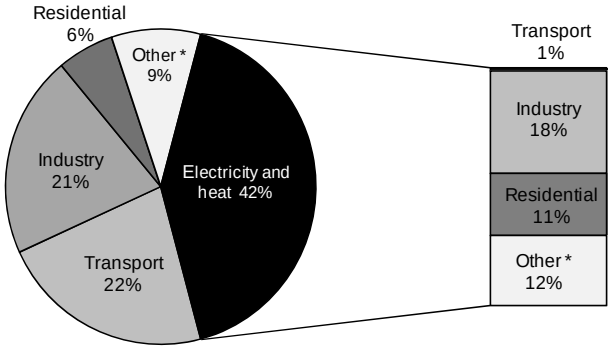


Key point: The top 10 emitting countries account for two-thirds of the world CO_2 emissions.

Emissions by sector

Two sectors produced nearly two-thirds of global CO_2 emissions in 2011: electricity and heat generation, by far the largest, accounted for 42%, while transport accounted for 22% (Figure 9).

Figure 9. World CO_2 emissions by sector in 2011



Note: Also shows allocation of electricity and heat to end-use sectors.

* Other includes commercial/public services, agriculture/forestry, fishing, energy industries other than electricity and heat generation, and other emissions not specified elsewhere.

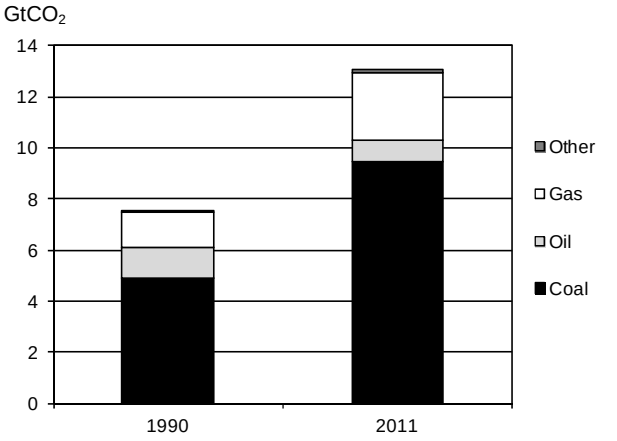
Key point: Two sectors combined, generation of electricity and heat and transport, represented nearly two-thirds of global emissions in 2011.

Generation of electricity and heat worldwide relies heavily on coal, the most carbon-intensive fossil fuel. Countries such as Australia, China, India, Poland and South Africa produce over two-thirds of their electricity and heat through the combustion of coal.

Between 2010 and 2011, CO_2 emissions from electricity and heat increased by 4.4%, faster than total emissions. While the share of oil in electricity and heat emissions has declined steadily since 1990, the share of gas increased slightly, and the share of coal increased significantly, from 66% in 1990 to 72% in 2011 (Figure 10). Carbon intensity developments for this sector will strongly depend on the fuel mix used to generate electricity, including the share of non-emitting sources, such as renewables and nuclear, as well as on the potential penetration of CCS technologies.

By 2035, the *WEO 2013* projects that demand for electricity will be almost 70% higher than current demand, driven by rapid growth in population and income in developing countries, by the continuing increase in the number of electrical devices used in homes and commercial buildings, and by the growth in electrically driven industrial processes. Meanwhile, renewables-based electricity generation is expected to continue growing over the next 25 years, benefiting from government support, declining investment costs and rising fossil-fuel prices. Under the three *WEO 2013* scenarios, the share of renewables in total electricity generation rises from 20% in 2011 to 25% (Current Policies), 31% (New Policies) and 48% (450 Scenario).

Figure 10. CO_2 emissions from electricity and heat generation*

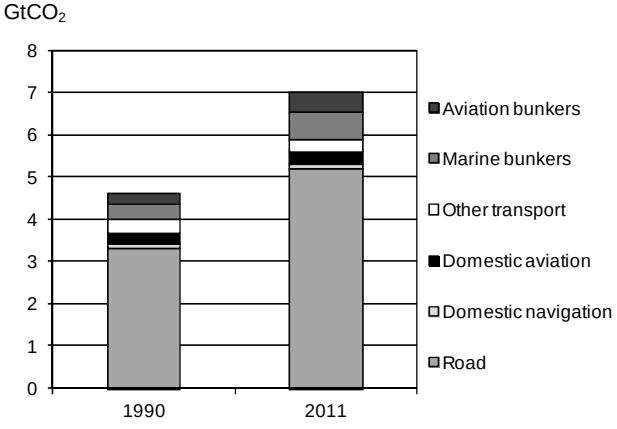


* Refers to main activity producers and autoproducers of electricity and heat.

Key point: CO_2 emissions from electricity and heat almost doubled between 1990 and 2011, driven by the large increase of generation from coal.

As for transport, the fast emissions growth was driven by emissions from the road sector, which increased by 52% since 1990 and accounted for about three quarters of transport emissions in 2011 (Figure 11). It is interesting to note that despite efforts to limit emissions from international transport, emissions from marine and aviation bunkers, both about 80% higher in 2011 than in 1990, grew even faster than those from road.

Figure 11. CO_2 emissions from transport



Key point: CO_2 emissions from road are driving the growth of transport emissions.

Global demand for transport appears unlikely to decrease in the foreseeable future; the *WEO 2013* projects that transport fuel demand will grow by nearly 40% by 2035. To limit emissions from this sector, policy makers should implement measures to

encourage or require improved vehicle efficiency, as the United States has recently done and the European Union is currently doing as a follow-up to the voluntary agreements. Policies that encourage a shift from cars to public transportation and to lower-emission modes of transportation can also help. Finally, policies can encourage a shift to new, preferably low-carbon fuels. These include electricity (*e.g.* electric and plug-in hybrid vehicles), hydrogen (*e.g.* through the introduction of fuel cell vehicles) and greater use of biofuels (*e.g.* as a blend in gasoline and diesel fuel). To avoid a rebound in transport fuel demand, these moves must also be backed up by emissions pricing or fuel excise policies.

These policies would both reduce the environmental impact of transport and help to secure domestic fuel supplies, which are sometimes unsettled (*e.g.* by the threat of supply disruptions, whether from natural disasters, accidents or the geopolitics of oil trade). As these policies will ease demand growth, they could also help keep oil prices below the increases projected in a business-as-usual scenario.

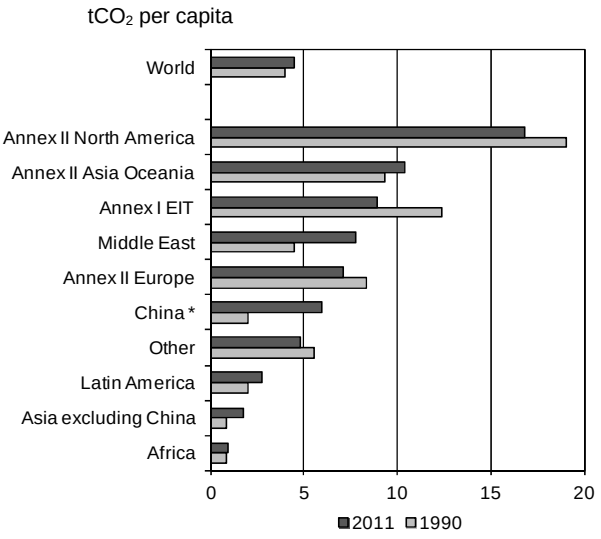
Across all sectors, the opportunities of the "hidden" fuel of energy efficiency are many and rich. For example, the IEA[8] shows that in 25 policy steps, countries could save USD 1 trillion in annual energy costs as well as deliver incalculable security benefits in terms of energy supply and environmental protection. Globally, apart from reducing both consumption and CO_2 emissions, energy efficiency could help countries maximise economic potential and social welfare and mitigate insecurity from stretched energy resources.

Coupling emissions with socio-economic indicators[9]

Indicators such as those briefly discussed in this section strongly reflect energy constraints and choices made to support the economic activities of each country. They also reflect sectors that predominate in different countries' economies.

The range of per-capita emission levels across the world is very large, highlighting wide divergences in the way different countries and regions use energy (Figure 12). For example, among the five largest emitters, the levels of per-capita emissions were very diverse, ranging from 1 tCO_2 for India and 6 tCO_2 for China to 17 tCO_2 for the United States. On average, industrialised countries emit far larger amounts of CO_2 per capita than developing countries. The lowest levels worldwide were those of the Asian and African region.

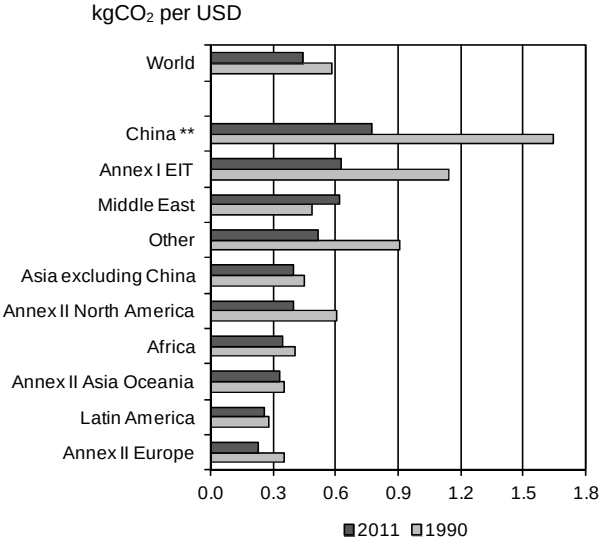
Figure 12. CO_2 emissions per capita by major world regions



* China includes Hong Kong.

Key point: Emissions per capita vary greatly around the world, with Annex II North America far ahead of other regions.

Figure 13. CO_2 emissions per GDP* by major world regions



* GDP in 2005 USD, using purchasing power parities.

** China includes Hong Kong.

Key point: Emission intensities in economic terms vary greatly around the world.

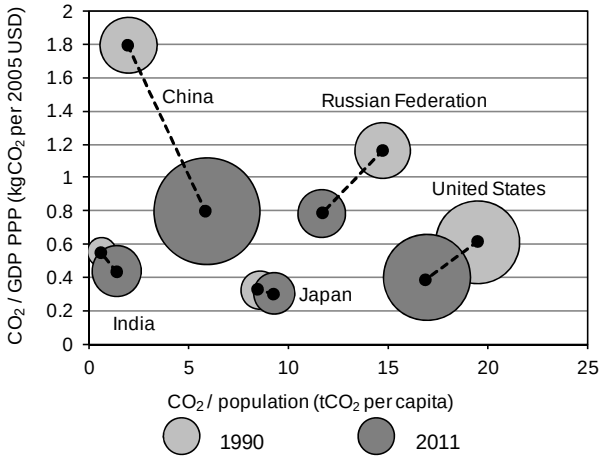
8 See *25 Energy Efficiency Policy Recommendations*, IEA (2011) and *World Energy Outlook*, IEA (2012).

9. No single indicator can provide a complete picture of a country's CO_2 emissions performance or its relative capacity to reduce emissions. The indicators discussed here are certainly incomplete and should only be used to provide a rough indication of the situation in a country.

Emissions per unit of GDP[10] are also very variable across regions (Figure 13). Although climate, economic structure and other variables can affect energy use, relatively high values of emissions per GDP indicate a potential for decoupling CO_2 emissions from economic growth. Possible improvements can derive from fuel switching away from carbon-intensive sources or from energy efficiency at all stages of the energy value chain (from raw material extraction to energy end-use).[11]

All the five largest emitters have shown reductions of emissions per unit of GDP between 1990 and 2011, in line with the average reduction observed globally (23%). This decreasing trend was more pronounced for China and the Russian Federation, whose 1990 levels were significantly higher than those of other countries (Figure 14).

Figure 14. Trends in CO_2 emission intensities for the top five emitting countries*



* Size of circle represents total CO_2 emissions from the country in that year.

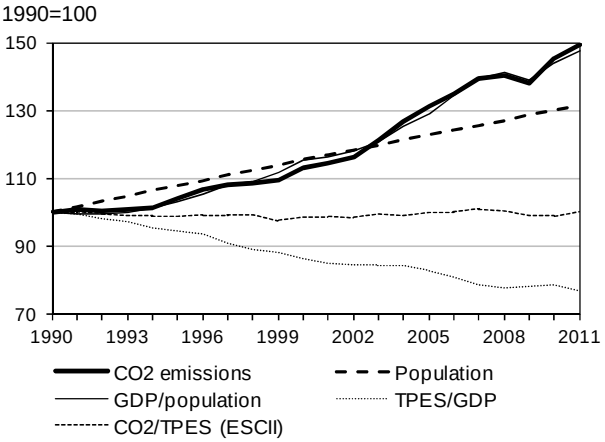
Key point: All top five emitters reduced their emissions per unit of GDP between 1990 and 2011, while emissions per capita showed contrasting trends.

Per-capita emissions, which increased by 14% globally between 1990 and 2011, showed instead contrasting trends among the top five emitting countries. For example, China increased its per-capita emissions by three times and India doubled them, as did some other rapidly expanding economies. Conversely, per-capita emissions decreased significantly in both the Russian Federation (21%) and the United States (13%), although following very different patterns. Values for Russia dramatically dropped in the early nineties, and have progressively recovered in more recent years, while values for the United States decreased with the financial crisis starting in 2008, after many years of rather stable behaviour.

On a global level, CO_2 emissions grew by almost 50% between 1990 and 2011. A simple four factor decomposition[12] shows the main driving factors of the world CO_2 emissions trend. Globally, the economic growth partially decoupled from energy use, as energy intensity decreased by 23% over the period. However, with a practically unchanged carbon intensity of the energy mix[13], the combined growth in population (32%) and in per capita GDP (48%) led to a dramatic increase in global CO_2 emissions between 1990 and 2011.

Such behaviour varies greatly among countries and regions. Understanding the factors driving CO_2 emissions trends will be essential to designing sound and effective policies aiming at emissions reductions.

Figure 15. Global CO_2 emissions and drivers (Kaya decomposition)



Key point: Despite some decoupling between economic growth and energy use, increasing wealth and population, with an unchanged carbon intensity of the mix, drove dramatic CO_2 emissions increases.

10. Throughout this analysis, GDP refers to GDP in 2005 USD, using purchasing power parities. A note of caution is necessary concerning the indicator of CO_2 emissions per GDP. It can be very useful to measure efforts over time for one country, but has limitations when comparing countries, as it is very sensitive to the base year used for the GDP purchasing power parity (PPP).

11. The IEA's Policies and Measures Databases offer access to information on energy-related policies and measures taken or planned to reduce GHG emissions, improve energy efficiency and support renewable energy development and deployment. The online databases can be consulted at: *www.iea.org/policiesandmeasures/*.

12 CO_2 emissions can be decomposed into the product of four factors: population, per capita GDP, TPES/GDP, CO_2/TPES. For a more detailed description of the Kaya decomposition, see Chapter 3: *IEA emissions estimates*.

13. Also known, in its index form, as Energy Sector Carbon Intensity Index (ESCII), as in the IEA publication *Tracking Clean Energy Progress 2013*.

Using biofuels to reduce transport emissions

Compatible with most conventional automotive engines (in low-percentage blends), blendable with current transport fuels, and marketable using much of the current fuel distribution and retail infrastructure, biofuels have the potential to reduce GHG emissions and to contribute to energy security by diversifying supply sources for transport. However, the economic, environmental and social benefits of the current generation of biofuels vary.

In order to assess their efficacy in reducing GHG emissions, biofuels can be compared on the basis of their well-to-wheel (WTW)* performance with respect to conventional fossil fuels. When ethanol is derived from corn, the WTW greenhouse-gas reduction with respect to conventional gasoline is typically in the range of 10% to 50%. The reduction is typically much higher for sugarcane-based ethanol from Brazil, reaching an estimated 70% to 120%**. Similarly, oilseed-derived biodiesel typically leads to GHG reductions, on a WTW basis, of 30% to 60% when compared to conventional petroleum diesel.

However, these comparisons do not take into account the possibility that changes in land use caused by biofuel production can result in one-time releases of CO_2 that could be quite large; more research is needed on the impacts of both direct and indirect land-use change, and how to minimise adverse impacts.

New and emerging biofuel technologies, which can use as feedstock biomass residues and energy crops such as fast-growing trees and perennial grasses, have the potential to expand the scope for production of very low-carbon biofuels. However, these biofuel technologies are not yet commercially operational at full scale. The most mature of these technologies are currently starting to be produced in first commercial plants.

For both conventional and advanced biofuels, production cost is a main barrier to their larger penetration in the transport fuel mix. Ethanol from sugarcane produced in Brazil has been more or less the only biofuel competitive with petroleum fuels without direct subsidies, although this has changed at times when high sugar prices pushed up production costs for ethanol beyond a level competitive with regulated gasoline prices.

Currently, more than 50 countries have mandated or promoted biofuel blending to displace oil in domestic transport supply. In Brazil, gasoline contains 20% to 25% ethanol, and around 95% of new car sales in Brazil in 2011 were flex-fuel vehicles that can run on a gasoline/ethanol blend from 20% to up to 100% ethanol in the fuel mix. This allows the driver to choose the cheapest fuel at the pump.

In 2007, the United States introduced the Renewable Fuels Standard 2, which sets out blending mandates for different types of biofuels. The total mandated volume stands at 15.2 billion gallons in 2012 and will increase to 36 billion gallons by 2022 (of which more than half will be required to be "advanced biofuels"*** and about one-third cellulosic ethanol****).

In the European Union, the Renewable Energy Directive sets out a mandatory share of 10% renewable energy in transport by 2020. While the overall target remains in place, a recent draft proposal from the European Parliament suggests to limit the use of conventional biofuels to 6% and to introduce a 2.5% quota for advanced biofuels. The directive requires for all biofuels that are counted towards the target to meet mandatory sustainability criteria, including minimum GHG emission savings compared to fossil fuels. The use of biofuels produced from certain types of wastes, and residues is counted twice against the targets. Australia (New South Wales and Queensland) and Canada are also mandating the use of biofuels, as are a number of non-OECD countries.

In the future, it is crucial that policies foster innovation and support only sustainable biofuels that can provide considerable emission reductions compared to the use of fossil gasoline and diesel. Continuous monitoring of the environmental, social and economic impacts of biofuel production and use will be important. This includes analysis of suitable land for biofuel cultivation and the potential influence of biofuel production on global food prices taking account of global demand for food, fibre and energy for a steadily growing world population. Support measures should be phased out over time as the commercial viability of biofuels improves as technologies evolve and prices of conventional fossil fuels increase. If well-managed and co-ordinated with investments in infrastructures and agriculture, biofuels can provide an opportunity for increasing land productivity and creating economic development, particularly in rural areas of developing countries.

* Well-to-wheel life cycle analysis refers to the total emissions from the production stage to the consumption stage of the product.

** GHG savings of more than 100% are possible through use of co-products

*** Advanced biofuels in the US Renewable Fuels Standard refer to biofuels that provide more than 50% life-cycle CO_2 savings compared with gasoline.

**** Cellulose is an organic compound with the formula $C_6H_{10}O_5$ and is the structural component of the primary cell wall of green plants. Lignocellulosic biomass refers to plant biomass that is composed of cellulose, hemicellulose and lignin.

Developing a low-carbon world

Traditionally, industrialised countries have emitted the large majority of anthropogenic greenhouse gases (GHGs). More recently, however, shares of developing country emissions surpassed those of industrialised countries, and have kept rising very rapidly. To shift towards a low-carbon world, mitigation measures now taking shape within industrialised countries will need to be accelerated, and complemented by comprehensive efforts worldwide.

A breakthrough in this effort was the agreement at the United Nations Framework Convention on Climate Change (UNFCCC) 17th Conference of the Parties (COP17) talks in Durban (December 2011) to "launch a process to develop a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all Parties". The goal is to negotiate the new agreement by 2015, and for it to come into force from 2020. If agreement can be reached, this will be the first international climate agreement to extend mitigation obligations to all countries, both developed and developing. To build political momentum towards a 2015 agreement, the Secretary-General of the United Nations Ban Ki-moon will invite world leaders to a summit in September 2014.

The Durban agreement builds on decisions at the two previous UNFCCC meetings (in Copenhagen and Cancún), which invited developing countries to put forward voluntary mitigation pledges, which in turn built on the earlier Bali Roadmap (from 2007) that encouraged voluntary mitigation actions in developing countries. Developed and developing countries that submitted pledges under the Copenhagen Accord collectively account for over 80% of global emissions. Although the ambition of these pledges is currently insufficient to limit temperature rise to 2°C above pre-industrial levels, the breadth of participation in mitigation commitments marks a significant improvement on the previous climate agreement, the Kyoto Protocol of the UNFCCC.

The Kyoto Protocol commits industrialised countries (as a group) to curb domestic emissions by about 5% relative to 1990 by the 2008-12 first commitment period. Alongside the agreement to negotiate a new climate agreement by 2015, 38 countries have agreed to take commitments under a second commitment period of the Kyoto Protocol to begin in 2013. The amendments to the Kyoto Protocol bringing the second commitment period into force require ratification by two-thirds of countries participating in the Protocol, a process that is not yet complete.

The Kyoto Protocol also creates "flexible mechanisms" by which industrialised countries can transfer emission allowances among themselves and earn emission credits from emissions reduction projects in participating developing countries and economies in transition (EITs). Despite its extensive coverage (192 countries), the Protocol is limited in its potential to address global emissions since not all major emitters are included in reduction commitments. The United States remains outside of the Protocol's jurisdiction and though most developing countries (*i.e.* non-Annex I countries) have signed, they do not face emissions targets. The Kyoto Protocol implies action on only one-quarter of global CO_2 emissions, as measured in 2010.

Through its flexibility mechanisms and provisions for international trading, the Kyoto Protocol has made CO_2 a tradable commodity, and has been a key driver for the development of emissions trading schemes as detailed below. In 2011 the total value of the global carbon market was USD 176 billion, with 10.3 billion allowances traded (World Bank, 2012).

Emissions trading schemes

Emissions trading schemes (ETS) are developing or being proposed in several regions and countries around the world. Some are operational or being launched (EU ETS, Australia, New Zealand, Norway, Tokyo, Switzerland, in California and through the Regional Greenhouse Gas Initiative in the United States, and in the Canadian provinces of Alberta and Quebec) while others are under development (Korea, China, Kazakhstan, Ukraine and Chile).

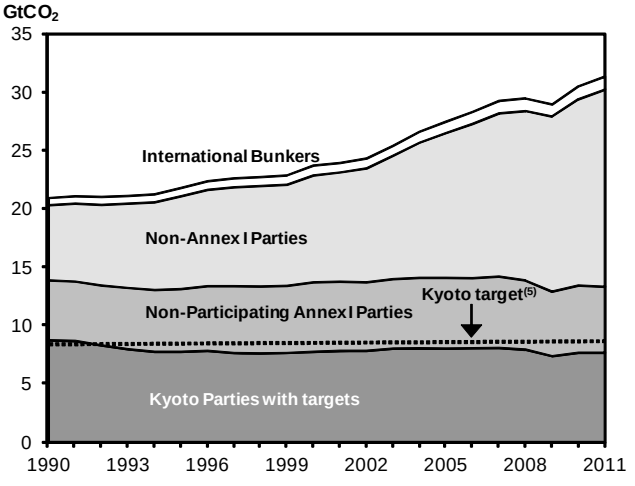
An important milestone in 2013 was the start of trading in Shenzhen, the first of China's seven pilot emissions trading schemes. China has also announced the intention to establish a nationwide ETS after 2016, informed by these pilots. Further pilots will be launched in late 2013 and early 2014 in four other cities (Beijing, Tianjin, Chongqing, and Shanghai) and two provinces (Hubei and Guangdong). Together, these pilots are expected to cover 700Mt of CO_2 emissions (Scotney et al, 2012).

Also in 2013, Kazakhstan launched a trial phase of its ETS, covering 178 companies in the energy and industrial sectors.

Table 1. World CO_2 emissions from fuel combustion and Kyoto Protocol targets[1]

	1990 $MtCO_2$	2011 $MtCO_2$	% change 90-11	Kyoto Target
KYOTO PARTIES WITH TARGETS	**8,778.3**	**7,713.5**	**-12.1%**	**-4.7% [1]**
North America	*428.2*	*529.8*	*23.7%*	
Canada [2]	428.2	529.8	23.7%	-6%
Europe	*3,154.1*	*2,932.8*	*-7.0%*	
Austria	56.4	68.5	21.4%	-13%
Belgium	107.9	108.6	0.6%	-7.5%
Denmark	50.6	41.7	-17.7%	-21%
Finland	54.4	55.6	2.2%	0%
France [3]	352.6	328.3	-6.9%	0%
Germany	949.7	747.6	-21.3%	-21%
Greece	70.1	83.6	19.3%	+25%
Iceland	1.9	1.9	-1.7%	+10%
Ireland	30.5	34.9	14.6%	+13%
Italy	397.4	393.0	-1.1%	-6.5%
Luxembourg	10.4	10.4	0.7%	-28%
Netherlands	155.8	174.5	12.0%	-6%
Norway	28.3	38.1	34.7%	+1%
Portugal	39.3	48.1	22.4%	+27%
Spain	205.2	270.3	31.7%	+15%
Sweden	52.8	44.9	-14.9%	+4%
Switzerland	41.6	39.9	-4.2%	-8%
United Kingdom	549.3	443.0	-19.3%	-12.5%
Asia Oceania	*1,343.9*	*1,613.1*	*20.0%*	
Australia	260.0	396.8	52.6%	+8%
Japan	1,061.6	1,186.0	11.7%	-6%
New Zealand	22.3	30.3	35.8%	0%
Economies in Transition	*3,852.2*	*2,637.7*	*-31.5%*	
Bulgaria	74.9	49.2	-34.3%	-8%
Croatia	21.5	18.8	-12.7%	-5%
Czech Republic	155.1	112.7	-27.4%	-8%
Estonia	36.1	19.3	-46.5%	-8%
Hungary	66.4	47.4	-28.6%	-6%
Latvia	18.6	7.6	-59.3%	-8%
Lithuania	33.1	13.2	-60.1%	-8%
Poland	342.1	300.0	-12.3%	-6%
Romania	167.5	81.8	-51.2%	-8%
Russian Federation	2,178.8	1,653.2	-24.1%	0%
Slovak Republic	56.7	33.9	-40.3%	-8%
Slovenia	13.3	15.3	14.4%	-8%
Ukraine	687.9	285.4	-58.5%	0%

	1990 $MtCO_2$	2011 $MtCO_2$	% change 90-11	Kyoto Target
OTHER COUNTRIES	**11,591.7**	**22,515.2**	**94.2%**	
Non-participating Annex I Parties	*5,122.3*	*5,641.4*	*10.1%*	
Belarus	124.4	66.0	-46.9%	none
Malta	2.3	2.5	8.2%	none
Turkey	126.9	285.7	125.1%	none
United States	4,868.7	5,287.2	8.6%	-7%
Other Regions	*6,357.6*	*16,698.1*	*162.6%*	none
Africa	544.5	967.8	77.7%	none
Middle East	555.7	1,606.9	189.1%	none
N-OECD Eur. & Eurasia [4]	629.7	533.1	-15.3%	none
Latin America [4]	842.1	1,519.1	80.4%	none
Asia (excl. China) [4]	1,507.9	4,071.8	170.0%	none
China	2,277.7	7,999.6	251.2%	none
INTL. MARINE BUNKERS	**362.3**	**645.1**	**78.1%**	
INTL. AVIATION BUNKERS	**256.4**	**468.5**	**82.7%**	
WORLD	**20,988.7**	**31,342.3**	**49.3%**	



(1) The targets apply to a basket of six greenhouse gases and allow sinks and international credits to be used for compliance with the target. The overall EU-15 target under the Protocol is 8%, but the member countries have agreed on a burden-sharing arrangement as listed. Because of lack of data and information on base years and gases, an overall "Kyoto target" cannot be precisely calculated for total Kyoto Parties: estimates applying the targets to IEA energy data suggest the target is equivalent to about 4.7% on an aggregate basis for CO_2 emissions from fuel combustion.

(2) On 15 December 2011, Canada withdrew from the Kyoto Protocol. This action became effective for Canada on 15 December 2012.

(3) Emissions from Monaco are included with France.

(4) Composition of regions differs from elsewhere in this publication to take into account countries that are not Kyoto Parties.

(5) The Kyoto target is calculated as percentage of the 1990 CO_2 emissions from fuel combustion only, therefore it does not represent the total target for the six-gas basket. This assumes that the reduction targets are spread equally across all gases.

Key point: The existing climate targets under the Kyoto Protocol are not sufficiently comprehensive to lead to reductions in global CO_2 emissions from fuel combustion.

Another milestone in 2013 was the start of trading in the California and Quebec schemes. Rules for these were developed co-operatively under the umbrella of the Western Climate Initiative, an agreement among US states and Canadian provinces to promote a common platform for emissions trading. The California and Quebec systems both started trading in January 2013, and will formally link and hold joint auctions of allowances from 2014, pending final approval. The California system will play a critical role in reducing California's emissions to 1990 levels by 2020, as required under the Global Warming Solutions Act of 2006 (AB 32). The California ETS covers large stationary energy and industrial sources from 2013, and expands to cover natural gas and transport fuel suppliers from 2015.

The Australian ETS started in July 2012 with a fixed-price transitional phase, and will move to full trading in 2015.

The Australian government and European Union had announced intentions to link their systems, starting with one-way trading of European allowances into the Australian market from 2015, followed by full two-way linking from 2018. However a change of government in Australia in September 2013 has cast the plans into doubt, with the incoming government intending to repeal the ETS legislation.

The largest scheme in operation is the EU ETS, which began in 2005 and covers emitters in the energy, industry and aviation sectors, representing about 45% of the energy-related CO_2 emissions of the region. The system covers the 28 member states of the European Union, plus Norway, Liechtenstein, and Iceland. The lessons from its first two phases have helped to shape the scheme's post-2012 design (Ellerman *et al.*, 2010).

In December 2008, the European Council and the European Parliament endorsed an agreement on a climate change and energy package which implements a political commitment by the European Union to reduce its GHG emissions by 20% by 2020 compared to 1990 levels.[14] The package also includes a target for renewables in the European Union, set at 20% of final energy demand by 2020.

The EU ETS will play a key role in achieving this target. The 2020 emissions cap for ETS installations is 21% below the actual level of 2005 emissions,[15] with the option to lower the cap to 34% below 2005 levels if there is ambitious climate action internationally. These targets were set in 2008, before the scale of the global financial crisis was apparent. Due to the economic slow-down, European GHG emissions have decreased to the point where the 21% target is expected to be achieved without any abatement effort from industry. As a result, allowance prices in the EU ETS have dropped substantially, and prompted a process of short and long-term reform. In May 2013, the European Parliament agreed to the temporary withholding of 900 Mt of allowances from auction. This will reduce oversupply while options are considered for longer-term measures to restore the supply-demand balance. A proposal for this reform is expected in late 2014.

In New Zealand, a comprehensive economy-wide emission trading scheme (NZ ETS) is being progressively introduced. It began with the forestry sector in January 2008; the energy, transport and industrial sectors have been included since July 2010. Waste and agricultural emissions will enter by 2015. A transition phase, from 2010 to 2015, is based on a capped price and partial obligations. The scheme is fully linked to the international Kyoto market, and allows unlimited use of Kyoto Protocol project and forestry credits. No emissions cap is specified: linking to the international market is intended rather to ensure that an appropriate carbon price is set in the New Zealand economy.

Several other ETS schemes are operating, including in countries that are not Parties to the Kyoto Protocol. In the United States, the first regional scheme (the Regional Greenhouse Gas Initiative [RGGI] covering the electricity sector in the northeastern states) began on 1 January 2009. In February 2013, the RGGI states agreed to lower the emissions cap for 2014 from 165 million to 91 million short tons of CO_2, to bring it in line with 2012 actual emissions level. This 45% reduction was necessary as the previous cap did not anticipate the economic recession or the rapid shift from coal to shale gas for United States electricity generation.

Small schemes are also in place in Tokyo (covering commercial sites) and Alberta (covering large emitters). Switzerland's ETS allows companies to manage their emissions through trading instead of facing the country's carbon tax. Switzerland is in negotiations to link its scheme to the EU ETS. The Korean government has passed legislation to establish an emissions trading scheme from 2015, to assist in delivering Korea's target of a 30% improvement on business-as-usual (BAU) emissions by 2020.

An important development in extending emissions trading to developing economies has been the World Bank's Partnership for Market Readiness, which provides funding and technical assistance to developing countries for capacity building toward the development and piloting of market-based instruments for

14. A 30% reduction target is proposed if other Parties were to take equally ambitious mitigation objectives.

15. Annual cap: 1 974 Mt in 2013, falling in linear fashion to 1 720 Mt by 2020; average annual cap over 2013-20: 1 846 Mt (compared to an annual cap of 2 083 Mt for the period 2008-12).

GHG reduction. Brazil, Chile, China, Columbia, Costa Rica, India, Indonesia, Mexico, Morocco, Peru, South Africa, Thailand, Turkey, Ukraine and Vietnam are currently participating as implementing countries.

Steps for future action

After the unprecedented move at COP15 and COP/MOP5 in Copenhagen, where heads of states and high-level representatives failed to negotiate a comprehensive accord and settled for the Copenhagen Accord, COP16 and COP/MOP6 in Cancún were widely seen as having revitalized the international negotiating process. In Cancún, the key elements of the Copenhagen Accord were formally adopted into the UN process, including: the goal of limiting global temperature increase to less than 2°C above pre-industrial levels; commitments for the provision of financial resources; and sketching a framework for monitoring and reviewing mitigation actions and commitments. Annex I Parties submitted quantified economy-wide GHG targets to 2020 as part of the accord, and several non-Annex I countries also listed mitigation actions, or sectoral or economy-wide GHG targets. With the agreement at COP17 in Durban to launch negotiations on a new global agreement, the focus of the UNFCCC negotiations is now very much on the roadmap to 2015, coupled with decisions on extending the Kyoto Protocol to a second commitment period. The details of this second period were agreed in Doha at COP18, leaving the way clear to negotiate toward the new agreement. COP19, held in November 2013 in Warsaw, will represent an essential step towards such agreement.

A key challenge in defining this new agreement is that while obligations are to start from 2020, global emissions need to peak before 2020 if temperature rise is to be limited to below 2°C. This points to the need for an ambitious start point in 2020, but also the importance of complementary initiatives outside the UNFCCC that can constrain emissions in the period up to 2020. In addition to defining a framework for mitigation actions across developed and developing countries, the Durban Platform will cover enhanced actions on adaptation, technology development and on the provision of financial resources. The concept of both mitigation actions and financial flows being "measurable, reportable and verifiable" is now central to the establishment of a post-2015 framework for climate action. The next step in the UNFCCC process is COP19 in Warsaw, where the elements of the new agreement will be discussed.

Alongside the UNFCCC process, progress toward a low-carbon future is being made in numerous other fora. The challenge of post-2012 discussions is the need to engage developing countries with approaches, possibly including the carbon market, that suit their capacity and their legitimate aspiration for economic and social development. The Asia Pacific Partnership for Clean Development and Climate (APP or AP7), the G8 2005 Gleneagles Plan of Action, and the Major Economies Forum on Energy and Climate (MEF) and Clean Energy Ministerial (CEM) processes have sought to involve developed and developing nations in common measures to address climate change. Other international fora gathering both developed and developing countries have emerged that can further mitigate efforts in specific areas, such as the International Renewable Energy Agency (IRENA), and the International Partnership for Energy Efficiency Co-operation (IPEEC).

The AP7, which groups Australia, Canada, China, India, Japan, Korea and the United States, focuses on the emissions of specific sectors (iron and steel, cement, aluminium, mining, buildings and appliances) and methods of clean fossil energy use, renewable energy generation and more efficient power generation and transmission.

Canada, France, Germany, Italy, Japan, the Russian Federation, the United Kingdom and the United States launched the July 2005 G8 Gleneagles Plan of Action to, in part, promote clean energy and sustainable development while mitigating climate change. The IEA was tasked under the Plan of Action to develop concrete recommendations to help the G8 achieve its clean energy objectives. Additionally, the G8 sought to engage South Africa, India, Brazil, China and Mexico in an official dialogue to address climate change, clean energy and sustainable development worldwide. This commitment by the G8 has been reiterated at subsequent summits.

The G20 summits have also served as a forum to advance climate change and clean energy discussions, including a commitment to rationalising and phasing out inefficient fossil fuel subsidies over the medium term. In 2011, the G20 formed a new Clean Energy and Energy Efficiency (C3E) Working Group to advance its work in this area. The Clean Energy Ministerial process, launched in 2009, is a high-level global forum to accelerate deployment of clean energy, through sharing experience in policies and programmes. It is based on a series of concrete initiatives to advance key technologies. The IEA is involved in some of these initiatives and also prepares an annual tracking report on global clean energy deployment for the CEM meeting.

In all these efforts, timely and accurate CO_2 and other GHG statistics will prove central to ascertaining compliance with international agreements and to informing policy makers and carbon market participants. The ability of countries to monitor and review emissions from their sources is essential in their engagement towards national and global GHG mitigation.

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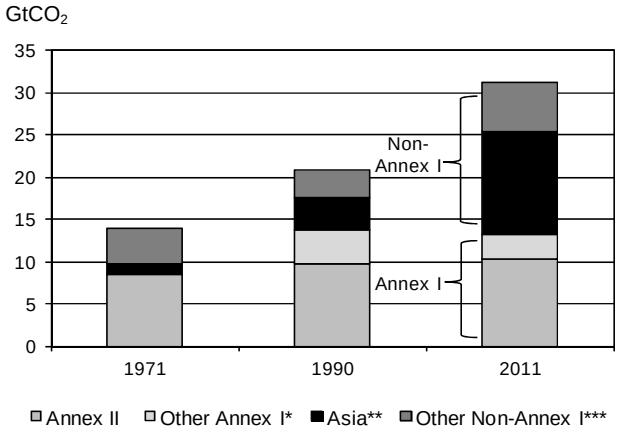
2. REGIONAL ASPECTS OF THE ENERGY-CLIMATE CHALLENGE

Between 1971 and 2011, global CO_2 emissions more than doubled, with a brief dip in 2009. However, two important turning points occurred in 2008: for the first time, emissions from non-Annex I countries surpassed those in Annex I, and the emission levels of Annex I countries fell below 1990 levels due to the combined impact of the economic recession and high oil prices.

Figure 16. Trends in regional CO_2 emissions



* Other Annex I includes Annex I EIT, Malta and Turkey.

** Asia includes Korea and excludes Japan (which is included in Annex II).

*** Other non-Annex I includes Africa, Latin America, Middle East, non-Annex I, non-OECD Europe and Eurasia, international bunkers, and, for 1971, Other Annex I.

Key point: In 2011, CO_2 emissions from Annex I countries as a whole were below 1990 levels, while emissions from non-Annex I countries grew significantly.

The share of Annex I countries in global CO_2 emissions progressively shrank (66% in 1990 and 43% in 2011), as emissions in developing countries (led by Asia) increased at a much faster rate. The growth in Asian emissions reflects a striking rate of economic development, particularly within China and India. Between 1990 and 2011, CO_2 emissions rose by over 2.5 times for non-Annex I countries as a whole and tripled for Asia. This is in contrast to the reduction in emissions below 1990 levels that occurred in the Annex I countries (emissions in 2011 were 3.9% lower than in 1990).

Emission trends within Annex I countries were very different. While in Annex II countries emissions of CO_2 were 6% higher in 2011 than in 1990, in Annex I EIT countries, they were 32% lower due to the rapid decline in industrial productivity that followed the collapse of their centrally planned economies in 1989.

As most of the recent emissions increase is observed in non-Annex I countries, this chapter examines how growing demand in some rapidly expanding economies – defined BRICS as a group – have dramatically changed emissions trends.

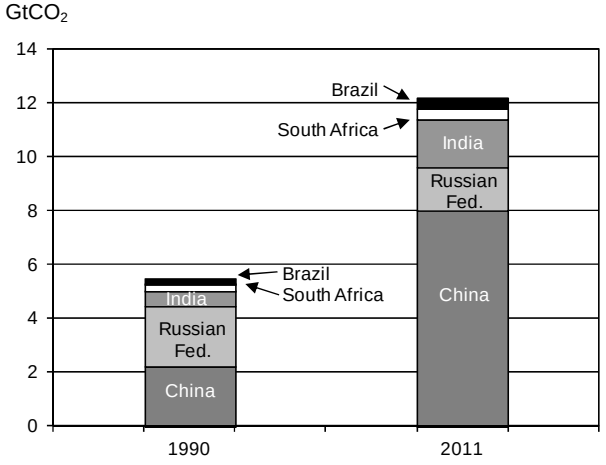
BRICS countries altering the regional balance

One of the most important recent developments in the world economy is the increasing economic integration of large non-OECD countries, in particular Brazil, the Russian Federation, India, China and South Africa, the so-called BRICS countries. In 2011, the BRICS represented over one-quarter of world GDP[16], up from 15% in 1990. Also in 2011, these five countries represented 35% of global energy use and 39% of CO_2 emissions from fuel combustion, with varying individual contributions (Figure 17). These shares are

16. Throughout this analysis, GDP refers to GDP in 2005 USD, using purchasing power parities.

likely to rise further in coming years if the strong economic performance currently occurring in most of these countries continues, as many commentators expect. In fact, China, the Russian Federation and India are already three of the four countries that emit the most CO_2 emissions in absolute terms.

Figure 17. The growing importance of GHG emissions in the BRICS countries



Key point: With the exception of the Russian Federation, CO_2 emissions from the BRICS countries are increasing at a very fast pace.

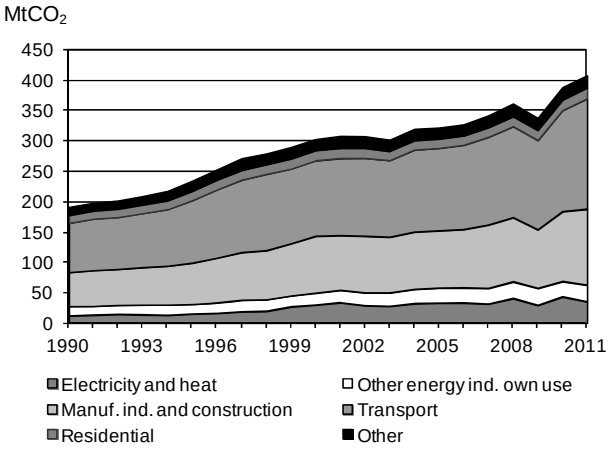
This brief discussion focuses on the BRICS countries, of which only the Russian Federation is a member of Annex I Parties to the UNFCCC. Each of these countries has very different natural resources, energy supply constraints and sectoral consumption patterns. Consequently, the issues relating to CO_2 emissions facing these five countries are quite different.

Brazil

Brazil is the sixth-largest emitter of total greenhouse gases in the world, with the particularity that the country's energy system has a relatively minor impact on GHG emissions (about 27%). The bulk of Brazilian GHG emissions come from agriculture, land-use and forestry activities, mainly through the expansion of agricultural frontiers in the Amazon region.

Compared to the Russian Federation, China and India, CO_2 emissions from fuel combustion in Brazil are small, representing only 1.3% of global CO_2 emissions from fuel combustion. Brazil's energy matrix is one of the cleanest in the world with renewables accounting for 43% of TPES. Within the energy sector, the sub-sectors that contribute the most to emissions – transport (45% in 2011, despite large consumption of biofuels) and industry (31%) – are those likely to grow the most over the next years (Figure 18).

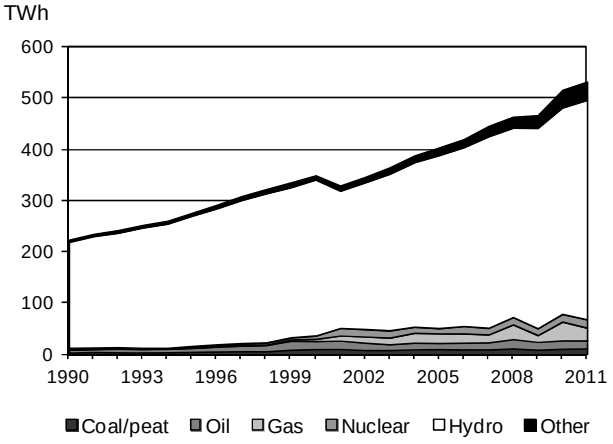
Figure 18. Brazil: CO_2 emissions by sector



Key point: The transport sector produces the largest share of CO_2 emissions from fuel combustion in Brazil.

Electricity generation in Brazil relies heavily on hydropower (Figure 19). Over the last three decades, the number of major dams has grown steadily and hydropower accounted for 81% of total electricity generation in 2011. Many of Brazil's hydropower generating facilities are located far away from the main demand centres, resulting in high transmission and distribution losses. Droughts in recent years have led to a wider diversification in the electricity production mix, also comprising solid biofuels (6%), natural gas (5%) and nuclear (3%) among other sources.

Figure 19. Brazil: Electricity generation by fuel



Key point: Brazilian electricity generation draws heavily on hydropower.

In 2009, the Brazilian government announced plans to build two new large hydroelectric plants. As a result, there are currently 22 GW of hydropower capacity

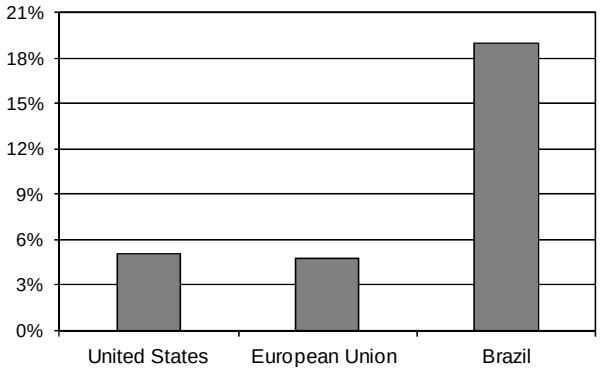
already contracted and under construction (including the 11.2 GW of the Belo Monte) plus 3.9 GW of small hydro plants. However, large hydro projects are frequently faced with opposition by environmental groups and indigenous communities, leading to legal disputes, project delays and higher project costs. The Brazilian power sector has developed the 'platform hydro power concept' to overcome these challenges: inspired by the functioning of offshore platforms for oil and gas, it helps prevent the development of nearby permanent settlements for workers and families, reducing the impact of new hydro plants.

In 2007, amid concerns about the risk of power-supply shortages beyond 2012 unless Brazil builds new capacity, the Brazilian government announced the development of five new nuclear power plants. The government's 2030 National Energy Plan, which dates from 2008 and is currently being updated, anticipates 5.3 GW of additional installed generation capacity from new nuclear plants (Angra 3 and four other plants) by 2030. However, after the Fukushima accident, the Brazilian government decided not to include the latter four plants in its 10-year power expansion plan 2012-20. Moreover, electricity produced from co-generation plants (mainly from sugarcane bagasse) is planned to constitute 11% of the country's electricity supply by 2030.

Biofuels account for a comparatively significant share of the energy consumed for road transport in Brazil (Figure 20). As such, Brazilian transport has a relatively low CO_2 emissions intensity.[17] CO_2 emissions per unit of fuel consumed in road traffic are 20% lower than the world average (2.3 versus 2.8 tCO_2 per toe).

Brazil is the world's largest exporter and consumer of fuel ethanol from sugarcane.[18] In 2011, Brazil consumed 146 kbbl/d of biogasoline, up from 90 in 2006. Currently, cars that can run on either 100% ethanol or a gasoline-anhydrous ethanol blend represent 84% of the new cars purchased in Brazil (an estimated 2.2 million in 2009) and cost the same as cars that can only run on conventional fuel.

Figure 20: Share of biofuels energy in road transport, 2011



Key point: Brazil's relative consumption of biofuels far outstrips that of any other country.

Brazil's profile as an energy producer will be transformed in the medium term, following the discovery in November 2007 of major deepwater oil resources in the Santos Basin, which are now being developed with some fields already in production. Following the approval of a new royalties law in May 2013, the first licensing round for the prolific pre-salt fields is scheduled for October 2013. According to the National Petroleum Agency (ANP), Brazil's total proven oil and condensate reserves as of 31 December 2011 were 16.4 billion barrels.

Russian Federation

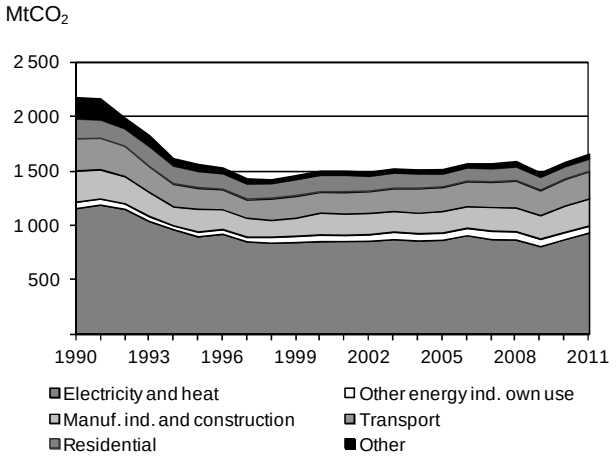
The Russian Federation is the only BRICS country where CO_2 emissions fell between 1990 and 2011, with a 24% drop over the period (Figure 21). The economic downturn after the break-up of the Former Soviet Union caused emissions to fall by 35% between 1990 and 1998. Yet, emissions stopped decreasing in 1999, due to the Russian Federation's economic recovery, stimulated by the increase in world energy prices. Emissions remained fairly constant for the following decade. After falling 7% in 2009, largely due to the global financial crisis and lower GDP growth, emissions grew again by 7% in 2010 and by 5% in 2011, the highest annual increases since 1990.

The *WEO 2013* New Policies Scenario projects that the Russian Federation CO_2 emissions will continue to increase steadily, but remain significantly under 1990 levels in 2035.

17. For a more complete discussion on the advantages and limitations of using biofuels to replace oil, see box on "Using biofuels to reduce transport emissions" in the chapter "Recent trends in energy-related CO_2 emissions". Note: CO_2 emissions intensity considers the tank-to-wheel emissions and assumes that the CO_2 emissions derived from the combustion of biofuels are zero.

18. In 2005, the United States displaced Brazil as the largest ethanol producer, although mainly derived from corn rather than sugarcane.

Figure 21. Russian Federation: CO_2 emissions by sector



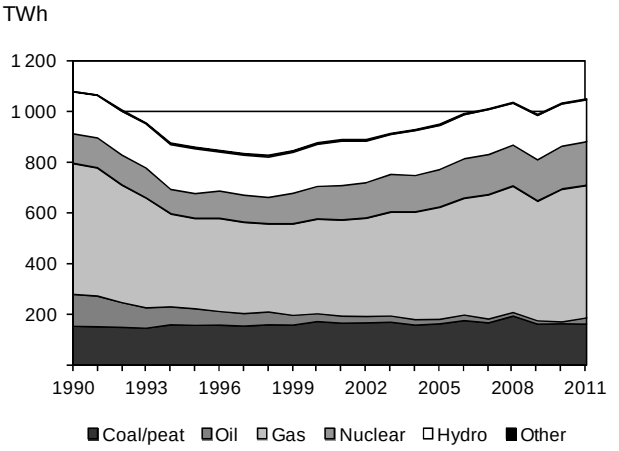
Key point: CO_2 emissions in the Russian Federation have remained fairly constant over the last fifteen years, after the economic downturn of the early nineties.

Besides CO_2 emissions from fuel combustion, other sources of greenhouse gases represent an important share of the Russian GHG emissions: in particular, CH_4 from leaks in the oil and gas transmission/distribution system and CO_2 emissions from flaring of associated gas. To effectively reduce GHG emissions from energy, these two issues would also need to be addressed (IEA, 2006a).

Based on satellite data, the Global Gas Flaring Reduction Partnership estimated that the volume of gas flared in 2010 in Russia was 35.2 bcm, marking a 17 bcm decrease since 2007. Yet, data showed that in 2011 the amount of gas flared increased by another 1.8 bcm. In early 2009, the Russian government passed the resolution "On the Measures Stimulating Reduction of Atmospheric Pollution by Products of Associated Gas Flaring" which limits associated gas flaring levels to 5% of the entire output as from 2012.

Excessive flaring will lead to specific fines in order to incentivise investment in flaring reduction, except for new fields ("green fields"), exempted from the requirement at the initial stages. In order to further discourage flaring and meet its targets, in November 2012 the Russian government approved a more stringent formula for calculating fines, which will increase by around three times in 2013 and six times in 2014, compared with 2012 levels. Overall, these additional measures, if fully implemented, should lead to a faster decrease of associated gas flaring in Russia in the coming years.

Figure 22. Russian Federation: Electricity generation by fuel



Key point: In the Russian Federation, a large portion of the electricity and heat generation comes from non-emitting (nuclear and hydro) or low-emitting (natural gas) sources.

In 2011, the electricity and heat generation sector represented 57% of Russian CO_2 emissions, compared to a global average of 43%. Within this sector, 49% of the electricity was generated by natural gas, 16% by coal and only 3% by oil (Figure 22).

The Russian government enacted a decree in January 2009 that sets targets to increase the share of electricity generated by renewable energy sources (excluding hydro over 25 MW) from less than 1% to 4.5% by 2020. In December 2010, the government introduced a capacity-based support scheme for renewable energy development. Yet as renewable energy deployment barely changed following the introduction of an initial support scheme, further regulatory precisions and amendments were introduced in May 2013. In April 2013, the government's State Programme targeting renewable energy deployment took a more cautious view on the initial 2020 targets, narrowing the target to 2.5% of electricity generation by 2020 while aiming to achieve a 393 million tonnes CO_2 emissions reduction.

Of the BRICS countries, the Russian Federation had in 2011 the highest CO_2 emissions per capita (11.6 tCO_2), slightly above the average of OECD countries (9.9 tCO_2). In terms of CO_2/GDP, the Russian Federation's economy remains CO_2 intensive with 0.79 $kgCO_2$ per unit of GDP, 2.4 times higher than the OECD average. Canada, whose geography and natural resources are comparable to those of the

Russian Federation, has a carbon intensity of 0.43 kgCO_2 per unit of GDP – about half of the Russian Federation's level. However, IEA statistics show a reduction of the Russian Federation's energy intensity of GDP of about 5% per year between 1998 and 2008. It is not clear how much this can be attributed to energy efficiency improvements or changes in the sectoral composition of GDP and industrial production mix as opposed to the dramatic increase in GDP due to the country's much higher export earnings from oil and gas. In fact, the energy intensity actually increased by 4% between 2008 and 2011. This is counter-intuitive, as it was in 2009 that Russia adopted its first Federal Law on energy efficiency setting a target of 40% reduction of the Russian energy intensity by 2020 compared to 2007 levels.

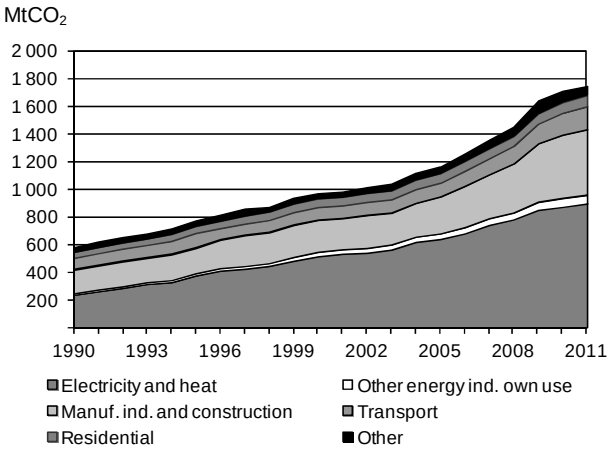
On the long term, the increase in CO_2 emissions may also be limited by lower economic growth figures – and lower than initially expected power demand growth figures; the replacement of ageing power plants with modern combined gas-fired power plants or renewable energy sources; the implementation of ambitious energy efficiency policies; the modernisation of district heating systems; the plan to extend the lifetime of nuclear reactors; and ongoing structural changes in the economy, with the service sector expanding.

India

India emits more than 5% of global CO_2 emissions and shows a clear trend of rapid increase: CO_2 emissions have tripled between 1990 and 2011. The *WEO 2013* New Policies Scenario projects that CO_2 emissions in India increase by 3.4% per year from 2011 to 2035, at which time India would account for 10% of global emissions. A large share of these emissions are produced by the electricity and heat sector, which represented 52% of CO_2 in 2011, up from 40% in 1990. CO_2 emissions in the transport sector accounted for only 10% of total emissions in 2011, but transport is one of the fastest-growing sectors (Figure 23).

In 2011, 68% of electricity in India came from coal, 10% from natural gas and 1% from oil (Figure 24). The share of fossil fuels in the generation mix grew from 73% in 1990 to 85% in 2002 and decreased 6 percentage points since then, due to the growth of renewable sources (*e.g.* wind represented 2% of total generation in 2011, and solid biofuels 3%).

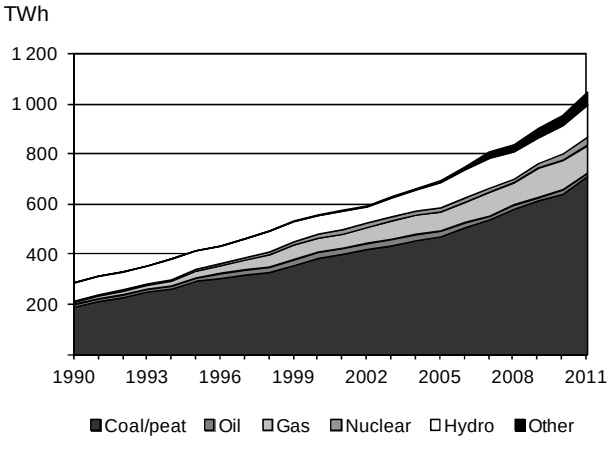
Figure 23. India: CO_2 emissions by sector



Key point: The bulk of CO_2 emissions in India comes from the electricity and heat generation sector, the share of which continues to grow.

According to more recent estimates, India's renewable power capacity continued its strong growth reaching 23 GW in January 2012, equivalent to nearly 12% of total power capacity (MNRE, 2012; CEA, 2012). Wind comprised the largest capacity with 16 GW or 70% of total renewable capacity, followed by small hydro at 14% and bagasse co-generation at 9%. Solar PV, with 481 MW of capacity or only 2% of total renewable installation, is expected to grow strongly in the medium and long term. One notable aspect of renewable power in India is the high proportion of private ownership, accounting for 86% in March 2012.

Figure 24. India: electricity generation by fuel



Key point: About two-thirds of India's electricity comes from coal.

Of the BRICS countries, India has the lowest CO_2 emissions per capita (1.4 tCO_2 in 2011), about one-third that of the world average. Due to the recent large increases in emissions, however, emissions per capita were in 2011 more than two times those of 1990 and will continue to grow. Yet according to the *WEO 2013* New Policies Scenario, by 2035 its carbon emissions of 2.5 tCO_2 per capita will still be substantially lower than the world average of 4.3 tCO_2 per capita projected for the same year.

India has continuously improved the efficiency of its economy and reduced the CO_2 emissions per unit of GDP by 20% between 1990 and 2011, although the carbon intensity of its energy mix (CO_2/TPES) increased by 27% over the same period. India aims to further reduce emissions intensity of GDP by 20% to 25% by 2020 compared with the 2005 level.[19]

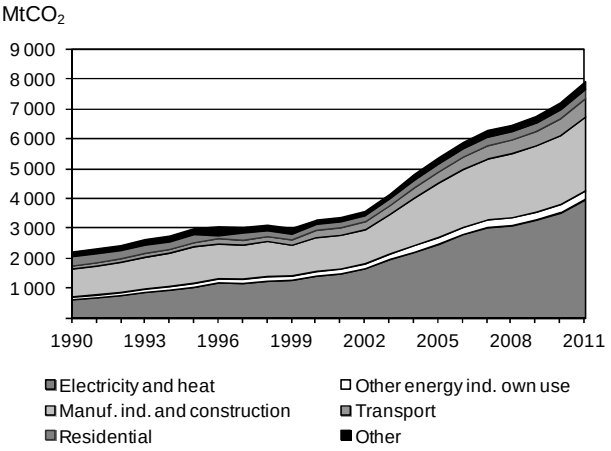
India recently created an executive committee to regularly review the progress made with the nine missions established under its National Action Plan on Climate Change. One key activity identified by the Executive Committee is the need to further mobilise funding to be made available under the National Clean Energy Fund (NCEF) to implement projects under the missions.

China

With almost 8 billion tonnes of CO_2, Chinese emissions accounted in 2011 for a quarter of global emissions, far surpassing those of the other BRICS countries. In fact, China overtook the United States in 2006 as the world's largest annual emitter of energy-related CO_2, although in cumulative and per-capita terms the United States remains the larger. Chinese CO_2 emissions more than tripled between 1990 and 2011. The increases were especially large during the surge of economic growth and consequent higher energy demand in the middle of the last decade. Due to the global economic crisis, however, the rate of emissions growth slowed in 2008 before returning to higher levels (10% in 2011). The *WEO 2013* New Policies Scenario projects that the growth in Chinese emissions could slow down even further to 1.0% per year on average between 2011 and 2035. Even with this steady decline, emissions in 2035 would be almost 30% higher than current levels.

Since 1990, emissions in the electricity and heat generation sector grew the most, representing 50% of Chinese CO_2 emissions in 2011 (Figure 25). Emissions in the industry sector also grew rapidly; they represented 31% of CO_2 emissions in 2011. As for transport (8%), the *WEO 2013* New Policies Scenario projects that emissions from the transport sector will continue to grow, accounting for 13% of total emissions in 2035. A key challenge is that switching to low- or zero-carbon energy sources is more difficult in transport than in other sectors.

Figure 25. China: CO_2 emissions by sector



Key point: In recent years, in line with vigorous economic expansion, China showed dramatic growth in CO_2 emissions, especially from electricity and heat generation.

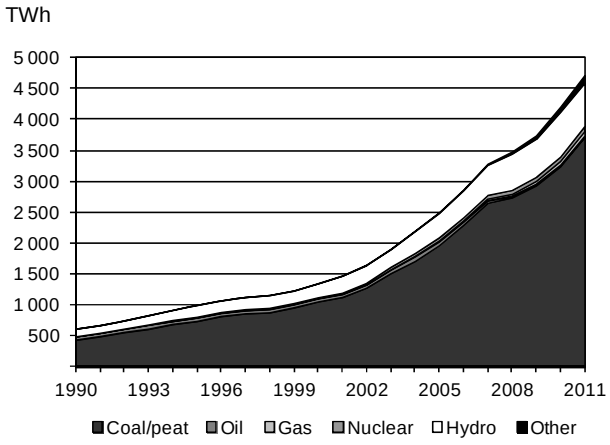
Chinese demand for electricity was the largest driver of the rise in emissions. The rate of capacity additions peaked in 2006, but in 2012 China's installed capacity still rose by a net 80 GW (National Bureau of Statistics, 2013), slightly less than the total installed capacity of Korea. At the same time, China closed nearly 17 GW of small, inefficient fossil fuel-fired plants, roughly equivalent to Finland's installed capacity.

Coal played a major role in supporting the growing demand for electricity generation (Figure 26). Nearly all of the 1990-2011 emissions growth from power generation derived from coal, although the emissions performance of coal-fired power generation continued to improve significantly (IEA, 2009).

In the past few decades, China experienced a rapid decoupling of energy consumption and CO_2 emissions from economic growth. During the 1980s, the central government in China reduced industrial energy intensity by establishing standards and quotas for the energy supplied to firms, and had the authority to shut off the power supply when enterprises exceeded their limits (Lin, 2005). However, as the Chinese economy has become increasingly market-oriented, state-directed

19. As per its stated goal in association with the Copenhagen Accord.

Figure 26. China: electricity generation by fuel



Key point: Coal dominates China's electricity generation and was responsible for the very fast growth in national CO_2 emissions.

investment in energy conservation as a percentage of total energy investment gradually declined (IEA, 2006b), though efficiency remains a policy priority.

The rapid expansion since 2003 of heavy industrial sectors to serve huge infrastructure investments and burgeoning demand for Chinese products from domestic and overseas consumers pushed up demand for fossil fuels. As a result, CO_2 emissions per unit of GDP actually rose from 2002 to 2005. Still, at 0.80 $kgCO_2$ per unit of GDP, the 2011 CO_2/GDP is less than half of that in 1990, and a recent push by the government to reduce energy intensity by 16% between 2010 and 2015 has helped to resume the long-term intensity decline, albeit at a slower rate than in the past. Despite the fact that some of the world's largest investments in renewables were made in China, coal dominance in the Chinese power sector has caused a 13% increase in the carbon intensity of the energy mix (CO_2/TPES) since 1990.

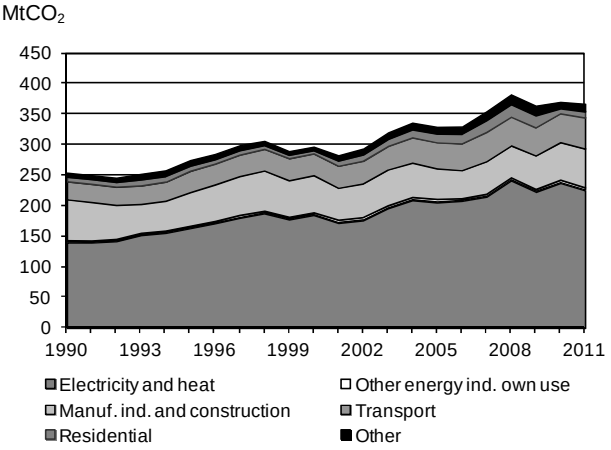
Although per-capita CO_2 emissions in China in 2011 were only about 60% of the OECD average level, they have increased threefold since 1990, with many of the largest increases occurring in the last nine years. The country is seeking ways to limit growth in CO_2 emissions, though, and is requiring all provincial and local governments to participate in implementing the 12th Five-Year Plan target of lowering CO_2 emissions per unit of GDP by 17% in 2015 compared to 2010. Regional pilot projects are underway to find practical ways of reaching this target, as well as the national pledge, announced in late 2009 under the Copenhagen Accord, to reduce CO_2 emissions per unit of GDP by 40% to 45% in 2020 compared to 2005.

South Africa

South Africa currently relies heavily on fossil fuels, mainly coal, as a primary energy source (88% in 2011). Although South Africa accounted for 38% of CO_2 emissions from fuel combustion across all of Africa in 2011, it represented only 1% of the global total. The electricity and heat sector produced 61% of South Africa's CO_2 emissions in 2011 (Figure 27).

Coal dominates the South African energy system, accounting for 70% of primary energy supply and 23% of final energy consumption. In 2011, South Africa generated 94% of its electricity using coal (Figure 28).

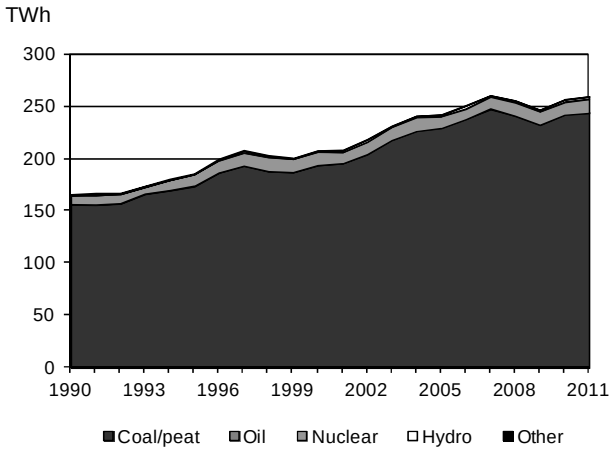
Figure 27. South Africa: CO_2 emissions by sector



Key point: The largest share of CO_2 emissions in South Africa comes from the electricity and heat sector, but growth remains moderate compared to some of the other BRICS countries.

South Africa submitted a pledge, under the Copenhagen Accord, to reduce emissions by 34% by 2020 and by around 42% by 2025, compared to a current emission baseline. One of the major climate change mitigation issues facing South Africa is the need to reduce emissions from the power sector, primarily by reducing reliance on coal. South Africa is already taking steps to expand the use of both renewable and nuclear energy, to explore the use of carbon capture and storage (CCS) technologies, to explore options for shale gas development, and to reduce energy demand through a nationwide energy efficiency programme. South Africa's public utility, Eskom, also has a target to reduce dependence on conventional coal to 70% by 2025 and reduce GHG emissions in absolute terms by 2050 (including increasing capacity from renewables). South Africa's current target is to reach 3 625 MW of generation capacity from renewables by 2013.

Figure 28. South Africa: electricity generation by fuel



Key point: South Africa relies almost solely on coal to produce its electricity.

The prices of commercial forms of energy in South Africa are, in general, very low by international standards, although a yearly price-hike has been recently introduced. Electricity access programmes are in place, and the electrification rate is relatively high for sub-Saharan Africa, but, especially in rural areas, direct use of commercial forms of energy by households is still limited. Traditional solid biofuels (especially wood) dominate energy use by rural households, causing health and safety problems, as well as concerns about the sustainability of wood supplies.

Between 1990 and 2011, per-capita CO_2 emissions in South Africa remained fairly constant while emissions per unit of GDP decreased by 17%, even if South Africa aims to reduce GHG emissions to 34% below its business-as-usual (BAU) growth trajectory by 2020, increasing to 42% below the BAU trajectory by 2025.

Sustainable energy use requires global engagement

The link between climate change and energy is a part of the larger challenge of sustainable development. The socio-economic and technological characteristics of development paths will strongly affect emissions, the rate and magnitude of climate change, climate change impacts, the capability to adapt and the capacity to mitigate the emissions themselves.

Trends in CO_2 emissions from fuel combustion illustrate the need for all countries to shape a more sustainable energy future. Special emphasis should first be on the industrialised nations that have the highest per-capita incomes and that are responsible for the bulk of cumulative emissions. However, with the rapidly growing energy demand of developing countries, it is important that they also strive to use energy in a sustainable way. *ETP 2012* shows that enhancing energy efficiency and reducing the carbon intensity of energy supply, which is largely reliant on fossil fuels, are both fundamental steps towards a global low-carbon energy system.

Since the Industrial Revolution, the bulk of annual CO_2 emissions have originated from Annex I countries. Given the size of some developing economies and the rapid growth in their energy needs, this long period of dominance has ended. Effective emissions mitigation will require all countries, regardless of energy demand and infrastructure, to use energy in a sustainable manner.

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3. IEA EMISSIONS ESTIMATES

The estimates of CO_2 emissions from fuel combustion presented in this publication are calculated using the IEA energy data[20] and the default methods and emission factors from the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*, IPCC/OECD/IEA, Paris, 1997 (*1996 IPCC Guidelines*).

Although the IPCC approved the *2006 Guidelines* at the 25th session of the IPCC in April 2006 in Mauritius, many countries (as well as the IEA Secretariat) are still calculating their inventories using the *1996 IPCC Guidelines* since this was the version used for the Kyoto Protocol. In December 2011 in Durban, the Parties adopted Decision 15/CP.17 to update their reporting tables so as to implement the *2006 Guidelines*. The new reporting tables will be used by Annex I Parties from 15 April 2015.

The IEA Secretariat reviews its energy databases each year. In the light of new assessments, important revisions may be made to the time series of individual countries. Therefore, certain data in this publication may have been revised with respect to previous editions.

Inventory quality

The *IPCC Guidelines* allow Parties under the UNFCCC to prepare and periodically update national inventories that are accurate, complete, comparable and transparent. Inventory quality is an important issue since countries are now implementing legally-binding commitments.

One way to assess inventory quality is to do comparisons among inventories, methodologies and input data. The *IPCC Guidelines* recommend that countries which have used a detailed Sectoral Approach for CO_2 emissions from energy combustion also use the Reference Approach for verification purposes. This will identify areas where a full accounting of emissions may not have been made (see Chapter 5 of the full publication: *IPCC methodologies*).

Reference Approach vs. Sectoral Approach

The Reference Approach and the Sectoral Approach often give different results because the Reference Approach is a top-down approach using a country's energy supply data and has no detailed information on how the individual fuels are used in each sector.

The Reference Approach provides estimates of CO_2 to compare with estimates derived using a Sectoral Approach. Theoretically, it indicates an upper bound to the Sectoral Approach "1A fuel combustion", because some of the carbon in the fuel is not combusted but will be emitted as fugitive emissions (as leakage or evaporation in the production and/or transformation stage).

Calculating CO_2 emissions inventories with the two approaches can lead to different results for some countries. In general the gap between the two approaches is relatively small (5 per cent or less) when compared to the total carbon flows involved. In cases where 1) fugitive emissions are proportional to the mass flows entering production and/or transformation processes, 2) stock changes at the level of the final consumer are not significant and 3) statistical differences in the energy data are limited, the Reference Approach and the Sectoral Approach should lead to similar evaluations of the CO_2 emissions trends.

When significant discrepancies and/or large time-series deviations do occur, they may be due to various reasons such as:

20. Published in *Energy Statistics of OECD Countries*, *Energy Balances of OECD Countries*, *Energy Statistics of Non-OECD Countries* and *Energy Balances of Non-OECD Countries*, IEA, Paris, 2013.

Large statistical differences between the energy supply and the energy consumption in the basic energy data. Statistical differences arise from the collection of data from different parts of the fuel flow from its supply origins to the various stages of downstream conversion and use. They are a normal part of a fuel balance. Large random statistical differences must always be examined to determine the reason for the difference, but equally importantly smaller statistical differences which systematically show an excess of supply over demand (or vice versa) should be pursued.

Significant mass imbalances between crude oil and other feedstock entering refineries and the (gross) oil products manufactured.

The use of aggregate net calorific and carbon content values for primary fuels which are converted rather than combusted. For example, it may appear that there is not conservation of energy or carbon depending on the calorific value and/or the carbon content chosen for the crude oil entering refineries and for the mix of products produced from the refinery for a particular year. This may cause an overestimation or underestimation of the emissions associated with the Reference Approach.

The misallocation of the quantities of fuels used for conversion into derived products (other than power or heat) ***or quantities combusted in energy industry own use***. When reconciling differences between the Reference Approach and a Sectoral Approach it is important to ensure that the quantities reported in transformation and energy industry own use (*e.g.* for coke ovens) reflect correctly the quantities used for conversion and for fuel use, respectively, and that no misallocation has occurred. Note that the quantities of fuels converted to derived products should have been reported in transformation in the energy balance. If any derived products are used to fuel the conversion process, the amounts involved should have been reported in energy industry own use of the energy balance. In a Sectoral Approach the inputs to transformation should not be included in the activity data used to estimate emissions.

Missing information on certain transformation outputs. Emissions from combustion of secondary fuels produced in integrated processes (for example, coke oven gas) may be overlooked in a Tier 1 Sectoral Approach if data are poor or unavailable. The use of secondary fuels (the output from the transformation process) should be included in the Sectoral Approach. Failure to do so will result in an underestimation of the Sectoral Approach.

Simplifications in the Reference Approach. Certain quantities of carbon should be included in the Reference Approach because their emissions fall under fuel combustion. These quantities have been excluded where the flows are small or not represented by a major statistic available within energy data. Examples of quantities not accounted for in the Reference Approach include lubricants used in two-stroke engines, blast furnace and other by-product gases which are used for fuel combustion outside their source category of production and combustion of waxed products in waste plants with heat recovery. On the other hand, certain flows of carbon should be excluded from the Reference Approach, but for reasons similar to the above no practical means can be found to exclude them without over complicating the calculations. These include coals and other hydrocarbons injected into blast furnaces as well as cokes used as reductants in the manufacture of inorganic chemicals. These simplifications will determine discrepancies between the Reference Approach and a Sectoral Approach. If data are available, the magnitudes of these effects can be estimated.

Missing information on stock changes that may occur at the final consumer level. The relevance of consumer stocks depends on the method used for the Sectoral Approach. If delivery figures are used (this is often the case) then changes in consumers' stocks are irrelevant. If, however, the Sectoral Approach is using actual consumption of the fuel, then this could cause either an overestimation or an underestimation of the Reference Approach.

High distribution losses or unrecorded consumption for natural gas may mean that the emissions are overestimated by the Reference Approach or underestimated by the Sectoral Approach.

The treatment of transfers and reclassifications of energy products may cause a difference in the Sectoral Approach estimation since different net calorific values and emission factors may be used depending on how the fuel is classified.

Differences between IEA estimates and UNFCCC submissions

It is possible to use the IEA CO_2 estimates for comparison with the greenhouse-gas (GHG) inventories reported by countries to the UNFCCC Secretariat. In this way, problems in methods, input data or emission factors may become apparent. However, care should be used in interpreting the results of any comparison since the IEA estimates may differ from a country's official submission for many reasons.

A recent comparison of the IEA estimates with the inventories submitted to the UNFCCC showed that for most Annex II countries, the two calculations were within 5-10% depending on the coverage of the fuel combustion sector in the national inventory. For some EIT and non-Annex I countries, differences between the IEA estimates and national inventories were larger. In some of the countries the underlying energy data were different, suggesting that more work is needed on the collecting and reporting of energy statistics for those countries.

Some countries have incorrectly defined bunkers as fuel used abroad by their own ships and planes. Still other countries have made calculation errors for carbon oxidation or have included international bunkers in their totals. Since all of the above will affect the national totals of CO_2 emissions from fuel combustion, a systematic comparison with the IEA estimates would allow countries to verify their calculations and produce more internationally comparable inventories.

In addition, the main bias in the energy data and emission factors will probably be systematic and not random. This means that the emission trends will usually be more reliable than the absolute emission levels. By comparing trends in the IEA estimates with trends in emissions as reported to the UNFCCC, it should be possible to identify definition problems or changes in the calculations, which were not reflected in the base year.

For many reasons the IEA estimates may differ from the numbers that a country submits to the UNFCCC, even if a country has accounted for all of its energy use and correctly applied the *IPCC Guidelines*. No attempt has been made to quantify the effects of these differences. In most cases these differences will be relatively small. Some of the reasons for these differences are:

- **The IEA uses a Tier 1 method.**

The IEA uses a Tier 1 Sectoral Approach based on the *1996 IPCC Guidelines*. Countries may be using a Tier 2 or Tier 3 method that takes into account different technologies.

- **The IEA is using the *1996 IPCC Guidelines*.**

The IEA continues to use the *1996 IPCC Guidelines*. Some countries may have already started using the *2006 IPCC Guidelines.*

- **Energy activity data are extracted from the IEA energy balances and may differ from those used for the UNFCCC calculations.**

Countries often have several "official" data sources such as a Ministry, a Central Bureau of Statistics, a nationalised electricity company, etc. Data can also be collected from the energy suppliers, the energy consumers or customs statistics. The IEA Secretariat tries to collect the most accurate data, but does not necessarily have access to the complete data set that may be available to national experts calculating emission inventories for the UNFCCC. In addition to different sources, the methodology used by the national bodies providing the data to the IEA and to the UNFCCC may differ. For example, general surveys, specific surveys, questionnaires, estimations, combined methods and classifications of data used in national statistics and in their subsequent reclassification according to international standards may result in different series.

- **The IEA uses average net calorific values.**

The IEA uses an average net calorific value (NCV) for each secondary oil product. These NCVs are region-specific and constant over time. Country-specific NCVs that can vary over time are used for NGL, refinery feedstocks and additives. Crude oil NCVs are further split into production, imports, exports and average. Different coal types have specific NCVs for production, imports, exports, inputs to main activity power plants and coal used in coke ovens, blast furnaces and industry, and can vary over time for each country.

Country experts may have the possibility of going into much more detail when calculating the heat content of the fuels. This in turn could produce different values than the IEA.

- **The IEA uses average emission factors.**

The IEA uses the default emission factors which are given in the *1996 IPCC Guidelines*. Country experts may have better information available.

- **The IEA does not have detailed information for the stored carbon calculation.**

The IEA does not have complete information on the non-energy use of fuels. The amount of carbon stored is estimated using the default values given in the *1996 IPCC Guidelines*. For "other products" in the stored carbon calculation, the IEA assumes that 100% of kerosene, white spirit and petroleum coke that is reported as non-energy use in the energy balance is also stored. Country experts calculating the inventories may have more detailed information.

- **The IEA cannot allocate emissions from autoproducers into the end-use sectors.**

The *1996 IPCC Guidelines* recommend that emissions from autoproduction should be included with emissions from other fuel use by end-consumers. At the same time, the emissions from the autoproduction of electricity and heat should be excluded from the

energy transformation source category to avoid double counting. The IEA is not able to allocate the fuel use from autoproducers between industry and *other*. Therefore, this publication shows a category called "Unallocated autoproducers". However, this should not affect the total emissions for a country.

- **Military emissions may be treated differently.**

According to the *1996 IPCC Guidelines*, military emissions should be reported in Source/Sink Category 1 A 5, *Other (not elsewhere specified)*. Previously, the IEA questionnaires requested that warships be included in international marine bunkers and that the military use of aviation fuels be included in domestic air. All other military use should have been reported in *non-specified other*.

At the IEA/Eurostat/UNECE Energy Statistics Working Group meeting (Paris, November 2004), participants decided to harmonise the definitions used to collect energy data on the joint IEA/Eurostat/UNECE questionnaires with those used by the IPCC to report GHG inventories. As a result, starting in the 2006 edition of this publication, all military consumption should be reported in *non-specified other*. Sea-going versus coastal is no longer a criterion for splitting international and domestic navigation.

However, it is not clear whether countries are reporting on the new basis, and if they are, whether they will be able to revise their historical data. The IEA has found that in practice most countries consider information on military consumption as confidential and therefore either combine it with other information or do not include it at all.

- **The IEA estimates include emissions from coke inputs into blast furnaces. Countries may have included these emissions in the IPCC category industrial processes.**

National GHG inventories submitted to the UNFCCC divide emissions according to source categories. Two of these IPCC Source/Sink Categories are energy and industrial processes. The IPCC Reference Approach estimates national emissions from fuel combustion based on the supply of fuel to a country and by implication includes emissions from coke inputs to blast furnaces in energy industry own use. However, within detailed sectoral calculations certain non-energy processes can be distinguished. In the reduction of iron in a blast furnace through the combustion of coke, the primary purpose of coke oxidation is to produce pig iron and the emissions can be considered as an industrial process. Care must be taken not to double count these emissions in both energy and industrial processes. The IEA estimates of emissions from fuel combustion in this publication include the coke inputs to blast furnaces.

- **The units may be different.**

The *1996 IPCC Guidelines* and the UNFCCC *Reporting Guidelines on Annual Inventories* both ask that CO_2 emissions be reported in Gg of CO_2. A million tonnes of CO_2 is equal to 1 000 Gg of CO_2, so to compare the numbers in this publication with national inventories expressed in Gg, the IEA emissions must be multiplied by 1 000.

Identifying key sources

In May 2000, the IPCC Plenary accepted the report on *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*. The report provides good practice guidance to assist countries in determining their key source categories. By identifying these key sources in the national inventory, inventory agencies can prioritise their efforts and improve their overall estimates.

The *Good Practice Guidance* identifies a key source category as one that is prioritised within the national inventory system because its estimate has a significant influence on a country's total inventory of direct greenhouse gases in terms of the absolute level of emissions, the trend in emissions, or both.

For a more complete description of the IPCC methodology for determining key sources, see Chapter 5 of the full publication: *IPCC methodologies*.

In the *Good Practice Guidance*, the recommendation for choosing the level of the key source analysis is to "disaggregate to the level where emission factors are distinguished. In most inventories, this will be the main fuel types. If emission factors are determined independently for some sub-source categories, these should be distinguished in the analysis."

Since the emission estimates in this publication were produced using the default emission factors from the *1996 IPCC* Guidelines, this means that the fuel combustion categories would have been divided into:

stationary combustion – coal
stationary combustion – oil
stationary combustion – gas
mobile combustion – coal
mobile combustion – oil
mobile combustion – gas

Clearly this level of aggregation is not particularly useful in identifying where additional work is needed

in refining the inventory. It does not take into account the possibility of improving data collection methods, improving emission factors or using a higher tier calculation for certain key sectors within the energy from fuel combustion source category. For this reason the IEA has disaggregated the key source analysis to the same level of detail presented in the country tables of this publication. For each country, the 9 largest sources, split by coal, oil, gas and other, are shown in the key sources table.

For the level assessment, the CO_2 emissions from fuel combustion as calculated by the IEA are supplemented, where possible, by the figures that were submitted by the Annex I Parties to the UNFCCC in the 2013 submission of the Common Reporting Format for CO_2 (only fugitive), CH_4, N_2O, HFCs, PFCs and SF_6, not taking into account CO_2 emissions/removals from land use, land use change and forestry.[21]

For the non-Annex I Parties, CO_2 emissions from fuel combustion were from the IEA and the rest of the 2011 emissions were estimated by JRC and PBL (See Part III of the full publication for further information).

Identifying drivers of CO_2 emissions trends

In this edition, new graphs and tables present the decomposition of CO_2 emissions into four driving factors following the Kaya identity[22], which is generally presented in the form:

Kaya identity
$$C = P\ (G/P)\ (E/G)\ (C/E)$$

where:

C = CO_2 emissions;
P = population;
G = GDP;
E = primary energy consumption.

The identity expresses, for a given time, CO_2 emissions as the product of population, per capita economic output (G/P), energy intensity of the economy (E/G) and carbon intensity of the energy mix (C/E). Because of possible non-linear interactions between terms, the sum of the percentage changes of the four factors, *e.g.* $(P_y\text{-}P_x)/P_x$, will not generally add up to the percentage change of CO_2 emissions $(C_y\text{-}C_x)/C_x$. However, relative changes of CO_2 emissions in time can be obtained from relative changes of the four factors as follows:

Kaya identity: relative changes in time
$$C_y/C_x = P_y/P_x\ (G/P)_y/(G/P)_x\ (C/E)_y/(C/E)_x$$

where x and y represent for example two different years.

In this publication, the Kaya decomposition is presented as:

CO_2 emissions and drivers
$$CO_2 = P\ (GDP/P)\ (TPES/GDP)\ (CO_2/TPES)$$

where:

CO_2 = CO_2 emissions;
P = population;
GDP[23]/P = GDP/population;
TPES/GDP[23] = Total Primary Energy Supply per GDP;
CO_2/TPES = CO_2 emissions per unit TPES.

Indices of all terms (1990 = 100 unless otherwise specified) are shown for each country and regional aggregate in the Summary tables and in the regional totals pages (Table 1, Key indicators, and Figure 6, CO_2 emissions and drivers). Note that in its index form, CO_2/TPES corresponds to the Energy Sector Carbon Intensity Index (ESCII)[24].

The Kaya identity can be used to discuss the primary driving forces of CO_2 emissions. For example, it shows that, globally, increases in population and GDP per capita have been driving upwards trends in CO_2 emissions, more than offsetting the reduction in energy intensity. In fact, the carbon intensity of the energy mix is almost unchanged, due to the continued dominance of fossil fuels - particularly coal - in the energy mix, and to the slow uptake of low-carbon technologies.

However, it should be noted that there are important caveats in the use of the Kaya identity. Most important, the four terms on the right-hand side of equation should be considered neither as fundamental driving forces in themselves, nor as generally independent from each other.

21. As recommended in the IPCC *Good Practice Guidance*.

22. Yamaji, K., Matsuhashi, R., Nagata, Y. Kaya, Y., *An integrated system for CO_2/Energy/GNP analysis: case studies on economic measures for CO_2 reduction in Japan*. Workshop on CO_2 reduction and removal: measures for the next century, March 19, 1991, International Institute for Applied Systems Analysis, Laxenburg, Austria.

23. GDP based on purchasing power parities (PPP).

24. See the IEA publication *Tracking Clean Energy Progress 2013*.

Notes on tables and graphs for regional totals

Table 1: Key indicators

Row 1: *CO_2 Sectoral Approach* presents total CO_2 emissions from fuel combustion as calculated using the IPCC Tier 1 Sectoral Approach, and corresponds to IPCC Source/Sink Category 1 A. Emissions calculated using a Sectoral Approach include emissions only when the fuel is actually combusted.

Row 2: *TPES* presents the Total Primary Energy Supply, calculated as production + imports - exports - international marine bunkers - international aviation bunkers ± stock changes.

Row 3: *GDP* presents the Gross Domestic Product in 2005 US dollars using exchange rates. For notes on methods and sources, please see Chapter 4: *Indicator sources and methods.*

Row 4: *GDP PPP* presents the Gross Domestic Product in 2005 US dollars using purchasing power parities. For notes on methods and sources, see *Chapter 4: Indicator sources and methods.*

Row 5: *Population.* For notes on sources see Chapter 4: *Indicator sources and methods.*

Row 6: *CO_2/TPES* presents the carbon intensity of the energy mix. For notes on methods see Chapter 4: *Indicator sources and methods.*

Row 7: *CO_2/GDP* presents the carbon *intensity* of the economy, using exchange rates. For notes on methods and sources, see Chapter 4: *Indicator sources and methods.*

Row 8: *CO_2/GDP PPP* presents the carbon intensity of the economy, using purchasing power parities. For notes on methods and sources, see Chapter 4: *Indicator sources and methods.*

Row 9: *CO_2/population* presents the per capita CO_2 emissions, based on CO_2 Sectoral approach. For notes on sources, see Chapter 4: *Indicator sources and methods.*

Row 10-14: *CO_2 emissions and drivers - Kaya decomposition* present indices of CO_2 emissions, population, GDP/population, TPES/GDP and CO_2/TPES, (based on GDP PPP time series). It represents the decomposition of CO_2 emissions into drivers (Kaya identity) explained earlier in this chapter, in the section *Identifying drivers of CO_2 emissions trends.*

Table 2: CO_2 emissions by sector

Row 1: *Sectoral Approach*: as in Row 1 of Table 1.

Row 2: *Main activity producer electricity and heat* contains the sum of emissions from main activity producer electricity generation, combined heat and power generation and heat plants. Main activity producers are defined as those undertakings whose primary activity is to supply the public. They may be publicly or privately owned. Emissions from own on-site use of fuel are included. This corresponds to IPCC Source/Sink Category 1 A 1 a.

Row 3: *Unallocated autoproducers* contains the emissions from the generation of electricity and/or heat by autoproducers. Autoproducers are defined as undertakings that generate electricity and/or heat, wholly or partly for their own use as an activity which supports their primary activity. They may be privately or publicly owned. In the *1996 IPCC Guidelines*, these emissions would normally be distributed between industry, transport and *other*.

Row 4: *Other energy industry own use* contains emissions from fuel combusted in oil refineries, for the manufacture of solid fuels, coal mining, oil and gas extraction and other energy-producing industries. This corresponds to the IPCC Source/Sink Categories 1 A 1 b and 1 A 1 c. According to the *1996 IPCC Guidelines*, emissions from coke inputs to blast furnaces can either be counted here or in the industrial processes source/sink category. Within detailed sectoral calculations, certain non-energy processes can be distinguished. In the reduction of iron in a blast furnace through the combustion of coke, the primary purpose of the coke oxidation is to produce pig iron and the emissions can be considered as an industrial process. Care must be taken not to double count these emissions in both energy and industrial processes. In the IEA estimations, emissions from energy industry own use in blast furnaces have been included in this category.

Row 5: *Manufacturing industries and construction* contains the emissions from combustion of fuels in industry. The IPCC Source/Sink Category 1 A 2 includes these emissions. However, in the *1996 IPCC Guidelines*, the IPCC category also includes emissions from industry autoproducers that generate electricity and/or heat. The IEA data are not collected in a way that allows the energy consumption to be *split* by specific end-use and therefore, this publication shows autoproducers as a separate item. See Row 3, *Unallocated autoproducers*. *Manufacturing industries and construction* also includes some emissions from coke inputs into blast furnaces,

which may be reported either in transformation, energy industry own use, industry or the separate IPCC Source/Sink Category 2, industrial processes.

Row 6: *Transport* contains emissions from the combustion of fuel for all transport activity, regardless of the sector, except for international marine and aviation bunkers. This includes domestic aviation, domestic navigation, road, rail and pipeline transport, and corresponds to IPCC Source/Sink Category 1 A 3. In addition, the IEA data are not collected in a way that allows the autoproducer consumption to be split by specific end-use and therefore, this publication shows autoproducers as a separate item. See Row 3, *Unallocated autoproducers*.

Note: Starting in the 2006 edition, military consumption previously included in *domestic aviation* and in *road* should be in *non-specified other*. See the section on *Differences between IEA estimates and UNFCCC submissions*, for further details.

Row 7: *Road* contains the emissions arising from fuel use in road vehicles, including the use of agricultural vehicles on highways. This corresponds to the IPCC Source/Sink Category 1 A 3 b.

Row 8: *Other* contains the emissions from commercial/institutional activities, agriculture/forestry, fishing, residential and other emissions not specified elsewhere that are included in the IPCC Source/Sink Categories 1 A 4 and 1 A 5. In the *1996 IPCC Guidelines*, the category also includes emissions from autoproducers in commercial/public services, residential and agriculture that generate electricity and/or heat. The IEA data are not collected in a way that allows the energy consumption to be split by specific end-use, and therefore, this publication shows autoproducers as a separate item. See Row 3, *Unallocated autoproducers*.

Row 9: *Residential* contains all emissions from fuel combustion in households. This corresponds to IPCC Source/Sink Category 1 A 4 b.

Row 10: *Reference Approach* contains total CO_2 emissions from fuel combustion as calculated using the IPCC Reference Approach. The Reference Approach is based on the supply of energy in a country and as a result, all inventories calculated using this method include fugitive emissions from energy transformation (*e.g.* from oil refineries) which are normally included in Category 1 B. For this reason, Reference Approach estimates are likely to overestimate national CO_2 emissions. In these tables, the difference between the Sectoral Approach and the Reference Approach includes statistical differences, product transfers, transformation losses and distribution losses.

Row 11: *Differences due to losses and/or transformation* contains emissions that result from the transformation of energy from a primary fuel to a secondary or tertiary fuel. Included here are solid fuel transformation, oil refineries, gas works and other fuel transformation industries. These emissions are normally reported as fugitive emissions in the IPCC Source/Sink Category 1 B, but will be included in 1 A in inventories that are calculated using the IPCC Reference Approach. Theoretically, this category should show relatively small emissions representing the loss of carbon by other ways than combustion, such as evaporation or leakage.

Negative emissions for one product and positive emissions for another product would imply a change in the classification of the emission source as a result of an energy transformation between coal and gas, between coal and oil, etc. In practice, however, it often proves difficult to correctly account for all inputs and outputs in energy transformation industries, and to separate energy that is transformed from energy that is combusted. Therefore, the row *Differences due to losses and/or transformation* sometimes shows quite large positive emissions or even negative ones due to problems in the underlying energy data.

Row 12: *Statistical differences* can be due to unexplained discrepancies in the underlying energy data. They can also be caused by differences between emissions calculated using the Reference Approach and the Sectoral Approach.

Row 13: *International marine bunkers* contains emissions from fuels burned by ships of all flags that are engaged in international navigation. The international navigation may take place at sea, on inland lakes and waterways, and in coastal waters. Consumption by ships engaged in domestic navigation is excluded. The domestic/international split is determined on the basis of port of departure and port of arrival, and not by the flag or nationality of the ship. Consumption by fishing vessels and by military forces is also excluded. Emissions from international marine bunkers should be excluded from the national totals. This corresponds to IPCC Source/Sink Category 1 A 3 d i.

Row 14: *International aviation bunkers* contains emissions from fuels used by aircraft for international aviation. Fuels used by airlines for their road vehicles are excluded. The domestic/international split should be determined on the basis of departure and landing locations and not by the nationality of

the airline. Emissions from international aviation should be excluded from the national totals. This corresponds to IPCC Source/Sink Category 1 A 3 a i.

Table 3: Key sources for CO_2 emissions from fuel combustion in 2011

See section *Identifying key sources* earlier in this chapter for methodological explanations. This table only shows the 9 largest key sources of CO_2 from fuel combustion. As a result, in most cases the cumulative contribution will not be 95% as recommended in the *Good Practice Guidance.* Key sources from fugitive emissions, industrial processes, solvents, agriculture and waste are not shown. The percentage of CO_2 emissions from fuel combustion in total GHG emissions is included as a memo item at the bottom of the table.

Figure 1: CO_2 emissions by fuel

Based on Sectoral approach CO_2 emissions. The product *gas* refers to natural gas. The product *other* includes industrial waste and non-renewable municipal waste.

Figure 2: CO_2 emissions by sector

Based on Sectoral approach CO_2 emissions. The sector *other* includes emissions from commercial/public services, agriculture/forestry and fishing. Emissions from unallocated autoproducers are included in *Electricity and heat.*

Figure 3: Reference vs Sectoral approach

Also includes CO_2 estimates as submitted by national administrations to the UNFCCC, either in National Communications on in national GHG inventories submissions.

Figure 4: Electricity generation by fuel

The product *other* includes geothermal, solar, wind, combustible renewables and waste, etc. Electricity generation includes both main activity producer and autoproducer electricity.

Figure 5: Changes in selected indicators

Presents average annual changes, computed as compounded annual growth rates, for three different periods, for the following variables: CO_2 emissions, CO_2/TPES, CO_2/GDP PPP, CO_2/population. For notes on methodologies and sources, see Chapter 4: *Indicator sources and methods*.

Figure 6: CO_2 emissions and drivers

Presents indices of CO_2 emissions and of four drivers of emission trends, as identified in the Kaya identity: population, GDP/population, TPES/GDP, CO_2/TPES (1990=100 unless otherwise specified), based on GDP PPP time series. For methodology, see section *Identifying drivers of CO_2 emissions trends* earlier in this chapter. For notes on sources, see Chapter 4: *Indicator sources and methods*.

Country notes

Australia

In the 2013 edition, data for Australia were revised back to 2003 due to the adoption of the National Greenhouse and Energy reporting (NGER) as the main energy consumption data source for the Australian energy Statistics. As a result, there are breaks in the time series for many data between 2002 and 2003. The revisions have also introduced some methodological problems. The national statistics appear to have problems identifying inputs and outputs to certain transformation processes such as gas works plants, electricity plants and CHP plants. Energy industry own use and inputs to the transformation processes are sometimes not reported separately in the correct categories. More detailed information is given in the online data documentation of *Energy Balances of OECD countries*, Chapter 5: *Country notes*.[25]

Cambodia

The break in the CO_2/TPES and TPES/GDP timeseries between 2008 and 2009 is due to a break in the timeseries for solid biofuels which creates an artificial increase in TPES between those years.

People's Republic of China

Large statistical differences between supply and consumption in the Chinese energy balances for recent years, especially for coal, may cause significant differences between CO_2 emissions computed according to Reference and Sectoral approach.

Cuba

International marine bunkers for residual fuel oil in the period 1971-1983 were estimated on the basis of 1984 figures and the data reported as domestic navigation in the energy balance.

25. Available at: www.iea.org/statistics/topics/energybalances/.

Estonia

The data reported as lignite in the energy balance represent oil shale.

France

The methodology for calculating main activity electricity and heat production from gas changed in 2000.

Italy

Prior to 1990, gas use in commercial/public services was included in residential.

Japan

Between 2004 and 2007, the IEA received revisions from the Japanese Administration. The first set of revisions received in 2004 increased the 1990 supply by 5% for coal, 2% for natural gas and 0.7% for oil compared to the previous data. This led to an increase of 2.5% in 1990 CO_2 emissions calculated using the Reference Approach while the Sectoral Approach remained fairly constant. For the 2006 edition, the IEA received revisions to the coal and oil data which had a significant impact on both the energy data and the CO_2 emissions. The most significant revisions occurred for coke oven coke, naphtha, blast furnace gas and petroleum coke. These revisions affected consumption rather than supply in the years concerned. As a result, the sectoral approach CO_2 emissions increased for all the years, however at different rates. For example, the sectoral approach CO_2 emissions for 1990 were 4.6% higher than those calculated for the 2005 edition while the 2003 emissions were 1.1% higher than those of the previous edition. Due to the impact these successive revisions have had on the final energy balance as well as on CO_2 emissions, the IEA was in close contact with the Japanese Administration to better understand the reasons behind these changes. These changes are mainly due to the Government of Japan's efforts to improve the input-output balances in the production of oil products and coal products in response to inquiries from the UNFCCC Secretariat. To cope with this issue, the Japanese Administration established a working group in March 2004. The working group completed its work in April 2006. Many of its conclusions were incorporated in the 2006 edition but some further revisions to the time series (especially in industry and *other*) were submitted for the 2007 edition.

Netherlands Antilles

Prior to 1992, the Reference Approach overstates emissions since data for lubricants and bitumen (which store carbon) are not available.

Norway

Discrepancies between Reference and Sectoral Approach estimates and the difference in the resulting growth rates arise from statistical differences between supply and consumption data for oil and natural gas. For Norway, supply of these fuels is the residual of two very large and opposite terms, production and exports.

Singapore

No official data on production and consumption of primary and secondary oil products are available for Singapore. As a result, large discrepancies between the Reference and Sectoral Approach estimates arise from statistical differences between supply and consumption of oil and oil products.

South Africa

Large differences between the Reference and Sectoral Approach estimates are due to losses associated with coal-to-liquid and to a lesser extent gas-to-liquid transformation.

Switzerland

The sectoral breakdown for gas/diesel oil used in residential before 1978 was estimated on the basis of commercial and residential consumption in 1978 and the data reported as commercial consumption in the energy balance in previous years.

Ukraine

To provide a better Reference Approach estimate of CO_2 emissions in 2010, for the purposes of this publication, the IEA Secretariat has adjusted the stock change and statistical difference of natural gas to better match international definitions.

United Kingdom

For reasons of confidentiality, gas for main activity electricity is included in autoproducers for 1990.

Vietnam

A detailed sectoral breakdown is available starting in 1980.

4. INDICATOR SOURCES AND METHODS

Population

The main source of the 1970 to 2011 population data for the OECD member countries is *National Accounts of OECD Countries, Volume 1*, 2013. Data for 1960 to 1969 have been estimated using the growth rates from the population series published in the *OECD Economic Outlook No. 76*. For the **Czech Republic**, **Hungary** and **Poland** (1960 to 1969) and **Mexico** (1960 to 1962), the data are estimated using the growth rates from the population series from the World Bank published in the *World Development Indicators CD-ROM*. For the **Slovak Republic**, population data for 1960 to 1989 are from the Demographic Research Centre, Infostat, Slovak Republic.

The main source of the population data for the OECD non-member countries is *World Development Indicators*, World Bank, Washington D.C., 2013. Population data for **Chinese Taipei**, **Gibraltar**, **Netherland Antilles,**[26] **Former Soviet Union** (before 1990), **Former Yugoslavia** (before 1990) and for a few countries within the regions **Other Africa**, **Other Non-OECD Americas** and **Other Asia** are based on the CHELEM-CEPII online database, 2013. Population data for 2010 for **Cyprus**[26] were calculated using the population growth rate supplied by Eurostat, 2013.

GDP and GDP PPP

The main source of the 1970 to 2011 GDP series for the OECD member countries is *National Accounts of OECD Countries, Volume 1*, 2013. For the OECD member countries, the PPPs selected to convert the GDP from national currencies to US dollars come from the OECD Secretariat and were aggregated using the Geary-Khamis (GK) method and rebased on the United States. For a more detailed description of the methodology please see *Methodological Manual of Purchasing Power Parities*, Eurostat/OECD, 2006. The PPPs for the other countries come from the World Bank and CHELEM-CEPII. [27]

GDP data for **Australia**, **France**, **Greece** and **Sweden** for 1960 to 1969 and **Denmark** for 1966 to 1969 as well as for **Netherlands** for 1969 come directly from the most recent volume of *National Accounts*. GDP data for 1960 to 1969 for the other countries have been estimated using the growth rates from the series in the *OECD Economic Outlook No. 76* and data previously published by the OECD Secretariat. Data prior to 1986 for **Chile**, prior to 1990 for the **Czech Republic** and **Poland**, prior to 1991 for **Hungary**, and prior to 1992 for the **Slovak Republic** are IEA Secretariat estimates based on GDP growth rates from the World Bank.

The main source of the GDP series for the non-OECD member countries is *World Development Indicators*, World Bank, Washington D.C., 2013. The GDP data have been compiled for individual countries at market prices in local currency and annual rates. These data have been scaled up/down to the price levels of 2005 and then converted to US dollars using the yearly average 2005 exchange rates and purchasing power parities (PPPs).

GDP figures for **Bahrain, Brunei** (up to 1979), **Chinese Taipei**, **Cyprus**[26] (1971-1980), **Ethiopia** (1971-1980), **Gibraltar**, **Iran, Iraq** (up to 1996), **Lebanon** (up to 1987), **Jordan** (up to 1974), **Myanmar**,

26. Please refer to Chapter 5: *Geographical coverage*.

27. Purchasing power parities are the rates of currency conversion that equalise the purchasing power of different currencies. A given sum of money, when converted into different currencies at the PPP rates, buys the same basket of goods and services in all countries. In other words, PPPs are the rates of currency conversion which eliminate the differences in price levels between different countries.

Netherlands Antilles,[26] **Democratic People's Republic of Korea, Qatar** (up to 2011), **Former Soviet Union** (before 1990), **Former Yugoslavia** (before 1990) and a few countries within the regions[26] **Other Africa**, **Other Non-OECD Americas** and **Other Asia** are based on the CHELEM-CEPII online databases, 2013.

The main source of the GDP PPP data is *World Development Indicators*, The World Bank, Washington, D.C., 2013, available for GDP PPP (constant 2005 USD) only from 1980. Prior to 1980, GDP PPP data have been estimated based on a constant ratio of exchange rate to PPP. GDP PPP figures for **Chinese Taipei**, **Gibraltar**, **Netherlands Antilles,**[26] **Myanmar, Democratic People's Republic of Korea, Zimbabwe**, **Former Soviet Union** (before 1990), **Former Yugoslavia** (before 1990) and a few countries within the regions[26] **Other Africa**, **Other Non-OECD Americas** and **Other Asia** are based on the CHELEM-CEPII online databases, 2013.

GDP PPP figures for **Bosnia and Herzegovina** (up to 1993), **Haiti** (up to 1990), **Iraq** (up to 1996), **Libya** (up to 1998), **Tanzania** (up to 1987)**, Vietnam** (up to 1983) **and Yemen** (up to 1989) have been estimated based on the growth rates of the CHELEM-CEPII online database, 2013.

The World Bank GDP figures for **Kosovo** are available starting in 2000. The GDP PPP figures have been estimated using the World Bank ratio of exchange rate to PPP in 2005 for Serbia since the ratio for Kosovo was not available.

CO_2 emissions

The estimates of CO_2 emissions in this publication are based on the *1996 IPCC Guidelines* and represent the total emissions from fuel combustion. Emissions have been calculated using both the IPCC Reference Approach and the IPCC Sectoral Approach (which corresponds to IPCC Source/Sink Category 1 A). Reference Approach totals may include certain fugitive emissions from energy transformation which should normally be included in Category 1 B. National totals do not include emissions from international marine and aviation bunkers. See the *Country Notes* in Chapter 3 for further details.

Electricity output

Total output (shown in the summary tables section) includes electricity generated using fossil fuels, nuclear, hydro (excluding pumped storage), geothermal, solar, biofuels, etc.

Both **main activity**[28] **producer** and **autoproducer**[29] **plants** have been included where available.

Data include the total amount of electricity in TWh generated by both **electricity plants** and **CHP plants**. Heat production from CHP plants is not included.

CO_2 / TPES

This ratio is expressed in tonnes of CO_2 per terajoule. It has been calculated using the Sectoral Approach CO_2 emissions and total primary energy supply (including biofuels and other non-fossil forms of energy).

CO_2 / GDP

This ratio is expressed in kilogrammes of CO_2 per 2005 US dollar. It has been calculated using the Sectoral Approach CO_2 emissions and is shown with both GDP calculated using exchange rates and GDP calculated using purchasing power parities.

CO_2 / population

This ratio is expressed in tonnes of CO_2 per capita. It has been calculated using the Sectoral approach CO_2 emissions.

Per capita CO_2 emissions by sector

These ratios are expressed in kilogrammes of CO_2 per capita. They have been calculated in two different ways. In the first ratio, the emissions from electricity and heat production are shown separately. In the second ratio, the emissions from electricity and heat have been allocated to final consuming sectors in proportion to the electricity and heat consumed by those sectors.

28. Main activity producers generate electricity and/or heat for sale to third parties, *as their primary activity*. They may be privately or publicly owned. Note that the sale need not take place through the public grid.

29. Autoproducer undertakings generate electricity and/or heat, wholly or partly for their own use as an activity which supports their primary activity. They may be privately or publicly owned.

CO_2 emissions per kWh

The indicator: definition

In the total CO_2 emissions per kWh, the numerator presents the CO_2 emissions from fossil fuels consumed for electricity generation, while the denominator presents the total electricity generated, coming from fossil fuels, but also from nuclear, hydro, geothermal, solar, biofuels, etc. As a result, the emissions per kWh vary a lot across countries and from year to year, depending on the generation mix.

In the CO_2 emissions per kWh **by fuel**:

- Coal/peat includes primary and secondary coal, peat and coal gases.
- Oil includes oil products (and small amounts of crude oil for some countries).
- Gas represents natural gas.

Note: Emissions per kWh should be used with caution due to data quality problems relating to electricity efficiencies for some countries.

Methodological choices: electricity-only versus combined electricity and heat

In previous editions of this publication, the IEA had published a combined electricity and heat CO_2 emissions per kWh indicator. The indicator was useful as an overall carbon intensity measure of a country's electricity and heat generating sectors, and it was easy to calculate. However, there were a number of drawbacks. As the efficiency of heat generation is almost always higher than electricity generation, countries with large amounts of district heating (generally colder countries) tended to have a higher efficiency (therefore lower CO_2 intensity) than warmer countries with less district heating. Further, the applications of a combined indicator for electricity and heat are limited; many users have been searching for an electricity-only CO_2 emissions per kWh indicator.

Unfortunately, it is not possible to obtain such an electricity-only indicator directly from IEA energy balance data without any assumption. In fact, for combined heat and power (CHP) plants, there is only one combined input available. While various methods exist to split this input into separate amounts for electricity and heat generation, none has previously been used by the IEA for the purposes of calculating a CO_2 emissions per kWh indicator.

It would be possible to calculate an electricity-only indicator using data for electricity-only plants, which would not encounter the problem of assigning CHP inputs between electricity and heat. However, this would not allow a fair cross-country comparison; some countries get a majority of their electricity from CHP, while others from electricity-only plants. As non-thermal renewables are solely electricity-only plants, and over 99% of non-emitting global nuclear generation is from electricity-only plants, then calculating this electricity-only plants indicator would significantly understate the electricity carbon intensity for many countries.

Electricity-only indicator: allocation of emissions from CHP plants

To allocate the CHP input to electricity and heat separately, the simplest method would be a **proportionality approach,** allocating inputs based on the proportion of electricity and heat in the output, also used by the IEA electricity questionnaire. This is equivalent to fixing the efficiency of electricity and heat to be equal. With the advantage of simplicity and transparency, the proportionality approach however tends to overstate electricity efficiency and to understate heat efficiency. For example, for CHP generation in OECD countries, total efficiency is around 60%. However, total electricity-only plant efficiency is around 41% in OECD. Similarly, 60% is quite low for heat generation (given typical heat-only plant efficiencies of 80-95%).

An alternative method to avoid unrealistic efficiencies is a **fixed-heat-efficiency approach,** fixing the efficiency of heat generation to compute the input to heat, and calculating the input to electricity as a residual from the total input. The standard heat efficiency was set to that of a typical heat boiler, 90%.

Implementation problems arise in two cases: i) when the observed efficiency is over 100% (*i.e.* there are problems in data quality), and ii) when the observed efficiency is between 90% and 100% (the total efficiency may be correct or it may be overstated).

In the first case, when the total efficiency is over 100% because the data are not reported correctly, it is not possible to use the fixed-heat-efficiency approach and by default the proportionality approach was used to allocate the inputs based on the output shares.

In the second case, where the total CHP efficiency was between 90% and 100% (which may or may not indicate a data quality problem), assuming a 90% efficiency for heat generation would incorrectly imply that the efficiency of power generation was equal to or higher than that of heat generation. However, as the real heat efficiency cannot be determined, the proportionality approach was used also here by default.

Fixed-heat-efficiency approach

$$CO_2\text{kWh} = \frac{CO_{2\,ELE} + (CO_{2\,CHP} \times \%\ \text{from elec.}) + OWNUSE_{ELE}}{ELoutput_{ELE} + ELoutput_{CHP}}$$

where:

$$\%\ \text{from elec.} = \frac{CHPinputs - ((HEoutput_{CHP} \times 0.02388) \div EFF_{HEAT})}{CHPinputs}$$

and:

$$OWNUSE_{ELE} = OWNUSE \times \frac{ELoutput}{ELoutput + (HEoutput \div 3.6)}$$

$CO_{2\,ELE}$ = CO_2 emissions from electricity only plants in $ktCO_2$

$CO_{2\,CHP}$ = CO_2 emissions from CHP plants in $ktCO_2$

OWNUSE = CO_2 emissions from own use in electricity, CHP and heat plants in $ktCO_2$

ELoutput = total electricity output from electricity and CHP plants in GWh

$ELoutput_{ELE}$ = electricity output from electricity only plants in GWh

$ELoutput_{CHP}$ = electricity output from CHP plants in GWh

HEoutput = total heat output from CHP and heat plants in TJ

$HEoutput_{CHP}$ = heat output from CHP plants in TJ

CHPinputs = energy inputs to CHP plants in ktoe

EFF_{HEAT} = efficiency of heat generation - assumed to be 0.9 (*i.e.* 90%) except when the observed efficiency of CHP generation is higher than 90%, in which case emissions are allocated using the proportionality approach ($EFF_{HEAT} = EFF_{ELEC} = EFF_{CHP}$).

In general, the fixed-heat-efficiency approach attributes larger emissions to electricity than the proportionality approach, with values much closer to those of electricity-only plants. The IEA has already used the fixed-heat-efficiency approach for several editions of its *World Energy Outlook*.

Comparison between electricity-only and combined electricity and heat ratios

For the majority of OECD countries, the electricity-only indicator is not significantly different from the combined electricity and heat indicator, shown in previous editions of this publication and in the online database. For the OECD total in 2011, the electricity-only indicator is 3% higher, while 20 of the OECD's 34 countries saw a change of 5% or less. Of the 14 countries changing more than 5%, six countries had large amounts of non-emitting electricity generation, giving them a small ratio to begin with (thus more prone to change). In addition, non-emitting generation is generally electricity-only, and so when the heat-only and heat CHP emissions are removed from the calculation, greater weight is attached to the non-emitting generation, with a lower level for the final indicator.

The countries in the OECD with larger differences are generally coal-intensive countries with large amounts of heat generation. As mentioned, in general, heat plants are more efficient than electricity-only or CHP plants; therefore, excluding heat plants from the calculation increases CO_2 intensity. The same is true if we allocate a high efficiency to the heat part of CHP generation; this decreases the efficiency of the electricity part and thus increases electricity's carbon intensity. Further, CHP and heat plants are more likely to be powered by CO_2-light natural gas while electricity-only plants tend to be powered by CO_2-heavy coal, making the new ratio more CO_2 intensive for these countries.

Specific country examples

The country with the largest difference between the two ratios within the OECD was **Sweden**; in 2011, the electricity only indicator was 59% lower than the combined electricity and heat indicator. This is due to the high share of non-emitting sources such as hydro

(44%) and nuclear (40%) in Sweden's electricity generation mix.

Similarly, the electricity only indicator for **Norway** in 2011 was 39% lower than the combined indicator, as the vast majority of the electricity output (95%) is from non-emitting hydroelectric generation.

Conversely, for **Estonia** in 2011 the electricity-only indicator was 37% higher than the combined electricity and heat indicator. This can be explained by the fact that the majority of electricity-only generation comes from oil shale, a fuel with a relatively high carbon emission factor, while heat plants (with a relatively large share of output) are largely fuelled by natural gas.

Another OECD country with a high ratio increase was **Denmark** (26% higher in 2011). The majority of fossil generation in Denmark is from CHP and the output from these plants is approximately half electricity and half heat. In addition, CHP plants in Denmark have efficiencies of 60-70%. When the heat part of CHP is set to be 90%, the efficiency of the electricity generation is lowered and the indicator is increased.

In many non-member countries, heat data are either zero or not available, which leads to changes of less than 1% in almost three-quarters of the non-member countries in 2011. The majority of countries which do change are the European and former Soviet Union countries (where district heating is often present).

As **China** has no (reported) CHP generation, the current IEA energy balance shows electricity-only and heat-only plants, not CHP plants. Heat-only plants are in general much more efficient per unit of energy than electricity-only plants and this explains why the new ratio is 7% higher in 2011.

In the **Russian Federation**, a large amount (34% of total power output) comes from heat-only plants, whose relatively efficient generation is excluded from the new ratio. The large amount of heat output generated by CHP plants also explains why the new ratio is 32% higher in 2011.

The electricity only indicators calculated for the following non-member countries are also lower than the combined electricity and heat indicator: **Georgia**, Latvia, **Kyrgyzstan** and **Tajikistan**. This is because their electricity production is mainly or exclusively clean hydro, while their CHP and heat-only production is fossil based. Implementing the new electricity-only indicator using the fixed-heat-efficiency approach increased hydro's weight (therefore decreasing the carbon intensity).

Implied carbon emission factors from electricity generation (CO_2 / kWh) for selected products

Average implied carbon emission factors from electricity generation by product are presented below, for selected products. Those values are given as a complement of the CO_2 emissions per kWh from electricity generation by country presented in the Summary tables. The values below represent the average amount of CO_2 per kWh of electricity produced in OECD member countries between 2009 and 2011. As they are very sensitive to the quality of underlying data, including net calorific values, and of reported input/output efficiencies, they should be taken as indicative; actual values may vary considerably.

Product	**gCO_2 / kWh**
Anthracite *	965
Coking coal *	785
Other bituminous coal	860
Sub-bituminous coal	925
Lignite	1005
Coke oven coke *	800
Gas works gas *	420
Coke oven gas *	415
Blast furnace gas *	2200
Other recovered gases *	2030
Natural gas	400
Crude oil *	635
Natural gas liquids *	540
Refinery gas *	410
Liquefied petroleum gases *	530
Kerosene *	645
Gas/diesel oil *	715
Fuel oil	670
Petroleum coke *	970
Peat *	745

* The electricity output from these products represents less than 1% of electricity output in the average of OECD member countries for the years 2009-2011. Values will be less reliable and should be used with caution.

5. GEOGRAPHICAL COVERAGE

Africa includes Algeria, Angola, Benin, Botswana (from 1981), Cameroon, Congo, Democratic Republic of Congo, Côte d'Ivoire, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Libya, Morocco, Mozambique, Namibia (from 1991), Nigeria, Senegal, South Africa, Sudan[30], United Republic of Tanzania, Togo, Tunisia, Zambia, Zimbabwe and **Other Africa**.

Other Africa includes Botswana (until 1980), Burkina Faso, Burundi, Cape Verde, Central African Republic, Chad, Comoros, Djibouti, Equatorial Guinea, Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Namibia (until 1990), Niger, Reunion, Rwanda, Sao Tome and Principe, Seychelles, Sierra Leone, Somalia, Swaziland, Uganda and Western Sahara (from 1990).

Middle East includes Bahrain, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates and Yemen.

Non-OECD Europe and Eurasia includes Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus[31], Georgia, Gibraltar, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Former Yugoslav Republic of Macedonia (FYROM), Malta, Republic of Moldova, Montenegro, Romania, Russian Federation, Serbia[32], Tajikistan, Turkmenistan, Ukraine, Uzbekistan, Former Soviet Union[33] (prior to 1990) and Former Yugoslavia[33] (prior to 1990).

Non-OECD Americas includes Argentina, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Netherlands Antilles[34], Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, Venezuela and **Other Non-OECD Americas**.

Other Non-OECD Americas includes Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Falkland Islands, French Guyana, Grenada, Guadeloupe, Guyana, Martinique, Montserrat, Puerto Rico[35] (for natural gas and electricity), St. Kitts and Nevis, Saint Lucia, St. Pierre and Miquelon, St. Vincent and the Grenadines, Suriname and Turks/Caicos Islands.

China includes the People's Republic of China and Hong Kong (China) but excludes Macau (China).

Asia includes Bangladesh, Brunei Darussalam, Cambodia (from 1995), Chinese Taipei, India, Indonesia, DPR of Korea, Malaysia, Mongolia (from 1985),

30. Because only aggregated data were available until 2011, the data for Sudan also include South Sudan.

31. Note by Turkey: *The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus" issue.*

Note by all the European Union Member States of the OECD and the European Union: *The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this report relates to the area under the effective control of the Government of the Republic of Cyprus.*

32. Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

33. Prior to 1990, Former Soviet Union includes Estonia and Former Yugoslavia includes Kosovo, Montenegro and Slovenia.

34. The Netherlands Antilles was dissolved on 10 October 2010 resulting in two new constituent countries, Curaçao and Saint Maarten, with the other islands joining the Netherlands. However, due to lack of detailed data, the IEA data and estimates under Netherlands Antilles cover the whole territory of the Netherlands Antilles.

35. Oil statistics as well as coal trade statistics for Puerto Rico are included under the United States.

Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Vietnam and **Other Asia**.

Other Asia includes Afghanistan, Bhutan, Cambodia (until 1994), Cook Islands, East Timor, Fiji, French Polynesia, Kiribati, Laos, Macau, Maldives, Mongolia (until 1984), New Caledonia, Palau (from 1994), Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu.

The **Organisation for Economic Co-Operation and Development (OECD)** includes Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia[36], Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel[37], Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia[36], Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

Within the **OECD**:

Australia excludes the overseas territories.

Denmark excludes Greenland and the Danish Faroes, except prior to 1990, where data on oil for Greenland were included with the Danish statistics. The National Administration is planning to revise the series back to 1974 to exclude these amounts.

France includes Monaco, and excludes the following overseas departments and territories: Guadeloupe, Guyana, Martinique, New Caledonia, French Polynesia, Reunion and St. Pierre and Miquelon.

Germany includes the new federal states of Germany from 1970 onwards.

The statistical data for **Israel** are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Italy includes San Marino and the Vatican.

Japan includes Okinawa.

The **Netherlands** excludes Suriname and the Netherlands Antilles.

Portugal includes the Azores and Madeira.

Spain includes the Canary Islands.

Switzerland includes Liechtenstein for oil data only. Data for other fuels do not include Liechtenstein.

Shipments of coal and oil to the Channel Islands and the Isle of Man from the **United Kingdom** are not classed as exports. Supplies of coal and oil to these islands are, therefore, included as part of UK supply. Exports of natural gas to the Isle of Man are included with the exports to Ireland.

United States includes the 50 states and the District of Columbia. Oil statistics as well as coal trade statistics also include Puerto Rico[38], Guam, the Virgin Islands, American Samoa, Johnston Atoll, Midway Islands, Wake Island and the Northern Mariana Islands.

OECD Americas includes Canada, Chile, Mexico and the United States.

OECD Asia Oceania includes Australia, Israel[37], Japan, Korea and New Zealand.

OECD Europe includes Austria, Belgium, the Czech Republic, Denmark, Estonia[17], Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia[17], Spain, Sweden, Switzerland, Turkey and the United Kingdom.

The **European Union - 27 (EU-27)** includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom.

The **International Energy Agency (IEA)** includes Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

Annex I Parties includes Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, the Czech Republic[39], Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein (not available in this publication), Lithuania, Luxembourg, Malta,

36. Estonia and Slovenia are included in OECD totals starting in 1990. Prior to 1990, data for Estonia are included in Former Soviet Union and data for Slovenia in Former Yugoslavia.

37. The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

38. Natural gas and electricity data for Puerto Rico are included under Other Non-OECD Americas.

39. Czechoslovakia was in the original list of Annex I countries.

Monaco (included with France), the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, the Slovak Republic[39], Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom and the United States.

The countries that are listed above are included in Annex I of the United Nations Framework Convention on Climate Change as amended on 11 December 1997 by the 12th Plenary meeting of the Third Conference of the Parties in Decision 4/CP.3. This includes the countries that were members of the OECD at the time of the signing of the Convention, the EEC, and fourteen countries in Central and Eastern Europe and the Former Soviet Union that were undergoing the process of transition to market economies. At its fifteenth session, the Conference of the Parties decided to amend Annex I to the Convention to include Malta (Decision 3/CP.15). The amendment entered into force on 26 October 2010.

Annex II Parties includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom and the United States.

According to Decision 26/CP.7 in document FCCC/CP/2001/13/Add.4, Turkey has been deleted from the list of Annex II countries to the Convention. This amendment entered into force on 28 June 2002.

Annex II North America includes Canada and the United States.

Annex II Europe includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Annex II Asia Oceania includes Australia, Japan and New Zealand.

Economies in Transition (EITs) are those countries in Annex I that were undergoing the process of transition to a market economy. This includes Belarus, Bulgaria, Croatia, the Czech Republic[39], Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, the Slovak Republic[39], Slovenia and Ukraine.

Annex I Kyoto Parties includes Australia, Austria, Belgium, Bulgaria, Canada, Croatia, the Czech Republic[39], Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein (not available in this publication), Lithuania, Luxembourg, Monaco (included with France), the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, the Slovak Republic[20], Slovenia, Spain, Sweden, Switzerland, Ukraine and the United Kingdom.

Membership in the Kyoto Protocol is almost identical to that of Annex I, except for Malta, Turkey and Belarus which did not agree to a target under the Protocol, and the United States which has expressed the intention not to ratify the Protocol. In accordance with article 27 (1) of the Kyoto Protocol to the UNFCCC, the Government of Canada notified the Secretary-General of the United Nations that it has decided to withdraw from the Kyoto Protocol. The action will become effective for Canada on 15 December 2012 in accordance with article 27 (2). For the purposes of this edition, Canada is still included in the Annex I and Annex II Kyoto Parties.

Please note that the following countries have not been considered due to lack of complete data:

Africa: Saint Helena.

Asia and Oceania: Christmas Island, Nauru, Niue and Tuvalu.

Non-OECD Americas: Anguilla.

Non-OECD Europe and Eurasia: Andorra, Liechtenstein[40] (except for oil data).

40. Oil data for Liechtenstein are included under Switzerland.

6. SUMMARY TABLES

CO_2 emissions: Sectoral Approach

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**14 079.8**	**15 685.0**	**18 061.0**	**18 641.4**	**20 988.7**	**21 851.0**	**23 758.6**	**27 501.4**	**28 966.4**	**30 509.4**	**31 342.3**	**49.3%**
Annex I Parties	*..*	*..*	*..*	*..*	*13 900.6*	*13 152.4*	*13 744.5*	*14 117.5*	*12 932.6*	*13 465.9*	*13 354.9*	*-3.9%*
Annex II Parties	*8 607.3*	*8 884.9*	*9 544.3*	*9 172.6*	*9 794.8*	*10 191.9*	*10 996.5*	*11 296.4*	*10 211.3*	*10 586.0*	*10 363.0*	*5.8%*
North America	*4 630.9*	*4 738.8*	*5 088.5*	*4 948.0*	*5 296.9*	*5 599.6*	*6 227.7*	*6 326.9*	*5 704.4*	*5 957.3*	*5 817.0*	*9.8%*
Europe	*3 059.8*	*3 092.8*	*3 350.7*	*3 105.9*	*3 154.1*	*3 139.7*	*3 223.3*	*3 342.4*	*2 982.1*	*3 063.6*	*2 932.8*	*-7.0%*
Asia Oceania	*916.7*	*1 053.4*	*1 105.1*	*1 118.7*	*1 343.9*	*1 452.6*	*1 545.5*	*1 627.1*	*1 524.8*	*1 565.0*	*1 613.1*	*20.0%*
Annex I EIT	*..*	*..*	*..*	*..*	*3 976.6*	*2 805.5*	*2 545.3*	*2 602.0*	*2 462.5*	*2 611.6*	*2 703.7*	*-32.0%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*6 469.4*	*7 989.3*	*9 177.7*	*12 410.4*	*15 010.1*	*15 947.1*	*16 873.7*	*160.8%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*8 778.3*	*7 797.3*	*7 784.9*	*8 064.7*	*7 426.8*	*7 703.1*	*7 713.5*	*-12.1%*
Intl. marine bunkers	**344.8**	**332.4**	**348.4**	**298.3**	**362.3**	**421.0**	**486.0**	**557.3**	**593.2**	**643.9**	**645.1**	**78.1%**
Intl. aviation bunkers	**167.3**	**171.8**	**199.8**	**222.6**	**256.4**	**288.2**	**350.4**	**416.1**	**430.5**	**452.5**	**468.5**	**82.7%**
Non-OECD Total **	**4 197.6**	**5 381.7**	**6 802.3**	**7 676.6**	**9 219.3**	**9 473.4**	**10 297.1**	**13 504.0**	**15 921.6**	**16 903.0**	**17 887.9**	**94.0%**
OECD Total ***	**9 370.1**	**9 799.1**	**10 710.4**	**10 443.9**	**11 150.7**	**11 668.4**	**12 625.1**	**13 024.0**	**12 021.1**	**12 510.0**	**12 340.8**	**10.7%**
Canada	339.6	377.9	426.9	402.2	428.2	460.9	529.5	555.2	519.5	528.0	529.8	23.7%
Chile	20.8	17.0	21.2	19.4	31.0	38.9	52.5	58.2	65.4	69.8	76.3	145.8%
Mexico	97.1	138.8	212.1	251.6	265.3	297.0	349.6	385.8	399.9	417.9	432.3	63.0%
United States	4 291.3	4 360.8	4 661.6	4 545.7	4 868.7	5 138.7	5 698.1	5 771.7	5 184.9	5 429.4	5 287.2	8.6%
OECD Americas	**4 748.8**	**4 894.6**	**5 321.8**	**5 219.0**	**5 593.2**	**5 935.5**	**6 629.8**	**6 770.8**	**6 169.7**	**6 445.0**	**6 325.6**	**13.1%**
Australia	144.1	180.0	208.0	221.0	260.0	285.4	338.8	380.2	404.6	396.0	396.8	52.6%
Israel	14.4	17.1	19.6	24.5	33.5	46.3	55.2	58.7	63.5	68.1	67.2	100.5%
Japan	758.8	856.3	880.7	878.1	1 061.6	1 141.9	1 175.8	1 213.0	1 089.1	1 138.0	1 186.0	11.7%
Korea	52.1	76.8	124.4	153.3	229.3	358.7	437.7	469.1	515.6	564.5	587.7	156.3%
New Zealand	13.7	17.1	16.4	19.6	22.3	25.3	30.9	33.9	31.2	31.0	30.3	35.8%
OECD Asia Oceania	**983.1**	**1 147.2**	**1 249.1**	**1 296.5**	**1 606.7**	**1 857.5**	**2 038.4**	**2 154.9**	**2 104.0**	**2 197.5**	**2 268.1**	**41.2%**
Austria	48.7	50.2	55.7	54.3	56.4	59.4	61.7	74.7	64.2	70.1	68.5	21.4%
Belgium	116.8	115.6	125.7	101.9	107.9	115.2	118.6	113.0	100.9	108.0	108.6	0.6%
Czech Republic	151.0	152.6	165.8	173.1	155.1	123.7	121.9	119.6	110.1	114.4	112.7	-27.4%
Denmark	55.0	52.5	62.5	60.5	50.6	58.1	50.8	48.4	46.9	47.0	41.7	-17.7%
Estonia	..	..	..	..	36.1	16.1	14.6	16.9	14.7	18.5	19.3	-46.5%
Finland	39.8	44.4	55.2	48.6	54.4	56.0	55.4	55.3	55.1	63.2	55.6	2.2%
France	431.9	430.6	461.4	360.3	352.6	354.2	378.7	388.3	349.4	356.7	328.3	-6.9%
Germany	978.6	975.5	1 055.6	1 014.6	949.7	867.8	825.0	800.2	737.0	769.0	747.6	-21.3%
Greece	25.2	34.5	45.3	54.6	70.1	75.8	87.4	95.0	90.2	84.2	83.6	19.3%
Hungary	60.3	70.7	83.7	80.8	66.4	57.3	54.2	56.4	48.2	48.9	47.4	-28.6%
Iceland	1.4	1.6	1.7	1.6	1.9	2.0	2.1	2.2	2.1	1.9	1.9	-1.7%
Ireland	21.7	21.1	25.9	26.4	30.5	33.0	41.1	44.0	39.3	38.9	34.9	14.6%
Italy	292.9	319.6	359.8	347.5	397.4	409.4	426.0	460.8	389.4	398.5	393.0	-1.1%
Luxembourg	15.4	12.1	11.9	9.9	10.4	8.0	8.0	11.4	10.0	10.6	10.4	0.7%
Netherlands	129.6	140.8	166.7	154.0	155.8	170.9	172.1	182.7	176.1	187.0	174.5	12.0%
Norway	23.5	24.1	28.0	27.2	28.3	32.8	33.6	36.4	37.1	39.4	38.1	34.7%
Poland	286.7	338.2	413.1	419.5	342.1	331.1	290.9	292.9	287.3	305.6	300.0	-12.3%
Portugal	14.4	18.1	23.8	24.6	39.3	48.3	59.4	62.8	53.1	48.1	48.1	22.4%
Slovak Republic	39.1	43.8	55.3	54.4	56.7	40.8	37.4	38.1	33.5	35.2	33.9	-40.3%
Slovenia	..	..	..	..	13.3	14.0	14.1	15.6	15.2	15.3	15.3	14.4%
Spain	119.9	156.5	187.7	175.2	205.2	232.7	283.9	339.4	282.5	267.9	270.3	31.7%
Sweden	82.4	79.4	73.4	58.8	52.8	57.5	52.8	50.3	41.8	47.2	44.9	-14.9%
Switzerland	38.9	36.7	39.2	41.4	41.6	41.8	42.5	44.6	42.4	43.8	39.9	-4.2%
Turkey	41.4	59.2	70.9	94.6	126.9	152.7	200.6	216.4	256.3	265.9	285.7	125.1%
United Kingdom	623.5	579.5	571.1	544.5	549.3	516.6	524.3	532.9	464.8	482.2	443.0	-19.3%
OECD Europe ***	**3 638.2**	**3 757.3**	**4 139.5**	**3 928.4**	**3 950.8**	**3 875.4**	**3 956.9**	**4 098.2**	**3 747.4**	**3 867.5**	**3 747.1**	**-5.2%**
European Union - 27	*..*	*..*	*..*	*..*	*4 052.5*	*3 847.3*	*3 833.8*	*3 970.8*	*3 560.3*	*3 667.4*	*3 542.7*	*-12.6%*

* Total world includes non-OECD total, OECD total as well as international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions: Sectoral Approach

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**4 197.6**	**5 381.7**	**6 802.3**	**7 676.6**	**9 219.3**	**9 473.4**	**10 297.1**	**13 504.0**	**15 921.6**	**16 903.0**	**17 887.9**	**94.0%**
Albania	3.9	4.5	7.6	7.2	6.2	1.9	3.1	4.0	3.5	3.7	3.9	-38.0%
Armenia	..	..	..	..	20.5	3.4	3.4	4.1	4.3	4.0	4.7	-77.2%
Azerbaijan	..	..	..	..	55.0	33.9	27.9	30.8	24.8	23.8	26.8	-51.3%
Belarus	..	..	..	..	124.4	61.4	58.7	62.1	62.2	65.1	66.0	-46.9%
Bosnia and Herzegovina	..	..	..	..	23.7	3.2	13.5	15.6	19.7	20.0	22.8	-3.6%
Bulgaria	62.8	72.2	83.8	81.1	74.9	53.3	42.1	46.1	42.4	44.4	49.2	-34.3%
Croatia	..	..	..	..	21.5	15.8	17.7	20.7	19.8	19.0	18.8	-12.7%
Cyprus **	1.8	1.7	2.6	2.8	3.9	5.0	6.3	7.0	7.5	7.2	6.9	79.6%
Georgia	..	..	..	..	33.2	8.1	4.6	4.3	5.4	4.9	6.3	-81.2%
Gibraltar	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	195.4%
Kazakhstan	..	..	..	..	236.4	167.5	113.0	157.1	199.4	233.7	234.2	-0.9%
Kosovo ***	..	..	..	..	..	..	5.0	6.5	8.3	8.6	8.5	..
Kyrgyzstan	..	..	..	..	22.5	4.4	4.4	4.9	5.2	6.3	6.7	-70.3%
Latvia	..	..	..	..	18.6	8.8	6.8	7.6	7.2	8.1	7.6	-59.3%
Lithuania	..	..	..	..	33.1	14.2	11.2	13.5	12.4	13.3	13.2	-60.1%
FYR of Macedonia	..	..	..	..	8.5	8.2	8.4	8.8	8.4	8.2	9.1	6.5%
Malta	0.6	0.6	1.0	1.1	2.3	2.4	2.1	2.7	2.5	2.5	2.5	8.2%
Republic of Moldova	..	..	..	..	30.2	11.8	6.5	7.7	7.3	7.9	7.9	-73.9%
Montenegro ***	..	..	..	..	..	..	..	1.7	1.6	2.5	2.5	..
Romania	114.9	140.6	176.1	173.3	167.5	117.5	87.0	95.2	78.8	75.5	81.8	-51.2%
Russian Federation	..	..	..	..	2 178.8	1 558.7	1 496.7	1 511.8	1 478.4	1 576.6	1 653.2	-24.1%
Serbia ***	..	..	..	..	61.4	44.0	42.5	49.2	45.3	45.8	49.8	-18.9%
Tajikistan	..	..	..	..	10.9	2.4	2.2	2.3	2.8	2.9	3.0	-72.6%
Turkmenistan	..	..	..	..	44.5	33.2	36.6	47.8	49.7	56.6	61.5	38.4%
Ukraine	..	..	..	..	687.9	392.8	292.0	305.6	252.5	271.6	285.4	-58.5%
Uzbekistan	..	..	..	..	119.8	101.6	118.0	108.5	104.1	101.4	110.2	-8.0%
Former Soviet Union ****	1 995.8	2 567.9	3 056.0	3 197.5	..	..	..	..	..	..	..	..
Former Yugoslavia ****	63.2	75.2	87.6	121.7	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**2 243.2**	**2 862.7**	**3 414.8**	**3 584.8**	**3 985.9**	**2 653.8**	**2 410.1**	**2 526.1**	**2 453.7**	**2 614.2**	**2 742.8**	**-31.2%**
Algeria	8.9	14.0	28.4	43.4	52.7	56.7	63.5	79.4	96.7	97.8	103.9	97.0%
Angola	1.7	2.0	2.7	2.9	4.0	4.0	5.1	7.2	14.1	15.7	15.7	292.0%
Benin	0.3	0.5	0.4	0.5	0.3	0.2	1.4	2.7	4.2	4.5	4.7	+
Botswana	..	..	..	1.6	2.9	3.3	4.2	4.4	4.3	5.0	4.7	60.0%
Cameroon	0.7	1.0	1.7	2.4	2.7	2.5	2.8	2.9	4.8	5.0	5.1	91.1%
Congo	0.6	0.6	0.7	0.8	0.6	0.5	0.5	0.8	1.5	1.8	2.1	232.7%
Dem. Rep. of Congo	2.5	2.6	3.1	3.2	3.0	2.1	1.7	2.3	2.9	3.1	3.3	10.4%
Côte d'Ivoire	2.4	3.0	3.4	3.0	2.6	3.2	6.1	5.8	6.2	6.2	5.9	123.8%
Egypt	20.3	25.6	41.9	64.8	78.4	83.1	101.3	152.7	172.8	178.4	188.4	140.3%
Eritrea	..	..	..	..	..	0.8	0.6	0.6	0.4	0.5	0.5	..
Ethiopia	1.3	1.2	1.4	1.4	2.2	2.4	3.2	4.5	5.8	5.5	5.9	165.1%
Gabon	0.5	0.7	1.3	1.7	0.9	1.3	1.4	1.7	2.1	2.2	2.2	141.4%
Ghana	1.9	2.3	2.3	2.2	2.7	3.3	5.1	6.4	9.1	10.3	10.8	299.4%
Kenya	3.2	3.5	4.5	4.6	5.5	5.8	7.8	7.6	10.7	11.5	11.6	111.4%
Libya	3.7	9.2	18.6	22.5	27.4	35.1	39.5	45.1	52.3	55.6	34.9	27.6%
Morocco	6.8	9.9	14.0	16.5	19.6	26.0	29.4	39.5	42.7	46.1	50.2	155.4%
Mozambique	2.9	2.3	2.3	1.5	1.1	1.1	1.3	1.5	2.2	2.5	2.8	163.0%
Namibia	..	..	..	..	..	1.7	1.8	2.5	3.0	3.1	3.1	..
Nigeria	5.9	11.7	26.7	32.4	29.2	31.1	42.0	55.2	42.4	51.9	52.8	81.3%
Senegal	1.2	1.6	2.0	2.1	2.1	2.5	3.6	4.7	5.4	5.6	5.7	166.7%
South Africa	156.7	201.5	208.8	228.8	253.7	274.5	296.7	329.2	364.3	370.6	367.6	44.9%
Sudan	3.3	3.3	3.7	4.2	5.5	4.6	5.9	9.7	15.0	15.3	14.5	163.6%
United Rep. of Tanzania	1.5	1.5	1.6	1.5	1.7	2.5	2.6	5.0	5.4	5.8	6.3	267.1%
Togo	0.3	0.3	0.4	0.3	0.6	0.6	1.0	1.0	1.1	1.2	1.2	118.7%
Tunisia	3.7	4.8	7.8	9.6	12.1	14.2	18.0	20.2	21.3	21.9	21.1	74.9%
Zambia	3.4	4.4	3.4	2.8	2.6	2.0	1.7	2.1	1.7	1.7	2.1	-19.3%
Zimbabwe	7.2	7.2	8.0	9.6	16.0	14.8	12.6	10.3	7.9	8.7	9.5	-40.9%
Other Africa	7.6	9.2	13.1	11.7	14.4	16.7	19.7	23.8	27.6	29.7	31.2	115.7%
Africa	**248.7**	**324.2**	**401.9**	**475.9**	**544.5**	**596.8**	**680.5**	**828.7**	**927.8**	**967.2**	**967.8**	**77.7%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions: Sectoral Approach

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	3.2	4.7	7.2	8.8	13.6	20.5	25.3	36.8	50.2	53.3	54.1	298.9%
Brunei Darussalam	0.4	1.4	2.6	2.9	3.2	4.5	4.4	4.8	7.4	7.9	8.9	174.2%
Cambodia	..	..	..	..	..	1.5	2.0	2.6	3.6	3.8	4.0	..
Chinese Taipei	31.0	42.5	72.9	71.4	114.4	158.2	218.4	262.5	250.5	270.2	264.7	131.4%
India	200.2	241.2	283.3	411.0	582.3	776.5	972.1	1 164.4	1 640.5	1 710.4	1 745.1	199.7%
Indonesia	25.1	38.0	68.9	88.0	146.1	214.4	272.8	335.7	379.1	410.1	425.9	191.6%
DPR of Korea	67.5	76.7	105.6	126.4	114.0	74.9	68.6	73.8	66.3	63.8	64.8	-43.1%
Malaysia	12.7	16.1	24.3	33.7	49.6	82.8	112.7	150.9	168.1	183.4	194.0	290.7%
Mongolia	..	..	..	11.6	12.7	10.1	8.8	9.5	11.7	12.6	13.0	3.0%
Myanmar	4.6	4.0	5.2	5.9	4.1	6.9	9.4	10.6	7.0	8.0	8.3	103.8%
Nepal	0.2	0.3	0.5	0.5	0.9	1.7	3.1	3.0	3.4	4.1	4.1	359.1%
Pakistan	16.6	20.9	26.1	39.1	58.6	79.5	99.2	120.5	139.5	135.4	136.3	132.6%
Philippines	23.0	29.0	33.3	28.5	38.2	57.2	67.5	70.7	70.8	76.6	77.1	101.7%
Singapore	6.1	8.5	12.7	16.3	29.4	41.6	47.6	49.6	55.7	64.3	64.8	120.4%
Sri Lanka	2.8	2.7	3.7	3.6	3.7	5.5	10.6	13.4	11.9	13.1	15.0	301.2%
Thailand	16.2	21.2	33.6	41.9	80.4	140.2	154.7	210.8	216.2	236.2	243.2	202.4%
Vietnam	16.1	16.7	14.8	17.1	17.2	27.8	44.0	79.8	113.8	129.4	137.4	698.6%
Other Asia	8.4	10.2	16.5	10.1	10.2	9.4	11.0	15.4	19.1	22.1	23.5	129.8%
Asia	**434.1**	**534.0**	**711.1**	**916.9**	**1 278.6**	**1 713.0**	**2 132.2**	**2 614.8**	**3 214.8**	**3 404.7**	**3 484.0**	**172.5%**
People's Rep. of China	815.6	1 068.5	1 425.4	1 724.5	2 244.9	3 021.6	3 310.1	5 403.1	6 793.0	7 252.6	7 954.5	254.3%
Hong Kong, China	9.2	10.8	14.5	22.0	32.9	36.0	39.9	40.8	45.6	41.5	45.0	37.0%
China	**824.7**	**1 079.3**	**1 440.0**	**1 746.5**	**2 277.7**	**3 057.6**	**3 350.0**	**5 443.9**	**6 838.6**	**7 294.1**	**7 999.6**	**251.2%**
Argentina	82.8	85.5	95.6	88.2	99.9	118.0	139.0	151.9	171.7	177.9	183.6	83.8%
Bolivia	2.2	3.2	4.2	4.3	5.2	6.9	7.1	9.4	12.7	14.1	15.2	195.9%
Brazil	90.2	135.7	177.6	164.2	192.4	235.6	303.6	322.7	338.3	388.5	408.0	112.1%
Colombia	26.7	28.3	35.0	39.6	46.2	58.4	59.2	58.1	62.2	62.2	66.7	44.3%
Costa Rica	1.3	1.7	2.2	2.0	2.6	4.4	4.5	5.7	6.3	6.5	6.7	156.9%
Cuba	20.4	23.7	30.2	31.9	33.8	22.2	27.1	25.1	31.7	29.4	28.0	-17.2%
Dominican Republic	3.4	5.2	6.3	6.2	7.4	11.2	17.1	17.3	18.1	18.2	18.0	144.0%
Ecuador	3.5	5.9	10.5	11.7	12.8	15.4	17.3	24.1	30.4	31.0	30.9	140.9%
El Salvador	1.4	2.0	1.7	1.8	2.2	4.6	5.2	6.3	6.2	5.8	6.0	170.0%
Guatemala	2.3	3.0	4.2	3.2	3.2	5.8	8.5	10.5	11.1	10.3	10.4	225.2%
Haiti	0.4	0.4	0.6	0.8	0.9	0.9	1.4	2.0	2.3	2.0	2.1	125.8%
Honduras	1.1	1.3	1.7	1.7	2.2	3.5	4.4	6.9	7.3	7.3	7.6	253.8%
Jamaica	5.5	7.4	6.5	4.6	7.2	8.3	9.7	10.2	7.5	7.2	7.6	5.8%
Netherlands Antilles	14.4	10.2	8.7	4.6	2.8	2.8	4.5	4.7	5.5	4.3	5.1	87.1%
Nicaragua	1.5	1.8	1.8	1.8	1.8	2.5	3.5	4.0	4.2	4.5	4.5	147.1%
Panama	2.5	3.1	2.9	2.7	2.6	4.1	4.9	6.8	7.8	8.4	9.4	266.3%
Paraguay	0.6	0.7	1.4	1.4	1.9	3.4	3.3	3.4	4.1	4.7	4.9	156.3%
Peru	15.6	18.4	20.5	18.2	19.2	23.7	26.5	28.9	38.2	41.8	44.7	132.7%
Trinidad and Tobago	6.1	5.8	7.9	9.6	11.4	12.3	21.1	33.9	40.2	42.8	40.8	258.6%
Uruguay	5.2	5.5	5.6	3.1	3.7	4.5	5.3	5.3	7.7	6.4	7.6	102.0%
Venezuela	52.1	62.8	92.4	95.2	105.1	118.3	126.7	148.2	167.9	181.6	159.2	51.5%
Other Non-OECD Americas	7.8	10.8	10.2	9.2	12.4	13.4	15.0	16.0	17.2	18.8	19.6	57.8%
Non-OECD Americas	**347.1**	**422.6**	**527.8**	**505.8**	**576.9**	**680.3**	**814.8**	**901.3**	**998.5**	**1 073.8**	**1 086.8**	**88.4%**
Bahrain	3.0	5.3	7.4	10.4	11.7	11.6	14.1	18.1	22.5	23.1	22.7	93.8%
Islamic Republic of Iran	41.7	71.5	90.2	146.4	178.7	251.3	315.1	421.6	513.9	508.0	521.0	191.6%
Iraq	10.4	15.5	27.0	36.8	53.4	97.5	70.3	74.9	89.7	101.3	108.3	102.7%
Jordan	1.3	2.1	4.3	7.4	9.2	12.2	14.4	18.0	19.3	18.8	19.8	114.1%
Kuwait	14.0	15.1	26.6	37.1	28.7	36.1	49.1	70.1	79.8	81.5	84.7	195.1%
Lebanon	4.5	5.6	6.6	6.5	5.5	12.8	14.1	14.5	19.3	18.3	18.5	238.7%
Oman	0.3	0.7	2.2	5.7	10.2	14.7	20.2	28.2	53.8	57.1	63.5	520.2%
Qatar	2.2	4.9	7.7	12.2	14.3	18.8	24.0	36.4	56.2	63.4	71.4	399.8%
Saudi Arabia	12.7	22.5	99.1	122.6	157.5	205.0	249.7	325.3	403.5	438.8	457.3	190.3%
Syrian Arab Republic	6.0	9.0	13.1	21.1	28.2	32.8	39.8	54.9	57.2	57.5	53.2	88.9%
United Arab Emirates	2.4	4.9	19.1	35.6	51.9	69.6	85.6	108.4	150.6	157.4	165.9	219.7%
Yemen	1.2	1.7	3.4	4.8	6.4	9.3	13.2	18.6	22.2	23.7	20.7	222.1%
Middle East	**99.8**	**159.0**	**306.7**	**446.7**	**555.7**	**771.9**	**909.6**	**1 189.2**	**1 488.1**	**1 548.9**	**1 606.9**	**189.1%**

CO_2 emissions: Sectoral Approach - Coal/peat

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**5 195.7**	**5 612.9**	**6 568.8**	**7 384.8**	**8 324.0**	**8 537.8**	**9 078.8**	**11 335.5**	**12 488.9**	**13 133.5**	**13 773.1**	**65.5%**
Annex I Parties	*..*	*..*	*..*	*..*	*5 103.4*	*4 570.4*	*4 692.7*	*4 738.8*	*4 182.8*	*4 402.9*	*4 315.2*	*-15.4%*
Annex II Parties	*2 646.0*	*2 605.6*	*2 962.7*	*3 318.2*	*3 478.5*	*3 390.6*	*3 646.7*	*3 728.2*	*3 217.4*	*3 370.5*	*3 240.4*	*-6.8%*
North America	*1 140.6*	*1 253.8*	*1 481.2*	*1 725.0*	*1 892.1*	*1 995.3*	*2 248.9*	*2 235.9*	*1 921.8*	*2 031.3*	*1 914.4*	*1.2%*
Europe	*1 233.9*	*1 058.9*	*1 182.7*	*1 223.8*	*1 155.4*	*925.7*	*843.2*	*850.6*	*683.3*	*707.4*	*721.9*	*-37.5%*
Asia Oceania	*271.5*	*292.9*	*298.7*	*369.4*	*431.1*	*469.6*	*554.6*	*641.7*	*612.3*	*631.8*	*604.0*	*40.1%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 566.3*	*1 119.0*	*957.0*	*924.3*	*853.2*	*912.6*	*949.7*	*-39.4%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*3 220.6*	*3 967.4*	*4 386.1*	*6 596.7*	*8 306.1*	*8 730.6*	*9 457.9*	*193.7%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*3 238.4*	*2 608.0*	*2 475.0*	*2 526.5*	*2 236.5*	*2 340.4*	*2 357.6*	*-27.2%*
Intl. marine bunkers	**0.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.0**	**x**
Intl. aviation bunkers	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Non-OECD Total **	**2 062.1**	**2 478.0**	**2 970.4**	**3 354.0**	**4 176.2**	**4 522.3**	**4 758.1**	**6 920.2**	**8 524.3**	**8 955.7**	**9 698.9**	**132.2%**
OECD Total ***	**3 133.5**	**3 134.9**	**3 598.4**	**4 030.8**	**4 147.8**	**4 015.5**	**4 320.7**	**4 415.3**	**3 964.5**	**4 177.8**	**4 074.2**	**-1.8%**
Canada	61.9	57.4	80.5	99.4	94.7	98.9	123.8	112.2	89.6	90.6	84.2	-11.1%
Chile	5.0	3.5	4.7	4.8	9.8	9.0	11.8	10.0	14.9	17.2	20.9	113.9%
Mexico	5.2	6.6	7.2	11.6	14.6	25.8	26.8	38.1	34.0	39.5	40.8	178.9%
United States	1 078.7	1 196.4	1 400.7	1 625.5	1 797.4	1 896.4	2 125.1	2 123.7	1 832.1	1 940.7	1 830.3	1.8%
OECD Americas	**1 150.7**	**1 263.9**	**1 493.2**	**1 741.4**	**1 916.5**	**2 030.1**	**2 287.5**	**2 284.0**	**1 970.6**	**2 088.0**	**1 976.2**	**3.1%**
Australia	73.2	90.3	104.0	116.7	137.1	152.3	189.3	210.8	220.3	207.3	198.8	45.0%
Israel	0.0	0.0	0.0	7.2	9.3	16.1	25.0	28.9	28.6	28.7	29.8	221.3%
Japan	194.1	197.7	190.8	248.8	290.6	313.9	360.9	422.1	385.8	419.1	400.0	37.6%
Korea	21.2	30.6	48.1	80.2	86.3	101.6	173.6	195.0	252.5	276.9	296.0	242.9%
New Zealand	4.2	4.8	3.8	3.9	3.3	3.3	4.3	8.7	6.1	5.3	5.2	56.3%
OECD Asia Oceania	**292.7**	**323.5**	**346.9**	**456.7**	**526.7**	**587.4**	**753.2**	**865.6**	**893.4**	**937.4**	**929.8**	**76.5%**
Austria	15.9	13.5	13.7	16.9	16.1	13.8	14.4	15.9	11.6	14.5	15.0	-6.7%
Belgium	42.2	37.0	40.2	37.8	39.0	33.4	29.0	19.6	10.8	11.4	10.6	-72.7%
Czech Republic	129.2	121.7	129.5	136.1	120.7	88.5	83.9	76.2	70.3	73.3	73.8	-38.9%
Denmark	6.0	8.0	23.8	28.4	23.7	25.3	15.4	14.4	15.7	15.2	12.7	-46.6%
Estonia	..	..	..	..	24.1	11.3	10.5	12.0	10.6	14.2	15.1	-37.3%
Finland	8.4	9.3	19.6	19.8	21.1	23.2	21.0	20.1	21.7	27.9	22.9	8.5%
France	135.3	104.2	121.2	91.3	73.6	57.5	57.4	53.8	41.1	44.1	35.1	-52.2%
Germany	554.1	494.5	552.2	580.7	504.6	370.1	337.2	332.3	290.3	306.2	311.1	-38.4%
Greece	6.8	11.0	13.4	24.9	33.4	36.4	37.6	37.8	35.1	32.9	33.5	0.4%
Hungary	34.9	32.9	36.3	34.5	23.8	17.0	15.2	12.2	9.9	10.4	10.5	-56.0%
Iceland	0.0	-	0.1	0.3	0.3	0.2	0.4	0.4	0.4	0.4	0.4	40.9%
Ireland	8.8	7.1	8.0	10.5	14.4	12.2	10.4	10.8	8.2	8.1	8.0	-44.5%
Italy	31.7	30.2	43.0	58.1	55.1	44.9	43.3	62.8	46.8	51.8	58.4	6.0%
Luxembourg	11.3	7.5	7.9	6.3	4.9	2.0	0.4	0.3	0.3	0.3	0.2	-95.3%
Netherlands	14.4	11.5	13.8	23.1	31.8	33.1	29.1	30.3	27.6	28.2	27.3	-14.1%
Norway	3.7	3.9	3.9	4.4	3.4	4.1	4.2	3.0	2.2	2.7	2.8	-17.3%
Poland	252.5	289.7	350.9	359.8	285.6	268.1	216.8	206.6	194.0	207.3	202.0	-29.3%
Portugal	2.4	1.6	1.6	2.9	10.6	13.9	14.7	13.1	11.1	6.4	8.7	-18.4%
Slovak Republic	23.5	23.7	32.0	33.3	30.7	21.1	16.0	15.6	14.4	14.1	13.9	-54.8%
Slovenia	..	..	..	..	6.5	5.7	5.5	6.3	5.8	5.9	6.0	-8.0%
Spain	36.8	37.4	47.7	69.1	73.5	71.3	81.5	80.0	40.3	31.4	50.0	-32.0%
Sweden	5.4	6.9	5.4	10.6	10.4	9.4	8.1	9.8	6.3	8.9	8.3	-20.2%
Switzerland	2.0	1.0	1.4	2.0	1.4	0.8	0.6	0.6	0.6	0.6	0.6	-59.7%
Turkey	16.0	20.7	26.8	45.1	57.9	60.7	88.9	86.3	112.3	119.7	125.1	116.2%
United Kingdom	348.4	274.2	266.1	236.8	238.2	174.1	138.6	145.5	113.5	116.4	116.3	-51.2%
OECD Europe ***	**1 690.0**	**1 547.5**	**1 758.4**	**1 832.7**	**1 704.7**	**1 398.1**	**1 280.0**	**1 265.7**	**1 100.5**	**1 152.4**	**1 168.2**	**-31.5%**
European Union - 27	*..*	*..*	*..*	*..*	*1 735.0*	*1 404.6*	*1 241.1*	*1 239.7*	*1 043.0*	*1 087.5*	*1 107.9*	*-36.1%*

* Total world includes non-OECD total, OECD total as well as international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions: Sectoral Approach - Coal/peat

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**2 062.1**	**2 478.0**	**2 970.4**	**3 354.0**	**4 176.2**	**4 522.3**	**4 758.1**	**6 920.2**	**8 524.3**	**8 955.7**	**9 698.9**	**132.2%**
Albania	1.2	1.6	2.5	3.7	2.4	0.1	0.1	0.1	0.2	0.2	0.3	-87.4%
Armenia	..	..	..	..	1.0	0.0	-	-	-	0.0	-	-100.0%
Azerbaijan	..	..	..	..	0.3	0.0	-	-	-	-	-	-100.0%
Belarus	..	..	..	..	9.1	5.2	3.6	2.3	1.8	2.0	2.2	-76.1%
Bosnia and Herzegovina	..	..	..	..	17.3	1.4	9.9	11.7	14.9	15.2	17.9	3.3%
Bulgaria	33.2	35.0	37.8	42.2	36.8	29.6	25.4	27.9	26.2	28.3	33.2	-9.7%
Croatia	..	..	..	..	3.3	0.7	1.7	2.7	2.0	2.7	2.8	-17.3%
Cyprus **	-	-	-	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	-88.3%
Georgia	..	..	..	..	3.4	0.1	0.0	0.0	0.5	0.1	0.2	-92.6%
Gibraltar	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	..	..	..	..	153.3	111.6	75.6	102.8	125.3	134.2	142.1	-7.3%
Kosovo ***	..	..	..	..	..	..	4.0	5.1	6.6	7.0	6.7	..
Kyrgyzstan	..	..	..	..	10.0	1.3	1.8	2.0	2.0	2.7	2.9	-71.4%
Latvia	..	..	..	..	2.7	1.1	0.5	0.3	0.3	0.4	0.5	-83.0%
Lithuania	..	..	..	..	3.1	1.0	0.4	0.7	0.7	0.8	0.9	-69.3%
FYR of Macedonia	..	..	..	..	5.5	5.9	5.5	6.1	5.5	5.4	6.2	12.3%
Malta	-	-	-	0.5	0.7	0.1	-	-	-	-	-	-100.0%
Republic of Moldova	..	..	..	..	7.8	2.3	0.4	0.3	0.4	0.4	0.4	-95.0%
Montenegro ***	..	..	..	..	..	..	..	1.2	0.9	1.7	1.8	..
Romania	31.2	38.0	48.9	57.6	49.7	40.5	28.7	35.2	30.7	29.0	33.9	-31.8%
Russian Federation	..	..	..	..	687.1	468.1	432.6	402.9	362.9	391.9	411.1	-40.2%
Serbia ***	..	..	..	..	41.3	36.2	35.0	33.3	31.9	31.7	35.9	-13.0%
Tajikistan	..	..	..	..	2.5	0.1	0.0	0.2	0.4	0.4	0.4	-83.1%
Turkmenistan	..	..	..	..	1.2	-	-	-	-	-	-	-100.0%
Ukraine	..	..	..	..	283.0	161.2	116.3	123.4	123.7	132.3	144.0	-49.1%
Uzbekistan	..	..	..	..	13.7	4.4	5.1	4.6	5.5	5.4	5.6	-59.0%
Former Soviet Union ****	875.2	1 028.9	1 141.8	982.9	..	..	..	..	..	..	..	..
Former Yugoslavia ****	35.8	40.5	42.6	72.4	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**976.6**	**1 143.9**	**1 273.5**	**1 159.5**	**1 335.4**	**870.7**	**746.9**	**762.9**	**742.3**	**791.8**	**849.0**	**-36.4%**
Algeria	0.4	0.3	0.2	1.0	1.3	1.4	0.7	1.0	0.7	0.7	0.6	-53.4%
Angola	-	-	-	-	-	-	-	-	-	-	-	-
Benin	-	-	-	-	-	-	-	-	-	-	-	-
Botswana	..	..	..	1.1	1.9	2.2	2.5	2.4	1.8	2.4	1.9	-2.8%
Cameroon	-	-	-	-	-	-	-	-	-	-	-	-
Congo	-	-	-	-	-	-	-	-	-	-	-	-
Dem. Rep. of Congo	1.0	0.8	0.8	0.8	0.9	1.0	0.8	1.0	1.2	1.3	1.3	52.8%
Côte d'Ivoire	-	-	-	-	-	-	-	-	-	-	-	-
Egypt	1.3	2.2	2.1	2.7	2.7	3.0	3.0	3.2	2.9	3.5	3.4	27.6%
Eritrea	..	..	..	..	..	-	-	-	-	-	-	..
Ethiopia	-	-	-	-	-	-	-	-	-	-	-	-
Gabon	-	-	-	-	-	-	-	-	-	-	-	-
Ghana	-	-	-	-	-	-	-	-	-	-	-	-
Kenya	0.2	0.1	0.0	0.2	0.4	0.4	0.3	0.3	0.4	0.6	0.9	151.7%
Libya	-	-	-	-	-	-	-	-	-	-	-	-
Morocco	1.2	1.7	1.6	2.7	4.1	6.7	10.3	12.7	10.5	10.8	11.6	179.9%
Mozambique	1.5	1.2	0.7	0.2	0.1	0.1	-	-	0.0	0.0	0.1	-55.2%
Namibia	..	..	..	..	..	0.0	0.0	0.0	0.1	0.1	0.0	..
Nigeria	0.5	0.6	0.4	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	-57.9%
Senegal	-	-	-	-	-	-	-	0.4	0.6	0.6	0.7	x
South Africa	129.2	167.4	173.7	189.2	207.2	225.7	247.6	270.1	296.4	296.9	290.2	40.0%
Sudan	-	-	0.0	-	-	-	-	-	-	-	-	-
United Rep. of Tanzania	-	-	0.0	0.0	0.0	0.1	0.2	0.1	-	0.1	0.1	959.0%
Togo	-	-	-	-	-	-	-	-	-	-	-	-
Tunisia	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-	-	-	-	-100.0%
Zambia	2.0	1.9	1.4	1.1	0.9	0.3	0.3	0.3	0.0	-	-	-100.0%
Zimbabwe	5.6	5.0	6.1	7.5	13.4	11.2	9.6	8.2	6.2	6.8	7.4	-44.3%
Other Africa	0.5	0.7	0.6	0.7	1.0	0.7	2.4	3.0	3.9	4.3	4.6	359.4%
Africa	**143.6**	**182.3**	**187.9**	**207.9**	**234.4**	**253.2**	**277.8**	**302.8**	**324.8**	**328.3**	**322.9**	**37.8%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions: Sectoral Approach - Coal/peat

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	0.4	0.5	0.5	0.2	1.1	1.2	1.3	1.7	3.3	3.5	3.5	224.0%
Brunei Darussalam	-	-	-	-	-	-	-	-	-	-	-	-
Cambodia	..	..	..	..	..	-	-	-	0.0	0.0	0.0	..
Chinese Taipei	10.0	8.4	14.6	26.0	42.3	63.7	109.6	145.3	144.5	154.8	150.1	254.9%
India	142.6	176.1	195.4	283.7	395.9	517.3	623.6	786.8	1 120.4	1 157.1	1 205.2	204.4%
Indonesia	0.5	0.5	0.5	4.5	17.6	26.0	51.4	85.8	111.6	124.5	130.4	642.6%
DPR of Korea	64.9	72.5	97.5	119.0	106.1	70.9	65.4	71.0	63.8	61.3	62.3	-41.3%
Malaysia	0.0	0.0	0.2	1.4	5.1	6.5	9.6	26.7	40.6	57.4	57.3	+
Mongolia	..	..	..	9.4	10.2	9.0	7.5	7.8	9.4	10.1	10.0	-2.3%
Myanmar	0.6	0.6	0.6	0.6	0.3	0.1	1.3	1.3	1.4	1.6	1.6	508.1%
Nepal	0.0	0.1	0.2	0.0	0.2	0.3	1.0	1.0	0.7	1.2	1.1	591.4%
Pakistan	2.5	2.2	2.6	4.8	7.1	7.8	6.7	14.3	17.0	16.0	15.8	123.5%
Philippines	0.1	0.2	1.5	5.4	5.2	7.0	19.5	22.3	25.6	29.6	32.5	522.7%
Singapore	0.0	0.0	0.0	0.1	0.1	0.1	-	0.0	0.0	0.0	-	-100.0%
Sri Lanka	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	1.4	+
Thailand	0.5	0.6	1.9	6.5	16.1	29.4	31.4	46.9	58.6	64.2	72.1	348.9%
Vietnam	5.6	10.0	9.2	11.3	9.0	13.4	17.6	33.3	50.8	59.0	62.6	598.2%
Other Asia	4.1	4.3	7.7	0.9	0.8	0.6	1.3	1.6	3.0	4.4	4.7	473.6%
Asia	**231.8**	**276.1**	**332.4**	**473.9**	**617.0**	**753.3**	**947.3**	**1 246.0**	**1 651.2**	**1 745.0**	**1 810.7**	**193.5%**
People's Rep. of China	693.1	855.2	1 146.3	1 456.5	1 918.5	2 566.4	2 698.7	4 507.8	5 705.4	5 980.4	6 592.8	243.6%
Hong Kong, China	0.1	0.1	0.2	12.8	24.4	24.4	17.7	27.2	30.8	26.1	31.4	28.6%
China	**693.2**	**855.3**	**1 146.5**	**1 469.3**	**1 942.9**	**2 590.7**	**2 716.4**	**4 535.0**	**5 736.3**	**6 006.4**	**6 624.2**	**240.9%**
Argentina	3.2	3.3	3.0	3.4	3.4	4.7	4.5	5.6	5.1	5.8	6.3	84.6%
Bolivia	-	-	-	0.2	-	-	-	-	-	-	-	-
Brazil	5.9	6.7	14.6	25.6	26.7	31.6	45.1	44.4	38.5	52.7	55.0	106.5%
Colombia	5.9	6.5	8.6	9.9	11.9	13.6	11.9	10.2	12.1	10.1	12.3	2.6%
Costa Rica	0.0	0.0	0.0	0.0	-	-	0.0	0.1	0.3	0.3	0.3	x
Cuba	0.2	0.1	0.4	0.5	0.6	0.3	0.1	0.1	0.1	0.1	0.1	-78.9%
Dominican Republic	-	-	-	0.5	0.0	0.2	0.2	1.1	2.2	2.1	2.2	+
Ecuador	-	-	-	-	-	-	-	-	-	-	-	-
El Salvador	-	-	0.0	-	-	0.0	0.0	0.0	-	-	-	-
Guatemala	-	-	0.1	-	-	-	0.5	1.0	0.7	1.2	1.1	x
Haiti	-	-	-	0.1	0.0	-	-	-	-	-	-	-100.0%
Honduras	-	-	-	-	0.0	0.0	0.3	0.4	0.5	0.5	0.6	+
Jamaica	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	7.7%
Netherlands Antilles	-	-	-	-	-	-	-	-	-	-	-	-
Nicaragua	-	-	-	-	-	-	-	-	-	-	-	-
Panama	0.0	0.0	-	0.1	0.1	0.1	0.1	1.0	0.2	0.3	0.8	949.2%
Paraguay	-	-	-	-	-	-	-	-	-	-	-	-
Peru	0.5	0.6	0.6	0.7	0.6	1.4	2.4	3.5	3.3	3.5	3.3	467.5%
Trinidad and Tobago	-	-	-	-	-	-	-	-	-	-	-	-
Uruguay	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-80.4%
Venezuela	0.6	1.0	0.6	0.7	1.8	0.0	0.5	0.1	0.9	0.8	0.8	-55.9%
Other Non-OECD Americas	0.1	0.1	0.1	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.9%
Non-OECD Americas	**16.5**	**18.4**	**28.0**	**41.8**	**45.3**	**52.0**	**65.9**	**67.8**	**63.9**	**77.5**	**82.9**	**83.2%**
Bahrain	-	-	-	-	-	-	-	-	-	-	-	-
Islamic Republic of Iran	0.4	2.1	1.9	1.6	1.2	1.8	3.2	4.5	3.2	3.2	3.8	222.5%
Iraq	-	-	-	-	-	-	-	-	-	-	-	-
Jordan	-	-	-	-	-	-	-	-	-	-	-	-
Kuwait	-	-	-	-	-	-	-	-	-	-	-	-
Lebanon	0.0	0.0	0.0	-	-	0.5	0.5	0.5	0.5	0.6	0.6	x
Oman	-	-	-	-	-	-	-	-	-	-	-	-
Qatar	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Syrian Arab Republic	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	x
United Arab Emirates	-	-	-	-	-	-	-	0.6	2.1	2.8	4.9	x
Yemen	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	**0.4**	**2.1**	**2.0**	**1.6**	**1.2**	**2.3**	**3.7**	**5.6**	**5.8**	**6.6**	**9.3**	**688.5%**

CO_2 emissions: Sectoral Approach - Oil

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**6 824.7**	**7 786.5**	**8 718.9**	**8 085.6**	**8 817.5**	**9 130.9**	**9 899.6**	**10 719.7**	**10 600.6**	**11 008.3**	**11 071.7**	**25.6%**
Annex I Parties	*..*	*..*	*..*	*..*	*5 687.2*	*5 333.6*	*5 491.9*	*5 657.3*	*5 021.1*	*5 069.3*	*5 030.8*	*-11.5%*
Annex II Parties	*4 522.9*	*4 773.7*	*4 914.7*	*4 232.8*	*4 485.6*	*4 625.2*	*4 854.3*	*5 023.5*	*4 378.6*	*4 439.6*	*4 363.2*	*-2.7%*
North America	*2 232.9*	*2 341.6*	*2 427.9*	*2 164.8*	*2 251.2*	*2 265.8*	*2 517.9*	*2 705.0*	*2 344.4*	*2 416.6*	*2 364.4*	*5.0%*
Europe	*1 657.7*	*1 700.3*	*1 750.2*	*1 431.1*	*1 477.7*	*1 561.0*	*1 568.7*	*1 573.5*	*1 404.8*	*1 388.3*	*1 328.9*	*-10.1%*
Asia Oceania	*632.3*	*731.8*	*736.6*	*636.9*	*756.7*	*798.4*	*767.6*	*744.9*	*629.4*	*634.7*	*669.9*	*-11.5%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 137.6*	*627.3*	*552.9*	*553.9*	*563.5*	*554.5*	*590.4*	*-48.1%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*2 511.6*	*3 088.1*	*3 571.3*	*4 089.0*	*4 555.8*	*4 842.6*	*4 927.2*	*96.2%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*3 493.5*	*3 168.3*	*3 104.0*	*3 123.7*	*2 825.1*	*2 814.4*	*2 818.2*	*-19.3%*
Intl. marine bunkers	**344.8**	**332.4**	**348.4**	**298.3**	**362.3**	**421.0**	**486.0**	**557.3**	**593.2**	**643.9**	**645.1**	**78.1%**
Intl. aviation bunkers	**167.3**	**171.8**	**199.8**	**222.6**	**256.4**	**288.2**	**350.4**	**416.1**	**430.5**	**452.5**	**468.5**	**82.7%**
Non-OECD Total **	**1 560.0**	**2 184.3**	**2 818.3**	**2 884.2**	**3 164.6**	**3 111.8**	**3 484.8**	**4 002.6**	**4 489.7**	**4 760.4**	**4 880.2**	**54.2%**
OECD Total ***	**4 752.7**	**5 098.0**	**5 352.4**	**4 680.4**	**5 034.2**	**5 309.9**	**5 578.4**	**5 743.6**	**5 087.2**	**5 151.5**	**5 077.8**	**0.9%**
Canada	209.8	233.2	246.7	188.8	209.4	212.2	237.1	272.2	253.6	257.9	253.1	20.9%
Chile	14.5	12.4	15.1	13.0	19.1	27.8	30.4	34.1	44.8	42.8	44.5	132.4%
Mexico	71.7	106.5	161.6	186.5	198.6	215.3	256.1	259.3	254.3	254.6	261.0	31.5%
United States	2 023.0	2 108.4	2 181.2	1 976.0	2 041.8	2 053.5	2 280.8	2 432.8	2 090.9	2 158.7	2 111.2	3.4%
OECD Americas	**2 319.1**	**2 460.5**	**2 604.6**	**2 364.3**	**2 468.9**	**2 508.9**	**2 804.4**	**2 998.5**	**2 643.5**	**2 713.9**	**2 669.9**	**8.1%**
Australia	66.8	80.8	87.3	79.9	89.3	94.6	104.7	114.1	117.2	119.5	123.7	38.6%
Israel	14.2	17.0	19.4	17.3	24.2	30.1	30.1	26.6	26.5	29.2	28.0	15.7%
Japan	556.2	639.4	638.6	547.4	655.4	689.5	647.1	613.0	494.6	497.8	528.7	-19.3%
Korea	30.9	46.2	76.2	73.1	135.3	234.1	219.6	203.8	182.1	186.7	182.3	34.7%
New Zealand	9.3	11.6	10.7	9.6	12.0	14.3	15.8	17.9	17.5	17.4	17.5	46.0%
OECD Asia Oceania	**677.4**	**795.0**	**832.3**	**727.2**	**916.3**	**1 062.5**	**1 017.4**	**975.4**	**837.9**	**850.6**	**880.2**	**-3.9%**
Austria	27.2	29.2	33.0	26.9	27.7	29.9	31.2	37.9	32.5	33.3	31.8	15.0%
Belgium	63.3	60.4	65.0	46.7	48.7	55.4	56.9	57.9	52.2	54.3	50.6	3.8%
Czech Republic	19.9	27.9	30.6	27.9	23.0	20.5	20.2	24.9	23.8	22.8	22.1	-3.5%
Denmark	49.0	44.2	38.5	30.2	22.0	24.4	23.5	21.7	20.1	19.7	18.4	-16.2%
Estonia	..	..	..	..	9.3	3.5	2.7	3.1	2.8	3.0	3.0	-67.5%
Finland	31.4	33.6	33.9	26.9	28.2	26.2	26.1	26.3	24.8	25.9	24.4	-13.4%
France	277.3	293.5	292.8	214.5	220.4	227.7	235.9	236.9	216.3	211.6	204.6	-7.1%
Germany	385.7	392.4	385.9	326.6	322.3	344.2	321.9	292.9	267.8	266.2	255.9	-20.6%
Greece	18.4	23.5	32.0	29.6	36.5	39.1	45.7	51.7	48.5	43.8	41.2	13.0%
Hungary	18.6	27.2	29.8	27.0	22.7	19.8	17.3	16.8	17.2	15.9	15.4	-32.4%
Iceland	1.4	1.6	1.7	1.4	1.6	1.7	1.7	1.8	1.7	1.6	1.5	-8.7%
Ireland	12.9	14.0	16.2	11.4	12.1	15.7	23.0	25.0	21.1	20.0	17.4	43.5%
Italy	237.3	248.6	267.5	229.6	252.3	261.1	248.0	231.8	191.2	184.9	181.5	-28.1%
Luxembourg	4.1	3.8	3.0	2.9	4.4	4.7	5.9	8.2	7.0	7.4	7.6	72.7%
Netherlands	68.1	56.8	83.5	55.6	52.7	57.8	60.7	68.5	64.7	65.4	65.2	23.6%
Norway	19.8	19.8	22.0	19.8	20.0	20.4	21.0	22.8	23.0	24.0	22.7	13.7%
Poland	21.9	33.5	42.8	39.2	34.5	40.9	51.5	57.9	64.1	67.1	66.5	92.6%
Portugal	12.0	16.5	22.2	21.8	28.7	34.4	39.8	40.4	31.8	30.6	28.2	-1.6%
Slovak Republic	12.6	15.2	18.1	14.3	14.4	7.1	6.8	9.1	9.1	9.8	9.7	-32.5%
Slovenia	..	..	..	..	5.0	6.7	6.7	7.2	7.4	7.3	7.4	47.3%
Spain	82.4	117.3	136.9	101.6	120.9	143.1	166.8	191.4	168.5	163.7	152.7	26.2%
Sweden	77.1	72.5	67.6	47.3	40.1	45.4	41.5	36.6	31.0	32.8	31.6	-21.2%
Switzerland	36.9	34.8	36.0	35.8	34.2	33.5	33.2	34.2	32.1	32.7	29.5	-13.7%
Turkey	25.4	38.5	44.1	49.4	62.5	78.9	82.7	77.1	76.5	72.8	74.7	19.5%
United Kingdom	253.5	238.0	212.7	202.5	204.7	196.4	185.8	187.6	170.3	170.3	164.0	-19.9%
OECD Europe ***	**1 756.2**	**1 842.6**	**1 915.6**	**1 588.9**	**1 649.1**	**1 738.5**	**1 756.6**	**1 769.7**	**1 605.7**	**1 587.0**	**1 527.7**	**-7.4%**
European Union - 27	*..*	*..*	*..*	*..*	*1 642.5*	*1 671.7*	*1 674.1*	*1 696.4*	*1 529.6*	*1 510.6*	*1 453.0*	*-11.5%*

* Total world includes non-OECD total, OECD total as well as international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions: Sectoral Approach - Oil

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**1 560.0**	**2 184.3**	**2 818.3**	**2 884.2**	**3 164.6**	**3 111.8**	**3 484.8**	**4 002.6**	**4 489.7**	**4 760.4**	**4 880.2**	**54.2%**
Albania	2.4	2.3	4.4	2.8	3.4	1.7	3.0	3.9	3.2	3.4	3.5	4.3%
Armenia	..	..	..	..	11.2	0.7	0.8	1.0	1.0	1.0	1.0	-91.4%
Azerbaijan	..	..	..	..	22.6	18.5	17.5	13.1	8.0	7.8	9.2	-59.4%
Belarus	..	..	..	..	87.8	30.6	22.3	20.9	26.1	20.9	24.1	-72.5%
Bosnia and Herzegovina	..	..	..	..	5.4	1.5	3.2	3.2	4.4	4.4	4.4	-18.9%
Bulgaria	29.1	34.9	38.6	28.0	26.1	13.7	10.4	12.0	11.4	11.0	10.1	-61.3%
Croatia	..	..	..	..	13.4	11.0	11.3	12.9	12.5	10.6	10.6	-21.3%
Cyprus **	1.8	1.7	2.6	2.6	3.6	5.0	6.1	6.8	7.4	7.1	6.9	91.2%
Georgia	..	..	..	..	19.2	5.8	2.3	2.1	2.5	2.6	2.8	-85.6%
Gibraltar	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	195.4%
Kazakhstan	..	..	..	..	58.3	32.5	22.1	25.8	27.8	45.8	37.9	-35.0%
Kosovo ***	..	..	..	..	..	..	1.0	1.4	1.7	1.6	1.7	..
Kyrgyzstan	..	..	..	..	8.9	1.4	1.2	1.4	2.5	2.9	3.1	-64.5%
Latvia	..	..	..	..	10.3	5.5	3.8	4.1	4.0	4.1	3.9	-62.0%
Lithuania	..	..	..	..	19.7	9.0	6.5	7.5	7.1	7.1	6.7	-65.9%
FYR of Macedonia	..	..	..	..	3.0	2.3	2.7	2.6	2.7	2.6	2.7	-12.4%
Malta	0.6	0.6	1.0	0.7	1.6	2.2	2.1	2.7	2.5	2.5	2.5	57.5%
Republic of Moldova	..	..	..	..	14.8	3.1	1.2	1.9	2.0	2.2	2.3	-84.3%
Montenegro ***	..	..	..	..	..	..	..	0.5	0.8	0.8	0.7	..
Romania	31.5	40.0	51.6	41.1	50.4	32.4	27.3	29.4	24.8	22.7	23.6	-53.2%
Russian Federation	..	..	..	..	625.4	351.2	332.4	309.9	314.9	314.8	350.2	-44.0%
Serbia ***	..	..	..	..	14.1	4.8	4.1	11.5	10.3	9.9	9.6	-32.0%
Tajikistan	..	..	..	..	5.2	1.2	0.7	0.9	1.6	1.7	1.8	-66.1%
Turkmenistan	..	..	..	..	14.7	7.0	11.1	14.5	14.4	16.1	16.9	15.3%
Ukraine	..	..	..	..	195.5	75.4	33.7	38.2	38.3	37.3	37.1	-81.0%
Uzbekistan	..	..	..	..	30.6	19.8	19.6	14.5	12.4	11.1	10.2	-66.7%
Former Soviet Union ****	688.9	1 018.6	1 210.0	1 193.3	..	..	..	..	..	..	..	..
Former Yugoslavia ****	25.5	31.8	39.2	38.3	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**779.9**	**1 130.0**	**1 347.5**	**1 307.0**	**1 245.4**	**636.6**	**546.8**	**543.2**	**544.7**	**552.6**	**584.0**	**-53.1%**
Algeria	6.2	9.1	14.8	20.8	24.0	22.9	25.2	31.5	42.3	43.7	46.8	94.7%
Angola	1.6	1.9	2.5	2.7	3.0	2.9	4.0	5.9	12.8	14.3	14.3	379.5%
Benin	0.3	0.5	0.4	0.5	0.3	0.2	1.4	2.7	4.2	4.5	4.7	+
Botswana	..	..	..	0.5	1.0	1.2	1.7	2.0	2.5	2.7	2.8	184.2%
Cameroon	0.7	1.0	1.7	2.4	2.7	2.5	2.8	2.9	4.3	4.5	4.6	73.4%
Congo	0.6	0.6	0.7	0.8	0.6	0.5	0.5	0.8	1.4	1.6	1.8	186.2%
Dem. Rep. of Congo	1.5	1.8	2.3	2.4	2.1	1.1	0.8	1.3	1.7	1.8	1.9	-7.9%
Côte d'Ivoire	2.4	3.0	3.4	3.0	2.6	3.1	3.2	2.9	3.4	3.1	2.8	6.8%
Egypt	18.8	23.4	36.4	54.1	60.8	57.2	66.0	82.0	90.1	89.6	90.1	48.2%
Eritrea	..	..	..	..	..	0.8	0.6	0.6	0.4	0.5	0.5	..
Ethiopia	1.3	1.2	1.4	1.4	2.2	2.4	3.2	4.5	5.8	5.5	5.9	165.1%
Gabon	0.5	0.7	1.3	1.6	0.7	1.1	1.1	1.4	1.7	1.8	1.9	166.8%
Ghana	1.9	2.3	2.3	2.2	2.7	3.3	5.1	6.4	9.1	9.5	9.2	239.7%
Kenya	3.0	3.4	4.4	4.4	5.1	5.4	7.6	7.2	10.4	10.8	10.7	108.6%
Libya	1.6	6.7	13.1	15.5	18.3	26.6	30.8	34.8	40.5	43.3	24.9	35.9%
Morocco	5.6	8.1	12.3	13.6	15.4	19.2	19.0	25.9	30.9	34.0	36.9	139.7%
Mozambique	1.4	1.1	1.6	1.2	0.9	1.0	1.3	1.5	2.0	2.2	2.5	162.0%
Namibia	..	..	..	..	..	1.7	1.8	2.4	2.9	3.0	3.1	..
Nigeria	5.0	10.1	23.4	25.2	22.1	21.9	30.0	38.5	29.8	35.9	36.0	62.8%
Senegal	1.2	1.6	2.0	2.1	2.1	2.4	3.6	4.3	4.8	4.9	5.0	135.8%
South Africa	27.5	34.1	35.1	39.6	46.4	48.8	49.1	59.1	67.9	69.8	73.5	58.5%
Sudan	3.3	3.3	3.7	4.2	5.5	4.6	5.9	9.7	15.0	15.3	14.5	163.6%
United Rep. of Tanzania	1.5	1.5	1.6	1.5	1.7	2.4	2.4	4.2	4.1	4.2	4.5	165.4%
Togo	0.3	0.3	0.4	0.3	0.6	0.6	1.0	1.0	1.1	1.2	1.2	118.7%
Tunisia	3.4	4.0	6.7	7.1	9.0	9.4	11.3	12.5	12.0	11.9	11.2	24.9%
Zambia	1.5	2.5	1.9	1.7	1.7	1.7	1.4	1.8	1.7	1.7	2.1	20.4%
Zimbabwe	1.6	2.1	1.8	2.0	2.6	3.6	3.0	2.1	1.7	1.9	2.0	-23.4%
Other Africa	7.1	8.5	12.4	10.9	13.4	16.0	17.3	20.7	23.6	25.3	26.5	97.3%
Africa	**99.9**	**132.9**	**187.7**	**221.8**	**247.7**	**264.4**	**301.1**	**370.5**	**428.0**	**448.5**	**442.0**	**78.5%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions: Sectoral Approach - Oil

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	2.2	3.3	4.6	4.6	5.2	8.4	9.5	12.9	13.0	13.8	14.6	181.0%
Brunei Darussalam	0.2	0.2	0.5	0.6	0.7	1.1	1.2	1.3	1.8	1.7	1.9	153.6%
Cambodia	..	..	..	..	..	1.5	2.0	2.6	3.6	3.7	4.0	..
Chinese Taipei	19.0	31.3	54.9	43.5	68.8	86.6	95.0	94.3	79.7	82.6	78.2	13.7%
India	56.3	63.3	85.3	119.3	165.8	223.8	301.5	309.1	415.4	438.0	430.1	159.3%
Indonesia	24.4	36.4	61.0	70.0	97.9	134.3	166.4	189.2	192.5	208.6	219.8	124.5%
DPR of Korea	2.6	4.2	8.0	7.4	7.9	3.9	3.1	2.8	2.6	2.5	2.6	-67.6%
Malaysia	12.6	16.0	23.9	27.9	37.6	53.2	57.5	64.8	67.7	67.2	73.1	94.6%
Mongolia	..	..	..	2.2	2.4	1.0	1.3	1.7	2.3	2.5	3.1	25.5%
Myanmar	3.9	3.0	3.9	3.5	2.1	4.0	5.4	6.2	3.3	3.3	3.5	68.1%
Nepal	0.2	0.2	0.3	0.5	0.7	1.5	2.1	2.1	2.7	2.9	2.9	306.5%
Pakistan	8.8	11.0	13.2	20.9	30.6	43.7	58.0	49.4	63.1	62.2	61.3	100.1%
Philippines	23.0	28.9	31.8	23.0	33.0	50.1	48.0	41.8	37.7	39.8	36.9	11.9%
Singapore	6.1	8.4	12.6	16.1	29.0	38.0	44.3	35.0	38.2	45.1	45.0	55.1%
Sri Lanka	2.7	2.7	3.7	3.6	3.7	5.5	10.6	13.2	11.6	12.9	13.6	265.9%
Thailand	15.8	20.6	31.8	28.5	52.7	90.5	82.7	103.4	90.9	95.9	100.5	90.7%
Vietnam	10.6	6.7	5.6	5.8	8.2	13.9	23.8	35.5	46.4	51.4	55.9	579.2%
Other Asia	3.8	5.4	8.6	8.0	8.8	8.3	9.2	13.2	15.4	16.8	17.9	102.4%
Asia	**192.1**	**241.6**	**349.9**	**385.2**	**555.3**	**769.4**	**921.3**	**978.3**	**1 087.8**	**1 151.1**	**1 164.8**	**109.8%**
People's Rep. of China	115.2	195.9	251.2	246.1	299.5	423.6	568.0	812.4	923.8	1 060.3	1 102.9	268.3%
Hong Kong, China	9.0	10.7	14.3	9.3	8.5	11.6	16.4	8.4	9.7	8.9	8.6	1.6%
China	**124.2**	**206.6**	**265.5**	**255.3**	**308.0**	**435.2**	**584.4**	**820.8**	**933.5**	**1 069.2**	**1 111.5**	**260.9%**
Argentina	67.3	65.1	70.9	54.4	53.1	62.1	66.0	67.9	78.7	83.7	84.9	60.0%
Bolivia	2.0	2.9	3.6	3.3	3.7	4.6	4.7	5.7	7.4	8.0	8.6	132.1%
Brazil	83.9	127.8	160.9	133.6	158.8	195.2	241.1	240.2	260.8	284.0	302.6	90.6%
Colombia	18.1	18.6	20.7	22.3	26.8	36.4	34.6	33.5	32.7	33.9	37.0	38.4%
Costa Rica	1.3	1.7	2.2	2.0	2.6	4.4	4.4	5.6	6.0	6.3	6.4	147.0%
Cuba	20.1	23.4	29.7	31.2	33.1	21.8	25.9	23.6	29.4	27.2	25.9	-21.6%
Dominican Republic	3.4	5.2	6.3	5.6	7.4	11.0	16.9	15.7	14.9	14.6	14.2	93.0%
Ecuador	3.5	5.9	10.5	11.7	12.8	15.4	17.3	23.4	29.5	30.0	30.1	134.1%
El Salvador	1.4	2.0	1.7	1.8	2.2	4.6	5.2	6.3	6.2	5.8	6.0	170.0%
Guatemala	2.3	3.0	4.2	3.2	3.2	5.8	7.9	9.5	10.4	9.1	9.3	190.2%
Haiti	0.4	0.4	0.6	0.6	0.9	0.9	1.4	2.0	2.3	2.0	2.1	132.9%
Honduras	1.1	1.3	1.7	1.7	2.2	3.5	4.1	6.5	6.9	6.8	7.0	226.1%
Jamaica	5.5	7.4	6.5	4.6	7.1	8.2	9.6	10.1	7.3	7.0	7.5	5.8%
Netherlands Antilles	14.4	10.2	8.7	4.6	2.8	2.8	4.5	4.7	5.5	4.3	5.1	87.1%
Nicaragua	1.5	1.8	1.8	1.8	1.8	2.5	3.5	4.0	4.2	4.5	4.5	147.1%
Panama	2.5	3.1	2.9	2.6	2.5	4.0	4.8	5.8	7.6	8.1	8.6	245.2%
Paraguay	0.6	0.7	1.4	1.4	1.9	3.4	3.3	3.4	4.1	4.7	4.9	156.3%
Peru	14.4	17.0	18.9	16.2	17.6	21.8	23.0	21.5	25.4	25.4	26.3	49.8%
Trinidad and Tobago	2.7	3.0	2.8	2.5	2.1	2.2	2.6	4.0	4.3	4.7	4.5	115.3%
Uruguay	5.1	5.4	5.5	3.1	3.7	4.5	5.2	5.1	7.5	6.3	7.4	98.7%
Venezuela	30.7	37.5	59.1	56.0	57.0	59.9	64.6	84.1	97.6	107.2	97.8	71.6%
Other Non-OECD Americas	7.7	10.7	10.1	9.1	12.4	13.3	14.3	14.6	15.7	17.3	18.0	45.7%
Non-OECD Americas	**290.1**	**354.3**	**430.7**	**373.3**	**415.5**	**488.5**	**564.8**	**597.2**	**664.3**	**701.1**	**718.9**	**73.0%**
Bahrain	1.2	1.2	1.7	1.8	2.1	2.4	2.5	3.6	4.1	4.2	4.0	91.5%
Islamic Republic of Iran	35.8	61.4	79.7	128.0	140.5	169.5	190.7	223.6	245.2	222.2	223.2	58.8%
Iraq	8.6	12.4	24.5	35.2	49.6	91.4	64.3	71.4	80.7	91.5	96.6	94.5%
Jordan	1.3	2.1	4.3	7.4	9.0	11.7	13.9	14.8	12.1	13.4	17.8	97.1%
Kuwait	4.1	5.2	13.4	27.4	17.2	18.4	30.8	46.7	57.9	53.8	52.3	203.9%
Lebanon	4.5	5.6	6.6	6.5	5.5	12.4	13.6	14.0	18.7	17.3	17.8	227.0%
Oman	0.3	0.7	1.5	3.6	5.3	8.0	8.8	12.2	19.3	19.4	20.8	291.8%
Qatar	0.3	0.7	1.4	1.7	2.1	2.6	3.1	7.0	16.3	17.7	16.7	688.4%
Saudi Arabia	10.0	17.1	77.9	88.5	111.3	143.0	174.7	208.5	277.5	299.7	313.4	181.7%
Syrian Arab Republic	6.0	9.0	13.0	20.8	25.0	28.0	29.4	44.1	44.3	40.0	38.5	54.1%
United Arab Emirates	0.4	1.6	9.5	15.8	18.8	21.1	21.4	28.1	33.8	36.6	39.0	107.7%
Yemen	1.2	1.7	3.4	4.8	6.4	9.3	13.2	18.6	21.4	22.0	18.9	193.8%
Middle East	**73.8**	**118.9**	**237.0**	**341.5**	**392.8**	**517.8**	**566.3**	**692.6**	**831.3**	**837.8**	**858.9**	**118.7%**

CO_2 emissions: Sectoral Approach - Natural gas

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**2 058.6**	**2 281.5**	**2 768.1**	**3 163.1**	**3 806.0**	**4 108.1**	**4 685.7**	**5 353.1**	**5 762.8**	**6 226.9**	**6 334.8**	**66.4%**
Annex I Parties	*..*	*..*	*..*	*..*	*3 070.2*	*3 178.2*	*3 471.3*	*3 637.9*	*3 626.8*	*3 883.7*	*3 882.3*	*26.5%*
Annex II Parties	*1 438.5*	*1 503.1*	*1 663.5*	*1 616.2*	*1 794.6*	*2 123.1*	*2 426.3*	*2 481.5*	*2 535.3*	*2 690.4*	*2 657.9*	*48.1%*
North America	*1 257.4*	*1 143.4*	*1 179.4*	*1 058.1*	*1 135.1*	*1 309.4*	*1 423.0*	*1 359.9*	*1 410.1*	*1 479.7*	*1 506.5*	*32.7%*
Europe	*168.1*	*331.0*	*414.3*	*446.1*	*505.1*	*631.3*	*783.8*	*885.9*	*846.8*	*918.0*	*820.6*	*62.5%*
Asia Oceania	*12.9*	*28.7*	*69.8*	*112.0*	*154.4*	*182.4*	*219.5*	*235.8*	*278.4*	*292.7*	*330.8*	*114.2%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 269.1*	*1 042.1*	*1 016.2*	*1 103.5*	*1 024.1*	*1 120.1*	*1 138.6*	*-10.3%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*735.8*	*929.9*	*1 214.3*	*1 715.2*	*2 136.1*	*2 343.2*	*2 452.5*	*233.3%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*2 024.8*	*1 979.4*	*2 155.3*	*2 357.1*	*2 291.7*	*2 468.5*	*2 442.9*	*20.6%*
Intl. marine bunkers	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Intl. aviation bunkers	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Non-OECD Total **	**575.5**	**719.4**	**1 013.7**	**1 438.4**	**1 878.4**	**1 826.7**	**2 038.1**	**2 561.3**	**2 887.3**	**3 146.8**	**3 264.6**	**73.8%**
OECD Total ***	**1 483.1**	**1 562.1**	**1 754.3**	**1 724.7**	**1 927.6**	**2 281.4**	**2 647.6**	**2 791.7**	**2 875.5**	**3 080.1**	**3 070.2**	**59.3%**
Canada	67.9	87.3	99.7	113.9	123.8	149.1	168.1	170.2	175.6	178.8	191.8	55.0%
Chile	1.3	1.1	1.4	1.6	2.1	2.1	10.3	14.0	5.8	9.8	10.9	417.6%
Mexico	20.2	25.6	43.2	53.6	52.1	55.9	66.6	88.3	111.7	123.8	130.5	150.6%
United States	1 189.5	1 056.1	1 079.7	944.2	1 011.3	1 160.2	1 254.9	1 189.7	1 234.5	1 300.9	1 314.7	30.0%
OECD Americas	**1 278.9**	**1 170.1**	**1 224.0**	**1 113.3**	**1 189.3**	**1 367.4**	**1 499.9**	**1 462.2**	**1 527.6**	**1 613.3**	**1 647.9**	**38.6%**
Australia	4.1	8.9	16.7	24.4	32.8	37.7	43.9	54.8	66.7	68.7	73.8	124.9%
Israel	0.2	0.1	0.2	0.1	0.0	0.0	0.0	3.1	8.4	10.1	9.4	+
Japan	8.5	19.2	51.2	81.5	114.6	137.1	164.8	173.7	204.2	215.8	249.4	117.6%
Korea	-	-	-	-	6.4	19.4	39.9	63.8	72.0	90.7	97.8	+
New Zealand	0.2	0.6	1.8	6.1	7.0	7.6	10.8	7.3	7.5	8.2	7.6	8.6%
OECD Asia Oceania	**13.1**	**28.8**	**70.0**	**112.0**	**160.8**	**201.8**	**259.4**	**302.8**	**358.8**	**393.6**	**438.0**	**172.4%**
Austria	5.6	7.5	9.0	10.1	11.8	14.7	15.0	18.8	17.2	18.9	17.9	51.1%
Belgium	11.3	18.2	20.5	16.9	18.9	24.5	30.7	33.3	34.6	38.8	34.9	84.8%
Czech Republic	1.9	3.1	5.6	9.1	11.5	14.5	17.0	17.8	15.2	17.4	15.7	37.4%
Denmark	-	0.0	0.0	1.5	4.2	7.3	10.3	10.4	9.2	10.3	8.7	109.5%
Estonia	..	..	..	..	2.7	1.3	1.5	1.8	1.2	1.3	1.2	-56.7%
Finland	-	1.5	1.7	1.9	5.1	6.6	7.9	8.4	7.9	8.7	7.7	50.8%
France	19.2	33.0	47.4	54.5	56.1	65.8	81.1	92.5	86.8	95.6	82.9	47.9%
Germany	38.8	86.4	114.9	105.3	118.1	147.0	158.4	171.1	162.8	179.0	163.0	38.0%
Greece	-	-	-	0.1	0.2	0.1	3.9	5.4	6.6	7.2	8.8	+
Hungary	6.8	10.7	17.6	19.2	19.8	20.3	21.6	27.0	20.7	22.2	21.1	6.4%
Iceland	-	-	-	-	-	-	-	-	-	-	-	-
Ireland	-	-	1.7	4.5	4.0	5.0	7.7	8.2	9.9	10.8	9.5	138.6%
Italy	23.9	40.8	49.3	59.8	89.2	102.8	134.0	163.2	148.0	157.4	148.0	65.8%
Luxembourg	0.0	0.8	1.0	0.7	1.0	1.3	1.6	2.7	2.6	2.8	2.4	140.5%
Netherlands	47.0	72.5	69.4	75.3	70.2	78.6	79.7	80.7	80.5	90.1	78.5	11.8%
Norway	-	0.4	2.0	2.8	4.6	8.1	8.0	10.0	11.3	11.9	11.3	145.4%
Poland	11.4	13.5	17.6	18.2	18.5	18.3	20.6	26.2	26.1	27.9	28.1	52.2%
Portugal	-	-	-	-	-	-	4.6	8.6	9.6	10.4	10.6	x
Slovak Republic	2.9	4.9	5.1	6.7	11.7	11.7	13.1	13.2	9.8	11.2	10.1	-13.3%
Slovenia	..	..	..	..	1.8	1.7	1.8	2.1	1.9	2.0	1.7	-4.1%
Spain	0.7	1.8	3.1	4.5	10.5	17.4	34.7	67.2	72.3	72.0	66.9	534.9%
Sweden	-	-	-	0.2	1.2	1.6	1.6	1.7	2.5	3.2	2.6	110.9%
Switzerland	0.0	1.0	1.9	2.9	3.8	5.1	5.6	6.5	6.3	7.0	6.2	64.9%
Turkey	-	-	-	0.1	6.5	13.0	28.9	52.8	67.4	73.2	85.7	+
United Kingdom	21.6	67.2	92.3	105.2	106.0	145.4	199.0	197.2	178.8	193.8	160.8	51.6%
OECD Europe ***	**191.1**	**363.2**	**460.3**	**499.4**	**577.5**	**712.2**	**888.3**	**1 026.8**	**989.2**	**1 073.1**	**984.3**	**70.4%**
European Union - 27	*..*	*..*	*..*	*..*	*657.9*	*745.6*	*889.4*	*1 002.1*	*939.6*	*1 018.5*	*919.5*	*39.8%*

* Total world includes non-OECD total, OECD total as well as international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions: Sectoral Approach - Natural gas

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**575.5**	**719.4**	**1 013.7**	**1 438.4**	**1 878.4**	**1 826.7**	**2 038.1**	**2 561.3**	**2 887.3**	**3 146.8**	**3 264.6**	**73.8%**
Albania	0.2	0.6	0.8	0.8	0.5	0.1	0.0	0.0	0.0	0.0	0.0	-94.1%
Armenia	..	..	..	..	8.3	2.7	2.6	3.1	3.3	3.0	3.7	-55.6%
Azerbaijan	..	..	..	..	32.1	15.4	10.4	17.7	16.8	16.1	17.6	-45.1%
Belarus	..	..	..	..	27.5	25.6	32.2	38.3	33.1	41.2	38.9	41.5%
Bosnia and Herzegovina	..	..	..	..	0.9	0.3	0.5	0.7	0.4	0.5	0.5	-43.0%
Bulgaria	0.6	2.3	7.4	10.8	12.0	10.0	6.2	5.9	4.7	5.0	5.8	-51.7%
Croatia	..	..	..	..	4.7	4.1	4.7	5.1	5.2	5.7	5.4	14.5%
Cyprus **	-	-	-	-	-	-	-	-	-	-	-	-
Georgia	..	..	..	..	10.6	2.2	2.2	2.2	2.3	2.2	3.2	-69.7%
Gibraltar	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	..	..	..	..	24.8	23.5	15.2	28.5	46.3	53.7	54.2	118.6%
Kosovo ***	..	..	..	..	..	..	-	-	-	-	-	..
Kyrgyzstan	..	..	..	..	3.6	1.7	1.3	1.4	0.6	0.6	0.7	-81.7%
Latvia	..	..	..	..	5.6	2.3	2.5	3.2	2.8	3.4	3.0	-46.3%
Lithuania	..	..	..	..	10.3	4.3	4.3	5.3	4.6	5.4	5.6	-46.3%
FYR of Macedonia	..	..	..	..	-	-	0.1	0.1	0.1	0.2	0.3	x
Malta	-	-	-	-	-	-	-	-	-	-	-	-
Republic of Moldova	..	..	..	..	7.6	6.4	4.8	5.5	5.0	5.3	5.2	-31.8%
Montenegro ***	..	..	..	..	..	..	..	-	-	-	-	..
Romania	52.1	62.6	75.7	74.6	67.4	43.1	30.6	30.2	23.2	23.7	24.2	-64.1%
Russian Federation	..	..	..	..	866.3	728.8	718.1	783.4	784.8	851.7	873.5	0.8%
Serbia ***	..	..	..	..	6.0	3.0	3.4	4.3	3.2	4.1	4.3	-29.5%
Tajikistan	..	..	..	..	3.2	1.2	1.5	1.3	0.8	0.8	0.8	-74.8%
Turkmenistan	..	..	..	..	28.6	26.2	25.5	33.3	35.2	40.5	44.6	55.8%
Ukraine	..	..	..	..	209.4	156.1	141.9	144.0	90.5	102.1	104.3	-50.2%
Uzbekistan	..	..	..	..	75.5	77.4	93.4	89.4	86.2	85.0	94.4	25.0%
Former Soviet Union ****	431.8	520.4	704.2	1 021.2	..	..	..	..	..	..	..	..
Former Yugoslavia ****	1.9	2.9	5.8	11.0	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**486.6**	**588.8**	**793.9**	**1 118.3**	**1 405.0**	**1 134.3**	**1 101.6**	**1 203.1**	**1 149.5**	**1 250.2**	**1 290.2**	**-8.2%**
Algeria	2.4	4.6	13.4	21.7	27.4	32.4	37.6	46.9	53.7	53.4	56.5	105.9%
Angola	0.1	0.1	0.2	0.2	1.0	1.1	1.1	1.2	1.3	1.4	1.4	38.9%
Benin	-	-	-	-	-	-	-	-	-	-	-	-
Botswana	..	..	..	-	-	-	-	-	-	-	-	-
Cameroon	-	-	-	-	-	-	-	-	0.5	0.5	0.5	x
Congo	0.0	0.0	-	0.0	-	-	-	0.0	0.1	0.2	0.3	x
Dem. Rep. of Congo	-	-	-	-	-	-	-	-	0.0	0.0	0.0	x
Côte d'Ivoire	-	-	-	-	-	0.1	3.0	2.9	2.8	3.1	3.1	x
Egypt	0.2	0.1	3.4	7.9	14.9	22.9	32.4	67.6	79.7	85.3	94.9	535.6%
Eritrea	..	..	..	..	..	-	-	-	-	-	-	..
Ethiopia	-	-	-	-	-	-	-	-	-	-	-	-
Gabon	-	-	0.0	0.1	0.2	0.3	0.2	0.3	0.3	0.4	0.3	56.9%
Ghana	-	-	-	-	-	-	-	-	0.0	0.8	1.6	x
Kenya	-	-	-	-	-	-	-	-	-	-	-	-
Libya	2.1	2.5	5.5	7.0	9.0	8.5	8.8	10.4	11.8	12.3	10.0	10.6%
Morocco	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.9	1.2	1.3	1.7	+
Mozambique	-	-	-	-	-	0.0	0.0	0.0	0.2	0.3	0.3	x
Namibia	..	..	..	..	..	-	-	-	-	-	-	..
Nigeria	0.4	1.0	2.9	6.9	6.9	9.2	12.0	16.7	12.5	15.9	16.8	144.0%
Senegal	-	-	-	-	0.0	0.1	0.0	0.0	0.0	0.0	0.0	175.7%
South Africa	-	-	-	-	-	-	-	-	-	3.9	3.8	x
Sudan	-	-	-	-	-	-	-	-	-	-	-	-
United Rep. of Tanzania	-	-	-	-	-	-	-	0.8	1.3	1.5	1.7	x
Togo	-	-	-	-	-	-	-	-	-	-	-	-
Tunisia	0.0	0.5	0.8	2.2	2.8	4.6	6.4	7.7	9.3	10.0	10.0	255.3%
Zambia	-	-	-	-	-	-	-	-	-	-	-	-
Zimbabwe	-	-	-	-	-	-	-	-	-	-	-	-
Other Africa	-	-	-	-	-	-	0.0	0.1	0.1	0.1	0.1	x
Africa	**5.2**	**9.0**	**26.3**	**46.2**	**62.4**	**79.2**	**101.5**	**155.5**	**175.0**	**190.4**	**202.9**	**225.1%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions: Sectoral Approach - Natural gas

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	0.6	0.9	2.1	4.0	7.3	10.9	14.6	22.2	33.9	36.0	36.0	393.8%
Brunei Darussalam	0.2	1.2	2.1	2.3	2.5	3.4	3.2	3.5	5.7	6.2	7.0	180.2%
Cambodia	..	..	..	..	..	-	-	-	-	-	-	..
Chinese Taipei	1.9	2.7	3.3	1.9	3.3	7.8	12.9	20.7	24.0	30.4	33.3	916.0%
India	1.3	1.9	2.5	8.0	20.6	35.3	47.1	68.5	104.7	115.3	109.8	432.4%
Indonesia	0.3	1.0	7.3	13.6	30.6	54.1	55.0	60.7	75.0	77.0	75.7	147.4%
DPR of Korea	-	-	-	-	-	-	-	-	-	-	-	-
Malaysia	0.0	0.1	0.1	4.4	6.9	23.1	45.5	59.4	59.7	58.8	63.5	818.0%
Mongolia	..	..	..	-	-	-	-	-	-	-	-	-
Myanmar	0.1	0.3	0.6	1.8	1.7	2.8	2.7	3.0	2.3	3.1	3.2	85.0%
Nepal	-	-	-	-	-	-	-	-	-	-	-	-
Pakistan	5.3	7.7	10.3	13.4	20.9	28.0	34.5	56.9	59.3	57.2	59.2	183.1%
Philippines	-	-	-	-	-	0.0	0.0	6.7	7.5	7.1	7.7	x
Singapore	0.0	0.1	0.1	0.1	0.1	3.1	2.9	13.9	16.7	18.2	18.8	+
Sri Lanka	-	-	-	-	-	-	-	-	-	-	-	-
Thailand	-	-	-	6.8	11.7	20.4	40.6	60.6	66.7	76.1	70.6	505.1%
Vietnam	-	-	-	0.1	0.0	0.4	2.6	11.0	16.6	19.0	18.9	+
Other Asia	0.5	0.5	0.2	1.2	0.6	0.5	0.5	0.5	0.7	0.9	0.9	57.6%
Asia	**10.2**	**16.3**	**28.8**	**57.7**	**106.2**	**189.9**	**262.1**	**387.4**	**472.8**	**505.4**	**504.5**	**375.1%**
People's Rep. of China	7.3	17.3	28.0	21.9	26.9	31.6	43.4	82.9	163.7	194.7	238.5	787.4%
Hong Kong, China	-	-	-	-	-	0.1	5.7	5.1	5.1	6.5	5.1	x
China	**7.3**	**17.3**	**28.0**	**21.9**	**26.9**	**31.7**	**49.2**	**88.0**	**168.8**	**201.3**	**243.5**	**806.2%**
Argentina	12.3	17.1	21.7	30.5	43.4	51.2	68.5	78.4	87.9	88.4	92.3	113.0%
Bolivia	0.1	0.3	0.6	0.8	1.4	2.3	2.4	3.7	5.4	6.0	6.6	359.9%
Brazil	0.5	1.1	2.2	5.0	7.0	8.8	17.4	38.0	39.1	51.8	50.3	622.2%
Colombia	2.6	3.2	5.7	7.3	7.5	8.3	12.8	14.3	17.4	18.2	17.4	131.4%
Costa Rica	-	-	-	-	-	-	-	-	-	-	-	-
Cuba	0.1	0.2	0.1	0.1	0.1	0.2	1.1	1.5	2.2	2.0	1.9	+
Dominican Republic	-	-	-	-	-	-	-	0.4	1.0	1.5	1.6	x
Ecuador	-	-	-	-	-	-	-	0.6	0.9	1.0	0.9	x
El Salvador	-	-	-	-	-	-	-	-	-	-	-	-
Guatemala	-	-	-	-	-	-	-	-	-	-	-	-
Haiti	-	-	-	-	-	-	-	-	-	-	-	-
Honduras	-	-	-	-	-	-	-	-	-	-	-	-
Jamaica	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands Antilles	-	-	-	-	-	-	-	-	-	-	-	-
Nicaragua	-	-	-	-	-	-	-	-	-	-	-	-
Panama	-	-	-	-	-	-	-	-	-	-	-	-
Paraguay	-	-	-	-	-	-	-	-	-	-	-	-
Peru	0.6	0.8	1.0	1.3	1.0	0.6	1.1	3.9	9.6	12.8	15.1	+
Trinidad and Tobago	3.4	2.8	5.1	7.1	9.3	10.0	18.4	29.9	35.9	38.0	36.3	291.0%
Uruguay	-	-	-	-	-	-	0.1	0.2	0.1	0.1	0.2	x
Venezuela	20.8	24.3	32.6	38.5	46.3	58.4	61.7	64.0	69.4	73.7	60.7	31.0%
Other Non-OECD Americas	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.4	1.5	1.5	1.6	+
Non-OECD Americas	**40.5**	**49.9**	**69.1**	**90.7**	**116.1**	**139.8**	**184.2**	**236.3**	**270.4**	**295.2**	**284.9**	**145.3%**
Bahrain	1.8	4.1	5.7	8.6	9.6	9.3	11.6	14.6	18.4	18.9	18.7	94.3%
Islamic Republic of Iran	5.5	8.1	8.5	16.8	37.0	80.0	121.1	193.5	265.5	282.6	294.0	694.6%
Iraq	1.8	3.1	2.4	1.6	3.8	6.0	6.0	3.5	9.0	9.8	11.7	209.5%
Jordan	-	-	-	-	0.2	0.5	0.5	3.2	7.2	5.3	2.0	759.4%
Kuwait	9.9	9.9	13.2	9.7	11.5	17.7	18.3	23.5	21.9	27.7	32.4	181.9%
Lebanon	-	-	-	-	-	-	-	-	0.1	0.5	-	-
Oman	-	-	0.7	2.1	4.9	6.7	11.4	16.0	34.5	37.6	42.6	767.3%
Qatar	1.9	4.2	6.3	10.5	12.2	16.2	20.9	29.4	39.9	45.7	54.6	349.5%
Saudi Arabia	2.7	5.4	21.2	34.1	46.3	62.0	75.0	116.8	126.0	139.1	143.9	211.1%
Syrian Arab Republic	-	-	0.1	0.3	3.2	4.8	10.4	10.8	13.0	17.5	14.7	360.4%
United Arab Emirates	2.0	3.3	9.6	19.8	33.1	48.5	64.2	79.7	114.7	118.0	122.1	268.6%
Yemen	-	-	-	-	-	-	-	-	0.8	1.7	1.8	x
Middle East	**25.6**	**38.0**	**67.7**	**103.6**	**161.8**	**251.8**	**339.5**	**491.0**	**650.9**	**704.4**	**738.6**	**356.5%**

CO_2 emissions: Reference Approach

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**14 611.9**	**16 154.7**	**18 627.9**	**19 281.9**	**21 545.7**	**22 112.2**	**23 981.8**	**27 965.3**	**29 729.4**	**31 545.1**	**32 331.6**	**50.1%**
Annex I Parties	*..*	*..*	*..*	*..*	*14 167.8*	*13 311.9*	*13 866.9*	*14 311.8*	*13 118.5*	*13 607.0*	*13 468.2*	*-4.9%*
Annex II Parties	*8 638.2*	*8 951.2*	*9 719.4*	*9 303.1*	*9 843.5*	*10 213.6*	*11 020.3*	*11 370.0*	*10 316.6*	*10 584.0*	*10 336.4*	*5.0%*
North America	*4 612.3*	*4 775.0*	*5 189.1*	*5 009.7*	*5 283.9*	*5 571.2*	*6 195.0*	*6 389.3*	*5 784.1*	*5 910.8*	*5 778.2*	*9.4%*
Europe	*3 098.9*	*3 118.8*	*3 387.8*	*3 151.9*	*3 201.1*	*3 170.9*	*3 255.2*	*3 367.3*	*3 030.5*	*3 100.1*	*2 964.9*	*-7.4%*
Asia Oceania	*927.0*	*1 057.4*	*1 142.4*	*1 141.5*	*1 358.5*	*1 471.5*	*1 570.1*	*1 613.4*	*1 502.0*	*1 573.1*	*1 593.3*	*17.3%*
Annex I EIT	*..*	*..*	*..*	*..*	*4 183.8*	*2 938.8*	*2 641.0*	*2 719.5*	*2 543.3*	*2 746.6*	*2 830.4*	*-32.3%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*6 759.2*	*8 091.1*	*9 278.5*	*12 680.0*	*15 587.3*	*16 841.7*	*17 749.7*	*162.6%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*9 039.8*	*7 970.9*	*7 925.1*	*8 181.6*	*7 499.9*	*7 837.9*	*7 789.7*	*-13.8%*
Intl. marine bunkers	**344.8**	**332.4**	**348.4**	**298.3**	**362.3**	**421.0**	**486.0**	**557.3**	**593.2**	**643.9**	**645.1**	**78.1%**
Intl. aviation bunkers	**167.3**	**171.8**	**199.8**	**222.6**	**256.4**	**288.2**	**350.4**	**416.1**	**430.5**	**452.5**	**468.5**	**82.7%**
Non-OECD Total **	**4 638.3**	**5 726.6**	**7 112.3**	**8 133.5**	**9 652.3**	**9 688.4**	**10 484.0**	**13 850.8**	**16 540.1**	**17 883.1**	**18 829.1**	**95.1%**
OECD Total ***	**9 461.5**	**9 923.9**	**10 967.4**	**10 627.5**	**11 274.7**	**11 714.6**	**12 661.4**	**13 141.1**	**12 165.6**	**12 565.6**	**12 388.8**	**9.9%**
Canada	337.2	392.3	426.2	399.9	423.6	452.7	518.8	545.4	487.9	482.7	470.8	11.1%
Chile	21.5	17.5	21.7	19.8	31.2	39.3	53.7	59.8	65.7	72.7	78.9	152.7%
Mexico	100.8	145.1	242.2	265.7	289.8	299.2	345.2	414.7	426.8	435.5	452.9	56.3%
United States	4 275.1	4 382.7	4 763.0	4 609.9	4 860.4	5 118.5	5 676.2	5 843.9	5 296.2	5 428.1	5 307.4	9.2%
OECD Americas	**4 734.6**	**4 937.7**	**5 453.0**	**5 295.3**	**5 604.9**	**5 909.7**	**6 593.9**	**6 863.7**	**6 276.6**	**6 418.9**	**6 309.9**	**12.6%**
Australia	156.9	182.7	212.1	220.0	260.9	278.6	330.4	350.8	377.8	375.0	373.0	42.9%
Israel	17.2	21.0	23.1	23.5	34.9	48.1	55.2	56.2	62.9	67.4	67.7	94.3%
Japan	755.6	857.1	913.0	899.8	1 074.1	1 165.5	1 208.4	1 229.3	1 092.7	1 167.2	1 190.1	10.8%
Korea	54.8	77.9	125.7	157.7	238.6	355.3	441.0	464.6	518.1	579.6	608.7	155.1%
New Zealand	14.4	17.7	17.3	21.7	23.4	27.4	31.3	33.3	31.5	30.9	30.3	29.3%
OECD Asia Oceania	**999.0**	**1 156.3**	**1 291.2**	**1 322.6**	**1 631.9**	**1 874.8**	**2 066.4**	**2 134.3**	**2 083.1**	**2 220.1**	**2 269.8**	**39.1%**
Austria	51.2	52.3	58.3	55.9	57.2	60.2	62.6	75.4	64.3	70.0	67.4	17.7%
Belgium	120.0	119.5	129.8	103.9	109.4	116.3	121.4	114.8	107.9	115.0	111.1	1.5%
Czech Republic	168.5	158.9	170.1	174.5	160.7	126.8	125.3	124.9	111.4	115.8	114.1	-29.0%
Denmark	56.2	52.6	61.0	61.0	51.0	58.1	51.3	48.5	46.5	47.4	42.3	-17.0%
Estonia	..	..	..	..	38.5	19.2	16.3	17.8	15.8	20.0	20.4	-47.1%
Finland	39.9	45.5	57.4	50.5	52.1	54.0	54.0	56.7	55.3	63.6	57.1	9.7%
France	434.6	431.8	473.0	374.3	367.7	349.9	362.3	389.8	355.2	357.6	337.6	-8.2%
Germany	993.1	976.5	1 076.4	1 022.5	970.9	875.8	841.8	811.4	742.2	775.3	752.5	-22.5%
Greece	25.3	35.4	45.4	55.9	69.2	72.6	85.3	93.1	88.2	81.1	79.2	14.4%
Hungary	58.2	67.4	80.7	78.8	68.1	59.4	55.0	57.3	48.0	49.3	47.7	-30.0%
Iceland	1.4	1.6	1.8	1.6	2.0	1.9	2.1	2.2	2.0	1.9	1.9	-6.3%
Ireland	22.5	21.8	26.3	27.2	30.9	31.5	40.0	41.4	40.3	38.8	35.8	15.8%
Italy	280.3	311.2	349.0	339.6	384.0	413.0	433.6	458.8	391.0	396.6	390.0	1.6%
Luxembourg	15.2	13.1	12.0	10.0	10.3	8.2	8.0	11.5	10.0	10.6	10.4	0.8%
Netherlands	130.4	138.0	155.7	147.2	158.5	172.3	174.5	182.6	178.9	190.7	177.9	12.2%
Norway	23.4	24.0	28.6	27.1	28.5	31.8	37.0	37.6	46.9	51.4	41.7	46.1%
Poland	310.3	367.5	450.4	445.3	363.3	340.0	294.6	301.6	294.8	316.1	313.7	-13.6%
Portugal	14.9	18.9	24.6	25.5	38.5	49.4	59.9	63.4	53.7	48.7	48.5	25.9%
Slovak Republic	48.3	55.0	60.9	59.4	54.5	42.3	37.4	38.9	34.0	36.2	34.2	-37.2%
Slovenia	..	..	..	..	13.5	14.2	13.9	15.7	15.2	15.4	15.3	13.5%
Spain	121.5	162.0	192.0	187.5	212.1	239.0	286.8	342.2	285.9	268.2	270.9	27.7%
Sweden	84.5	80.9	72.0	61.8	51.8	54.7	49.5	51.3	43.0	51.7	50.9	-1.6%
Switzerland	39.7	37.4	39.8	39.5	42.9	40.3	40.9	43.6	43.8	41.0	39.0	-9.0%
Turkey	43.7	62.4	73.3	99.7	138.2	157.3	203.5	219.7	256.2	273.8	298.9	116.2%
United Kingdom	644.9	596.3	584.7	560.8	564.0	541.7	544.2	543.1	475.3	490.5	450.6	-20.1%
OECD Europe ***	**3 727.9**	**3 830.0**	**4 223.1**	**4 009.6**	**4 037.9**	**3 930.0**	**4 001.2**	**4 143.0**	**3 806.0**	**3 926.6**	**3 809.1**	**-5.7%**
European Union - 27	*..*	*..*	*..*	*..*	*4 132.0*	*3 915.1*	*3 875.7*	*4 012.7*	*3 609.1*	*3 712.5*	*3 591.1*	*-13.1%*

* Total world includes non-OECD total, OECD total as well as international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions: Reference Approach

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**4 638.3**	**5 726.6**	**7 112.3**	**8 133.5**	**9 652.3**	**9 688.4**	**10 484.0**	**13 850.8**	**16 540.1**	**17 883.1**	**18 829.1**	**95.1%**
Albania	4.1	4.8	8.0	7.5	6.5	1.9	3.0	4.2	3.3	3.7	4.0	-39.4%
Armenia	..	..	..	..	20.5	3.4	3.4	4.1	4.3	4.0	4.7	-77.3%
Azerbaijan	..	..	..	..	56.7	35.8	29.0	32.2	27.5	26.8	29.6	-47.8%
Belarus	..	..	..	..	127.2	63.0	60.0	63.9	63.8	64.6	69.7	-45.2%
Bosnia and Herzegovina	..	..	..	..	24.0	3.4	13.7	15.8	20.2	20.7	23.6	-1.7%
Bulgaria	63.8	73.0	84.2	85.1	74.8	57.3	43.5	47.8	43.0	45.1	50.0	-33.2%
Croatia	..	..	..	..	21.5	16.0	17.9	21.0	20.0	19.3	19.0	-11.9%
Cyprus **	1.8	1.7	2.6	2.8	4.1	5.0	6.3	6.6	7.5	7.1	6.8	65.4%
Georgia	..	..	..	..	30.3	7.2	4.4	4.4	5.5	5.1	6.4	-79.0%
Gibraltar	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	197.1%
Kazakhstan	..	..	..	..	240.9	171.2	116.3	166.0	202.1	235.3	247.1	2.6%
Kosovo ***	..	..	..	..	..	..	5.0	6.5	8.3	8.6	8.5	..
Kyrgyzstan	..	..	..	..	22.5	4.4	4.4	4.9	5.2	6.3	6.7	-70.3%
Latvia	..	..	..	..	18.7	9.1	6.7	7.3	7.2	8.0	7.6	-59.4%
Lithuania	..	..	..	..	33.5	14.4	10.8	13.9	12.9	13.9	13.8	-59.0%
FYR of Macedonia	..	..	..	..	8.6	8.2	8.5	8.9	8.6	8.4	9.2	6.7%
Malta	0.6	0.6	1.0	1.1	2.3	2.2	2.1	2.7	2.4	2.6	2.5	10.4%
Republic of Moldova	..	..	..	..	30.2	12.1	6.6	7.8	7.4	8.0	8.0	-73.6%
Montenegro ***	..	..	..	..	..	..	..	1.7	1.6	2.5	2.5	..
Romania	111.6	138.9	177.8	178.9	172.2	128.5	88.6	94.3	79.1	77.3	82.7	-52.0%
Russian Federation	..	..	..	..	2 337.2	1 620.4	1 545.2	1 579.8	1 528.6	1 678.2	1 743.3	-25.4%
Serbia ***	..	..	..	..	63.1	45.3	43.6	50.8	47.2	46.9	50.7	-19.6%
Tajikistan	..	..	..	..	11.2	2.4	2.2	2.3	2.8	2.9	3.0	-73.1%
Turkmenistan	..	..	..	..	46.0	34.1	37.5	48.3	50.2	57.2	62.0	34.9%
Ukraine	..	..	..	..	700.0	428.3	325.8	335.3	269.4	287.5	299.1	-57.3%
Uzbekistan	..	..	..	..	120.6	104.8	123.9	113.3	108.1	104.8	114.3	-5.2%
Former Soviet Union ****	2 368.9	2 842.6	3 242.5	3 448.3	..	..	..	..	..	..	..	..
Former Yugoslavia ****	65.5	77.1	101.5	127.2	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**2 616.4**	**3 138.8**	**3 617.7**	**3 851.1**	**4 172.9**	**2 778.7**	**2 508.8**	**2 644.3**	**2 536.5**	**2 745.3**	**2 875.1**	**-31.1%**
Algeria	9.8	15.0	29.0	46.4	54.7	59.8	66.0	80.1	101.1	98.8	104.0	90.0%
Angola	1.7	2.1	2.7	2.9	4.1	3.9	5.1	7.1	13.9	15.6	15.5	276.3%
Benin	0.3	0.5	0.4	0.5	0.2	0.2	1.5	2.3	4.1	4.5	4.7	+
Botswana	..	..	..	1.6	2.9	3.3	4.2	4.4	4.3	5.0	4.7	61.1%
Cameroon	0.7	1.0	1.7	2.5	2.7	2.6	3.0	3.2	6.2	6.3	5.2	91.3%
Congo	0.6	0.6	0.7	0.9	0.7	0.6	0.5	1.0	1.7	2.0	2.3	215.6%
Dem. Rep. of Congo	2.7	2.9	2.9	3.4	4.1	3.0	1.7	2.3	2.7	3.1	3.3	-19.7%
Côte d'Ivoire	2.4	3.1	3.4	2.5	2.9	3.7	6.6	6.5	5.9	6.0	6.3	121.7%
Egypt	20.2	25.6	38.6	67.3	83.9	88.1	99.6	153.7	173.9	179.0	188.9	125.0%
Eritrea	..	..	..	..	..	0.8	0.6	0.8	0.5	0.5	0.5	..
Ethiopia	1.4	1.2	1.4	1.4	2.4	2.6	3.2	4.5	5.8	5.5	5.9	143.8%
Gabon	1.7	2.1	2.2	1.9	1.1	1.2	1.3	1.7	2.1	2.2	2.2	106.3%
Ghana	1.9	2.5	2.2	2.5	2.8	3.6	5.4	6.3	8.6	10.4	11.3	297.0%
Kenya	3.2	3.4	4.3	4.6	5.7	5.7	7.7	7.5	11.0	11.7	11.9	107.9%
Libya	3.8	9.9	17.2	24.7	27.2	34.8	39.6	45.4	52.6	56.1	35.0	28.5%
Morocco	6.8	9.9	13.9	16.4	20.2	25.2	30.0	40.4	42.7	46.9	50.0	148.3%
Mozambique	3.0	2.4	2.4	1.5	1.0	1.1	1.5	1.5	2.2	2.5	2.9	185.1%
Namibia	..	..	..	..	..	1.7	1.8	2.5	3.0	3.1	3.1	..
Nigeria	5.9	11.8	26.9	33.2	38.2	34.1	43.5	59.9	44.2	53.5	55.6	45.4%
Senegal	1.2	1.6	2.0	1.9	2.2	2.5	3.7	4.7	5.3	5.7	5.8	166.9%
South Africa	149.7	176.2	215.3	288.5	291.6	334.1	345.9	410.8	462.2	458.0	451.9	55.0%
Sudan	4.1	3.9	3.9	4.3	5.6	4.7	7.1	10.2	15.9	15.5	14.8	165.5%
United Rep. of Tanzania	2.1	1.9	2.2	2.0	2.0	3.0	2.3	5.0	5.4	5.8	6.3	206.8%
Togo	0.3	0.3	0.4	0.3	0.6	0.6	1.0	1.0	1.1	1.2	1.2	118.7%
Tunisia	3.7	5.0	8.0	10.1	12.3	14.0	17.4	19.6	21.1	22.2	21.6	75.5%
Zambia	3.4	3.3	3.4	2.9	2.7	2.1	1.7	2.2	1.8	1.9	2.2	-18.4%
Zimbabwe	7.9	7.7	8.0	9.6	15.4	15.3	12.7	10.5	8.0	8.7	9.5	-38.3%
Other Africa	7.3	8.7	11.3	12.1	14.6	17.2	20.0	24.3	30.3	30.2	31.6	116.3%
Africa	**246.0**	**302.9**	**404.5**	**545.8**	**602.2**	**669.7**	**734.3**	**919.4**	**1 037.5**	**1 061.9**	**1 058.3**	**75.8%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions: Reference Approach

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	3.4	4.7	7.2	9.3	14.1	21.3	26.7	38.4	50.8	54.3	55.4	291.8%
Brunei Darussalam	0.4	1.7	3.2	4.3	4.0	5.3	5.8	5.3	7.4	7.8	9.3	131.4%
Cambodia	..	..	..	..	..	1.5	2.1	2.9	3.8	3.9	4.2	..
Chinese Taipei	31.2	43.2	75.1	74.8	118.5	162.7	229.1	269.0	252.9	273.0	273.7	131.0%
India	198.5	238.4	283.5	419.2	590.8	791.0	973.6	1 200.4	1 693.1	1 761.5	1 806.2	205.7%
Indonesia	25.5	39.3	71.8	88.1	145.4	220.2	276.0	341.9	385.3	411.7	408.9	181.3%
DPR of Korea	69.4	79.6	108.6	129.8	117.6	75.8	68.7	73.9	66.4	63.9	64.9	-44.8%
Malaysia	13.8	16.9	28.9	37.5	53.6	85.4	117.4	166.8	177.1	191.7	196.9	267.6%
Mongolia	..	..	..	11.6	12.7	10.1	8.8	9.5	11.8	12.7	13.1	3.3%
Myanmar	4.7	4.2	5.3	6.1	4.2	6.8	10.0	12.0	9.2	8.5	8.4	100.8%
Nepal	0.2	0.3	0.5	0.5	0.9	1.8	3.1	3.0	3.4	4.1	4.1	344.6%
Pakistan	17.1	21.3	26.6	40.0	61.3	82.0	103.7	123.3	138.9	139.8	139.3	127.1%
Philippines	23.5	28.7	33.3	26.2	38.5	57.7	67.4	70.4	67.2	78.1	77.7	101.6%
Singapore	7.0	9.7	14.1	16.2	29.4	50.7	50.6	43.9	59.3	71.6	68.4	132.5%
Sri Lanka	2.9	2.9	3.9	3.7	4.0	5.8	10.6	12.4	12.1	13.1	15.7	294.3%
Thailand	17.3	21.8	34.3	40.7	81.2	140.9	155.3	215.6	218.3	236.5	242.7	198.9%
Vietnam	16.1	16.7	14.8	17.1	17.2	27.8	44.0	79.7	113.8	129.6	136.1	691.0%
Other Asia	8.3	10.1	16.4	10.0	10.1	9.4	11.2	14.8	18.3	21.6	23.2	128.6%
Asia	**439.4**	**539.6**	**727.7**	**935.4**	**1 303.5**	**1 756.1**	**2 164.3**	**2 683.2**	**3 289.0**	**3 483.3**	**3 548.1**	**172.2%**
People's Rep. of China	867.1	1 133.2	1 488.8	1 793.2	2 394.3	2 945.4	3 305.7	5 427.0	7 122.2	7 881.1	8 621.3	260.1%
Hong Kong, China	9.1	11.1	14.3	22.8	30.9	34.9	39.2	40.1	47.1	42.1	47.0	52.2%
China	**876.2**	**1 144.3**	**1 503.1**	**1 816.0**	**2 425.2**	**2 980.3**	**3 344.8**	**5 467.1**	**7 169.3**	**7 923.3**	**8 668.3**	**257.4%**
Argentina	86.0	89.8	101.2	92.7	106.8	118.0	134.1	147.7	171.6	177.3	181.1	69.6%
Bolivia	2.2	3.4	4.6	4.3	4.8	7.6	7.4	11.2	13.1	14.2	14.9	212.4%
Brazil	93.9	143.9	189.8	180.5	205.0	253.4	309.9	330.0	345.6	398.1	417.0	103.4%
Colombia	27.2	32.0	35.0	39.1	48.9	57.9	57.6	60.1	69.1	73.3	69.0	41.2%
Costa Rica	1.4	1.8	2.3	2.0	2.9	4.0	4.9	5.3	6.4	6.5	6.7	127.8%
Cuba	20.1	23.7	31.1	32.2	32.3	23.0	27.2	25.8	32.1	29.7	28.7	-10.9%
Dominican Republic	3.4	5.6	6.5	7.1	9.0	13.2	19.6	18.0	18.3	18.8	19.5	116.1%
Ecuador	3.3	6.2	10.8	12.0	12.7	16.1	18.5	28.1	31.7	31.0	31.5	148.3%
El Salvador	1.5	2.1	1.8	1.9	2.3	4.8	5.3	5.9	5.9	5.8	6.2	164.5%
Guatemala	2.4	2.6	4.3	3.3	3.6	5.8	9.0	10.6	11.1	10.3	10.4	189.5%
Haiti	0.4	0.4	0.6	0.8	0.9	0.9	1.4	2.0	2.2	2.0	2.1	126.5%
Honduras	1.1	1.3	1.7	1.6	2.2	3.5	4.5	6.9	7.1	7.3	7.6	253.1%
Jamaica	5.2	7.4	6.4	4.5	7.1	8.4	10.0	10.2	7.5	7.1	7.6	7.2%
Netherlands Antilles *	13.6	9.6	10.0	4.9	4.0	3.3	4.3	4.2	5.8	4.5	5.4	35.9%
Nicaragua	1.5	1.9	1.9	1.9	1.7	2.6	3.4	4.1	4.2	4.3	4.6	161.5%
Panama	3.7	3.7	2.6	2.8	2.6	4.1	5.3	6.7	7.7	8.7	9.9	286.8%
Paraguay	0.6	0.7	1.4	1.4	1.9	3.5	3.2	3.4	4.1	4.7	4.9	153.0%
Peru	16.1	19.4	21.8	18.4	18.2	22.8	26.1	29.3	37.1	40.2	43.2	136.8%
Trinidad and Tobago	5.0	4.8	8.3	11.0	12.7	12.8	21.8	33.2	40.5	42.7	41.7	228.1%
Uruguay	5.8	5.9	6.0	3.4	4.0	4.7	6.1	5.6	7.6	6.5	7.6	89.9%
Venezuela	43.6	60.3	88.8	99.2	104.9	116.6	124.8	151.6	157.9	176.3	160.1	52.6%
Other Non-OECD Americas	11.6	15.5	15.1	9.3	12.5	13.4	14.3	15.3	16.9	18.5	18.6	49.1%
Non-OECD Americas	**349.8**	**442.1**	**551.9**	**534.2**	**601.1**	**700.5**	**818.7**	**915.4**	**1 003.4**	**1 088.2**	**1 098.6**	**82.7%**
Bahrain	3.1	4.8	6.3	9.8	10.2	11.6	13.8	17.3	22.1	22.5	22.6	122.0%
Islamic Republic of Iran	43.5	70.1	105.2	150.6	186.9	266.6	322.7	443.4	529.2	519.6	519.6	178.1%
Iraq	11.2	16.4	27.1	39.9	56.2	99.7	74.1	75.4	92.1	107.0	112.6	100.2%
Jordan	1.4	2.2	4.4	7.6	9.4	12.4	14.1	18.4	19.5	19.0	19.6	108.9%
Kuwait	14.0	15.1	26.0	37.5	24.1	38.3	50.6	72.4	83.1	84.4	82.9	244.7%
Lebanon	5.0	6.0	6.9	6.6	5.5	12.8	14.1	14.5	19.3	18.3	18.5	235.6%
Oman	0.7	0.7	3.1	5.5	10.8	15.7	20.0	26.0	42.8	56.6	61.5	471.4%
Qatar	2.2	4.9	7.7	12.3	13.9	17.7	23.6	36.7	54.9	62.4	71.5	412.9%
Saudi Arabia	17.8	22.8	86.3	119.6	143.2	216.9	245.2	341.7	417.6	461.4	441.2	208.0%
Syrian Arab Republic	7.2	9.0	12.3	21.9	29.6	33.8	40.6	55.8	58.0	56.9	52.6	77.7%
United Arab Emirates	2.4	4.9	18.9	34.8	50.5	67.6	80.3	100.6	143.0	149.1	157.2	211.2%
Yemen	1.9	1.8	3.4	4.8	7.1	9.9	13.9	19.3	22.6	24.1	20.9	192.4%
Middle East	**110.5**	**158.8**	**307.5**	**451.0**	**547.5**	**803.1**	**913.0**	**1 221.4**	**1 504.3**	**1 581.2**	**1 580.8**	**188.7%**

* Reference Approach emissions for the Netherlands Antilles in 1990 are overstated as data for lubricants and bitumen (which store carbon) are not available.

CO_2 emissions from international marine bunkers

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World	**344.85**	**332.41**	**348.39**	**298.28**	**362.28**	**421.02**	**486.02**	**557.33**	**593.19**	**643.91**	**645.13**	**78.1%**
Annex I Parties	*..*	*..*	*..*	*..*	*233.38*	*229.76*	*250.32*	*271.44*	*252.21*	*263.89*	*265.26*	*13.7%*
Annex II Parties	*202.63*	*216.81*	*234.71*	*171.25*	*223.14*	*226.46*	*245.20*	*262.90*	*244.22*	*250.28*	*248.81*	*11.5%*
North America	*26.41*	*36.12*	*93.91*	*56.43*	*93.55*	*93.68*	*92.24*	*83.63*	*78.67*	*84.81*	*85.13*	*-9.0%*
Europe	*120.20*	*110.37*	*97.05*	*87.88*	*108.75*	*110.94*	*132.31*	*155.74*	*146.58*	*147.34*	*147.56*	*35.7%*
Asia Oceania	*56.02*	*70.31*	*43.75*	*26.94*	*20.84*	*21.84*	*20.65*	*23.53*	*18.97*	*18.12*	*16.12*	*-22.7%*
Annex I EIT	*..*	*..*	*..*	*..*	*9.78*	*2.58*	*1.80*	*3.14*	*3.56*	*7.82*	*12.11*	*23.9%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*128.90*	*191.27*	*235.70*	*285.89*	*340.99*	*380.02*	*379.87*	*194.7%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*142.24*	*138.53*	*158.09*	*184.29*	*171.23*	*175.47*	*177.47*	*24.8%*
Non-OECD Total *	**137.93**	**112.19**	**109.88**	**121.69**	**130.74**	**167.60**	**201.52**	**249.62**	**313.61**	**357.46**	**361.26**	**176.3%**
OECD Total **	**206.91**	**220.22**	**238.51**	**176.59**	**231.54**	**253.42**	**284.50**	**307.71**	**279.58**	**286.45**	**283.87**	**22.6%**
Canada	3.07	2.58	4.71	1.18	2.87	3.17	3.34	1.88	2.13	2.18	1.68	-41.5%
Chile	0.60	0.37	0.27	0.09	0.57	1.12	1.94	3.30	2.61	1.28	1.57	174.4%
Mexico	0.26	0.38	1.00	1.33	..	2.55	3.83	2.70	2.39	2.50	2.85	..
United States	23.34	33.54	89.20	55.26	90.68	90.51	88.90	81.76	76.54	82.63	83.46	-8.0%
OECD Americas	**27.27**	**36.88**	**95.18**	**57.85**	**94.12**	**97.35**	**98.02**	**89.63**	**83.67**	**88.60**	**89.56**	**-4.8%**
Australia	5.10	5.03	3.68	2.28	2.14	2.79	2.96	2.74	2.80	2.25	1.99	-6.7%
Israel	..	..	..	0.35	0.38	0.65	0.58	0.81	1.10	1.06	0.97	156.9%
Japan	49.88	64.20	38.90	23.92	17.66	17.92	16.93	19.80	15.08	14.80	13.12	-25.7%
Korea	1.53	0.17	0.31	1.69	5.27	21.35	30.46	33.24	26.81	28.75	27.96	430.7%
New Zealand	1.04	1.08	1.18	0.74	1.04	1.13	0.76	0.99	1.09	1.07	1.01	-3.3%
OECD Asia Oceania	**57.55**	**70.48**	**44.06**	**28.98**	**26.49**	**43.84**	**51.69**	**57.58**	**46.88**	**47.93**	**45.05**	**70.1%**
Austria	-	-	-	-	-	-	-	-	-	-	-	-
Belgium	8.06	8.64	7.52	7.30	12.91	12.31	17.02	24.40	22.34	24.29	21.59	67.3%
Czech Republic	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	2.09	1.67	1.32	1.34	3.02	4.96	4.03	2.41	1.60	2.16	2.19	-27.5%
Estonia	..	..	..	..	0.57	0.28	0.33	0.38	0.71	0.69	0.59	4.2%
Finland	0.24	0.30	1.84	1.45	1.78	1.04	2.10	1.59	0.78	0.66	0.63	-64.9%
France	12.71	14.53	12.52	7.52	7.72	6.69	8.83	8.11	7.53	7.30	7.84	1.6%
Germany	12.93	10.52	11.00	10.85	7.79	6.43	6.85	7.83	8.57	8.72	8.57	10.0%
Greece	1.78	2.70	2.63	3.51	7.97	11.17	11.28	9.02	8.25	8.60	8.75	9.8%
Hungary	-	-	-	-	-	-	-	-	-	-	-	-
Iceland	..	..	..	0.02	0.10	0.14	0.21	0.20	0.16	0.18	0.19	101.2%
Ireland	0.24	0.20	0.23	0.09	0.06	0.36	0.47	0.32	0.35	0.26	0.30	430.4%
Italy	22.80	17.97	13.08	10.75	8.37	7.59	5.16	7.06	7.43	9.43	7.90	-5.6%
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	28.26	32.86	29.39	27.45	34.29	35.59	41.98	53.31	44.61	43.72	46.98	37.0%
Norway	1.90	1.49	0.87	1.03	1.39	2.19	2.56	2.16	1.54	1.21	1.18	-15.3%
Poland	1.63	2.21	2.22	1.63	1.24	0.44	0.90	1.01	0.78	0.68	0.53	-56.9%
Portugal	2.32	2.00	1.34	1.48	1.91	1.52	2.08	1.82	1.51	1.46	1.78	-6.7%
Slovak Republic	-	-	-	-	-	-	-	-	-	-	-	-
Slovenia	..	..	..	..	..	..	..	0.07	0.10	0.06	0.10	..
Spain	5.94	3.44	5.07	6.76	11.46	10.00	18.97	25.00	27.52	26.53	27.14	136.8%
Sweden	3.58	3.45	2.66	1.76	2.09	3.30	4.28	6.12	6.70	6.19	5.43	159.5%
Switzerland	..	..	..	..	0.06	0.05	0.03	0.04	0.02	0.03	0.02	-55.6%
Turkey	0.26	0.29	..	0.25	0.37	0.58	1.25	3.31	0.85	1.15	0.47	26.6%
United Kingdom	17.37	10.60	7.57	6.56	7.84	7.62	6.44	6.34	7.67	6.60	7.08	-9.8%
OECD Europe **	**122.10**	**112.87**	**99.26**	**89.76**	**110.93**	**112.23**	**134.79**	**160.50**	**149.02**	**149.93**	**149.26**	34.6%
European Union - 27	*..*	*..*	*..*	*..*	*111.25*	*111.38*	*133.91*	*159.39*	*152.64*	*154.15*	*153.25*	37.8%

* Includes Estonia and Slovenia prior to 1990.
** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions from international marine bunkers

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**137.93**	**112.19**	**109.88**	**121.69**	**130.74**	**167.60**	**201.52**	**249.62**	**313.61**	**357.46**	**361.26**	**176.3%**
Albania	..	..	..	..	..	..	..	..	..	..	..	..
Armenia	..	..	..	..	-	-	-	-	-	-	-	-
Azerbaijan	..	..	..	..	..	..	..	..	0.22	0.23	0.24	..
Belarus	..	..	..	..	-	-	-	-	-	-	-	-
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Bulgaria	..	..	..	0.71	0.18	0.85	0.20	0.34	0.64	0.30	0.24	30.4%
Croatia	..	..	..	..	0.15	0.10	0.06	0.08	0.02	0.02	0.07	-49.3%
Cyprus **	0.01	0.06	0.05	0.11	0.18	0.21	0.60	0.90	0.68	0.58	0.61	242.3%
Georgia	..	..	..	..	..	0.16	..	..	..	..	..	..
Gibraltar	0.55	0.58	0.41	0.88	1.38	2.69	3.22	4.82	7.60	7.75	8.26	499.2%
Kazakhstan	..	..	..	..	..	..	..	..	..	..	0.06	..
Kosovo ***	..	..	..	..	..	..	..	..	..	..	..	..
Kyrgyzstan	..	..	..	..	-	-	-	-	-	-	-	-
Latvia	..	..	..	..	1.48	0.47	0.02	0.81	0.86	0.79	0.67	-54.6%
Lithuania	..	..	..	..	0.30	0.44	0.29	0.45	0.40	0.45	0.45	50.9%
FYR of Macedonia	-	-	-	-	-	-	-	-	-	-	-	-
Malta	0.19	0.08	0.09	0.06	0.09	0.14	2.07	2.09	3.57	4.64	3.86	+
Republic of Moldova	..	..	..	..	..	..	..	..	..	..	..	..
Montenegro ***	..	..	..	..	..	..	..	..	..	..	..	..
Romania	..	..	..	..	..	..	..	..	0.05	0.05	0.03	..
Russian Federation	..	..	..	..	5.87	..	..	..	..	4.79	9.43	60.7%
Serbia ***	..	..	..	..	..	..	..	..	..	..	..	..
Tajikistan	..	..	..	..	-	-	-	-	-	-	-	-
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Ukraine	..	..	..	..	..	..	..	..	..	..	..	..
Uzbekistan	..	..	..	..	-	-	-	-	-	-	-	-
Former Soviet Union ****	13.17	14.09	14.09	13.79	..	..	..	..	..	..	..	..
Former Yugoslavia ****	..	..	..	..	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**13.92**	**14.81**	**14.64**	**15.53**	**9.62**	**5.06**	**6.45**	**9.49**	**14.04**	**19.59**	**23.93**	**148.7%**
Algeria	0.61	0.77	1.29	1.16	1.36	1.17	0.77	1.17	0.91	1.01	0.80	-41.2%
Angola	0.77	0.48	0.83	0.10	0.02	0.03	..	0.35	0.60	0.57	0.52	+
Benin	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	..	..	..	..	..	..	..	..	..	..	..	..
Cameroon	..	..	0.12	0.03	0.04	0.09	0.06	0.04	0.16	0.14	0.14	245.2%
Congo	..	..	..	..	..	..	..	..	..	..	..	..
Dem. Rep. of Congo	0.40	0.22	0.08	0.09	0.10	0.01	..	..	..	..	..	-100.0%
Côte d'Ivoire	0.06	0.01	1.35	0.73	0.12	0.27	0.29	0.35	0.05	0.06	0.04	-69.3%
Egypt	0.06	1.08	3.19	4.71	5.25	7.73	8.58	4.51	0.96	1.36	1.20	-77.2%
Eritrea	..	..	..	..	..	0.42	..	..	..	..	..	..
Ethiopia	0.07	0.01	0.01	0.03	0.04	0.52	..	..	..	..	..	-100.0%
Gabon	0.20	0.14	0.19	0.22	0.08	0.44	0.60	0.60	0.60	0.69	0.67	745.6%
Ghana	0.16	0.14	0.10	..	..	..	0.16	0.12	0.23	0.30	0.40	..
Kenya	1.47	1.05	0.56	0.45	0.55	0.17	0.21	0.00	0.02	0.05	0.08	-84.9%
Libya	0.01	0.01	0.02	0.04	0.25	0.28	1.02	1.39	1.15	1.15	0.35	42.5%
Morocco	0.24	0.18	0.21	0.04	0.06	0.04	0.05	0.05	0.03	0.40	0.40	533.7%
Mozambique	0.76	0.35	0.27	0.10	0.09	0.01	0.00	0.01	..	..	..	-100.0%
Namibia	..	..	..	..	..	..	..	..	..	..	..	..
Nigeria	0.02	0.11	0.25	0.34	0.58	1.42	1.15	1.55	1.98	2.14	2.30	295.2%
Senegal	2.99	2.09	0.84	0.33	0.11	0.09	0.30	0.36	0.19	0.20	0.21	83.9%
South Africa	10.81	7.15	5.25	3.41	5.95	10.30	8.51	8.52	5.52	9.72	9.54	60.3%
Sudan	..	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.06	0.06	0.07	200.0%
United Rep. of Tanzania	0.05	0.05	0.12	0.08	0.08	0.07	0.08	0.10	0.13	0.14	0.15	88.2%
Togo	..	..	..	..	..	..	0.01	0.01	0.01	0.01	0.02	..
Tunisia	0.06	0.02	0.02	0.01	0.07	0.06	0.06	0.05	0.08	0.04	0.06	-7.1%
Zambia	-	-	-	-	-	-	-	-	-	-	-	-
Zimbabwe	..	..	..	..	..	..	..	..	..	..	..	..
Other Africa	3.02	2.08	1.77	1.82	1.71	1.42	1.48	1.36	1.48	1.52	1.59	-7.0%
Africa	**21.76**	**15.95**	**16.48**	**13.70**	**16.49**	**24.55**	**23.36**	**20.60**	**14.18**	**19.58**	**18.53**	**12.4%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions from international marine bunkers

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	0.06	0.05	0.19	0.07	0.06	0.11	0.11	0.11	0.11	0.11	0.11	78.6%
Brunei Darussalam	..	..	0.00	..	0.11	0.21	0.22	0.27	0.26	0.28	0.30	164.9%
Cambodia	..	..	..	..	..	..	..	..	..	..	..	..
Chinese Taipei	0.39	0.33	0.66	1.62	4.86	7.57	11.02	7.50	5.05	5.45	5.00	2.8%
India	0.71	0.57	0.72	0.34	0.47	0.39	0.27	0.08	0.42	0.32	0.37	-20.4%
Indonesia	0.70	1.09	0.79	0.68	1.68	1.28	0.36	0.42	0.52	0.56	0.60	-64.6%
DPR of Korea	..	..	..	..	..	..	..	..	..	..	..	..
Malaysia	0.11	0.22	0.18	0.31	0.29	0.53	0.69	0.19	0.15	0.19	0.64	120.6%
Mongolia	..	..	..	..	..	..	..	..	..	..	..	..
Myanmar	0.01	0.00	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	x
Nepal	-	-	-	-	-	-	-	-	-	-	-	-
Pakistan	0.29	0.21	0.47	0.08	0.11	0.05	0.08	0.25	0.73	0.55	0.31	194.1%
Philippines	1.29	0.45	0.59	0.49	0.21	0.35	0.67	0.38	0.63	0.58	0.68	228.7%
Singapore	8.89	10.43	14.96	15.14	33.87	35.28	57.58	78.60	112.19	125.94	133.02	292.8%
Sri Lanka	1.19	1.29	1.10	1.01	1.21	1.09	0.50	0.53	0.57	0.64	0.62	-48.8%
Thailand	0.21	0.25	0.50	0.65	1.70	3.02	2.46	5.18	4.75	4.42	3.33	95.7%
Vietnam	..	..	..	0.07	0.09	0.22	0.46	0.79	0.92	1.02	1.12	+
Other Asia	0.57	0.53	0.46	0.20	0.21	0.30	0.33	0.44	0.35	0.40	0.43	108.3%
Asia	**14.42**	**15.43**	**20.62**	**20.66**	**44.86**	**50.40**	**74.76**	**94.76**	**126.66**	**140.48**	**146.54**	**226.6%**
People's Rep. of China	0.80	1.36	2.23	2.88	4.29	8.86	8.66	15.89	22.58	27.62	29.17	579.5%
Hong Kong, China	1.96	1.69	2.83	3.11	4.52	7.16	10.61	17.79	32.35	38.59	28.98	540.8%
China	**2.76**	**3.05**	**5.06**	**5.99**	**8.82**	**16.03**	**19.28**	**33.69**	**54.92**	**66.21**	**58.15**	**559.7%**
Argentina	0.66	0.28	1.32	2.00	2.22	1.71	1.48	2.19	2.99	3.75	4.32	94.4%
Bolivia	-	-	-	-	-	-	-	-	-	-	-	-
Brazil	1.00	1.17	1.42	1.71	1.72	3.64	9.16	10.92	11.75	12.61	13.53	688.2%
Colombia	0.95	0.49	0.31	0.22	0.33	0.58	0.74	1.13	1.54	1.97	2.07	529.9%
Costa Rica	0.10	..	0.13	0.14	0.24	0.37	0.34	0.35	0.10	0.09	0.08	-66.7%
Cuba	..	..	..	0.12	0.05	0.05	0.06	0.09	0.09	0.09	0.09	81.8%
Dominican Republic	..	..	..	..	..	..	..	..	..	..	..	..
Ecuador	0.28	..	0.34	0.11	0.49	0.99	0.87	0.69	3.95	3.13	1.44	191.5%
El Salvador	..	..	..	..	..	..	..	..	..	..	..	..
Guatemala	0.18	0.27	0.40	0.38	0.43	0.53	0.64	0.74	0.86	0.89	0.92	117.2%
Haiti	..	..	..	..	..	..	..	..	..	..	..	..
Honduras	..	..	..	..	..	..	..	..	0.00	0.00	0.00	..
Jamaica	0.16	0.26	0.10	0.04	0.10	0.12	0.12	0.26	1.00	0.85	0.90	802.8%
Netherlands Antilles	7.71	7.34	7.27	6.13	5.18	5.32	6.28	6.71	7.06	7.18	7.27	40.5%
Nicaragua	..	..	..	..	..	..	..	..	..	..	..	..
Panama	1.71	3.41	3.10	4.02	4.95	6.43	8.06	7.29	8.21	8.63	7.64	54.4%
Paraguay	-	-	-	-	-	-	-	-	-	-	-	-
Peru	0.10	0.12	0.47	0.62	0.12	0.53	0.31	1.00	0.55	0.76	0.77	553.0%
Trinidad and Tobago	5.12	3.54	1.42	0.31	0.11	0.16	1.19	1.47	1.38	1.06	1.17	974.5%
Uruguay	0.27	0.20	0.24	0.33	0.37	1.21	0.92	1.12	1.60	1.41	1.17	218.9%
Venezuela	9.13	4.82	1.99	1.76	2.50	2.30	2.06	2.33	2.81	2.78	3.08	23.1%
Other Non-OECD Americas	3.08	2.04	2.79	1.87	0.86	0.71	0.79	0.64	0.54	0.58	0.60	-30.7%
Non-OECD Americas	**30.43**	**23.94**	**21.31**	**19.77**	**19.66**	**24.61**	**33.01**	**36.94**	**44.45**	**45.79**	**45.07**	**129.2%**
Bahrain	0.56	0.55	0.60	0.47	0.25	0.25	0.25	0.24	0.23	0.24	0.24	-3.8%
Islamic Republic of Iran	1.02	1.23	1.22	0.90	1.23	1.84	2.25	2.95	6.31	7.31	7.01	470.5%
Iraq	0.26	0.29	0.37	0.46	0.40	0.02	0.48	0.32	0.45	0.44	0.51	27.7%
Jordan	..	..	..	..	..	0.03	0.13	0.25	0.12	0.05	0.03	..
Kuwait	6.29	6.32	5.60	2.38	0.55	1.82	1.43	2.15	1.20	1.68	3.26	489.3%
Lebanon	0.71	0.03	..	..	..	0.04	0.05	0.06	0.07	0.08	0.08	..
Oman	3.85	2.54	0.71	0.35	0.06	0.08	0.19	0.12	0.38	0.57	0.45	635.0%
Qatar	..	..	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	40.05	25.86	13.62	28.01	5.74	5.96	6.60	7.09	8.00	10.29	10.63	85.3%
Syrian Arab Republic	0.77	1.26	1.97	2.53	2.82	3.43	3.68	3.17	3.40	3.43	2.97	5.4%
United Arab Emirates	..	..	5.53	9.69	18.99	33.16	29.30	37.44	38.88	41.36	43.53	129.2%
Yemen	1.13	0.91	2.13	1.24	1.24	0.31	0.30	0.36	0.33	0.34	0.31	-74.6%
Middle East	**54.64**	**39.00**	**31.76**	**46.04**	**31.28**	**46.95**	**44.66**	**54.14**	**59.36**	**65.80**	**69.04**	**120.7%**

CO_2 emissions from international aviation bunkers

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World	**167.33**	**171.81**	**199.82**	**222.64**	**256.41**	**288.20**	**350.42**	**416.10**	**430.51**	**452.49**	**468.51**	**82.7%**
Annex I Parties	*..*	*..*	*..*	*..*	*168.58*	*179.25*	*223.49*	*253.98*	*248.24*	*251.98*	*258.79*	*53.5%*
Annex II Parties	*58.57*	*61.75*	*70.77*	*81.47*	*131.19*	*159.76*	*204.47*	*229.79*	*220.84*	*223.75*	*230.56*	*75.7%*
North America	*16.61*	*17.53*	*21.18*	*21.83*	*41.50*	*48.54*	*60.20*	*70.76*	*65.49*	*68.03*	*68.32*	*64.6%*
Europe	*35.96*	*37.67*	*42.70*	*48.59*	*70.77*	*87.26*	*115.76*	*127.38*	*128.50*	*126.96*	*131.44*	*85.7%*
Asia Oceania	*6.01*	*6.55*	*6.90*	*11.05*	*18.92*	*23.96*	*28.52*	*31.65*	*26.85*	*28.76*	*30.80*	*62.7%*
Annex I EIT	*..*	*..*	*..*	*..*	*36.64*	*18.50*	*17.11*	*20.71*	*22.91*	*24.33*	*24.50*	*-33.1%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*87.83*	*108.94*	*126.93*	*162.12*	*182.28*	*200.51*	*209.72*	*138.8%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*129.04*	*132.30*	*164.47*	*182.30*	*180.59*	*183.42*	*190.34*	*47.5%*
Non-OECD Total *	**103.69**	**103.63**	**119.24**	**130.54**	**114.46**	**113.95**	**129.02**	**160.05**	**179.41**	**197.80**	**207.21**	**81.0%**
OECD Total **	**63.64**	**68.18**	**80.58**	**92.11**	**141.95**	**174.25**	**221.39**	**256.04**	**251.11**	**254.69**	**261.31**	**84.1%**
Canada	1.25	1.93	1.35	1.22	2.71	2.58	3.08	2.55	2.33	3.37	3.60	33.0%
Chile	0.43	0.35	0.54	0.49	0.57	0.64	1.04	1.05	1.30	1.52	1.31	131.8%
Mexico	1.39	2.40	4.23	4.53	5.23	6.75	8.05	8.52	7.96	8.08	8.12	55.3%
United States	15.35	15.60	19.83	20.61	38.79	45.96	57.11	68.21	63.16	64.66	64.72	66.8%
OECD Americas	**18.43**	**20.27**	**25.95**	**26.85**	**47.29**	**55.93**	**69.29**	**80.33**	**74.75**	**77.63**	**77.75**	**64.4%**
Australia	1.57	1.89	2.40	2.76	4.29	5.75	7.15	8.08	9.24	10.09	10.17	136.8%
Israel	1.79	1.88	2.21	1.99	1.58	2.12	2.38	3.20	2.40	2.40	2.57	62.0%
Japan	3.80	4.32	3.92	7.63	13.31	16.61	19.57	21.37	15.43	16.36	18.30	37.5%
Korea	-	0.36	0.83	1.69	0.84	2.05	1.70	7.25	10.93	11.89	11.99	+
New Zealand	0.64	0.34	0.57	0.66	1.32	1.60	1.79	2.20	2.18	2.31	2.33	76.4%
OECD Asia Oceania	**7.80**	**8.79**	**9.93**	**14.74**	**21.35**	**28.13**	**32.59**	**42.11**	**40.19**	**43.05**	**45.36**	**112.4%**
Austria	0.28	0.24	0.38	0.65	0.86	1.28	1.63	1.89	1.83	1.98	2.06	140.6%
Belgium	1.21	1.05	1.22	1.62	2.82	2.61	4.37	3.80	5.72	4.56	4.36	55.0%
Czech Republic	0.69	0.58	0.85	0.63	0.65	0.56	0.48	0.94	1.00	0.92	0.91	40.4%
Denmark	1.92	1.56	1.59	1.56	1.70	1.84	2.32	2.55	2.30	2.40	2.46	44.3%
Estonia	..	..	..	..	0.10	0.05	0.06	0.14	0.10	0.11	0.10	-
Finland	0.18	0.40	0.46	0.48	0.97	0.86	1.02	1.24	1.51	1.59	1.88	92.8%
France	4.57	5.71	5.62	6.43	9.32	11.44	15.07	16.10	16.01	16.32	17.19	84.4%
Germany	7.57	8.16	8.22	9.46	13.34	15.76	19.50	22.56	24.29	23.98	23.14	73.4%
Greece	1.29	1.31	2.23	2.33	2.34	2.52	2.41	2.30	2.53	2.02	2.19	-6.4%
Hungary	0.15	0.20	0.36	0.44	0.49	0.54	0.69	0.79	0.70	0.70	0.71	45.0%
Iceland	0.22	0.13	0.09	0.18	0.22	0.20	0.39	0.40	0.33	0.37	0.41	88.7%
Ireland	0.96	0.73	0.60	0.57	1.03	1.11	1.73	2.35	1.64	2.14	2.00	94.1%
Italy	3.47	2.44	4.15	4.33	4.50	5.80	8.38	8.88	8.88	9.39	9.63	114.2%
Luxembourg	0.11	0.15	0.19	0.22	0.39	0.56	0.95	1.28	1.24	1.28	1.20	208.6%
Netherlands	2.01	2.26	2.72	3.47	4.29	7.38	9.65	10.67	10.25	10.00	10.39	141.9%
Norway	0.70	0.51	0.67	0.92	1.24	1.09	1.05	1.04	1.06	1.28	1.26	1.0%
Poland	0.52	0.53	0.67	0.67	0.68	0.82	0.82	0.96	1.44	1.52	1.38	103.6%
Portugal	0.70	0.80	0.88	1.27	1.49	1.49	1.69	2.13	2.43	2.63	2.69	80.8%
Slovak Republic	-	-	-	-	-	0.12	0.08	0.12	0.13	0.12	0.13	x
Slovenia	..	..	..	..	0.08	0.06	0.07	0.07	0.08	0.08	0.07	-11.5%
Spain	1.74	2.77	2.58	2.67	3.32	6.01	8.03	9.18	9.40	9.02	10.80	225.2%
Sweden	0.33	0.33	0.49	0.51	1.07	1.76	2.06	1.87	2.11	2.04	2.19	104.2%
Switzerland	1.63	1.80	2.02	2.41	3.00	3.63	4.57	3.48	3.98	4.16	4.47	49.0%
Turkey	0.09	0.14	0.12	0.18	0.53	0.78	1.54	3.21	4.22	3.60	3.45	547.4%
United Kingdom	7.08	7.32	8.59	9.53	18.86	21.92	30.93	35.65	33.00	31.80	33.11	75.6%
OECD Europe **	**37.41**	**39.12**	**44.70**	**50.51**	**73.30**	**90.19**	**119.51**	**133.61**	**136.17**	**134.01**	**138.20**	88.5%
European Union - 27	*..*	*..*	*..*	*..*	*71.25*	*87.23*	*113.89*	*127.81*	*128.90*	*127.14*	*131.05*	83.9%

* Includes Estonia and Slovenia prior to 1990.
** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions from international aviation bunkers

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**103.69**	**103.63**	**119.24**	**130.54**	**114.46**	**113.95**	**129.02**	**160.05**	**179.41**	**197.80**	**207.21**	**81.0%**
Albania	-	-	-	-	-	-	0.12	0.17	0.05	0.05	0.06	x
Armenia	..	..	..	..	0.59	0.10	0.19	0.13	0.09	0.13	0.13	-77.3%
Azerbaijan	..	..	..	..	1.03	0.30	0.30	1.10	0.92	1.19	1.29	25.0%
Belarus	..	..	..	..	-	-	-	-	-	-	-	-
Bosnia and Herzegovina	..	..	..	..	0.08	0.11	0.03	0.02	0.02	0.02	0.02	-80.0%
Bulgaria	0.61	0.61	0.91	1.11	0.71	0.98	0.24	0.56	0.45	0.50	0.50	-28.9%
Croatia	..	..	..	..	0.15	0.17	0.10	0.12	0.13	0.16	0.16	10.4%
Cyprus **	0.15	0.02	0.23	0.44	0.72	0.79	0.82	0.89	0.81	0.82	0.89	24.6%
Georgia	..	..	..	..	0.60	0.01	0.05	0.11	0.12	0.12	0.11	-82.2%
Gibraltar	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	-
Kazakhstan	..	..	..	..	2.68	0.78	0.23	0.49	0.53	0.86	0.74	-72.5%
Kosovo ***	..	..	..	..	..	..	-	-	0.05	0.04	0.04	..
Kyrgyzstan	..	..	..	..	0.26	0.19	0.12	0.15	0.88	1.01	0.82	212.8%
Latvia	..	..	..	..	0.22	0.08	0.08	0.17	0.30	0.35	0.35	60.6%
Lithuania	..	..	..	..	0.40	0.12	0.07	0.14	0.11	0.14	0.16	-58.8%
FYR of Macedonia	..	..	..	..	0.02	0.09	0.09	0.02	0.01	0.02	0.01	-20.0%
Malta	0.17	0.18	0.23	0.14	0.21	0.22	0.37	0.26	0.27	0.30	0.28	31.4%
Republic of Moldova	..	..	..	..	0.22	0.03	0.06	0.04	0.04	0.04	0.04	-81.9%
Montenegro ***	..	..	..	..	..	..	..	0.04	0.01	0.01	0.03	..
Romania	0.06	0.05	-	-	0.69	0.54	0.37	0.33	0.38	0.43	0.25	-64.3%
Russian Federation	..	..	..	..	26.37	13.99	13.27	15.27	17.36	18.49	19.04	-27.8%
Serbia ***	..	..	..	..	0.43	0.11	0.09	0.15	0.12	0.12	0.14	-67.1%
Tajikistan	..	..	..	..	0.05	0.02	0.01	0.03	0.08	0.09	0.09	106.7%
Turkmenistan	..	..	..	..	0.75	0.61	0.97	1.34	1.46	1.61	1.46	94.3%
Ukraine	..	..	..	..	6.11	0.47	0.78	1.11	0.72	0.82	0.73	-88.0%
Uzbekistan	..	..	..	..	-	-	-	-	-	-	-	-
Former Soviet Union ****	66.66	62.09	70.62	76.70	..	..	..	..	..	..	..	..
Former Yugoslavia ****	0.64	0.88	1.00	0.99	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**68.31**	**63.86**	**73.00**	**79.40**	**42.29**	**19.74**	**18.34**	**22.65**	**24.93**	**27.33**	**27.38**	**-35.3%**
Algeria	0.29	0.66	0.93	1.31	1.09	0.96	1.17	1.16	1.42	1.42	1.43	31.6%
Angola	0.23	0.31	0.25	0.99	1.03	1.17	1.42	0.56	0.61	0.62	0.64	-37.4%
Benin	0.02	0.01	0.03	0.06	0.05	0.07	0.07	0.03	0.27	0.47	0.49	862.5%
Botswana	..	..	..	0.01	0.03	0.02	0.02	0.03	0.05	0.05	0.05	54.5%
Cameroon	0.17	0.10	0.15	0.15	0.15	0.17	0.18	0.20	0.21	0.21	0.21	41.7%
Congo	-	0.05	0.11	0.09	0.08	0.05	0.10	0.14	0.19	0.19	0.18	133.3%
Dem. Rep. of Congo	0.28	0.24	0.37	0.40	0.32	0.35	0.24	0.50	0.05	0.46	0.50	54.3%
Côte d'Ivoire	0.13	0.21	0.26	0.28	0.27	0.26	0.37	0.28	0.17	0.21	0.14	-46.4%
Egypt	0.21	0.27	0.51	0.12	0.44	0.79	1.71	2.23	3.00	2.55	2.43	450.7%
Eritrea	..	..	..	..	..	0.02	0.03	0.03	0.00	0.00	0.00	..
Ethiopia	0.14	0.16	0.20	0.34	0.53	0.20	0.24	0.46	0.78	1.01	1.08	104.3%
Gabon	0.03	0.04	0.07	0.08	0.20	0.19	0.23	0.21	0.17	0.18	0.19	-3.6%
Ghana	0.13	0.15	0.12	0.10	0.14	0.18	0.32	0.39	0.41	0.36	0.44	218.6%
Kenya	0.57	0.89	1.10	0.82	0.83	1.37	1.36	1.76	1.80	1.70	2.12	155.1%
Libya	0.27	0.53	0.89	1.05	0.63	0.91	1.33	0.51	0.68	0.70	0.28	-55.5%
Morocco	0.35	0.44	0.78	0.70	0.79	0.73	0.90	1.16	1.54	1.77	1.78	126.1%
Mozambique	0.12	0.05	0.08	0.09	0.13	0.06	0.13	0.14	0.21	0.20	0.19	43.9%
Namibia	..	..	..	..	..	0.10	0.12	0.04	0.11	0.12	0.12	..
Nigeria	0.24	0.70	1.14	1.33	0.95	1.25	0.58	0.70	2.00	0.51	0.57	-39.7%
Senegal	0.30	0.37	0.58	0.43	0.45	0.45	0.75	0.74	0.63	0.64	0.64	41.7%
South Africa	0.53	0.73	0.87	0.93	1.09	1.58	2.79	2.15	2.45	2.40	2.54	132.0%
Sudan	0.34	0.14	0.20	0.21	0.09	0.10	0.33	0.97	0.81	0.84	0.97	925.1%
United Rep. of Tanzania	0.08	0.20	0.17	0.13	0.22	0.19	0.18	0.26	0.31	0.32	0.34	54.6%
Togo	-	-	-	-	0.10	0.12	0.03	0.15	0.19	0.20	0.21	103.0%
Tunisia	0.39	0.38	0.56	0.30	0.57	0.74	0.85	0.65	0.60	0.75	0.72	26.3%
Zambia	0.04	0.14	0.23	0.12	0.19	0.10	0.13	0.16	0.09	0.09	0.10	-49.2%
Zimbabwe	0.07	0.17	0.19	0.32	0.23	0.33	0.35	0.02	0.02	0.02	0.03	-88.9%
Other Africa	-	-	0.90	0.90	0.90	0.95	1.50	1.72	1.84	1.89	1.98	119.0%
Africa	**4.91**	**6.93**	**10.70**	**11.28**	**11.51**	**13.39**	**17.42**	**17.36**	**20.60**	**19.89**	**20.38**	**77.0%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions from international aviation bunkers

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	0.06	0.08	0.15	0.22	0.27	0.30	0.38	0.87	0.84	0.89	0.95	250.0%
Brunei Darussalam	0.00	0.06	0.07	0.05	0.11	0.21	0.21	0.25	0.27	0.33	0.34	197.2%
Cambodia	..	..	..	..	..	0.03	0.04	0.05	0.07	0.08	0.08	..
Chinese Taipei	1.48	1.62	1.66	0.92	1.79	4.09	5.38	6.46	5.54	6.25	6.24	247.7%
India	1.68	1.98	2.49	3.21	3.71	4.60	4.97	7.28	10.23	11.22	12.23	230.1%
Indonesia	0.16	0.32	0.73	0.65	0.96	1.17	1.21	1.52	1.90	2.01	2.15	123.0%
DPR of Korea	-	-	-	-	-	-	-	-	-	-	-	-
Malaysia	0.42	0.74	0.77	0.86	1.88	3.44	4.67	5.96	6.30	7.07	7.58	304.3%
Mongolia	..	..	..	-	0.01	0.06	0.06	0.06	0.05	0.05	0.08	525.0%
Myanmar	0.03	0.02	0.03	0.03	0.02	0.02	0.05	0.03	0.05	0.06	0.06	200.0%
Nepal	0.01	0.02	0.04	0.06	0.05	0.11	0.17	0.19	0.21	0.26	0.28	466.7%
Pakistan	1.13	1.08	1.69	1.41	1.39	1.70	0.36	0.63	0.55	0.48	0.61	-56.0%
Philippines	0.70	0.82	0.66	1.02	1.01	1.16	1.42	2.12	2.89	2.93	3.17	215.2%
Singapore	0.70	1.32	2.71	3.19	5.63	7.81	11.89	13.45	15.09	17.02	18.33	225.5%
Sri Lanka	-	0.00	0.00	-	-	-	0.32	0.93	0.28	0.35	0.96	x
Thailand	1.26	2.17	2.39	3.12	5.58	7.51	8.27	10.17	10.49	11.15	12.02	115.2%
Vietnam	6.88	2.60	-	-	-	0.12	0.30	0.94	1.51	2.01	2.39	x
Other Asia	0.66	0.52	0.33	0.47	0.51	0.33	0.61	0.83	0.69	0.90	0.96	86.3%
Asia	**15.16**	**13.36**	**13.71**	**15.20**	**22.93**	**32.67**	**40.28**	**51.74**	**56.93**	**63.05**	**68.42**	**198.3%**
People's Rep. of China	-	-	0.10	0.84	1.32	2.21	4.17	10.70	13.60	16.45	18.40	+
Hong Kong, China	1.41	1.83	2.24	2.55	5.62	9.22	8.31	14.71	14.06	16.20	17.40	209.4%
China	**1.41**	**1.83**	**2.35**	**3.39**	**6.94**	**11.43**	**12.48**	**25.41**	**27.66**	**32.64**	**35.79**	**415.4%**
Argentina	-	-	-	-	-	1.58	2.83	2.14	1.40	1.95	1.96	x
Bolivia	-	-	-	-	-	-	0.14	0.15	0.13	0.14	0.15	x
Brazil	-	-	0.61	0.74	1.41	2.06	2.00	3.30	4.90	5.78	6.36	350.4%
Colombia	0.59	0.92	1.31	1.31	1.56	2.14	1.89	1.83	1.79	2.08	2.24	43.5%
Costa Rica	-	-	-	-	0.01	0.31	0.36	0.57	0.48	0.49	0.51	+
Cuba	0.27	0.43	0.65	0.89	0.98	0.53	0.64	0.53	0.43	0.43	0.37	-62.4%
Dominican Republic	0.08	0.10	0.17	0.16	0.11	0.17	0.22	0.30	0.29	0.30	0.32	177.8%
Ecuador	0.27	0.14	0.45	0.45	0.39	0.55	0.66	0.96	1.03	1.03	1.05	171.5%
El Salvador	0.03	0.05	0.06	0.11	0.11	0.16	0.22	0.24	0.35	0.34	0.35	205.6%
Guatemala	0.15	0.11	0.13	0.12	0.13	0.14	0.15	0.23	0.07	0.12	0.12	-9.7%
Haiti	0.02	0.03	0.05	0.04	0.07	0.07	0.09	0.07	0.05	0.06	0.05	-26.1%
Honduras	0.02	0.03	0.06	0.12	0.09	0.07	0.11	0.07	0.15	0.15	0.07	-24.1%
Jamaica	0.42	0.33	0.30	0.39	0.46	0.52	0.53	0.60	0.52	0.76	0.57	23.8%
Netherlands Antilles	0.15	0.13	0.16	0.13	0.12	0.20	0.24	0.26	0.27	0.27	0.28	137.8%
Nicaragua	0.05	0.06	0.06	0.04	0.08	0.06	0.08	0.05	0.06	0.05	0.06	-26.8%
Panama	0.43	1.11	0.41	0.26	0.20	0.31	0.54	0.57	0.94	1.07	1.20	495.3%
Paraguay	0.03	0.04	0.06	0.06	0.03	0.03	0.04	0.05	0.06	0.07	0.07	144.8%
Peru	0.51	0.74	0.92	0.71	0.64	1.10	1.06	0.96	1.74	1.94	2.38	269.1%
Trinidad and Tobago	0.21	0.12	0.17	0.22	0.20	0.17	0.39	0.38	0.20	0.20	0.21	6.5%
Uruguay	-	-	-	-	-	-	0.12	0.12	0.21	0.23	0.28	x
Venezuela	0.29	0.37	0.73	0.81	1.02	1.00	0.94	2.03	0.48	1.88	0.42	-58.9%
Other Non-OECD Americas	1.10	0.63	0.90	0.86	1.02	1.06	1.79	1.38	1.42	1.51	1.55	52.4%
Non-OECD Americas	**4.63**	**5.34**	**7.20**	**7.42**	**8.64**	**12.25**	**15.03**	**16.79**	**16.99**	**20.85**	**20.57**	**138.0%**
Bahrain	0.43	0.84	1.53	1.21	1.43	1.15	1.12	1.72	2.10	1.97	1.83	28.3%
Islamic Republic of Iran	7.02	7.01	2.15	1.64	1.48	1.97	2.71	2.69	3.70	3.80	3.55	139.4%
Iraq	0.24	0.81	1.05	0.58	0.98	1.26	1.63	1.98	2.81	2.87	2.87	192.1%
Jordan	0.12	0.18	0.57	0.61	0.66	0.75	0.75	0.96	0.98	1.08	0.99	49.8%
Kuwait	0.34	0.34	1.04	0.97	0.51	1.12	1.15	1.82	2.41	2.24	2.16	321.7%
Lebanon	0.28	0.23	0.15	0.32	0.16	0.66	0.40	0.46	0.55	0.70	0.71	348.0%
Oman	0.01	0.15	0.38	0.57	0.93	0.46	0.65	1.24	0.98	1.24	1.18	26.7%
Qatar	-	0.16	0.23	0.24	0.34	0.43	0.57	1.43	2.98	3.75	4.66	+
Saudi Arabia	0.47	1.40	3.45	4.57	4.79	5.69	5.85	5.44	6.11	6.46	6.63	38.3%
Syrian Arab Republic	0.24	0.65	0.72	0.87	0.87	0.62	0.41	0.33	0.14	0.09	0.09	-89.5%
United Arab Emirates	0.02	0.34	0.80	1.80	9.79	10.08	9.87	7.67	9.13	9.47	9.80	0.0%
Yemen	0.09	0.18	0.21	0.46	0.17	0.28	0.38	0.36	0.41	0.36	0.20	12.8%
Middle East	**9.26**	**12.31**	**12.30**	**13.84**	**22.13**	**24.47**	**25.47**	**26.11**	**32.29**	**34.04**	**34.67**	**56.6%**

CO_2 emissions by sector in 2011 *

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy industry own use **	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
World * **	**31 342.3**	**13 066.8**	**1 542.9**	**6 508.7**	**7 001.1**	**5 172.0**	**3 222.9**	**1 851.6**
Annex I Parties	*13 354.9*	*5 589.5*	*663.6*	*1 956.9*	*3 386.6*	*2 912.3*	*1 758.3*	*1 018.3*
Annex II Parties	*10 363.0*	*4 029.2*	*557.2*	*1 465.0*	*2 924.1*	*2 578.7*	*1 387.5*	*758.6*
North America	*5 817.0*	*2 319.8*	*323.9*	*699.3*	*1 804.1*	*1 544.9*	*670.0*	*354.8*
Europe	*2 932.8*	*975.8*	*156.0*	*465.1*	*800.8*	*751.2*	*535.0*	*336.8*
Asia Oceania	*1 613.1*	*733.5*	*77.3*	*300.6*	*319.2*	*282.5*	*182.5*	*67.0*
Annex I EIT	*2 703.7*	*1 447.1*	*96.5*	*438.0*	*416.2*	*293.5*	*305.9*	*216.1*
Non-Annex I Parties	*16 873.7*	*7 477.2*	*879.3*	*4 551.7*	*2 500.9*	*2 259.7*	*1 464.6*	*833.3*
Annex I Kyoto Parties	*7 713.5*	*3 234.2*	*384.8*	*1 290.5*	*1 691.2*	*1 457.0*	*1 112.8*	*657.6*
Non-OECD Total	**17 887.9**	**8 154.6**	**857.6**	**4 740.9**	**2 557.2**	**2 207.3**	**1 577.5**	**940.4**
OECD Total	**12 340.8**	**4 912.1**	**685.2**	**1 767.8**	**3 330.2**	**2 964.7**	**1 645.5**	**911.2**
Canada	529.8	107.7	57.9	101.4	166.0	139.3	96.8	42.4
Chile	76.3	29.0	2.9	15.8	21.6	19.6	7.0	3.6
Mexico	432.3	133.1	57.6	57.5	152.0	147.6	32.0	18.7
United States	5 287.2	2 212.0	266.0	597.9	1 638.1	1 405.6	573.2	312.5
OECD Americas	**6 325.6**	**2 481.9**	**384.4**	**772.6**	**1 977.8**	**1 712.1**	**708.9**	**377.1**
Australia	396.8	207.8	33.9	49.9	86.0	71.9	19.1	8.2
Israel	67.2	43.3	2.0	1.5	11.1	11.1	9.3	2.7
Japan	1 186.0	519.5	41.7	244.8	219.7	198.5	160.4	58.2
Korea	587.7	299.7	39.0	102.3	85.6	81.5	61.2	33.5
New Zealand	30.3	6.3	1.7	5.9	13.5	12.0	3.0	0.5
OECD Asia Oceania	**2 268.1**	**1 076.6**	**118.3**	**404.4**	**415.8**	**375.1**	**253.0**	**103.2**
Austria	68.5	16.8	7.9	12.2	21.6	20.9	10.0	6.6
Belgium	108.6	19.6	4.7	33.4	26.4	25.6	24.6	14.8
Czech Republic	112.7	63.0	2.4	19.4	16.5	15.7	11.4	6.8
Denmark	41.7	17.9	2.3	4.0	12.3	11.3	5.1	2.7
Estonia	19.3	15.3	0.2	0.9	2.2	2.1	0.7	0.2
Finland	55.6	24.9	3.9	9.8	12.3	11.3	4.7	1.4
France	328.3	45.0	15.4	60.4	122.1	117.2	85.4	45.6
Germany	747.6	324.5	26.0	114.1	148.7	143.1	134.2	89.0
Greece	83.6	42.9	2.7	7.2	19.5	17.1	11.4	8.7
Hungary	47.4	15.2	1.7	6.0	11.3	11.1	13.1	7.9
Iceland	1.9	0.0	-	0.5	0.8	0.8	0.6	0.0
Ireland	34.9	11.8	0.2	3.7	10.5	10.3	8.7	6.1
Italy	393.0	134.2	17.8	54.8	108.2	102.0	78.0	50.9
Luxembourg	10.4	1.1	-	1.0	6.9	6.9	1.5	0.9
Netherlands	174.5	55.5	11.2	40.8	33.4	32.5	33.5	16.7
Norway	38.1	2.9	10.9	7.4	13.6	9.8	3.3	0.5
Poland	300.0	158.2	7.5	35.7	47.4	46.3	51.3	31.7
Portugal	48.1	17.1	2.6	7.0	17.1	16.2	4.3	2.2
Slovak Republic	33.9	8.6	4.7	8.0	7.1	5.9	5.4	3.0
Slovenia	15.3	6.2	0.0	1.7	5.5	5.5	1.8	1.0
Spain	270.3	84.1	17.0	45.3	91.3	80.4	32.6	18.5
Sweden	44.9	8.3	2.3	9.1	22.4	21.5	2.8	0.3
Switzerland	39.9	2.8	0.9	5.3	16.9	16.5	14.0	9.2
Turkey	285.7	111.4	9.9	53.9	45.7	39.6	64.9	43.5
United Kingdom	443.0	166.6	30.2	49.1	116.8	107.8	80.4	62.7
OECD Europe	**3 747.1**	**1 353.6**	**182.5**	**590.8**	**936.5**	**877.4**	**683.6**	**430.8**
European Union - 27	*3 542.7*	*1 320.0*	*168.0*	*547.3*	*891.5*	*840.3*	*615.9*	*386.5*

* This table shows CO_2 emissions for the same sectors which are present throughout this publication. In particular, the emissions from electricity and heat production are shown separately and not reallocated as in the table on pages 74-76.

** Includes emissions from own use in petroleum refining, the manufacture of solid fuels, coal mining, oil and gas extraction and other energy-producing industries.

*** World includes international bunkers in the transport sector.

CO_2 emissions by sector in 2011

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy industry own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Non-OECD Total	**17 887.9**	**8 154.6**	**857.6**	**4 740.9**	**2 557.2**	**2 207.3**	**1 577.5**	**940.4**
Albania	3.9	0.0	0.1	0.9	2.3	2.2	0.6	0.2
Armenia	4.7	0.9	-	0.6	1.3	1.3	1.8	1.0
Azerbaijan	26.8	9.6	2.1	2.1	5.8	5.3	7.2	5.9
Belarus	66.0	30.0	3.0	14.6	11.0	9.6	7.4	4.6
Bosnia and Herzegovina	22.8	15.7	0.4	1.7	3.4	3.4	1.6	0.6
Bulgaria	49.2	34.0	1.0	4.3	7.9	7.3	2.0	1.1
Croatia	18.8	4.4	2.0	3.3	5.8	5.4	3.3	1.9
Cyprus *	6.9	3.6	-	0.5	2.1	2.1	0.6	0.3
Georgia	6.3	1.0	0.2	1.4	2.3	2.2	1.4	1.0
Gibraltar	0.5	0.1	-	0.1	0.3	0.3	-	-
Kazakhstan	234.2	78.8	46.1	69.0	12.5	11.7	27.9	14.9
Kosovo	8.5	6.4	-	0.7	1.0	1.0	0.4	0.2
Kyrgyzstan	6.7	1.2	-	2.2	2.8	2.8	0.5	0.0
Latvia	7.6	2.2	-	1.0	3.1	2.8	1.3	0.5
Lithuania	13.2	2.9	1.7	3.0	4.2	3.9	1.3	0.7
FYR of Macedonia	9.1	5.8	0.1	1.5	1.4	1.4	0.3	0.1
Malta	2.5	1.9	-	0.0	0.5	0.5	0.1	0.1
Republic of Moldova	7.9	3.5	-	1.0	1.1	1.1	2.2	1.6
Montenegro	2.5	1.7	0.0	0.1	0.6	0.6	0.0	0.0
Romania	81.8	38.8	4.5	14.6	14.1	12.9	9.8	6.1
Russian Federation	1 653.2	939.1	61.0	251.1	247.5	140.9	154.4	114.6
Serbia	49.8	33.7	0.3	6.1	5.7	5.2	3.9	1.9
Tajikistan	3.0	0.4	-	-	0.3	0.3	2.3	-
Turkmenistan	61.5	17.5	5.3	4.6	7.2	3.7	27.0	-
Ukraine	285.4	129.2	6.7	74.2	32.6	24.1	42.7	35.9
Uzbekistan	110.2	36.8	3.7	19.4	7.9	4.4	42.4	32.4
Non-OECD Europe and Eurasia	**2 742.8**	**1 399.4**	**138.1**	**478.1**	**384.8**	**256.4**	**342.6**	**225.7**
Algeria	103.9	28.5	11.1	13.5	32.3	30.7	18.4	14.5
Angola	15.7	2.2	0.2	2.7	6.8	6.1	3.8	1.3
Benin	4.7	0.1	-	0.1	3.3	3.3	1.1	1.1
Botswana	4.7	0.7	-	1.3	2.1	2.1	0.6	0.1
Cameroon	5.1	1.2	0.4	0.4	2.8	2.6	0.4	0.4
Congo	2.1	0.3	-	0.1	1.6	1.5	0.1	0.1
Dem. Rep. of Congo	3.3	0.0	-	1.1	1.8	1.8	0.4	0.4
Côte d'Ivoire	5.9	2.7	0.1	0.5	1.5	1.3	1.1	0.3
Egypt	188.4	71.6	14.4	40.3	40.0	37.0	22.1	15.1
Eritrea	0.5	0.3	-	0.0	0.2	0.2	0.1	0.0
Ethiopia	5.9	0.0	-	1.5	2.9	2.9	1.4	0.8
Gabon	2.2	0.7	0.0	0.8	0.5	0.5	0.3	0.1
Ghana	10.8	2.4	0.3	1.6	5.5	5.0	1.1	0.7
Kenya	11.6	2.3	0.3	3.3	4.7	4.5	1.0	0.9
Libya	34.9	17.6	1.1	2.7	12.0	12.0	1.6	1.6
Morocco	50.2	18.1	1.4	8.0	14.3	14.3	8.4	3.5
Mozambique	2.8	0.0	0.0	0.6	1.9	1.8	0.3	0.1
Namibia	3.1	0.0	-	0.3	1.8	1.7	1.0	-
Nigeria	52.8	11.7	6.4	4.3	23.6	23.5	6.8	2.3
Senegal	5.7	2.1	0.0	1.0	2.1	2.0	0.5	0.3
South Africa	367.6	225.7	3.4	63.7	51.2	47.8	23.7	10.9
Sudan	14.5	1.8	0.6	2.5	7.6	7.6	2.0	0.6
United Rep. of Tanzania	6.3	1.5	-	0.9	3.2	3.2	0.6	0.6
Togo	1.2	0.0	-	0.1	1.0	1.0	0.2	0.2
Tunisia	21.1	7.3	0.1	4.7	5.7	5.7	3.3	1.7
Zambia	2.1	0.0	0.1	1.1	0.7	0.5	0.2	-
Zimbabwe	9.5	3.2	0.1	1.8	1.3	1.2	3.1	0.1
Other Africa	31.2	10.2	-	3.9	13.8	12.1	3.2	1.6
Africa	**967.8**	**412.2**	**39.9**	**163.0**	**245.9**	**233.6**	**106.7**	**59.2**

* Please refer to Chapter 5, Geographical Coverage.

CO_2 emissions by sector in 2011

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy industry own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Bangladesh	54.1	24.8	0.2	12.1	8.4	6.7	8.6	6.4
Brunei Darussalam	8.9	2.7	2.5	2.4	1.3	1.3	0.1	0.1
Cambodia	4.0	0.8	-	0.6	2.0	1.7	0.6	0.6
Chinese Taipei	264.7	149.7	13.8	55.9	35.8	34.6	9.5	4.6
India	1 745.1	900.6	62.9	471.6	169.9	154.1	140.1	80.0
Indonesia	425.9	137.6	27.5	118.1	114.7	101.4	27.9	16.3
DPR of Korea	64.8	10.3	0.0	40.7	1.3	1.3	12.5	0.1
Malaysia	194.0	89.5	21.0	32.8	43.0	42.5	7.7	2.1
Mongolia	13.0	8.0	0.0	1.6	1.6	1.1	1.8	0.9
Myanmar	8.3	1.9	0.7	2.6	2.3	1.7	0.7	0.0
Nepal	4.1	0.0	-	1.1	1.9	1.9	1.0	0.4
Pakistan	136.3	39.0	1.2	42.2	36.1	33.5	17.7	14.5
Philippines	77.1	34.0	1.3	12.6	23.3	20.3	5.9	2.4
Singapore	64.8	23.0	6.2	27.0	8.1	8.1	0.4	0.2
Sri Lanka	15.0	5.5	0.1	1.2	7.2	7.0	1.1	0.4
Thailand	243.2	81.4	15.4	68.6	58.3	57.6	19.5	5.3
Vietnam	137.4	42.5	1.5	47.3	32.9	32.0	13.2	7.7
Other Asia	23.5	7.1	-	5.4	9.0	8.0	2.0	0.7
Asia	**3 484.0**	**1 558.3**	**154.3**	**943.9**	**557.2**	**514.6**	**270.4**	**142.7**
People's Rep. of China	7 954.5	3 981.0	285.1	2 487.5	623.3	494.2	577.7	319.5
Hong Kong, China	45.0	30.0	-	7.2	5.4	5.4	2.4	0.8
China	**7 999.6**	**4 010.9**	**285.1**	**2 494.7**	**628.8**	**499.6**	**580.1**	**320.3**
Argentina	183.6	50.6	16.8	35.9	46.9	43.3	33.5	21.8
Bolivia	15.2	3.1	1.3	1.7	5.9	5.6	3.2	1.2
Brazil	408.0	36.1	27.3	125.2	181.9	163.2	37.5	17.3
Colombia	66.7	6.7	7.2	20.6	23.8	22.8	8.4	4.0
Costa Rica	6.7	0.6	0.0	1.0	4.6	4.6	0.4	0.1
Cuba	28.0	16.9	0.3	7.5	1.4	1.2	1.9	0.6
Dominican Republic	18.0	9.6	0.0	1.0	4.9	4.0	2.4	2.2
Ecuador	30.9	7.0	1.0	3.8	16.0	13.5	3.1	2.8
El Salvador	6.0	1.4	0.0	1.0	3.1	3.1	0.5	0.5
Guatemala	10.4	2.3	-	1.9	5.5	5.5	0.7	0.7
Haiti	2.1	0.3	-	0.6	1.1	0.4	0.2	0.2
Honduras	7.6	2.6	-	1.2	3.1	3.1	0.7	0.1
Jamaica	7.6	3.2	0.1	0.3	2.1	1.4	1.9	0.3
Netherlands Antilles	5.1	0.9	1.6	0.9	1.6	1.6	0.2	0.2
Nicaragua	4.5	1.8	0.1	0.6	1.7	1.7	0.4	0.1
Panama	9.4	2.8	-	2.3	3.6	3.6	0.7	0.5
Paraguay	4.9	-	-	0.1	4.5	4.4	0.3	0.2
Peru	44.7	11.7	4.2	8.8	16.8	15.8	3.1	1.8
Trinidad and Tobago	40.8	4.5	8.9	24.1	2.8	2.8	0.4	0.4
Uruguay	7.6	2.0	0.5	0.8	3.2	3.1	1.1	0.4
Venezuela	159.2	28.6	24.5	56.4	43.0	43.0	6.7	5.0
Other Non-OECD Americas	19.6	11.0	-	0.7	5.9	4.9	2.0	0.8
Non-OECD Americas	**1 086.8**	**203.8**	**93.9**	**296.2**	**383.3**	**352.6**	**109.5**	**61.3**
Bahrain	22.7	8.3	4.4	6.8	2.9	2.9	0.2	0.2
Islamic Rep. of Iran	521.0	138.5	26.8	104.3	117.2	114.7	134.3	105.6
Iraq	108.3	49.0	4.3	9.5	34.2	34.2	11.2	11.2
Jordan	19.8	9.3	0.7	2.1	5.3	5.3	2.4	1.5
Kuwait	84.7	45.2	13.9	13.5	11.6	11.6	0.5	0.5
Lebanon	18.5	11.6	-	1.2	5.0	5.0	0.7	0.7
Oman	63.5	16.2	8.6	29.2	8.8	8.8	0.7	0.3
Qatar	71.4	15.0	29.4	12.2	14.5	14.5	0.3	0.3
Saudi Arabia	457.3	188.7	52.7	102.0	109.2	107.0	4.7	4.7
Syrian Arab Republic	53.2	24.7	1.4	8.2	11.9	11.7	6.9	4.0
United Arab Emirates	165.9	59.5	2.2	72.6	30.9	29.2	0.7	0.7
Yemen	20.7	3.9	2.1	3.4	5.8	5.8	5.6	1.6
Middle East	**1 606.9**	**570.0**	**146.3**	**365.1**	**357.3**	**350.6**	**168.2**	**131.3**

CO_2 emissions with electricity and heat allocated to consuming sectors * in 2011

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Other energy industry own use **	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
World * **	**31 342.3**	**2 133.5**	**12 202.6**	**7 151.9**	**5 172.0**	**9 854.3**	**5 246.3**
Annex I Parties	*13 354.9*	*963.6*	*3 671.8*	*3 468.7*	*2 912.3*	*5 250.8*	*2 827.5*
Annex II Parties	*10 363.0*	*683.0*	*2 630.5*	*2 961.7*	*2 578.7*	*4 087.9*	*2 071.6*
North America	*5 817.0*	*391.4*	*1 274.1*	*1 809.1*	*1 544.9*	*2 342.4*	*1 175.7*
Europe	*2 932.8*	*195.6*	*826.0*	*819.6*	*751.2*	*1 091.6*	*611.8*
Asia Oceania	*1 613.1*	*96.0*	*530.4*	*332.9*	*282.5*	*653.9*	*284.1*
Annex I EIT	*2 703.7*	*269.5*	*931.1*	*460.5*	*293.5*	*1 042.7*	*687.2*
Non-Annex I Parties	*16 873.7*	*1 169.9*	*8 530.8*	*2 569.6*	*2 259.7*	*4 603.4*	*2 418.8*
Annex I Kyoto Parties	*7 713.5*	*619.0*	*2 405.4*	*1 768.2*	*1 457.0*	*2 920.9*	*1 640.8*
Non-OECD Total	**17 887.9**	**1 287.0**	**8 880.3**	**2 663.5**	**2 207.3**	**5 057.1**	**2 811.5**
OECD Total	**12 340.8**	**846.4**	**3 322.3**	**3 374.8**	**2 964.7**	**4 797.2**	**2 434.8**
Canada	529.8	63.4	142.7	166.8	139.3	157.0	72.1
Chile	76.3	3.2	34.8	21.9	19.6	16.4	8.3
Mexico	432.3	61.7	128.4	152.7	147.6	89.5	48.7
United States	5 287.2	328.0	1 131.4	1 642.4	1 405.6	2 185.4	1 103.5
OECD Americas	**6 325.6**	**456.3**	**1 437.3**	**1 983.7**	**1 712.1**	**2 448.3**	**1 232.7**
Australia	396.8	44.7	126.2	89.7	71.9	136.1	66.1
Israel	67.2	2.5	12.0	11.1	11.1	41.7	16.7
Japan	1 186.0	49.4	396.0	229.7	198.5	510.9	215.4
Korea	587.7	45.4	256.1	86.9	81.5	199.4	79.9
New Zealand	30.3	1.8	8.2	13.5	12.0	6.9	2.6
OECD Asia Oceania	**2 268.1**	**143.8**	**798.5**	**430.8**	**375.1**	**894.9**	**380.8**
Austria	68.5	8.2	18.1	22.3	20.9	19.9	12.3
Belgium	108.6	5.8	42.5	26.7	25.6	33.6	18.9
Czech Republic	112.7	6.8	41.3	18.2	15.7	46.4	25.7
Denmark	41.7	2.7	6.9	12.4	11.3	19.7	11.0
Estonia	19.3	1.0	3.9	2.3	2.1	12.1	7.1
Finland	55.6	4.3	21.0	12.4	11.3	17.9	8.9
France	328.3	17.8	71.3	123.3	117.2	116.0	59.3
Germany	747.6	35.0	251.4	157.0	143.1	304.2	179.0
Greece	83.6	4.4	18.7	19.6	17.1	40.9	23.1
Hungary	47.4	2.6	10.1	11.6	11.1	23.1	13.4
Iceland	1.9	0.0	0.5	0.8	0.8	0.6	0.0
Ireland	34.9	0.3	8.2	10.6	10.3	15.9	10.0
Italy	393.0	30.5	110.9	112.1	102.0	139.5	78.4
Luxembourg	10.4	-	1.5	6.9	6.9	2.0	1.0
Netherlands	174.5	15.7	61.2	34.1	32.5	63.5	27.1
Norway	38.1	11.1	8.5	13.6	9.8	4.9	1.4
Poland	300.0	24.0	80.2	49.8	46.3	146.1	87.1
Portugal	48.1	3.4	13.4	17.3	16.2	14.0	6.5
Slovak Republic	33.9	5.1	11.1	7.2	5.9	10.5	5.3
Slovenia	15.3	0.1	4.4	5.6	5.5	5.1	2.8
Spain	270.3	18.7	70.0	92.4	80.4	89.2	44.0
Sweden	44.9	2.5	11.8	22.6	21.5	8.1	3.4
Switzerland	39.9	0.9	6.2	17.0	16.5	15.7	10.1
Turkey	285.7	11.2	109.4	46.1	39.6	119.1	68.2
United Kingdom	443.0	34.5	103.8	118.8	107.8	186.0	117.4
OECD Europe	**3 747.1**	**246.3**	**1 086.5**	**960.3**	**877.4**	**1 454.0**	**821.4**
European Union - 27	*3 542.7*	*235.8*	*1 013.1*	*915.9*	*840.3*	*1 377.9*	*780.7*

* CO_2 emissions from electricity and heat generation have been allocated to final consuming sectors in proportion to the electricity and heat consumed. The detailed unallocated emissions are shown in the table on pages 71-73.

** Includes emissions from own use in petroleum refining, the manufacture of solid fuels, coal mining, oil and gas extraction and other energy-producing industries.

*** World includes international bunkers in the transport sector.

CO_2 emissions with electricity and heat allocated to consuming sectors in 2011

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Other energy industry own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Non-OECD Total	**17 887.9**	**1 287.0**	**8 880.3**	**2 663.5**	**2 207.3**	**5 057.1**	**2 811.5**
Albania	3.9	0.1	0.9	2.3	2.2	0.6	0.2
Armenia	4.7	-	0.8	1.3	1.3	2.5	1.4
Azerbaijan	26.8	3.1	3.3	6.1	5.3	14.3	9.8
Belarus	66.0	5.4	24.8	11.5	9.6	24.4	14.4
Bosnia and Herzegovina	22.8	0.9	6.9	3.5	3.4	11.5	7.6
Bulgaria	49.2	3.0	15.8	8.2	7.3	22.3	13.1
Croatia	18.8	2.1	4.3	5.9	5.4	6.6	3.8
Cyprus *	6.9	0.0	0.9	2.1	2.1	3.8	1.6
Georgia	6.3	0.2	1.7	2.3	2.2	2.0	1.4
Gibraltar	0.5	-	0.1	0.3	0.3	0.1	-
Kazakhstan	234.2	53.0	105.2	14.4	11.7	61.6	32.4
Kosovo	8.5	0.0	2.5	1.0	1.0	5.0	3.7
Kyrgyzstan	6.7	0.0	2.5	2.8	2.8	1.4	0.3
Latvia	7.6	-	1.3	3.1	2.8	3.2	1.6
Lithuania	13.2	1.9	3.8	4.2	3.9	3.3	1.9
FYR of Macedonia	9.1	0.2	3.3	1.4	1.4	4.2	2.7
Malta	2.5	-	0.8	0.5	0.5	1.2	0.6
Republic of Moldova	7.9	0.1	2.2	1.1	1.1	4.5	3.1
Montenegro	2.5	0.0	1.2	0.6	0.6	0.7	0.6
Romania	81.8	7.9	28.6	14.9	12.9	30.4	20.2
Russian Federation	1 653.2	190.7	577.1	281.3	140.9	604.1	416.8
Serbia	49.8	1.0	16.3	6.2	5.2	26.3	18.8
Tajikistan	3.0	0.0	0.2	0.3	0.3	2.5	0.1
Turkmenistan	61.5	7.5	9.1	7.5	3.7	37.5	2.6
Ukraine	285.4	19.1	124.3	36.8	24.1	105.2	73.9
Uzbekistan	110.2	4.4	27.7	8.6	4.4	69.4	36.3
Non-OECD Europe and Eurasia	**2 742.8**	**300.5**	**965.5**	**428.5**	**256.4**	**1 048.3**	**669.1**
Algeria	103.9	11.7	23.7	32.9	30.7	35.5	24.5
Angola	15.7	0.2	3.5	6.8	6.1	5.3	2.7
Benin	4.7	-	0.2	3.3	3.3	1.2	1.2
Botswana	4.7	-	1.6	2.1	2.1	1.0	0.3
Cameroon	5.1	0.4	1.0	2.8	2.6	0.9	0.6
Congo	2.1	-	0.2	1.6	1.5	0.3	0.3
Dem. Rep. of Congo	3.3	-	1.2	1.8	1.8	0.4	0.4
Côte d'Ivoire	5.9	0.1	1.3	1.5	1.3	2.9	1.5
Egypt	188.4	14.4	62.8	40.0	37.0	71.2	45.4
Eritrea	0.5	-	0.1	0.2	0.2	0.3	0.2
Ethiopia	5.9	-	1.5	2.9	2.9	1.5	0.8
Gabon	2.2	0.0	0.9	0.5	0.5	0.7	0.5
Ghana	10.8	0.3	2.8	5.5	5.0	2.3	1.5
Kenya	11.6	0.3	4.6	4.7	4.5	2.0	1.5
Libya	34.9	1.1	6.5	12.0	12.0	15.3	5.9
Morocco	50.2	2.0	14.6	14.5	14.3	19.0	9.3
Mozambique	2.8	0.0	0.6	1.9	1.8	0.3	0.1
Namibia	3.1	-	0.3	1.8	1.7	1.0	-
Nigeria	52.8	6.4	6.3	23.6	23.5	16.6	9.0
Senegal	5.7	0.0	1.5	2.1	2.0	2.0	1.1
South Africa	367.6	15.4	183.8	54.9	47.8	113.5	53.3
Sudan	14.5	0.6	2.8	7.6	7.6	3.5	1.5
United Rep. of Tanzania	6.3	0.0	1.6	3.2	3.2	1.4	1.2
Togo	1.2	-	0.1	1.0	1.0	0.2	0.2
Tunisia	21.1	0.1	7.4	5.9	5.7	7.8	3.9
Zambia	2.1	0.1	1.1	0.7	0.5	0.2	0.0
Zimbabwe	9.5	0.1	3.2	1.3	1.2	4.9	1.1
Other Africa	31.2	0.2	6.3	13.8	12.1	10.9	5.3
Africa	**967.8**	**53.4**	**341.7**	**250.6**	**233.6**	**322.1**	**173.1**

* Please refer to Chapter 5, Geographical Coverage.

CO_2 emissions with electricity and heat allocated to consuming sectors in 2011

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Other energy industry own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Bangladesh	54.1	0.2	26.2	8.4	6.7	19.3	14.4
Brunei Darussalam	8.9	2.7	2.6	1.3	1.3	2.3	1.0
Cambodia	4.0	-	0.8	2.0	1.7	1.2	1.0
Chinese Taipei	264.7	16.3	140.2	36.5	34.6	71.5	33.9
India	1 745.1	62.9	875.0	186.6	154.1	620.6	278.0
Indonesia	425.9	27.5	165.8	114.7	101.4	117.8	73.0
DPR of Korea	64.8	0.0	45.8	1.3	1.3	17.7	0.1
Malaysia	194.0	21.0	72.1	43.2	42.5	57.7	21.2
Mongolia	13.0	0.0	4.4	1.7	1.1	6.9	4.0
Myanmar	8.3	0.7	3.3	2.3	1.7	1.9	0.8
Nepal	4.1	-	1.1	1.9	1.9	1.0	0.4
Pakistan	136.3	1.2	53.3	36.1	33.5	45.6	32.6
Philippines	77.1	1.3	24.3	23.4	20.3	28.2	13.8
Singapore	64.8	6.2	36.3	9.4	8.1	12.9	3.8
Sri Lanka	15.0	0.1	3.1	7.2	7.0	4.7	2.6
Thailand	243.2	15.4	103.3	58.3	57.6	66.2	23.4
Vietnam	137.4	1.5	69.8	32.9	32.0	33.2	23.3
Other Asia	23.5	0.6	8.0	9.0	8.0	5.9	2.6
Asia	**3 484.0**	**157.7**	**1 635.3**	**576.3**	**514.6**	**1 114.8**	**529.8**
People's Rep. of China	7 954.5	517.4	5 065.2	660.9	494.2	1 711.1	933.3
Hong Kong, China	45.0	-	9.4	5.4	5.4	30.2	8.7
China	**7 999.6**	**517.4**	**5 074.5**	**666.4**	**499.6**	**1 741.3**	**942.0**
Argentina	183.6	16.8	57.9	47.2	43.3	61.8	37.6
Bolivia	15.2	1.3	2.6	5.9	5.6	5.5	2.4
Brazil	408.0	28.7	141.1	182.0	163.2	56.1	25.8
Colombia	66.7	7.2	22.6	23.8	22.8	13.0	6.8
Costa Rica	6.7	0.0	1.1	4.6	4.6	0.9	0.4
Cuba	28.0	0.3	12.1	1.7	1.2	13.9	8.9
Dominican Republic	18.0	0.0	5.5	4.9	4.0	7.6	6.3
Ecuador	30.9	1.0	6.0	16.0	13.5	7.9	5.2
El Salvador	6.0	0.0	1.6	3.1	3.1	1.3	0.9
Guatemala	10.4	-	2.8	5.5	5.5	2.1	1.5
Haiti	2.1	-	0.7	1.1	0.4	0.4	0.3
Honduras	7.6	-	1.9	3.1	3.1	2.7	1.2
Jamaica	7.6	0.1	1.5	2.1	1.4	3.9	1.1
Netherlands Antilles	5.1	1.6	1.4	1.6	1.6	0.6	0.2
Nicaragua	4.5	0.1	1.2	1.7	1.7	1.6	0.7
Panama	9.4	-	2.6	3.6	3.6	3.2	1.4
Paraguay	4.9	-	0.1	4.5	4.4	0.3	0.2
Peru	44.7	4.2	15.1	16.8	15.8	8.5	4.5
Trinidad and Tobago	40.8	8.9	26.8	2.8	2.8	2.2	1.7
Uruguay	7.6	0.5	1.4	3.2	3.1	2.6	1.3
Venezuela	159.2	25.2	68.9	43.1	43.0	22.0	13.1
Other Non-OECD Americas	19.6	-	6.3	5.9	4.9	7.4	4.6
Non-OECD Americas	**1 086.8**	**96.0**	**381.2**	**384.2**	**352.6**	**225.4**	**125.9**
Bahrain	22.7	4.4	8.0	2.9	2.9	7.3	4.2
Islamic Rep. of Iran	521.0	28.2	154.3	117.4	114.7	221.1	146.6
Iraq	108.3	4.3	19.6	34.2	34.2	50.2	34.2
Jordan	19.8	0.7	4.5	5.3	5.3	9.3	5.4
Kuwait	84.7	20.2	13.5	11.6	11.6	39.5	25.7
Lebanon	18.5	-	4.3	5.0	5.0	9.2	5.1
Oman	63.5	8.6	31.5	8.8	8.8	14.6	8.2
Qatar	71.4	29.4	17.1	14.5	14.5	10.4	5.0
Saudi Arabia	457.3	60.6	129.8	109.2	107.0	157.6	98.5
Syrian Arab Republic	53.2	1.4	16.6	11.9	11.7	23.3	15.3
United Arab Emirates	165.9	2.2	79.5	30.9	29.2	53.3	19.3
Yemen	20.7	2.1	3.5	5.8	5.8	9.3	4.1
Middle East	**1 606.9**	**162.1**	**482.0**	**357.5**	**350.6**	**605.2**	**371.7**

Total primary energy supply

petajoules

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**231 553**	**259 254**	**302 160**	**324 155**	**367 681**	**386 762**	**422 125**	**482 823**	**511 536**	**540 299**	**549 031**	**49.3%**
Annex I Parties	*..*	*..*	*..*	*..*	*233 718*	*229 470*	*241 486*	*250 691*	*235 796*	*245 328*	*241 338*	*3.3%*
Annex II Parties	*130 359*	*138 423*	*153 269*	*154 084*	*167 905*	*180 349*	*194 911*	*201 128*	*187 637*	*193 272*	*187 944*	*11.9%*
North America	*72 382*	*76 179*	*83 595*	*82 358*	*88 909*	*96 212*	*105 708*	*108 483*	*101 144*	*103 267*	*102 285*	*15.0%*
Europe	*44 325*	*46 578*	*51 959*	*53 014*	*56 453*	*58 860*	*62 235*	*65 394*	*60 880*	*63 214*	*60 433*	*7.1%*
Asia Oceania	*13 651*	*15 666*	*17 715*	*18 712*	*22 543*	*25 276*	*26 968*	*27 251*	*25 613*	*26 791*	*25 226*	*11.9%*
Annex I EIT	*..*	*..*	*..*	*..*	*63 575*	*46 515*	*43 350*	*45 993*	*44 038*	*47 618*	*48 649*	*-23.5%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*125 561*	*147 671*	*169 285*	*218 921*	*261 862*	*280 114*	*292 592*	*133.0%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*149 398*	*139 277*	*142 047*	*148 910*	*139 934*	*146 973*	*143 617*	*-3.9%*
Intl. marine bunkers	**4 533**	**4 371**	**4 583**	**3 928**	**4 780**	**5 549**	**6 403**	**7 331**	**7 795**	**8 464**	**8 482**	**77.5%**
Intl. aviation bunkers	**2 366**	**2 428**	**2 823**	**3 146**	**3 623**	**4 072**	**4 951**	**5 879**	**6 083**	**6 393**	**6 619**	**82.7%**
Non-OECD Total **	**83 463**	**100 993**	**124 450**	**144 448**	**169 929**	**173 095**	**189 178**	**238 849**	**278 913**	**299 093**	**311 829**	**83.5%**
OECD Total ***	**141 192**	**151 462**	**170 303**	**172 633**	**189 349**	**204 045**	**221 593**	**230 764**	**218 745**	**226 348**	**222 101**	**17.3%**
Canada	5 918	6 948	8 037	8 080	8 732	9 662	10 528	11 397	10 523	10 509	10 544	20.8%
Chile	364	320	397	401	587	768	1 054	1 187	1 234	1 295	1 406	139.7%
Mexico	1 800	2 477	3 982	4 547	5 129	5 440	6 087	7 129	7 358	7 491	7 795	52.0%
United States	66 464	69 231	75 558	74 278	80 177	86 550	95 180	97 086	90 622	92 759	91 741	14.4%
OECD Americas	**74 546**	**78 975**	**87 974**	**87 306**	**94 624**	**102 420**	**112 848**	**116 798**	**109 737**	**112 053**	**111 485**	**17.8%**
Australia	2 161	2 528	2 914	3 049	3 610	3 875	4 526	4 752	5 112	5 129	5 145	42.5%
Israel	240	294	328	317	480	649	763	774	899	971	974	102.8%
Japan	11 201	12 772	14 424	15 194	18 394	20 777	21 728	21 794	19 769	20 896	19 321	5.0%
Korea	711	1 024	1 725	2 241	3 897	6 061	7 878	8 800	9 595	10 465	10 904	179.8%
New Zealand	289	366	376	469	539	623	714	705	731	766	761	41.2%
OECD Asia Oceania	**14 602**	**16 984**	**19 768**	**21 270**	**26 920**	**31 986**	**35 610**	**36 825**	**36 107**	**38 228**	**37 104**	**37.8%**
Austria	788	842	969	967	1 040	1 121	1 196	1 415	1 338	1 433	1 382	32.9%
Belgium	1 660	1 772	1 958	1 846	2 022	2 251	2 450	2 457	2 391	2 549	2 474	22.4%
Czech Republic	1 900	1 828	1 966	2 061	2 075	1 737	1 716	1 882	1 760	1 844	1 818	-12.4%
Denmark	775	732	801	808	727	812	780	791	769	808	754	3.7%
Estonia	..	..	..	..	415	219	197	216	199	233	235	-43.5%
Finland	761	825	1 030	1 082	1 188	1 211	1 350	1 435	1 392	1 525	1 455	22.4%
France	6 639	6 907	8 029	8 533	9 378	9 925	10 550	11 332	10 612	10 934	10 585	12.9%
Germany	12 772	13 126	14 954	14 956	14 702	14 089	14 092	14 034	13 115	13 807	13 053	-11.2%
Greece	364	492	627	735	898	949	1 134	1 266	1 232	1 156	1 119	24.6%
Hungary	797	959	1 187	1 246	1 204	1 083	1 047	1 155	1 041	1 075	1 045	-13.2%
Iceland	38	46	63	74	87	94	130	146	225	225	240	174.4%
Ireland	281	278	345	361	413	434	568	600	601	595	553	33.9%
Italy	4 413	4 889	5 478	5 414	6 136	6 662	7 181	7 698	6 902	7 128	7 009	14.2%
Luxembourg	170	158	149	128	142	132	140	183	166	177	175	23.1%
Netherlands	2 130	2 471	2 695	2 539	2 750	2 962	3 066	3 300	3 273	3 493	3 241	17.9%
Norway	557	611	767	836	879	981	1 092	1 121	1 247	1 354	1 178	34.0%
Poland	3 606	4 314	5 301	5 221	4 317	4 165	3 731	3 868	3 936	4 251	4 242	-1.7%
Portugal	263	322	418	459	701	846	1 033	1 108	1 011	986	966	37.9%
Slovak Republic	597	702	831	868	893	744	743	788	701	746	726	-18.7%
Slovenia	..	..	..	..	239	254	269	305	297	303	303	27.0%
Spain	1 784	2 407	2 834	2 969	3 772	4 220	5 102	5 942	5 348	5 349	5 257	39.4%
Sweden	1 509	1 634	1 695	1 977	1 976	2 107	1 991	2 159	1 901	2 148	2 053	3.9%
Switzerland	686	719	839	924	1 020	1 009	1 047	1 086	1 129	1 097	1 062	4.2%
Turkey	818	1 120	1 317	1 646	2 209	2 577	3 197	3 533	4 089	4 402	4 708	113.2%
United Kingdom	8 737	8 347	8 308	8 406	8 621	9 055	9 334	9 321	8 226	8 450	7 874	-8.7%
OECD Europe ***	**52 044**	**55 502**	**62 561**	**64 057**	**67 805**	**69 640**	**73 134**	**77 141**	**72 902**	**76 068**	**73 511**	**8.4%**
European Union - 27	*..*	*..*	*..*	*..*	*68 485*	*68 551*	*70 545*	*74 398*	*69 095*	*71 834*	*69 250*	*1.1%*

* Total world includes non-OECD total, OECD total as well as international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

Total primary energy supply

petajoules

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**83 463**	**100 993**	**124 450**	**144 448**	**169 929**	**173 095**	**189 178**	**238 849**	**278 913**	**299 093**	**311 829**	**83.5%**
Albania	72	83	129	114	112	56	74	91	87	86	91	-18.7%
Armenia	..	..	..	..	323	69	84	105	109	104	114	-64.8%
Azerbaijan	..	..	..	..	949	582	473	562	500	485	526	-44.6%
Belarus	..	..	..	..	1 905	1 036	1 034	1 125	1 119	1 159	1 235	-35.2%
Bosnia and Herzegovina	..	..	..	..	294	63	182	211	258	270	297	1.1%
Bulgaria	797	973	1 189	1 283	1 181	964	782	833	733	749	805	-31.9%
Croatia	..	..	..	..	378	295	326	373	365	359	353	-6.5%
Cyprus **	25	24	36	39	57	71	89	93	106	102	99	73.5%
Georgia	..	..	..	..	520	156	120	119	130	131	148	-71.5%
Gibraltar	1	1	2	2	2	4	5	6	7	7	7	195.3%
Kazakhstan	..	..	..	..	3 075	2 187	1 494	2 127	2 655	3 117	3 270	6.3%
Kosovo ***	..	..	..	..	..	..	65	81	102	104	106	..
Kyrgyzstan	..	..	..	..	313	100	97	105	104	117	130	-58.6%
Latvia	..	..	..	..	329	192	160	190	184	194	183	-44.3%
Lithuania	..	..	..	..	673	365	299	370	367	295	305	-54.6%
FYR of Macedonia	..	..	..	..	104	105	112	119	118	121	131	26.0%
Malta	9	9	13	14	29	30	28	37	33	36	36	23.3%
Republic of Moldova	..	..	..	..	414	198	121	147	133	143	139	-66.3%
Montenegro ***	..	..	..	..	..	..	..	41	42	49	49	..
Romania	1 764	2 169	2 731	2 719	2 606	1 951	1 517	1 620	1 460	1 467	1 500	-42.4%
Russian Federation	..	..	..	..	36 810	26 655	25 927	27 286	27 085	29 404	30 604	-16.9%
Serbia ***	..	..	..	..	825	577	575	672	635	650	678	-17.9%
Tajikistan	..	..	..	..	222	93	90	98	98	99	100	-54.9%
Turkmenistan	..	..	..	..	733	573	623	802	832	949	1 035	41.1%
Ukraine	..	..	..	..	10 550	6 854	5 602	5 982	4 791	5 539	5 294	-49.8%
Uzbekistan	..	..	..	..	1 941	1 786	2 125	1 966	1 877	1 832	1 999	3.0%
Former Soviet Union ****	32 169	39 351	46 453	52 248	..	..	..	..	..	..	..	..
Former Yugoslavia ****	918	1 068	1 411	1 722	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**35 753**	**43 678**	**51 963**	**58 141**	**64 347**	**44 961**	**42 004**	**45 163**	**43 929**	**47 570**	**49 234**	**-23.5%**
Algeria	145	231	469	743	929	1 009	1 130	1 354	1 709	1 679	1 752	88.6%
Angola	161	173	191	209	246	268	314	392	527	560	568	130.8%
Benin	46	52	57	65	70	77	83	105	144	153	157	126.4%
Botswana	..	..	..	37	53	63	77	81	85	95	93	75.6%
Cameroon	113	127	153	187	209	230	264	292	289	291	281	34.9%
Congo	21	23	26	32	32	32	34	45	59	63	69	113.9%
Dem. Rep. of Congo	280	313	354	417	494	548	698	836	960	995	1 026	107.6%
Côte d'Ivoire	103	124	150	155	181	213	282	403	397	410	470	159.8%
Egypt	326	411	635	1 077	1 354	1 477	1 702	2 627	2 992	3 080	3 251	140.2%
Eritrea	..	..	..	..	..	42	30	32	30	31	32	..
Ethiopia	507	556	604	696	828	918	1 057	1 211	1 356	1 392	1 426	72.3%
Gabon	45	54	58	57	49	57	61	72	81	83	84	69.0%
Ghana	125	153	168	182	222	271	324	345	390	419	442	99.4%
Kenya	221	253	308	363	447	507	588	676	791	826	845	89.0%
Libya	66	153	288	418	468	586	666	740	849	905	559	19.5%
Morocco	102	143	204	234	291	360	429	558	630	678	724	149.0%
Mozambique	289	280	281	267	248	263	300	355	400	413	427	72.3%
Namibia	..	..	..	..	..	37	41	54	63	65	67	..
Nigeria	1 510	1 747	2 196	2 572	2 955	3 246	3 793	4 459	4 574	4 821	4 954	67.6%
Senegal	52	58	65	65	71	78	100	117	137	143	147	108.4%
South Africa	1 902	2 260	2 737	3 617	3 808	4 337	4 575	5 368	5 977	5 957	5 919	55.4%
Sudan	294	313	350	396	445	502	559	621	682	695	696	56.4%
United Rep. of Tanzania	317	321	336	367	407	461	561	718	810	839	869	113.2%
Togo	30	33	37	41	53	66	88	99	110	113	116	118.8%
Tunisia	69	91	137	174	207	243	306	348	385	405	398	92.1%
Zambia	147	163	188	206	226	244	261	302	328	337	354	56.7%
Zimbabwe	228	248	272	310	389	412	413	405	366	377	390	0.2%
Other Africa	1 102	1 201	1 373	1 535	1 751	1 968	2 283	2 655	3 041	3 116	3 206	83.2%
Africa	**8 201**	**9 482**	**11 638**	**14 421**	**16 431**	**18 512**	**21 020**	**25 272**	**28 164**	**28 942**	**29 322**	**78.5%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

Total primary energy supply

petajoules

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	238	282	352	417	533	666	778	999	1 220	1 288	1 310	145.7%
Brunei Darussalam	7	31	57	75	72	94	100	93	127	136	160	121.9%
Cambodia	..	..	..	..	..	119	143	144	205	210	223	..
Chinese Taipei	419	599	1 170	1 392	2 020	2 670	3 573	4 278	4 283	4 575	4 546	125.0%
India	6 551	7 441	8 589	10 667	13 261	16 089	19 142	22 583	29 239	30 302	31 378	136.6%
Indonesia	1 468	1 722	2 333	2 756	4 129	5 477	6 480	7 514	8 364	8 847	8 751	111.9%
DPR of Korea	813	932	1 271	1 507	1 391	920	826	893	810	787	797	-42.7%
Malaysia	255	308	498	649	902	1 419	1 972	2 659	2 925	3 042	3 178	252.3%
Mongolia	..	..	..	131	143	113	100	110	136	145	151	5.8%
Myanmar	331	351	394	460	447	494	538	620	596	586	589	31.6%
Nepal	153	169	191	213	242	281	339	382	418	428	435	79.5%
Pakistan	713	852	1 037	1 351	1 794	2 242	2 682	3 191	3 483	3 530	3 552	98.0%
Philippines	641	764	938	995	1 198	1 404	1 669	1 623	1 595	1 696	1 694	41.4%
Singapore	114	155	215	283	482	788	783	919	1 183	1 435	1 400	190.5%
Sri Lanka	159	172	190	209	231	249	349	377	380	412	436	88.9%
Thailand	573	726	921	1 036	1 756	2 593	3 026	4 152	4 492	4 917	4 988	184.1%
Vietnam	554	582	603	668	748	916	1 203	1 736	2 238	2 467	2 563	242.6%
Other Asia	151	181	322	269	289	289	345	398	466	515	544	88.6%
Asia	**13 140**	**15 267**	**19 081**	**23 078**	**29 640**	**36 822**	**44 049**	**52 671**	**62 163**	**65 316**	**66 696**	**125.0%**
People's Rep. of China	16 393	20 257	25 051	28 959	36 453	43 729	48 624	74 344	95 716	105 371	114 205	213.3%
Hong Kong, China	126	152	194	275	362	446	561	530	625	579	624	72.0%
China	**16 519**	**20 409**	**25 245**	**29 234**	**36 816**	**44 175**	**49 184**	**74 874**	**96 341**	**105 950**	**114 828**	**211.9%**
Argentina	1 409	1 505	1 751	1 731	1 929	2 262	2 552	2 804	3 185	3 272	3 354	73.9%
Bolivia	43	62	102	106	109	156	156	217	260	307	323	195.1%
Brazil	2 921	3 815	4 767	5 416	5 870	6 745	7 848	9 016	10 068	11 132	11 306	92.6%
Colombia	580	646	741	837	1 014	1 156	1 081	1 134	1 290	1 350	1 324	30.5%
Costa Rica	34	42	53	53	70	98	120	162	191	195	195	177.5%
Cuba	450	503	627	654	741	463	538	450	517	473	468	-36.8%
Dominican Republic	98	129	144	145	171	223	314	286	291	301	309	81.0%
Ecuador	94	132	209	235	245	285	327	463	531	520	542	121.6%
El Salvador	73	95	105	110	103	141	166	189	176	176	181	74.9%
Guatemala	114	140	159	158	185	223	295	329	390	429	426	130.4%
Haiti	63	72	87	79	65	71	84	108	114	101	134	105.8%
Honduras	58	64	78	84	100	118	125	167	186	191	198	99.2%
Jamaica	84	112	95	72	117	134	160	156	127	118	128	10.1%
Netherlands Antilles	229	161	164	75	61	55	89	88	97	78	105	71.5%
Nicaragua	51	62	64	81	85	95	106	119	122	124	127	50.2%
Panama	69	71	59	65	62	84	108	121	141	155	170	172.2%
Paraguay	57	62	87	95	129	164	161	166	187	200	203	58.1%
Peru	382	434	471	443	408	459	512	571	720	804	862	111.4%
Trinidad and Tobago	110	97	160	213	251	257	454	707	849	895	876	249.4%
Uruguay	101	102	111	84	94	108	129	124	173	175	185	96.8%
Venezuela	819	1 047	1 483	1 653	1 824	2 161	2 362	2 787	2 914	3 161	2 939	61.2%
Other Non-OECD Americas	198	251	251	163	204	218	240	263	285	306	314	54.2%
Non-OECD Americas	**8 038**	**9 603**	**11 771**	**12 550**	**13 835**	**15 675**	**17 929**	**20 425**	**22 814**	**24 464**	**24 669**	**78.3%**
Bahrain	59	89	117	174	182	206	246	307	391	397	398	118.5%
Islamic Republic of Iran	695	1 115	1 594	2 252	2 903	4 238	5 149	7 220	8 936	8 821	8 882	206.0%
Iraq	173	255	404	578	825	1 446	1 086	1 125	1 375	1 584	1 684	104.1%
Jordan	21	32	64	110	137	180	204	280	312	297	296	115.8%
Kuwait	256	271	438	587	381	623	787	1 105	1 290	1 364	1 362	257.0%
Lebanon	77	91	104	98	82	185	205	210	279	267	266	225.0%
Oman	9	10	48	88	177	255	338	451	765	970	1 058	499.2%
Qatar	39	85	139	236	273	341	455	697	1 044	1 213	1 394	410.0%
Saudi Arabia	308	367	1 302	1 926	2 502	3 665	4 242	6 093	7 355	8 039	7 832	213.0%
Syrian Arab Republic	100	128	187	328	438	507	660	871	889	906	837	91.0%
United Arab Emirates	42	81	303	574	855	1 159	1 421	1 810	2 540	2 642	2 768	223.7%
Yemen	31	29	53	73	105	143	199	276	325	350	304	188.9%
Middle East	**1 810**	**2 554**	**4 752**	**7 024**	**8 861**	**12 949**	**14 993**	**20 444**	**25 502**	**26 850**	**27 080**	**205.6%**

Total primary energy supply

million tonnes of oil equivalent

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**5 530.6**	**6 192.2**	**7 217.0**	**7 742.3**	**8 781.9**	**9 237.6**	**10 082.3**	**11 532.0**	**12 217.8**	**12 904.8**	**13 113.4**	**49.3%**
Annex I Parties	*..*	*..*	*..*	*..*	*5 582.2*	*5 480.8*	*5 767.8*	*5 987.7*	*5 631.9*	*5 859.6*	*5 764.3*	*3.3%*
Annex II Parties	*3 113.6*	*3 306.2*	*3 660.8*	*3 680.2*	*4 010.3*	*4 307.6*	*4 655.4*	*4 803.9*	*4 481.6*	*4 616.2*	*4 489.0*	*11.9%*
North America	*1 728.8*	*1 819.5*	*1 996.6*	*1 967.1*	*2 123.6*	*2 298.0*	*2 524.8*	*2 591.1*	*2 415.8*	*2 466.5*	*2 443.0*	*15.0%*
Europe	*1 058.7*	*1 112.5*	*1 241.0*	*1 266.2*	*1 348.4*	*1 405.9*	*1 486.5*	*1 561.9*	*1 454.1*	*1 509.8*	*1 443.4*	*7.1%*
Asia Oceania	*326.1*	*374.2*	*423.1*	*446.9*	*538.4*	*603.7*	*644.1*	*650.9*	*611.8*	*639.9*	*602.5*	*11.9%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 518.5*	*1 111.0*	*1 035.4*	*1 098.5*	*1 051.8*	*1 137.3*	*1 162.0*	*-23.5%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*2 999.0*	*3 527.1*	*4 043.3*	*5 228.8*	*6 254.5*	*6 690.4*	*6 988.4*	*133.0%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*3 568.3*	*3 326.6*	*3 392.7*	*3 556.7*	*3 342.3*	*3 510.4*	*3 430.2*	*-3.9%*
Intl. marine bunkers	**108.3**	**104.4**	**109.5**	**93.8**	**114.2**	**132.5**	**152.9**	**175.1**	**186.2**	**202.2**	**202.6**	**77.5%**
Intl. aviation bunkers	**56.5**	**58.0**	**67.4**	**75.1**	**86.5**	**97.3**	**118.3**	**140.4**	**145.3**	**152.7**	**158.1**	**82.7%**
Non-OECD Total **	**1 993.5**	**2 412.2**	**2 972.4**	**3 450.1**	**4 058.7**	**4 134.3**	**4 518.4**	**5 704.8**	**6 661.7**	**7 143.7**	**7 447.9**	**83.5%**
OECD Total ***	**3 372.3**	**3 617.6**	**4 067.6**	**4 123.3**	**4 522.5**	**4 873.5**	**5 292.7**	**5 511.7**	**5 224.6**	**5 406.2**	**5 304.8**	**17.3%**
Canada	141.4	165.9	192.0	193.0	208.6	230.8	251.4	272.2	251.3	251.0	251.8	20.8%
Chile	8.7	7.6	9.5	9.6	14.0	18.3	25.2	28.4	29.5	30.9	33.6	139.7%
Mexico	43.0	59.2	95.1	108.6	122.5	129.9	145.4	170.3	175.8	178.9	186.2	52.0%
United States	1 587.5	1 653.5	1 804.7	1 774.1	1 915.0	2 067.2	2 273.3	2 318.9	2 164.5	2 215.5	2 191.2	14.4%
OECD Americas	**1 780.5**	**1 886.3**	**2 101.2**	**2 085.3**	**2 260.1**	**2 446.2**	**2 695.3**	**2 789.7**	**2 621.0**	**2 676.3**	**2 662.8**	**17.8%**
Australia	51.6	60.4	69.6	72.8	86.2	92.6	108.1	113.5	122.1	122.5	122.9	42.5%
Israel	5.7	7.0	7.8	7.6	11.5	15.5	18.2	18.5	21.5	23.2	23.3	102.8%
Japan	267.5	305.1	344.5	362.9	439.3	496.3	519.0	520.5	472.2	499.1	461.5	5.0%
Korea	17.0	24.5	41.2	53.5	93.1	144.8	188.2	210.2	229.2	250.0	260.4	179.8%
New Zealand	6.9	8.8	9.0	11.2	12.9	14.9	17.1	16.8	17.5	18.3	18.2	41.2%
OECD Asia Oceania	**348.8**	**405.7**	**472.1**	**508.0**	**643.0**	**764.0**	**850.5**	**879.5**	**862.4**	**913.0**	**886.2**	**37.8%**
Austria	18.8	20.1	23.2	23.1	24.8	26.8	28.6	33.8	32.0	34.2	33.0	32.9%
Belgium	39.7	42.3	46.8	44.1	48.3	53.8	58.5	58.7	57.1	60.9	59.1	22.4%
Czech Republic	45.4	43.7	46.9	49.2	49.6	41.5	41.0	44.9	42.0	44.0	43.4	-12.4%
Denmark	18.5	17.5	19.1	19.3	17.4	19.4	18.6	18.9	18.4	19.3	18.0	3.7%
Estonia	..	..	..	..	9.9	5.2	4.7	5.2	4.7	5.6	5.6	-43.5%
Finland	18.2	19.7	24.6	25.8	28.4	28.9	32.2	34.3	33.3	36.4	34.7	22.4%
France	158.6	165.0	191.8	203.8	224.0	237.1	252.0	270.7	253.5	261.2	252.8	12.9%
Germany	305.0	313.5	357.2	357.2	351.1	336.5	336.6	335.2	313.2	329.8	311.8	-11.2%
Greece	8.7	11.7	15.0	17.6	21.4	22.7	27.1	30.2	29.4	27.6	26.7	24.6%
Hungary	19.0	22.9	28.4	29.8	28.8	25.9	25.0	27.6	24.9	25.7	25.0	-13.2%
Iceland	0.9	1.1	1.5	1.8	2.1	2.3	3.1	3.5	5.4	5.4	5.7	174.4%
Ireland	6.7	6.6	8.2	8.6	9.9	10.4	13.6	14.3	14.4	14.2	13.2	33.9%
Italy	105.4	116.8	130.8	129.3	146.6	159.1	171.5	183.9	164.9	170.2	167.4	14.2%
Luxembourg	4.1	3.8	3.6	3.1	3.4	3.1	3.3	4.4	4.0	4.2	4.2	23.1%
Netherlands	50.9	59.0	64.4	60.6	65.7	70.7	73.2	78.8	78.2	83.4	77.4	17.9%
Norway	13.3	14.6	18.3	20.0	21.0	23.4	26.1	26.8	29.8	32.3	28.1	34.0%
Poland	86.1	103.0	126.6	124.7	103.1	99.5	89.1	92.4	94.0	101.5	101.3	-1.7%
Portugal	6.3	7.7	10.0	11.0	16.7	20.2	24.7	26.5	24.2	23.5	23.1	37.9%
Slovak Republic	14.3	16.8	19.8	20.7	21.3	17.8	17.7	18.8	16.7	17.8	17.3	-18.7%
Slovenia	..	..	..	..	5.7	6.1	6.4	7.3	7.1	7.2	7.2	26.9%
Spain	42.6	57.5	67.7	70.9	90.1	100.8	121.9	141.9	127.7	127.7	125.6	39.4%
Sweden	36.0	39.0	40.5	47.2	47.2	50.3	47.6	51.6	45.4	51.3	49.0	3.9%
Switzerland	16.4	17.2	20.0	22.1	24.4	24.1	25.0	25.9	27.0	26.2	25.4	4.2%
Turkey	19.5	26.8	31.4	39.3	52.8	61.5	76.3	84.4	97.7	105.1	112.5	113.2%
United Kingdom	208.7	199.4	198.4	200.8	205.9	216.3	222.9	222.6	196.5	201.8	188.1	-8.7%
OECD Europe ***	**1 243.0**	**1 325.7**	**1 494.2**	**1 530.0**	**1 619.5**	**1 663.3**	**1 746.8**	**1 842.5**	**1 741.2**	**1 816.8**	**1 755.8**	**8.4%**
European Union - 27	*..*	*..*	*..*	*..*	*1 635.7*	*1 637.3*	*1 684.9*	*1 777.0*	*1 650.3*	*1 715.7*	*1 654.0*	*1.1%*

* Total world includes non-OECD total, OECD total as well as international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

Total primary energy supply

million tonnes of oil equivalent

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**1 993.5**	**2 412.2**	**2 972.4**	**3 450.1**	**4 058.7**	**4 134.3**	**4 518.4**	**5 704.8**	**6 661.7**	**7 143.7**	**7 447.9**	**83.5%**
Albania	1.7	2.0	3.1	2.7	2.7	1.3	1.8	2.2	2.1	2.1	2.2	-18.7%
Armenia	..	..	..	..	7.7	1.6	2.0	2.5	2.6	2.5	2.7	-64.8%
Azerbaijan	..	..	..	..	22.7	13.9	11.3	13.4	11.9	11.6	12.6	-44.6%
Belarus	..	..	..	..	45.5	24.7	24.7	26.9	26.7	27.7	29.5	-35.2%
Bosnia and Herzegovina	..	..	..	..	7.0	1.5	4.3	5.0	6.2	6.5	7.1	1.1%
Bulgaria	19.0	23.2	28.4	30.6	28.2	23.0	18.7	19.9	17.5	17.9	19.2	-31.9%
Croatia	..	..	..	..	9.0	7.1	7.8	8.9	8.7	8.6	8.4	-6.5%
Cyprus **	0.6	0.6	0.9	0.9	1.4	1.7	2.1	2.2	2.5	2.4	2.4	73.5%
Georgia	..	..	..	..	12.4	3.7	2.9	2.8	3.1	3.1	3.5	-71.5%
Gibraltar	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	195.5%
Kazakhstan	..	..	..	..	73.4	52.2	35.7	50.8	63.4	74.4	78.1	6.3%
Kosovo ***	..	..	..	..	..	..	1.5	1.9	2.4	2.5	2.5	..
Kyrgyzstan	..	..	..	..	7.5	2.4	2.3	2.5	2.5	2.8	3.1	-58.6%
Latvia	..	..	..	..	7.9	4.6	3.8	4.5	4.4	4.6	4.4	-44.3%
Lithuania	..	..	..	..	16.1	8.7	7.1	8.8	8.8	7.1	7.3	-54.6%
FYR of Macedonia	..	..	..	..	2.5	2.5	2.7	2.8	2.8	2.9	3.1	26.0%
Malta	0.2	0.2	0.3	0.3	0.7	0.7	0.7	0.9	0.8	0.8	0.9	23.3%
Republic of Moldova	..	..	..	..	9.9	4.7	2.9	3.5	3.2	3.4	3.3	-66.3%
Montenegro ***	..	..	..	..	..	..	..	1.0	1.0	1.2	1.2	..
Romania	42.1	51.8	65.2	64.9	62.3	46.6	36.2	38.7	34.9	35.0	35.8	-42.4%
Russian Federation	..	..	..	..	879.2	636.6	619.3	651.7	646.9	702.3	731.0	-16.9%
Serbia ***	..	..	..	..	19.7	13.8	13.7	16.1	15.2	15.5	16.2	-17.9%
Tajikistan	..	..	..	..	5.3	2.2	2.1	2.3	2.3	2.4	2.4	-54.9%
Turkmenistan	..	..	..	..	17.5	13.7	14.9	19.2	19.9	22.7	24.7	41.1%
Ukraine	..	..	..	..	252.0	163.7	133.8	142.9	114.4	132.3	126.4	-49.8%
Uzbekistan	..	..	..	..	46.4	42.7	50.8	47.0	44.8	43.7	47.8	3.0%
Former Soviet Union ****	768.3	939.9	1 109.5	1 247.9	..	..	..	..	..	..	..	..
Former Yugoslavia ****	21.9	25.5	33.7	41.1	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**853.9**	**1 043.2**	**1 241.1**	**1 388.7**	**1 536.9**	**1 073.9**	**1 003.2**	**1 078.7**	**1 049.2**	**1 136.2**	**1 175.9**	**-23.5%**
Algeria	3.5	5.5	11.2	17.7	22.2	24.1	27.0	32.3	40.8	40.1	41.9	88.6%
Angola	3.9	4.1	4.6	5.0	5.9	6.4	7.5	9.4	12.6	13.4	13.6	130.8%
Benin	1.1	1.2	1.4	1.5	1.7	1.8	2.0	2.5	3.4	3.7	3.8	126.4%
Botswana	..	..	..	0.9	1.3	1.5	1.8	1.9	2.0	2.3	2.2	75.6%
Cameroon	2.7	3.0	3.7	4.5	5.0	5.5	6.3	7.0	6.9	6.9	6.7	34.9%
Congo	0.5	0.6	0.6	0.8	0.8	0.8	0.8	1.1	1.4	1.5	1.7	113.9%
Dem. Rep. of Congo	6.7	7.5	8.5	10.0	11.8	13.1	16.7	20.0	22.9	23.8	24.5	107.6%
Côte d'Ivoire	2.5	3.0	3.6	3.7	4.3	5.1	6.7	9.6	9.5	9.8	11.2	159.8%
Egypt	7.8	9.8	15.2	25.7	32.3	35.3	40.7	62.7	71.5	73.6	77.6	140.2%
Eritrea	..	..	..	..	..	1.0	0.7	0.8	0.7	0.7	0.8	..
Ethiopia	12.1	13.3	14.4	16.6	19.8	21.9	25.2	28.9	32.4	33.3	34.1	72.3%
Gabon	1.1	1.3	1.4	1.4	1.2	1.4	1.5	1.7	1.9	2.0	2.0	69.0%
Ghana	3.0	3.7	4.0	4.4	5.3	6.5	7.7	8.2	9.3	10.0	10.5	99.4%
Kenya	5.3	6.0	7.4	8.7	10.7	12.1	14.1	16.2	18.9	19.7	20.2	89.0%
Libya	1.6	3.7	6.9	10.0	11.2	14.0	15.9	17.7	20.3	21.6	13.3	19.5%
Morocco	2.4	3.4	4.9	5.6	6.9	8.6	10.2	13.3	15.1	16.2	17.3	149.0%
Mozambique	6.9	6.7	6.7	6.4	5.9	6.3	7.2	8.5	9.6	9.9	10.2	72.3%
Namibia	..	..	..	..	..	0.9	1.0	1.3	1.5	1.6	1.6	..
Nigeria	36.1	41.7	52.5	61.4	70.6	77.5	90.6	106.5	109.3	115.1	118.3	67.6%
Senegal	1.2	1.4	1.6	1.6	1.7	1.9	2.4	2.8	3.3	3.4	3.5	108.4%
South Africa	45.4	54.0	65.4	86.4	91.0	103.6	109.3	128.2	142.8	142.3	141.4	55.4%
Sudan	7.0	7.5	8.4	9.5	10.6	12.0	13.3	14.8	16.3	16.6	16.6	56.4%
United Rep. of Tanzania	7.6	7.7	8.0	8.8	9.7	11.0	13.4	17.1	19.3	20.0	20.7	113.2%
Togo	0.7	0.8	0.9	1.0	1.3	1.6	2.1	2.4	2.6	2.7	2.8	118.8%
Tunisia	1.7	2.2	3.3	4.2	4.9	5.8	7.3	8.3	9.2	9.7	9.5	92.1%
Zambia	3.5	3.9	4.5	4.9	5.4	5.8	6.2	7.2	7.8	8.1	8.5	56.7%
Zimbabwe	5.4	5.9	6.5	7.4	9.3	9.8	9.9	9.7	8.7	9.0	9.3	0.2%
Other Africa	26.3	28.7	32.8	36.7	41.8	47.0	54.5	63.4	72.6	74.4	76.6	83.2%
Africa	**195.9**	**226.5**	**278.0**	**344.4**	**392.5**	**442.2**	**502.1**	**603.6**	**672.7**	**691.3**	**700.3**	**78.5%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

Total primary energy supply

million tonnes of oil equivalent

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	5.7	6.7	8.4	9.9	12.7	15.9	18.6	23.9	29.1	30.8	31.3	145.7%
Brunei Darussalam	0.2	0.7	1.3	1.8	1.7	2.2	2.4	2.2	3.0	3.2	3.8	121.9%
Cambodia	..	..	..	..	..	2.8	3.4	3.4	4.9	5.0	5.3	..
Chinese Taipei	10.0	14.3	27.9	33.2	48.3	63.8	85.3	102.2	102.3	109.3	108.6	125.0%
India	156.5	177.7	205.2	254.8	316.7	384.3	457.2	539.4	698.4	723.7	749.4	136.6%
Indonesia	35.1	41.1	55.7	65.8	98.6	130.8	154.8	179.5	199.8	211.3	209.0	111.9%
DPR of Korea	19.4	22.3	30.4	36.0	33.2	22.0	19.7	21.3	19.4	18.8	19.0	-42.7%
Malaysia	6.1	7.3	11.9	15.5	21.5	33.9	47.1	63.5	69.9	72.6	75.9	252.3%
Mongolia	..	..	..	3.1	3.4	2.7	2.4	2.6	3.3	3.5	3.6	5.8%
Myanmar	7.9	8.4	9.4	11.0	10.7	11.8	12.8	14.8	14.2	14.0	14.1	31.6%
Nepal	3.7	4.0	4.6	5.1	5.8	6.7	8.1	9.1	10.0	10.2	10.4	79.5%
Pakistan	17.0	20.3	24.8	32.3	42.9	53.5	64.1	76.2	83.2	84.3	84.8	98.0%
Philippines	15.3	18.2	22.4	23.8	28.6	33.5	39.9	38.8	38.1	40.5	40.5	41.4%
Singapore	2.7	3.7	5.1	6.8	11.5	18.8	18.7	21.9	28.3	34.3	33.4	190.5%
Sri Lanka	3.8	4.1	4.5	5.0	5.5	5.9	8.3	9.0	9.1	9.8	10.4	88.9%
Thailand	13.7	17.3	22.0	24.7	41.9	61.9	72.3	99.2	107.3	117.4	119.1	184.1%
Vietnam	13.2	13.9	14.4	16.0	17.9	21.9	28.7	41.5	53.5	58.9	61.2	242.6%
Other Asia	3.6	4.3	7.7	6.4	6.9	6.9	8.2	9.5	11.1	12.3	13.0	88.6%
Asia	**313.9**	**364.6**	**455.7**	**551.2**	**707.9**	**879.5**	**1 052.1**	**1 258.0**	**1 484.7**	**1 560.0**	**1 593.0**	**125.0%**
People's Rep. of China	391.6	483.8	598.3	691.7	870.7	1 044.5	1 161.4	1 775.7	2 286.1	2 516.7	2 727.7	213.3%
Hong Kong, China	3.0	3.6	4.6	6.6	8.7	10.6	13.4	12.7	14.9	13.8	14.9	72.0%
China	**394.6**	**487.5**	**603.0**	**698.2**	**879.3**	**1 055.1**	**1 174.7**	**1 788.3**	**2 301.1**	**2 530.6**	**2 742.6**	**211.9%**
Argentina	33.7	35.9	41.8	41.3	46.1	54.0	61.0	67.0	76.1	78.2	80.1	73.9%
Bolivia	1.0	1.5	2.4	2.5	2.6	3.7	3.7	5.2	6.2	7.3	7.7	195.1%
Brazil	69.8	91.1	113.9	129.4	140.2	161.1	187.4	215.3	240.5	265.9	270.0	92.6%
Colombia	13.9	15.4	17.7	20.0	24.2	27.6	25.8	27.1	30.8	32.2	31.6	30.5%
Costa Rica	0.8	1.0	1.3	1.3	1.7	2.3	2.9	3.9	4.6	4.6	4.7	177.5%
Cuba	10.7	12.0	15.0	15.6	17.7	11.1	12.9	10.8	12.3	11.3	11.2	-36.8%
Dominican Republic	2.3	3.1	3.4	3.5	4.1	5.3	7.5	6.8	6.9	7.2	7.4	81.0%
Ecuador	2.2	3.1	5.0	5.6	5.8	6.8	7.8	11.0	12.7	12.4	12.9	121.6%
El Salvador	1.8	2.3	2.5	2.6	2.5	3.4	4.0	4.5	4.2	4.2	4.3	74.9%
Guatemala	2.7	3.3	3.8	3.8	4.4	5.3	7.0	7.9	9.3	10.3	10.2	130.4%
Haiti	1.5	1.7	2.1	1.9	1.6	1.7	2.0	2.6	2.7	2.4	3.2	105.8%
Honduras	1.4	1.5	1.9	2.0	2.4	2.8	3.0	4.0	4.5	4.6	4.7	99.2%
Jamaica	2.0	2.7	2.3	1.7	2.8	3.2	3.8	3.7	3.0	2.8	3.1	10.1%
Netherlands Antilles	5.5	3.8	3.9	1.8	1.5	1.3	2.1	2.1	2.3	1.9	2.5	71.5%
Nicaragua	1.2	1.5	1.5	1.9	2.0	2.3	2.5	2.8	2.9	3.0	3.0	50.2%
Panama	1.7	1.7	1.4	1.6	1.5	2.0	2.6	2.9	3.4	3.7	4.1	172.2%
Paraguay	1.4	1.5	2.1	2.3	3.1	3.9	3.9	4.0	4.5	4.8	4.9	58.1%
Peru	9.1	10.4	11.3	10.6	9.7	11.0	12.2	13.6	17.2	19.2	20.6	111.4%
Trinidad and Tobago	2.6	2.3	3.8	5.1	6.0	6.1	10.9	16.9	20.3	21.4	20.9	249.4%
Uruguay	2.4	2.4	2.6	2.0	2.3	2.6	3.1	3.0	4.1	4.2	4.4	96.8%
Venezuela	19.6	25.0	35.4	39.5	43.6	51.6	56.4	66.6	69.6	75.5	70.2	61.2%
Other Non-OECD Americas	4.7	6.0	6.0	3.9	4.9	5.2	5.7	6.3	6.8	7.3	7.5	54.2%
Non-OECD Americas	**192.0**	**229.4**	**281.1**	**299.7**	**330.4**	**374.4**	**428.2**	**487.8**	**544.9**	**584.3**	**589.2**	**78.3%**
Bahrain	1.4	2.1	2.8	4.2	4.4	4.9	5.9	7.3	9.3	9.5	9.5	118.5%
Islamic Republic of Iran	16.6	26.6	38.1	53.8	69.3	101.2	123.0	172.4	213.4	210.7	212.1	206.0%
Iraq	4.1	6.1	9.6	13.8	19.7	34.5	25.9	26.9	32.8	37.8	40.2	104.1%
Jordan	0.5	0.8	1.5	2.6	3.3	4.3	4.9	6.7	7.5	7.1	7.1	115.8%
Kuwait	6.1	6.5	10.5	14.0	9.1	14.9	18.8	26.4	30.8	32.6	32.5	257.0%
Lebanon	1.8	2.2	2.5	2.3	2.0	4.4	4.9	5.0	6.7	6.4	6.3	225.0%
Oman	0.2	0.2	1.1	2.1	4.2	6.1	8.1	10.8	18.3	23.2	25.3	499.2%
Qatar	0.9	2.0	3.3	5.6	6.5	8.1	10.9	16.6	24.9	29.0	33.3	410.0%
Saudi Arabia	7.4	8.8	31.1	46.0	59.8	87.5	101.3	145.5	175.7	192.0	187.1	213.0%
Syrian Arab Republic	2.4	3.1	4.5	7.8	10.5	12.1	15.8	20.8	21.2	21.6	20.0	91.0%
United Arab Emirates	1.0	1.9	7.2	13.7	20.4	27.7	33.9	43.2	60.7	63.1	66.1	223.7%
Yemen	0.7	0.7	1.3	1.7	2.5	3.4	4.7	6.6	7.8	8.4	7.3	188.9%
Middle East	**43.2**	**61.0**	**113.5**	**167.8**	**211.6**	**309.3**	**358.1**	**488.3**	**609.1**	**641.3**	**646.8**	**205.6%**

GDP using exchange rates

billion 2005 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World	**16 105.0**	**18 687.8**	**22 561.6**	**25 577.3**	**30 249.8**	**33 550.5**	**39 708.0**	**45 674.2**	**49 080.0**	**51 052.1**	**52 485.9**	**73.5%**
Annex I Parties	*..*	*..*	*..*	*..*	*24 965.9*	*26 926.6*	*31 427.1*	*35 006.6*	*35 653.1*	*36 625.7*	*37 229.7*	*49.1%*
Annex II Parties	*12 704.3*	*14 370.3*	*17 044.1*	*19 414.8*	*23 054.9*	*25 407.7*	*29 690.2*	*32 780.8*	*33 165.6*	*34 022.5*	*34 502.8*	*49.7%*
North America	*4 756.8*	*5 310.5*	*6 364.7*	*7 446.3*	*8 712.5*	*9 836.6*	*12 158.0*	*13 698.1*	*13 856.4*	*14 195.9*	*14 460.7*	*66.0%*
Europe	*5 981.7*	*6 737.3*	*7 840.1*	*8 495.5*	*9 970.4*	*10 827.0*	*12 490.1*	*13 638.0*	*13 900.2*	*14 190.0*	*14 401.5*	*44.4%*
Asia Oceania	*1 965.8*	*2 322.5*	*2 839.4*	*3 472.9*	*4 372.1*	*4 744.1*	*5 042.0*	*5 444.8*	*5 409.0*	*5 636.6*	*5 640.6*	*29.0%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 637.8*	*1 198.6*	*1 344.6*	*1 736.8*	*1 963.4*	*2 031.4*	*2 105.5*	*28.6%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*5 283.9*	*6 624.0*	*8 280.9*	*10 667.6*	*13 426.9*	*14 426.4*	*15 256.1*	*188.7%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*16 706.5*	*17 570.9*	*19 855.7*	*21 923.1*	*22 399.1*	*23 019.0*	*23 337.1*	*39.7%*
Non-OECD Total *	**2 624.8**	**3 332.4**	**4 292.2**	**4 745.5**	**5 457.0**	**6 095.7**	**7 428.7**	**9 820.8**	**12 535.6**	**13 457.1**	**14 246.4**	**161.1%**
OECD Total **	**13 480.2**	**15 355.5**	**18 269.4**	**20 831.8**	**24 792.8**	**27 454.8**	**32 279.4**	**35 853.3**	**36 544.4**	**37 594.9**	**38 239.5**	**54.2%**
Canada	397.7	473.6	568.3	650.7	749.9	816.7	999.9	1 133.8	1 166.4	1 203.9	1 234.8	64.7%
Chile	30.2	25.8	36.7	38.3	53.1	80.5	98.7	123.1	139.8	148.3	157.2	196.2%
Mexico	251.8	331.8	458.0	504.1	547.8	591.0	770.7	846.1	874.2	920.7	956.8	74.7%
United States	4 359.1	4 836.9	5 796.4	6 795.6	7 962.6	9 019.9	11 158.1	12 564.3	12 690.0	12 992.0	13 225.9	66.1%
OECD Americas	**5 038.7**	**5 668.2**	**6 859.3**	**7 988.7**	**9 313.4**	**10 508.1**	**13 027.4**	**14 667.2**	**14 870.4**	**15 265.0**	**15 574.7**	**67.2%**
Australia	259.5	288.2	334.1	387.9	451.1	530.7	640.1	759.8	849.2	869.8	899.1	99.3%
Israel	31.3	40.7	47.1	54.9	68.1	94.3	120.0	133.7	157.7	165.5	173.2	154.2%
Japan	1 656.4	1 975.5	2 448.1	3 018.2	3 851.3	4 132.2	4 308.1	4 571.9	4 441.8	4 648.5	4 622.0	20.0%
Korea	66.7	95.7	142.5	219.5	360.3	526.7	678.3	844.9	958.5	1 019.1	1 056.1	193.1%
New Zealand	49.8	58.8	57.1	66.9	69.8	81.2	93.8	113.1	118.0	118.3	119.5	71.3%
OECD Asia Oceania	**2 063.8**	**2 459.0**	**3 028.9**	**3 747.4**	**4 800.5**	**5 365.1**	**5 840.3**	**6 423.3**	**6 525.2**	**6 821.2**	**6 869.9**	**43.1%**
Austria	127.1	146.7	172.4	185.4	215.3	240.3	280.6	305.0	320.0	326.6	335.4	55.8%
Belgium	170.8	196.2	229.3	240.4	279.8	302.9	348.6	377.4	391.3	400.8	408.0	45.8%
Czech Republic	70.0	79.9	88.9	93.4	101.0	97.2	106.4	130.1	144.9	148.5	151.2	49.6%
Denmark	125.9	133.3	152.6	174.4	187.4	210.3	242.1	257.7	253.3	257.3	260.1	38.8%
Estonia	..	..	..	..	10.1	7.1	9.8	13.9	13.6	14.0	15.2	49.6%
Finland	73.3	88.8	103.7	118.8	140.2	136.0	171.9	195.8	197.5	204.1	209.7	49.6%
France	942.1	1 086.9	1 283.6	1 385.9	1 623.8	1 725.6	1 973.0	2 136.6	2 167.1	2 204.4	2 249.1	38.5%
Germany	1 365.1	1 492.0	1 760.6	1 884.1	2 216.3	2 448.7	2 685.2	2 766.3	2 840.9	2 959.1	3 048.7	37.6%
Greece	100.4	119.0	145.9	146.9	156.3	166.2	197.0	240.1	253.5	241.0	223.8	43.2%
Hungary	51.3	65.7	78.3	85.4	87.7	77.8	90.0	110.3	107.9	109.4	111.2	26.8%
Iceland	4.8	5.8	7.8	8.8	10.3	10.4	13.2	16.3	17.1	16.4	16.9	64.1%
Ireland	35.4	43.5	54.4	61.7	77.6	97.4	158.8	202.8	208.6	207.0	209.9	170.4%
Italy	802.3	920.5	1 144.3	1 244.0	1 450.7	1 547.7	1 701.0	1 786.3	1 734.0	1 763.9	1 770.5	22.0%
Luxembourg	9.5	10.7	11.9	13.5	19.3	23.5	31.6	37.6	40.1	41.3	41.9	117.0%
Netherlands	269.5	305.1	351.2	371.3	437.8	490.4	598.0	638.5	672.8	683.7	690.5	57.7%
Norway	98.8	118.5	147.8	174.2	189.6	227.6	272.7	304.1	314.3	315.8	319.6	68.6%
Poland	136.0	173.9	181.4	183.0	180.1	200.6	261.1	303.9	368.3	382.6	399.9	122.0%
Portugal	67.0	77.8	99.8	104.3	137.4	149.6	184.1	191.8	193.4	197.2	194.1	41.2%
Slovak Republic	23.8	27.1	30.2	32.6	34.9	31.9	37.7	47.9	57.6	60.2	62.1	77.8%
Slovenia	..	..	..	..	24.9	24.2	29.9	35.7	38.5	39.0	39.2	57.6%
Spain	401.2	496.6	547.3	586.6	730.9	787.6	963.1	1 130.8	1 182.7	1 178.9	1 183.8	62.0%
Sweden	176.6	198.7	212.4	232.6	263.9	273.0	324.5	370.6	376.9	401.6	416.5	57.8%
Switzerland	238.8	238.9	259.7	279.9	323.5	325.6	360.6	384.8	415.3	427.9	436.2	34.8%
Turkey	115.0	144.4	162.3	205.8	269.7	315.9	386.6	483.0	517.7	565.1	614.7	127.9%
United Kingdom	973.3	1 058.5	1 155.2	1 282.7	1 510.3	1 664.3	1 984.1	2 295.8	2 321.4	2 363.2	2 386.6	58.0%
OECD Europe **	**6 377.7**	**7 228.3**	**8 381.1**	**9 095.7**	**10 678.9**	**11 581.6**	**13 411.6**	**14 762.8**	**15 148.8**	**15 508.7**	**15 794.9**	47.9%
European Union - 27	*..*	*..*	*..*	*..*	*10 052.0*	*10 843.0*	*12 524.5*	*13 767.5*	*14 098.5*	*14 399.6*	*14 626.4*	*45.5%*

* Includes Estonia and Slovenia prior to 1990.
** Excludes Estonia and Slovenia prior to 1990.

GDP using exchange rates

billion 2005 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**2 624.8**	**3 332.4**	**4 292.2**	**4 745.5**	**5 457.0**	**6 095.7**	**7 428.7**	**9 820.8**	**12 535.6**	**13 457.1**	**14 246.4**	**161.1%**
Albania	3.0	3.8	5.0	5.5	5.6	4.9	6.4	8.4	10.4	10.7	11.0	96.6%
Armenia	..	..	..	..	4.1	2.1	2.8	4.9	5.8	5.9	6.2	52.2%
Azerbaijan	..	..	..	..	11.9	5.0	7.0	13.2	27.0	28.3	28.6	139.5%
Belarus	..	..	..	..	23.7	15.5	21.0	30.2	39.9	42.9	45.2	90.6%
Bosnia and Herzegovina	..	..	..	..	2.3	2.5	8.6	10.9	12.7	12.8	13.0	465.5%
Bulgaria	10.7	14.6	19.7	23.2	25.0	21.9	22.1	28.9	32.9	33.0	33.6	34.4%
Croatia	..	..	..	..	42.1	30.5	36.0	44.8	46.9	46.3	46.3	9.9%
Cyprus **	2.5	3.0	5.3	6.9	9.6	12.0	14.5	17.0	19.0	19.2	19.3	99.9%
Georgia	..	..	..	..	12.0	3.4	4.5	6.4	7.8	8.2	8.8	-26.6%
Gibraltar	0.5	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.1	50.2%
Kazakhstan	..	..	..	..	50.2	30.9	34.9	57.1	72.0	77.2	83.0	65.3%
Kosovo ***	..	..	..	..	..	..	2.6	3.7	4.6	4.8	5.1	..
Kyrgyzstan	..	..	..	..	3.1	1.6	2.0	2.5	3.1	3.1	3.2	5.3%
Latvia	..	..	..	..	14.4	8.2	10.8	16.0	15.6	15.5	16.4	13.6%
Lithuania	..	..	..	..	24.8	14.4	17.8	26.0	27.0	27.3	29.0	16.9%
FYR of Macedonia	..	..	..	..	6.1	4.8	5.5	6.0	6.9	7.1	7.3	19.9%
Malta	0.9	1.3	2.3	2.5	3.4	4.5	5.7	6.0	6.5	6.7	6.8	99.1%
Republic of Moldova	..	..	..	..	6.0	2.4	2.1	3.0	3.3	3.5	3.7	-37.5%
Montenegro ***	..	..	..	..	..	..	..	2.3	2.7	2.8	2.9	..
Romania	38.0	57.5	82.8	97.4	89.0	79.9	75.0	98.9	113.3	114.3	113.9	28.0%
Russian Federation	..	..	..	..	843.0	523.7	567.4	764.0	870.1	907.8	947.2	12.4%
Serbia ***	..	..	..	..	42.4	21.8	21.1	25.2	27.6	27.9	28.4	-33.0%
Tajikistan	..	..	..	..	3.8	1.4	1.4	2.3	3.0	3.2	3.4	-8.8%
Turkmenistan	..	..	..	..	8.0	5.1	6.3	8.1	12.2	13.3	15.2	89.4%
Ukraine	..	..	..	..	137.0	65.8	59.5	86.1	86.9	90.6	95.3	-30.5%
Uzbekistan	..	..	..	..	11.2	9.1	11.0	14.3	19.8	21.5	23.3	107.4%
Former Soviet Union ****	645.8	807.4	985.2	1 094.9	..	..	..	..	..	..	..	..
Former Yugoslavia ****	64.8	79.6	107.1	109.1	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**766.2**	**967.6**	**1 207.9**	**1 340.1**	**1 379.5**	**872.1**	**947.2**	**1 287.4**	**1 477.7**	**1 535.0**	**1 597.1**	**15.8%**
Algeria	25.8	38.5	51.9	65.7	68.2	69.1	80.6	102.3	112.7	116.5	119.4	75.0%
Angola	13.6	13.8	13.8	15.1	17.7	14.0	19.1	30.6	52.8	54.6	56.8	220.8%
Benin	1.3	1.4	1.7	2.1	2.2	2.7	3.5	4.3	5.1	5.2	5.4	143.6%
Botswana	..	..	..	2.6	4.6	5.5	7.9	10.3	11.1	11.8	12.5	175.3%
Cameroon	4.8	6.4	8.7	13.6	12.1	11.0	13.8	16.6	18.5	19.1	19.9	64.5%
Congo	1.6	2.1	2.7	4.4	4.3	4.4	5.0	6.1	7.2	7.9	8.1	87.6%
Dem. Rep. of Congo	9.7	10.3	9.5	10.4	10.4	7.1	5.8	7.2	8.8	9.4	10.1	-2.9%
Côte d'Ivoire	7.9	9.9	12.1	12.3	13.0	14.0	16.4	16.4	17.8	18.2	17.4	33.1%
Egypt	15.9	18.2	29.1	40.3	49.5	58.5	75.4	89.7	115.1	121.0	123.2	148.8%
Eritrea	..	..	..	..	..	0.8	0.9	1.1	1.0	1.1	1.1	..
Ethiopia	5.4	5.5	5.7	5.3	6.9	7.2	9.0	12.3	18.3	20.1	21.6	214.9%
Gabon	3.0	6.1	5.6	6.4	6.7	7.8	8.0	8.7	9.3	10.0	10.4	54.7%
Ghana	4.5	4.2	4.5	4.4	5.5	6.8	8.4	10.7	13.7	14.8	16.9	207.4%
Kenya	4.9	6.4	8.7	9.9	13.0	14.1	15.7	18.7	22.2	23.5	24.5	88.5%
Libya	43.0	34.7	54.8	39.1	35.3	34.0	35.9	44.0	52.3	53.7	20.9	-40.8%
Morocco	16.1	19.4	25.3	29.8	37.0	38.7	46.7	59.5	72.9	75.5	79.0	113.7%
Mozambique	2.9	2.5	2.5	1.9	2.5	3.0	4.3	6.6	8.5	9.1	9.8	284.5%
Namibia	..	..	..	..	..	4.8	5.7	7.3	8.4	9.0	9.3	..
Nigeria	41.0	47.1	57.0	48.9	63.4	71.7	83.4	112.2	143.9	155.3	166.7	162.9%
Senegal	3.3	3.8	4.0	4.6	5.1	5.7	6.9	8.7	9.9	10.3	10.6	107.0%
South Africa	110.1	126.3	147.1	157.4	170.9	178.4	204.7	247.1	280.9	289.1	298.1	74.4%
Sudan	6.8	8.4	8.8	9.2	11.3	14.5	19.8	26.5	36.8	38.7	40.5	258.2%
United Rep. of Tanzania	3.9	4.7	5.4	5.6	7.5	8.1	10.1	14.1	18.4	19.7	21.0	181.6%
Togo	1.0	1.1	1.5	1.4	1.6	1.6	2.0	2.1	2.4	2.5	2.6	61.2%
Tunisia	6.3	8.5	11.6	14.2	16.4	19.9	26.0	32.3	39.1	40.2	39.5	140.4%
Zambia	4.2	4.7	4.8	4.9	5.3	4.9	5.7	7.2	9.1	9.8	10.4	96.5%
Zimbabwe	3.7	4.3	4.6	5.7	7.1	7.5	8.4	5.8	4.7	5.1	5.6	-21.1%
Other Africa	33.1	35.0	39.4	40.5	46.3	45.6	59.0	80.7	97.6	101.2	106.1	129.3%
Africa	**373.8**	**423.3**	**520.9**	**555.6**	**623.9**	**661.7**	**788.2**	**989.0**	**1 198.7**	**1 252.5**	**1 267.5**	**103.1%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

GDP using exchange rates

billion 2005 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	17.5	16.4	20.1	24.1	29.0	35.9	46.3	60.3	76.8	81.5	86.9	200.3%
Brunei Darussalam	4.2	5.1	8.3	6.9	6.9	8.1	8.6	9.5	9.6	9.9	10.1	46.0%
Cambodia	..	..	..	..	..	2.8	4.0	6.3	8.2	8.7	9.3	..
Chinese Taipei	30.6	46.5	80.1	109.3	167.0	236.8	305.8	364.9	402.8	446.4	470.6	181.7%
India	154.2	175.0	204.0	262.3	350.2	448.7	601.3	834.2	1 125.4	1 232.9	1 317.5	276.2%
Indonesia	40.6	55.2	80.9	106.4	150.1	219.2	226.9	285.9	355.8	377.8	402.2	168.0%
DPR of Korea	7.9	12.4	21.4	34.3	40.9	32.1	28.5	29.7	30.3	27.6	28.1	-31.2%
Malaysia	16.0	21.3	32.1	41.1	57.3	90.1	113.9	143.5	166.3	178.2	187.3	226.8%
Mongolia	..	..	..	1.5	1.8	1.6	1.8	2.5	3.2	3.5	4.1	119.6%
Myanmar	1.9	2.1	2.9	3.7	3.3	4.4	6.5	12.0	16.5	17.4	18.4	456.9%
Nepal	2.2	2.4	2.7	3.4	4.2	5.5	6.9	8.1	9.7	10.1	10.5	148.2%
Pakistan	20.2	23.5	31.7	44.0	58.4	73.2	85.9	109.6	129.4	134.0	138.0	136.4%
Philippines	31.2	39.1	52.5	49.3	62.1	69.1	82.4	103.1	121.8	131.1	136.3	119.4%
Singapore	11.0	15.4	23.3	32.4	49.1	73.9	97.8	123.5	147.3	169.0	177.3	261.3%
Sri Lanka	5.3	6.2	8.0	10.2	12.1	15.7	20.1	24.4	30.8	33.3	36.0	197.9%
Thailand	22.6	28.5	41.8	54.5	88.9	134.5	137.5	176.4	194.9	210.1	210.3	136.4%
Vietnam	9.5	9.6	10.2	14.1	17.8	26.3	36.8	52.9	69.6	74.3	78.6	343.0%
Other Asia	15.1	17.0	19.7	21.8	26.1	30.0	32.4	42.6	57.0	60.9	65.2	149.9%
Asia	**389.9**	**475.8**	**639.6**	**819.2**	**1 125.2**	**1 507.9**	**1 843.5**	**2 389.3**	**2 955.4**	**3 206.6**	**3 386.5**	**201.0%**
People's Rep. of China	126.6	157.7	216.3	360.0	525.7	937.4	1 417.0	2 256.9	3 476.5	3 838.0	4 194.9	698.0%
Hong Kong, China	22.2	29.7	52.3	69.1	100.2	129.7	147.6	181.6	206.1	220.1	230.9	130.4%
China	**148.8**	**187.4**	**268.6**	**429.0**	**625.9**	**1 067.1**	**1 564.7**	**2 438.5**	**3 682.6**	**4 058.1**	**4 425.8**	**607.1%**
Argentina	97.9	107.9	123.9	109.0	106.4	146.2	166.0	183.2	232.4	253.7	276.2	159.6%
Bolivia	4.0	5.1	5.6	5.1	5.7	6.9	8.2	9.5	11.5	12.0	12.6	121.9%
Brazil	253.7	371.7	513.4	541.8	598.5	696.1	769.0	882.2	1 019.9	1 096.8	1 126.7	88.3%
Colombia	41.1	51.1	66.3	74.1	94.3	115.5	122.7	146.5	175.9	182.9	193.8	105.4%
Costa Rica	4.7	5.9	7.7	7.7	9.8	12.8	16.3	20.0	23.8	25.0	26.0	164.9%
Cuba	18.3	22.0	25.8	38.9	38.5	26.7	33.4	42.6	52.8	55.0	57.3	48.8%
Dominican Republic	7.0	9.7	12.6	13.8	15.9	20.5	28.6	34.0	44.5	47.9	50.0	215.4%
Ecuador	10.4	14.8	19.2	20.5	23.5	26.8	28.1	36.9	42.5	44.0	47.4	102.1%
El Salvador	8.4	10.1	10.1	8.8	9.7	13.1	15.2	17.1	18.1	18.3	18.6	91.8%
Guatemala	8.7	10.9	14.4	13.6	15.7	19.3	23.4	27.2	31.6	32.6	33.8	116.0%
Haiti	3.2	3.4	4.5	4.3	4.3	3.8	4.3	4.2	4.6	4.3	4.5	5.8%
Honduras	2.7	3.1	4.4	4.8	5.6	6.7	7.7	9.7	11.2	11.5	11.9	113.2%
Jamaica	7.1	7.6	6.4	6.6	8.4	10.2	10.0	11.0	11.0	11.0	11.1	33.2%
Netherlands Antilles	1.1	1.2	1.4	1.5	1.7	1.9	2.3	2.5	2.6	2.7	2.7	58.0%
Nicaragua	4.4	5.5	4.4	4.6	3.9	4.2	5.4	6.3	7.0	7.2	7.6	95.9%
Panama	4.9	5.6	6.7	7.9	7.6	10.0	12.5	15.5	21.5	23.2	25.6	235.1%
Paraguay	1.9	2.5	4.3	4.7	5.6	6.8	6.7	7.5	8.5	9.7	10.4	83.7%
Peru	34.6	42.4	47.4	48.2	43.8	57.2	64.7	79.4	103.1	112.2	119.8	173.7%
Trinidad and Tobago	6.1	6.9	10.1	9.0	8.0	8.6	11.0	16.1	19.0	19.0	18.2	126.6%
Uruguay	9.2	9.9	12.3	10.2	12.3	14.9	17.2	17.4	21.1	23.0	24.3	97.6%
Venezuela	74.8	85.2	96.2	91.8	104.3	123.6	128.3	145.5	177.2	174.6	181.8	74.3%
Other Non-OECD Americas	12.6	13.1	17.6	18.4	24.1	25.6	31.0	34.5	35.8	36.6	37.5	55.8%
Non-OECD Americas	**616.7**	**795.5**	**1 014.5**	**1 045.1**	**1 147.6**	**1 357.4**	**1 512.0**	**1 748.8**	**2 075.8**	**2 203.1**	**2 298.2**	**100.3%**
Bahrain	1.7	3.1	5.0	4.7	5.8	8.1	10.0	13.5	17.0	17.8	18.1	210.5%
Islamic Republic of Iran	67.3	95.5	82.7	100.2	101.5	120.0	146.3	192.0	228.3	241.8	246.6	142.9%
Iraq	83.0	105.5	158.6	101.5	54.2	20.7	42.6	31.3	38.5	38.8	42.7	-21.2%
Jordan	2.3	2.2	4.6	5.9	5.6	7.9	9.2	12.6	16.7	17.0	17.5	212.0%
Kuwait	46.0	38.1	40.3	31.8	36.6	49.6	54.5	80.8	88.3	91.3	98.8	170.1%
Lebanon	14.3	14.1	11.9	16.7	9.5	16.9	18.2	21.9	28.0	30.0	30.9	224.9%
Oman	4.1	5.4	7.0	14.2	16.6	22.0	26.0	30.9	39.7	41.3	43.6	163.1%
Qatar	15.1	15.3	17.8	15.0	14.8	16.4	28.9	43.0	79.4	92.6	110.0	644.3%
Saudi Arabia	73.5	153.0	213.8	169.3	200.4	230.8	262.0	315.6	346.5	362.6	387.1	93.2%
Syrian Arab Republic	4.7	8.1	11.1	12.8	13.8	20.3	22.7	28.9	35.5	36.6	35.9	159.7%
United Arab Emirates	15.5	39.9	83.2	77.6	88.3	106.2	139.1	180.6	208.2	211.2	221.6	151.0%
Yemen	1.9	2.7	4.7	6.7	7.9	10.6	13.6	16.8	19.2	20.8	18.6	136.6%
Middle East	**329.4**	**482.7**	**640.7**	**556.5**	**554.9**	**629.5**	**773.1**	**967.8**	**1 145.4**	**1 201.9**	**1 271.3**	**129.1%**

GDP using purchasing power parities

billion 2005 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World	**18 844.7**	**22 235.7**	**27 109.4**	**30 712.6**	**36 173.4**	**40 210.4**	**48 150.8**	**57 343.2**	**64 565.9**	**67 779.1**	**70 313.0**	**94.4%**
Annex I Parties	*..*	*..*	*..*	*..*	*25 364.9*	*26 638.3*	*31 100.5*	*35 011.7*	*35 904.9*	*36 915.1*	*37 604.3*	*48.3%*
Annex II Parties	*11 822.4*	*13 374.3*	*15 871.6*	*18 076.6*	*21 453.2*	*23 673.0*	*27 753.9*	*30 682.4*	*31 056.6*	*31 845.4*	*32 298.0*	*50.6%*
North America	*4 756.2*	*5 309.8*	*6 363.8*	*7 445.3*	*8 711.3*	*9 835.3*	*12 156.5*	*13 696.3*	*13 854.6*	*14 194.0*	*14 458.8*	*66.0%*
Europe	*5 366.1*	*6 057.6*	*7 057.0*	*7 635.9*	*8 975.3*	*9 746.5*	*11 241.7*	*12 275.3*	*12 513.0*	*12 766.8*	*12 948.4*	*44.3%*
Asia Oceania	*1 700.1*	*2 006.9*	*2 450.8*	*2 995.5*	*3 766.5*	*4 091.2*	*4 355.7*	*4 710.9*	*4 689.0*	*4 884.6*	*4 890.8*	*29.9%*
Annex I EIT	*..*	*..*	*..*	*..*	*3 470.7*	*2 448.1*	*2 713.2*	*3 539.6*	*4 001.7*	*4 146.2*	*4 302.4*	*24.0%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*10 808.5*	*13 572.2*	*17 050.2*	*22 331.4*	*28 660.9*	*30 864.1*	*32 708.7*	*202.6%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*16 895.7*	*17 058.3*	*19 250.9*	*21 574.2*	*22 258.2*	*22 880.9*	*23 249.5*	*37.6%*
Non-OECD Total *	**5 801.0**	**7 317.7**	**9 332.5**	**10 451.8**	**12 077.9**	**13 458.4**	**16 508.7**	**22 049.8**	**28 441.1**	**30 576.5**	**32 407.3**	**168.3%**
OECD Total **	**13 043.7**	**14 918.1**	**17 776.9**	**20 260.8**	**24 095.6**	**26 752.0**	**31 642.0**	**35 293.4**	**36 124.8**	**37 202.6**	**37 905.7**	**57.3%**
Canada	397.1	472.9	567.4	649.7	748.7	815.4	998.4	1 132.0	1 164.6	1 202.0	1 232.9	64.7%
Chile	50.6	43.3	61.5	64.3	89.0	135.1	165.5	206.4	234.5	248.8	263.7	196.2%
Mexico	385.0	507.4	700.3	770.9	837.7	903.7	1 178.6	1 293.8	1 336.8	1 407.9	1 463.1	74.7%
United States	4 359.1	4 836.9	5 796.4	6 795.6	7 962.6	9 019.9	11 158.1	12 564.3	12 690.0	12 992.0	13 225.9	66.1%
OECD Americas	**5 191.8**	**5 860.5**	**7 125.6**	**8 280.5**	**9 638.0**	**10 874.0**	**13 500.5**	**15 196.5**	**15 425.9**	**15 850.8**	**16 185.6**	**67.9%**
Australia	244.8	271.8	315.1	365.8	425.4	500.6	603.8	716.7	800.9	820.4	848.0	99.3%
Israel	37.8	49.2	56.8	66.3	82.2	113.8	144.9	161.4	190.4	199.9	209.1	154.2%
Japan	1 409.2	1 680.7	2 082.7	2 567.8	3 276.5	3 515.5	3 665.2	3 889.6	3 779.0	3 954.8	3 932.2	20.0%
Korea	86.6	124.3	184.9	284.9	467.7	683.8	880.5	1 096.7	1 244.3	1 322.9	1 371.0	193.1%
New Zealand	46.1	54.4	52.9	61.9	64.6	75.1	86.8	104.6	109.2	109.4	110.6	71.3%
OECD Asia Oceania	**1 824.5**	**2 180.4**	**2 692.5**	**3 346.7**	**4 316.5**	**4 888.8**	**5 381.1**	**5 969.0**	**6 123.7**	**6 407.4**	**6 470.9**	**49.9%**
Austria	115.3	133.1	156.4	168.2	195.3	218.0	254.6	276.7	290.3	296.3	304.3	55.8%
Belgium	152.7	175.4	205.0	214.9	250.1	270.7	311.6	337.3	349.8	358.3	364.7	45.8%
Czech Republic	117.2	133.7	148.8	156.3	169.1	162.6	178.1	217.7	242.5	248.5	253.0	49.6%
Denmark	87.9	93.0	106.5	121.8	130.8	146.8	169.0	179.9	176.8	179.6	181.6	38.8%
Estonia	..	..	..	..	16.2	11.4	15.8	22.3	21.7	22.4	24.3	49.6%
Finland	60.3	73.0	85.4	97.8	115.4	111.9	141.5	161.1	162.5	167.9	172.6	49.6%
France	820.5	946.5	1 117.9	1 207.0	1 414.2	1 502.8	1 718.3	1 860.7	1 887.3	1 919.8	1 958.7	38.5%
Germany	1 266.2	1 384.0	1 633.2	1 747.7	2 055.8	2 271.4	2 490.8	2 566.0	2 635.3	2 744.8	2 828.0	37.6%
Greece	113.1	134.0	164.3	165.5	176.0	187.2	221.8	270.4	285.5	271.4	252.1	43.2%
Hungary	79.6	102.0	121.5	132.6	136.1	120.8	139.6	171.2	167.5	169.7	172.5	26.8%
Iceland	3.0	3.7	5.0	5.6	6.5	6.6	8.4	10.4	10.9	10.4	10.7	64.1%
Ireland	28.2	34.7	43.3	49.1	61.8	77.5	126.4	161.4	166.0	164.7	167.1	170.4%
Italy	744.4	854.1	1 061.8	1 154.2	1 346.0	1 436.0	1 578.3	1 657.4	1 608.9	1 636.6	1 642.7	22.0%
Luxembourg	8.0	9.0	10.1	11.4	16.3	19.8	26.7	31.8	33.8	34.8	35.4	117.0%
Netherlands	241.8	273.7	315.1	333.2	392.9	440.0	536.5	572.9	603.7	613.5	619.6	57.7%
Norway	71.5	85.8	107.1	126.1	137.3	164.8	197.5	220.2	227.6	228.7	231.5	68.6%
Poland	235.4	301.1	314.0	316.7	311.8	347.2	452.0	526.1	637.6	662.3	692.2	122.0%
Portugal	78.7	91.5	117.3	122.6	161.5	175.7	216.3	225.4	227.3	231.7	228.1	41.2%
Slovak Republic	43.2	49.3	54.9	59.3	63.6	58.0	68.6	87.1	104.9	109.5	113.0	77.8%
Slovenia	..	..	..	..	32.7	31.8	39.3	47.0	50.7	51.3	51.6	57.6%
Spain	421.7	522.0	575.4	616.6	768.3	828.0	1 012.5	1 188.8	1 243.3	1 239.3	1 244.5	62.0%
Sweden	140.7	158.4	169.2	185.4	210.3	217.5	258.6	295.3	300.3	320.0	331.9	57.8%
Switzerland	170.6	170.7	185.6	200.0	231.1	232.7	257.6	274.9	296.7	305.7	311.6	34.8%
Turkey	186.0	233.6	262.5	332.9	436.2	510.9	625.3	781.2	837.4	914.1	994.3	127.9%
United Kingdom	841.4	915.1	998.7	1 108.9	1 305.7	1 438.9	1 715.3	1 984.9	2 007.0	2 043.1	2 063.3	58.0%
OECD Europe **	**6 027.5**	**6 877.2**	**7 958.8**	**8 633.7**	**10 141.1**	**10 989.2**	**12 760.4**	**14 127.8**	**14 575.2**	**14 944.5**	**15 249.2**	50.4%
European Union - 27	*..*	*..*	*..*	*..*	*9 666.2*	*10 356.8*	*11 960.6*	*13 225.1*	*13 630.2*	*13 916.7*	*14 137.8*	46.3%

* Includes Estonia and Slovenia prior to 1990.
** Excludes Estonia and Slovenia prior to 1990.

GDP using purchasing power parities

billion 2005 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**5 801.0**	**7 317.7**	**9 332.5**	**10 451.8**	**12 077.9**	**13 458.4**	**16 508.7**	**22 049.8**	**28 441.1**	**30 576.5**	**32 407.3**	**168.3%**
Albania	6.9	8.6	11.3	12.5	12.9	11.3	14.7	19.2	23.7	24.5	25.3	96.5%
Armenia	..	..	..	..	10.4	5.5	7.1	12.6	14.8	15.2	15.9	52.2%
Azerbaijan	..	..	..	..	34.0	14.2	20.0	37.7	76.9	80.7	81.5	139.5%
Belarus	..	..	..	..	65.6	42.8	58.1	83.5	110.2	118.7	125.0	90.6%
Bosnia and Herzegovina	..	..	..	..	5.0	5.5	18.8	24.0	27.8	28.1	28.5	465.5%
Bulgaria	28.1	38.3	51.6	60.9	65.6	57.5	58.1	75.9	86.3	86.7	88.2	34.4%
Croatia	..	..	..	..	64.0	46.3	54.8	68.1	71.3	70.3	70.3	9.9%
Cyprus **	2.8	3.3	5.7	7.5	10.5	13.1	15.8	18.5	20.6	20.9	21.0	99.9%
Georgia	..	..	..	..	29.5	8.3	11.1	15.7	19.1	20.2	21.7	-26.5%
Gibraltar	0.4	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	50.3%
Kazakhstan	..	..	..	..	115.9	71.2	80.5	131.8	166.1	178.2	191.5	65.3%
Kosovo ***	..	..	..	..	..	..	6.6	9.4	11.7	12.1	12.7	..
Kyrgyzstan	..	..	..	..	11.1	5.6	7.4	8.9	11.1	11.0	11.7	5.3%
Latvia	..	..	..	..	26.9	15.4	20.2	30.0	29.1	29.0	30.6	13.6%
Lithuania	..	..	..	..	46.2	26.8	33.3	48.5	50.4	51.1	54.1	16.9%
FYR of Macedonia	..	..	..	..	16.3	12.8	14.8	16.0	18.6	18.9	19.5	19.9%
Malta	1.3	1.9	3.3	3.6	4.8	6.3	8.1	8.5	9.2	9.4	9.6	99.1%
Republic of Moldova	..	..	..	..	16.9	6.8	6.0	8.5	9.3	10.0	10.6	-37.5%
Montenegro ***	..	..	..	..	..	..	..	5.2	6.3	6.4	6.6	..
Romania	77.7	117.7	169.6	199.5	182.2	163.6	153.5	202.5	231.9	234.1	233.3	28.0%
Russian Federation	..	..	..	..	1 872.3	1 163.0	1 260.1	1 696.7	1 932.3	2 016.1	2 103.5	12.4%
Serbia ***	..	..	..	..	106.5	54.9	52.9	63.4	69.3	70.0	71.4	-33.0%
Tajikistan	..	..	..	..	15.7	6.0	6.0	9.7	12.5	13.3	14.3	-8.8%
Turkmenistan	..	..	..	..	22.4	14.2	17.6	22.6	33.9	37.0	42.5	89.3%
Ukraine	..	..	..	..	418.4	200.8	181.8	263.0	265.4	276.5	290.9	-30.5%
Uzbekistan	..	..	..	..	41.1	33.3	40.2	52.4	72.5	78.6	85.2	107.4%
Former Soviet Union ****	1 521.5	1 902.2	2 321.1	2 579.6	..	..	..	..	..	..	..	..
Former Yugoslavia ****	114.0	140.0	188.3	191.8	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**1 752.6**	**2 212.3**	**2 751.4**	**3 055.9**	**3 194.8**	**1 985.9**	**2 148.3**	**2 933.0**	**3 381.1**	**3 518.0**	**3 666.1**	**14.8%**
Algeria	59.3	88.6	119.6	151.3	157.1	159.2	185.7	235.8	259.7	268.3	275.0	75.0%
Angola	24.7	24.9	25.0	27.3	32.0	25.3	34.5	55.3	95.4	98.7	102.6	220.8%
Benin	3.1	3.4	4.1	5.1	5.3	6.6	8.5	10.3	12.2	12.6	13.0	143.7%
Botswana	..	..	..	5.5	9.6	11.7	16.8	21.6	23.4	25.0	26.4	175.3%
Cameroon	10.1	13.4	18.3	28.6	25.4	23.0	29.1	34.9	38.9	40.0	41.7	64.5%
Congo	3.1	4.2	5.3	8.6	8.5	8.7	9.8	11.9	14.2	15.4	15.9	87.6%
Dem. Rep. of Congo	21.4	22.7	21.0	23.1	23.0	15.8	12.9	15.9	19.5	20.9	22.3	-2.9%
Côte d'Ivoire	14.6	18.2	22.3	22.6	23.9	25.7	30.0	30.0	32.6	33.4	31.8	33.2%
Egypt	59.0	67.7	108.1	149.7	184.0	217.5	280.2	333.2	427.7	449.7	457.8	148.8%
Eritrea	..	..	..	..	..	2.0	2.1	2.7	2.5	2.6	2.8	..
Ethiopia	20.8	21.3	21.8	20.5	26.4	27.7	34.6	47.2	70.3	77.3	83.0	214.9%
Gabon	6.1	12.5	11.6	13.1	13.9	16.2	16.4	17.8	19.2	20.5	21.5	54.7%
Ghana	11.0	10.3	10.8	10.6	13.4	16.5	20.4	26.1	33.4	36.1	41.3	207.4%
Kenya	12.7	16.5	22.4	25.3	33.3	36.1	40.1	48.0	56.9	60.2	62.8	88.5%
Libya	79.0	63.8	100.7	71.8	65.0	62.6	66.0	80.9	96.2	98.6	38.4	-40.8%
Morocco	29.3	35.3	46.0	54.1	67.2	70.3	84.8	108.2	132.4	137.3	143.5	113.7%
Mozambique	6.2	5.2	5.3	4.1	5.4	6.4	9.1	13.9	18.0	19.2	20.6	284.5%
Namibia	..	..	..	..	..	7.2	8.5	10.8	12.6	13.4	13.9	..
Nigeria	89.4	102.6	124.3	106.5	138.2	156.3	181.7	244.6	313.5	338.5	363.4	162.9%
Senegal	7.0	7.9	8.3	9.5	10.7	11.9	14.5	18.2	20.8	21.6	22.2	107.0%
South Africa	180.9	207.5	241.6	258.5	280.7	293.0	336.2	405.8	461.4	474.8	489.6	74.4%
Sudan	15.4	19.0	20.0	20.7	25.6	32.8	44.8	60.0	83.3	87.5	91.7	258.2%
United Rep. of Tanzania	11.2	13.3	15.4	16.1	21.3	23.2	28.7	40.4	52.6	56.3	59.9	181.6%
Togo	2.1	2.5	3.2	3.1	3.5	3.6	4.4	4.6	5.2	5.4	5.7	61.2%
Tunisia	14.0	19.0	25.8	31.7	36.7	44.3	58.1	72.0	87.1	89.8	88.1	140.4%
Zambia	7.7	8.7	8.8	9.1	9.8	9.1	10.5	13.3	16.8	18.1	19.3	96.5%
Zimbabwe	2.5	2.9	3.1	3.8	4.8	5.1	5.7	3.9	3.2	3.5	3.8	-21.1%
Other Africa	75.6	80.7	91.6	95.3	110.0	111.3	140.7	190.2	233.7	245.4	256.4	133.0%
Africa	**766.0**	**872.0**	**1 084.4**	**1 175.7**	**1 334.6**	**1 429.0**	**1 714.9**	**2 157.6**	**2 642.9**	**2 770.1**	**2 814.5**	**110.9%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

GDP using purchasing power parities

billion 2005 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	47.6	44.5	54.6	65.5	78.6	97.5	125.7	163.7	208.6	221.3	236.1	200.3%
Brunei Darussalam	7.7	9.4	15.3	12.7	12.7	14.8	15.9	17.6	17.7	18.2	18.6	46.0%
Cambodia	..	..	..	..	..	9.1	12.9	20.1	26.3	27.8	29.8	..
Chinese Taipei	50.9	77.3	133.2	181.7	277.8	393.8	508.5	606.8	669.9	742.3	782.6	181.7%
India	465.2	527.9	615.6	791.7	1 057.1	1 354.4	1 814.9	2 517.9	3 396.9	3 721.4	3 976.5	276.2%
Indonesia	100.1	136.3	199.5	262.4	370.2	540.6	559.7	705.2	877.6	931.9	992.1	168.0%
DPR of Korea	28.7	45.0	77.6	124.2	148.0	116.2	103.2	107.5	109.6	99.8	101.8	-31.2%
Malaysia	34.9	46.5	70.0	89.8	125.2	196.8	248.7	313.5	363.3	389.3	409.1	226.8%
Mongolia	..	..	..	4.5	5.3	4.7	5.3	7.3	9.4	10.0	11.7	119.7%
Myanmar	7.8	8.7	11.9	15.0	13.5	17.8	26.7	49.0	67.6	71.1	75.0	457.1%
Nepal	6.9	7.6	8.6	10.9	13.6	17.5	22.1	26.0	31.0	32.4	33.7	148.2%
Pakistan	62.6	72.9	98.5	136.7	181.2	227.2	266.7	340.3	401.9	416.1	428.4	136.4%
Philippines	78.9	99.1	133.0	124.8	157.3	175.0	208.5	261.0	308.5	332.1	345.0	119.4%
Singapore	17.3	24.2	36.5	50.8	76.9	115.9	153.3	193.6	230.8	264.9	277.8	261.3%
Sri Lanka	15.1	17.7	22.9	29.2	34.5	44.9	57.4	69.7	88.0	95.0	102.9	197.9%
Thailand	57.0	71.8	105.4	137.5	224.5	339.5	347.2	445.2	491.9	530.4	530.8	136.4%
Vietnam	32.1	32.4	34.3	47.3	59.7	88.6	124.0	178.1	234.0	249.9	264.6	343.0%
Other Asia	26.6	30.5	35.3	37.2	40.5	52.1	56.4	80.0	108.6	120.8	132.7	227.6%
Asia	**1 039.3**	**1 252.0**	**1 652.2**	**2 121.8**	**2 876.7**	**3 806.3**	**4 657.2**	**6 102.3**	**7 641.3**	**8 274.6**	**8 749.2**	**204.1%**
People's Rep. of China	301.2	374.8	514.1	855.6	1 249.5	2 228.0	3 368.1	5 364.3	8 262.9	9 122.2	9 970.6	698.0%
Hong Kong, China	30.4	40.7	71.5	94.4	137.0	177.4	201.9	248.3	281.8	301.0	315.7	130.4%
China	**331.6**	**415.5**	**585.6**	**950.0**	**1 386.5**	**2 405.3**	**3 570.0**	**5 612.5**	**8 544.7**	**9 423.2**	**10 286.3**	**641.9%**
Argentina	223.8	246.8	283.4	249.3	243.5	334.4	379.7	419.0	531.7	580.4	631.9	159.6%
Bolivia	14.5	18.3	20.2	18.3	20.5	25.0	29.6	34.5	41.5	43.2	45.4	121.9%
Brazil	455.1	666.8	921.0	972.0	1 073.7	1 248.9	1 379.6	1 582.6	1 829.7	1 967.6	2 021.3	88.3%
Colombia	88.2	109.6	142.4	159.1	202.4	247.9	263.2	314.4	377.4	392.6	415.8	105.4%
Costa Rica	9.2	11.6	14.9	14.9	19.2	25.1	31.9	39.0	46.5	48.7	50.7	164.9%
Cuba	20.8	24.9	29.3	44.1	43.7	30.3	37.8	48.3	59.8	62.3	65.0	48.8%
Dominican Republic	12.2	16.9	21.8	24.0	27.6	35.6	49.7	59.1	77.3	83.3	87.0	215.4%
Ecuador	24.6	35.1	45.3	48.5	55.6	63.4	66.4	87.4	100.6	104.2	112.3	102.1%
El Salvador	16.9	20.4	20.4	17.7	19.6	26.4	30.7	34.5	36.5	37.0	37.6	91.8%
Guatemala	16.6	20.6	27.3	25.8	29.7	36.7	44.5	51.7	60.1	61.8	64.2	116.0%
Haiti	7.3	7.8	10.3	10.0	9.9	8.7	9.8	9.6	10.5	9.9	10.5	5.8%
Honduras	6.3	7.2	10.2	11.1	13.0	15.5	18.0	22.5	26.0	26.7	27.7	113.2%
Jamaica	12.1	12.9	10.9	11.1	14.2	17.2	16.9	18.6	18.7	18.6	18.9	33.2%
Netherlands Antilles	0.9	1.1	1.2	1.3	1.5	1.7	2.1	2.2	2.4	2.4	2.4	58.0%
Nicaragua	11.5	14.3	11.6	11.9	10.1	11.0	14.1	16.4	18.2	18.8	19.8	95.9%
Panama	9.4	10.7	12.8	15.2	14.7	19.2	24.0	29.7	41.3	44.4	49.2	235.1%
Paraguay	6.0	7.8	13.2	14.4	17.4	20.9	20.7	23.0	26.1	29.9	31.9	83.7%
Peru	76.7	93.9	105.2	106.9	97.1	126.8	143.4	176.0	228.7	248.8	265.7	173.7%
Trinidad and Tobago	10.0	11.3	16.5	14.7	13.2	14.1	18.0	26.4	31.1	31.1	29.8	126.6%
Uruguay	16.9	18.2	22.8	18.8	22.7	27.5	31.7	32.0	39.0	42.4	44.9	97.6%
Venezuela	135.6	154.5	174.3	166.4	189.1	224.0	232.5	263.8	321.2	316.4	329.6	74.3%
Other Non-OECD Americas	15.6	15.7	21.1	22.3	28.3	30.3	36.6	40.9	42.6	43.6	41.3	45.7%
Non-OECD Americas	**1 190.1**	**1 526.4**	**1 936.1**	**1 977.8**	**2 166.4**	**2 590.5**	**2 881.1**	**3 331.7**	**3 966.9**	**4 214.0**	**4 402.8**	**103.2%**
Bahrain	2.5	4.6	7.6	7.0	8.8	12.3	15.1	20.3	25.8	26.9	27.4	210.5%
Islamic Republic of Iran	225.4	320.0	277.3	335.9	340.2	402.1	490.2	643.5	765.2	810.3	826.3	142.9%
Iraq	218.6	277.9	418.0	267.5	142.7	54.6	112.2	82.5	101.5	102.3	112.5	-21.2%
Jordan	4.2	4.1	8.6	11.1	10.4	14.7	17.2	23.5	31.0	31.7	32.6	212.0%
Kuwait	62.9	52.0	55.1	43.5	50.0	67.8	74.4	110.4	120.7	124.9	135.1	170.1%
Lebanon	25.5	25.0	21.2	29.7	16.9	30.1	32.3	38.9	49.9	53.3	54.9	224.9%
Oman	6.8	8.9	11.6	23.5	27.4	36.4	43.0	51.1	65.7	68.3	72.1	163.1%
Qatar	20.0	20.3	23.6	19.9	19.6	21.7	38.3	57.1	105.3	122.8	145.8	644.3%
Saudi Arabia	114.3	237.8	332.3	263.2	311.6	358.8	407.3	490.6	538.6	563.6	601.8	93.2%
Syrian Arab Republic	12.6	21.3	29.5	34.0	36.6	53.6	60.0	76.4	93.9	96.9	95.0	159.7%
United Arab Emirates	23.3	60.0	125.3	116.8	132.9	160.0	209.5	272.1	313.7	318.1	333.7	151.0%
Yemen	5.2	7.3	12.8	18.4	21.7	29.2	37.6	46.2	53.0	57.2	51.2	136.6%
Middle East	**721.4**	**1 039.5**	**1 322.8**	**1 170.5**	**1 118.8**	**1 241.3**	**1 537.4**	**1 912.6**	**2 264.2**	**2 376.6**	**2 488.5**	**122.4%**

Population

millions

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World	**3 764.9**	**4 066.6**	**4 443.4**	**4 851.5**	**5 288.9**	**5 706.6**	**6 108.3**	**6 491.3**	**6 801.6**	**6 880.1**	**6 958.0**	**31.6%**
Annex I Parties	*..*	*..*	*..*	*..*	*1 175.8*	*1 207.3*	*1 231.6*	*1 257.5*	*1 281.9*	*1 287.8*	*1 292.7*	*9.9%*
Annex II Parties	*705.3*	*729.4*	*755.0*	*775.9*	*799.3*	*827.7*	*853.1*	*881.8*	*905.5*	*910.3*	*914.7*	*14.4%*
North America	*229.7*	*239.1*	*252.2*	*264.3*	*277.9*	*295.9*	*313.1*	*328.2*	*341.0*	*343.9*	*346.5*	*24.7%*
Europe	*354.6*	*361.4*	*367.7*	*371.3*	*377.3*	*384.4*	*389.9*	*401.1*	*410.0*	*411.5*	*413.2*	*9.5%*
Asia Oceania	*121.0*	*128.8*	*135.0*	*140.2*	*144.2*	*147.5*	*150.1*	*152.4*	*154.5*	*154.9*	*155.0*	*7.5%*
Annex I EIT	*..*	*..*	*..*	*..*	*321.1*	*319.5*	*313.9*	*306.8*	*304.0*	*304.1*	*303.6*	*-5.4%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*4 113.1*	*4 499.3*	*4 876.6*	*5 233.8*	*5 519.7*	*5 592.3*	*5 665.3*	*37.7%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*860.0*	*870.4*	*874.6*	*882.8*	*892.7*	*895.1*	*896.8*	*4.3%*
Non-OECD Total *	**2 870.2**	**3 131.9**	**3 463.5**	**3 831.3**	**4 224.9**	**4 595.2**	**4 956.4**	**5 298.6**	**5 575.6**	**5 646.5**	**5 717.5**	**35.3%**
OECD Total **	**894.7**	**934.8**	**980.0**	**1 020.2**	**1 064.0**	**1 111.4**	**1 151.8**	**1 192.7**	**1 226.0**	**1 233.6**	**1 240.5**	**16.6%**
Canada	22.0	23.1	24.5	25.8	27.7	29.3	30.7	32.2	33.7	34.1	34.5	24.5%
Chile	9.8	10.4	11.2	12.1	13.2	14.4	15.4	16.3	16.9	17.1	17.3	31.0%
Mexico	49.9	56.7	65.7	73.5	81.3	91.2	98.3	103.8	107.4	108.3	109.2	34.4%
United States	207.7	216.0	227.7	238.5	250.2	266.6	282.4	296.0	307.2	309.8	312.0	24.7%
OECD Americas	**289.3**	**306.3**	**329.1**	**350.0**	**372.3**	**401.5**	**426.8**	**448.3**	**465.3**	**469.3**	**473.0**	**27.1%**
Australia	13.2	14.0	14.8	15.9	17.2	18.2	19.3	20.5	22.1	22.4	22.8	32.6%
Israel	3.1	3.5	3.9	4.3	4.7	5.5	6.3	7.0	7.5	7.6	7.8	66.0%
Japan	105.0	111.8	117.1	121.0	123.6	125.6	126.9	127.8	128.0	128.0	127.8	3.4%
Korea	32.9	35.3	38.1	40.8	42.9	45.1	47.0	48.1	49.2	49.4	49.8	16.1%
New Zealand	2.9	3.1	3.1	3.3	3.4	3.7	3.9	4.1	4.3	4.4	4.4	30.9%
OECD Asia Oceania	**157.0**	**167.6**	**177.0**	**185.3**	**191.7**	**198.1**	**203.4**	**207.5**	**211.2**	**211.9**	**212.6**	**10.9%**
Austria	7.5	7.6	7.5	7.6	7.7	7.9	8.0	8.2	8.4	8.4	8.4	9.7%
Belgium	9.7	9.8	9.9	9.9	10.0	10.1	10.2	10.5	10.8	10.9	11.0	10.1%
Czech Republic	9.8	10.1	10.3	10.3	10.4	10.3	10.3	10.2	10.5	10.5	10.5	1.3%
Denmark	5.0	5.1	5.1	5.1	5.1	5.2	5.3	5.4	5.5	5.5	5.6	8.3%
Estonia	..	..	..	..	1.6	1.4	1.4	1.3	1.3	1.3	1.3	-15.6%
Finland	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.2	5.3	5.4	5.4	8.0%
France	52.4	53.9	55.1	56.6	58.1	59.4	60.7	63.0	64.5	64.8	65.1	12.0%
Germany	78.3	78.7	78.3	77.7	79.4	81.7	82.2	82.5	81.9	81.8	81.8	3.0%
Greece	9.0	9.2	9.8	10.1	10.3	10.6	10.9	11.1	11.3	11.3	11.3	9.4%
Hungary	10.4	10.5	10.7	10.6	10.4	10.3	10.2	10.1	10.0	10.0	10.0	-3.8%
Iceland	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	25.1%
Ireland	3.0	3.2	3.4	3.5	3.5	3.6	3.8	4.2	4.5	4.6	4.6	30.5%
Italy	54.1	55.4	56.4	56.6	56.7	56.8	56.9	58.6	60.2	60.5	60.7	7.1%
Luxembourg	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	35.9%
Netherlands	13.2	13.7	14.1	14.5	14.9	15.5	15.9	16.3	16.5	16.6	16.7	11.7%
Norway	3.9	4.0	4.1	4.2	4.2	4.4	4.5	4.6	4.8	4.9	5.0	16.8%
Poland	32.8	34.0	35.6	37.2	38.0	38.3	38.3	38.2	38.2	38.5	38.5	1.3%
Portugal	8.7	9.2	9.9	10.1	10.0	10.0	10.2	10.5	10.6	10.6	10.7	6.6%
Slovak Republic	4.6	4.8	5.0	5.2	5.3	5.4	5.4	5.4	5.4	5.4	5.4	2.7%
Slovenia	..	..	..	..	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.8%
Spain	34.3	35.7	37.7	38.6	39.0	39.4	40.3	43.4	45.9	46.1	46.1	18.2%
Sweden	8.1	8.2	8.3	8.4	8.6	8.8	8.9	9.0	9.3	9.4	9.5	10.4%
Switzerland	6.3	6.4	6.4	6.5	6.8	7.1	7.2	7.5	7.8	7.8	7.9	15.8%
Turkey	36.2	40.1	44.4	50.3	55.1	59.8	64.3	68.6	72.1	73.0	74.0	34.2%
United Kingdom	55.9	56.2	56.3	56.6	57.2	58.0	58.9	60.2	61.8	62.3	62.7	9.6%
OECD Europe **	**448.4**	**460.9**	**473.8**	**484.9**	**500.0**	**511.9**	**521.7**	**536.9**	**549.5**	**552.4**	**555.0**	11.0%
European Union - 27	*..*	*..*	*..*	*..*	*472.8*	*478.6*	*483.0*	*492.1*	*500.4*	*502.1*	*503.4*	6.5%

* Includes Estonia and Slovenia prior to 1990.
** Excludes Estonia and Slovenia prior to 1990.

Population

millions

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**2 870.2**	**3 131.9**	**3 463.5**	**3 831.3**	**4 224.9**	**4 595.2**	**4 956.4**	**5 298.6**	**5 575.6**	**5 646.5**	**5 717.5**	**35.3%**
Albania	2.2	2.4	2.7	3.0	3.3	3.1	3.1	3.1	3.2	3.2	3.2	-2.2%
Armenia	..	..	..	..	3.5	3.2	3.1	3.1	3.1	3.1	3.1	-12.6%
Azerbaijan	..	..	..	..	7.2	7.7	8.0	8.4	8.9	9.1	9.2	28.1%
Belarus	..	..	..	..	10.2	10.2	10.0	9.8	9.5	9.5	9.5	-7.0%
Bosnia and Herzegovina	..	..	..	..	4.3	3.3	3.7	3.8	3.8	3.8	3.8	-12.9%
Bulgaria	8.5	8.7	8.9	9.0	8.7	8.4	8.2	7.7	7.6	7.5	7.5	-14.2%
Croatia	..	..	..	..	4.8	4.7	4.4	4.4	4.4	4.4	4.4	-7.8%
Cyprus **	0.6	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.8	0.8	0.8	38.4%
Georgia	..	..	..	..	4.8	4.7	4.4	4.4	4.4	4.5	4.5	-6.6%
Gibraltar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.7%
Kazakhstan	..	..	..	..	16.3	15.8	14.9	15.1	16.1	16.3	16.6	1.3%
Kosovo ***	..	..	..	..	..	..	1.7	1.7	1.8	1.8	1.8	..
Kyrgyzstan	..	..	..	..	4.4	4.6	4.9	5.2	5.4	5.4	5.5	25.4%
Latvia	..	..	..	..	2.7	2.5	2.4	2.3	2.3	2.2	2.2	-16.6%
Lithuania	..	..	..	..	3.7	3.6	3.5	3.4	3.3	3.3	3.2	-13.4%
FYR of Macedonia	..	..	..	..	1.9	2.0	2.0	2.0	2.1	2.1	2.1	8.1%
Malta	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	18.4%
Republic of Moldova	..	..	..	..	3.7	3.7	3.6	3.6	3.6	3.6	3.6	-3.7%
Montenegro ***	..	..	..	..	..	..	..	0.6	0.6	0.6	0.6	..
Romania	20.5	21.3	22.2	22.8	23.2	22.7	22.4	21.6	21.5	21.4	21.4	-7.8%
Russian Federation	..	..	..	..	148.3	148.1	146.3	143.2	141.9	141.9	141.9	-4.3%
Serbia ***	..	..	..	..	9.5	9.9	8.1	7.4	7.3	7.3	7.3	-23.9%
Tajikistan	..	..	..	..	5.3	5.8	6.2	6.5	6.8	6.9	7.0	31.6%
Turkmenistan	..	..	..	..	3.7	4.2	4.5	4.7	5.0	5.0	5.1	39.2%
Ukraine	..	..	..	..	51.9	51.5	49.2	47.1	46.1	45.9	45.7	-11.9%
Uzbekistan	..	..	..	..	20.5	22.8	24.7	26.2	27.8	28.6	29.3	43.1%
Former Soviet Union ****	245.2	254.4	265.8	277.7	..	..	..	..	..	..	..	..
Former Yugoslavia ****	20.3	20.9	21.7	22.4	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**297.6**	**308.6**	**322.1**	**335.7**	**342.9**	**343.5**	**340.4**	**336.6**	**337.5**	**338.6**	**339.6**	**-1.0%**
Algeria	14.2	16.0	18.8	22.1	25.3	28.3	30.5	32.9	35.0	35.5	36.0	42.2%
Angola	6.0	6.6	7.6	9.1	10.3	12.1	13.9	16.5	18.6	19.1	19.6	89.8%
Benin	2.9	3.2	3.6	4.1	4.8	5.7	6.5	7.6	8.6	8.9	9.1	90.7%
Botswana	..	..	..	1.2	1.4	1.6	1.8	1.9	2.0	2.0	2.0	47.0%
Cameroon	7.0	7.8	9.1	10.5	12.2	13.9	15.7	17.6	19.2	19.6	20.0	64.4%
Congo	1.4	1.6	1.8	2.1	2.4	2.7	3.1	3.5	3.9	4.0	4.1	73.3%
Dem. Rep. of Congo	20.8	23.3	27.0	31.0	36.4	44.1	49.6	57.4	64.2	66.0	67.8	86.1%
Côte d'Ivoire	5.7	6.8	8.5	10.5	12.5	14.7	16.6	18.0	19.4	19.7	20.2	61.0%
Egypt	36.8	40.1	45.0	50.7	56.8	62.1	67.6	74.2	79.7	81.1	82.5	45.2%
Eritrea	..	..	..	..	..	3.2	3.7	4.5	5.1	5.3	5.4	..
Ethiopia	31.7	35.1	37.9	43.9	51.5	57.0	65.6	74.3	81.2	83.0	84.7	64.6%
Gabon	0.5	0.6	0.7	0.8	0.9	1.1	1.2	1.4	1.5	1.5	1.5	65.1%
Ghana	8.9	9.9	10.9	12.9	14.8	17.0	19.2	21.6	23.8	24.4	25.0	68.8%
Kenya	11.7	13.5	16.3	19.7	23.4	27.4	31.3	35.6	39.5	40.5	41.6	77.5%
Libya	2.1	2.5	3.1	3.9	4.3	4.8	5.2	5.8	6.3	6.4	6.4	48.2%
Morocco	15.7	17.3	19.6	22.3	24.8	26.9	28.8	30.4	31.6	32.0	32.3	30.2%
Mozambique	9.7	10.6	12.1	13.3	13.5	15.9	18.2	20.8	22.9	23.4	23.9	76.6%
Namibia	..	..	..	..	..	1.7	1.9	2.1	2.2	2.3	2.3	..
Nigeria	58.7	65.1	75.5	85.8	97.6	110.0	123.7	139.8	154.5	158.4	162.5	66.5%
Senegal	4.2	4.8	5.4	6.2	7.2	8.4	9.5	10.9	12.1	12.4	12.8	76.3%
South Africa	22.6	24.7	27.6	31.3	35.2	39.1	44.0	47.2	49.3	50.0	50.6	43.7%
Sudan	15.2	17.1	20.1	23.5	26.5	30.1	34.2	38.4	42.5	43.6	44.6	68.5%
United Rep. of Tanzania	14.0	16.0	18.7	21.8	25.5	29.9	34.0	38.8	43.5	44.8	46.2	81.4%
Togo	2.2	2.4	2.7	3.2	3.7	4.1	4.8	5.4	5.9	6.0	6.2	67.9%
Tunisia	5.2	5.6	6.4	7.3	8.2	9.0	9.6	10.0	10.4	10.5	10.7	30.9%
Zambia	4.3	4.9	5.8	6.8	7.9	8.9	10.2	11.5	12.7	12.9	13.5	71.4%
Zimbabwe	5.4	6.2	7.3	8.9	10.5	11.7	12.5	12.6	12.5	12.6	12.8	21.8%
Other Africa	70.4	77.4	89.6	100.5	115.9	127.1	147.3	169.7	190.3	195.8	200.9	73.3%
Africa	**377.2**	**419.2**	**481.0**	**553.3**	**633.5**	**718.5**	**810.2**	**910.3**	**998.3**	**1 021.6**	**1 045.2**	**65.0%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

Population

millions

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	67.8	70.6	80.6	92.3	105.3	117.5	129.6	140.6	147.0	148.7	150.5	43.0%
Brunei Darussalam	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	61.1%
Cambodia	..	..	..	..	..	11.2	12.4	13.4	14.0	14.1	14.3	..
Chinese Taipei	14.9	16.1	17.8	19.3	20.3	21.3	22.2	22.7	23.0	23.2	23.4	15.4%
India	566.7	622.1	700.1	784.5	873.8	964.5	1 053.9	1 140.0	1 207.7	1 224.6	1 241.5	42.1%
Indonesia	121.4	134.1	150.8	168.1	184.3	199.4	213.4	227.3	237.4	239.9	242.3	31.5%
DPR of Korea	14.6	16.1	17.2	18.7	20.1	21.8	22.9	23.7	24.2	24.3	24.5	21.4%
Malaysia	11.2	12.3	13.8	15.8	18.2	20.7	23.4	26.1	27.9	28.4	28.9	58.5%
Mongolia	..	..	..	1.9	2.2	2.3	2.4	2.5	2.7	2.8	2.8	27.7%
Myanmar	26.8	29.5	32.9	36.1	39.3	42.1	45.0	46.3	47.6	48.0	48.3	23.1%
Nepal	12.2	13.4	15.0	16.9	19.1	21.6	24.4	27.3	29.4	30.0	30.5	59.8%
Pakistan	61.0	68.5	80.5	95.5	111.8	127.3	144.5	158.6	170.5	173.6	176.7	58.0%
Philippines	36.5	40.9	47.1	54.1	61.6	69.3	77.3	85.5	91.7	93.3	94.9	53.9%
Singapore	2.1	2.3	2.4	2.7	3.0	3.5	4.0	4.3	5.0	5.1	5.2	70.1%
Sri Lanka	12.7	13.5	14.7	15.8	17.0	18.1	19.1	19.6	20.5	20.7	20.9	22.7%
Thailand	38.0	42.4	47.5	52.3	57.1	59.7	63.2	66.7	68.7	69.1	69.5	21.8%
Vietnam	43.7	48.0	53.7	58.9	66.0	72.0	77.6	82.4	86.0	86.9	87.8	33.1%
Other Asia	28.4	30.6	32.7	35.5	40.2	34.4	38.7	43.5	47.8	49.1	50.3	25.2%
Asia	**1 058.2**	**1 160.5**	**1 307.1**	**1 468.7**	**1 639.6**	**1 806.9**	**1 974.3**	**2 131.0**	**2 251.6**	**2 282.0**	**2 312.7**	**41.0%**
People's Rep. of China	841.1	916.4	981.2	1 051.0	1 135.2	1 204.9	1 262.6	1 303.7	1 331.4	1 337.8	1 344.1	18.4%
Hong Kong, China	4.0	4.5	5.1	5.5	5.7	6.2	6.7	6.8	7.0	7.1	7.1	24.0%
China	**845.2**	**920.9**	**986.3**	**1 056.5**	**1 140.9**	**1 211.0**	**1 269.3**	**1 310.5**	**1 338.4**	**1 344.9**	**1 351.2**	**18.4%**
Argentina	24.4	26.1	28.1	30.4	32.6	34.9	36.9	38.7	40.1	40.4	40.8	24.9%
Bolivia	4.3	4.8	5.4	6.0	6.7	7.5	8.3	9.1	9.8	9.9	10.1	51.5%
Brazil	98.4	108.2	121.7	136.2	149.7	161.8	174.4	186.0	193.2	194.9	196.7	31.4%
Colombia	21.9	24.0	26.9	30.0	33.2	36.5	39.8	43.0	45.7	46.3	46.9	41.3%
Costa Rica	1.9	2.0	2.3	2.7	3.1	3.5	3.9	4.3	4.6	4.7	4.7	54.0%
Cuba	8.9	9.4	9.8	10.1	10.6	10.9	11.1	11.3	11.3	11.3	11.3	6.5%
Dominican Republic	4.6	5.1	5.8	6.5	7.2	7.9	8.6	9.3	9.8	9.9	10.1	39.8%
Ecuador	6.2	6.9	8.0	9.1	10.3	11.4	12.3	13.4	14.3	14.5	14.7	42.9%
El Salvador	3.8	4.2	4.7	5.0	5.3	5.7	5.9	6.1	6.2	6.2	6.2	16.8%
Guatemala	5.6	6.2	7.0	8.0	8.9	10.0	11.2	12.7	14.0	14.4	14.8	65.4%
Haiti	4.8	5.1	5.7	6.4	7.1	7.9	8.6	9.3	9.9	10.0	10.1	42.1%
Honduras	2.8	3.1	3.6	4.2	4.9	5.6	6.2	6.9	7.5	7.6	7.8	58.6%
Jamaica	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.7	2.7	2.7	13.3%
Netherlands Antilles	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	21.2%
Nicaragua	2.5	2.8	3.2	3.7	4.1	4.6	5.1	5.4	5.7	5.8	5.9	42.4%
Panama	1.6	1.7	2.0	2.2	2.4	2.7	3.0	3.2	3.5	3.5	3.6	47.8%
Paraguay	2.5	2.8	3.2	3.7	4.2	4.8	5.3	5.9	6.3	6.5	6.6	54.8%
Peru	13.6	15.1	17.3	19.5	21.7	23.8	25.9	27.6	28.8	29.1	29.4	35.6%
Trinidad and Tobago	1.0	1.0	1.1	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	10.8%
Uruguay	2.8	2.8	2.9	3.0	3.1	3.2	3.3	3.3	3.3	3.4	3.4	8.4%
Venezuela	11.0	12.7	15.0	17.5	19.8	22.0	24.3	26.6	28.4	28.8	29.3	48.2%
Other Non-OECD Americas	2.6	2.7	2.8	2.9	3.0	3.2	3.4	3.6	3.8	3.8	3.8	26.9%
Non-OECD Americas	**227.2**	**249.1**	**278.8**	**310.5**	**341.7**	**371.8**	**401.8**	**429.9**	**450.2**	**455.2**	**460.2**	**34.7%**
Bahrain	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.7	1.2	1.3	1.3	168.6%
Islamic Republic of Iran	29.4	32.8	38.6	46.5	54.9	59.8	65.3	69.7	73.1	74.0	74.8	36.3%
Iraq	10.4	11.8	13.8	15.7	18.2	20.9	24.3	27.6	31.1	32.0	33.0	81.2%
Jordan	1.6	1.8	2.2	2.6	3.2	4.2	4.8	5.4	5.9	6.0	6.2	95.0%
Kuwait	0.8	1.1	1.4	1.7	2.1	1.6	1.9	2.3	2.6	2.7	2.8	35.0%
Lebanon	2.5	2.8	2.8	2.9	2.9	3.5	3.7	4.1	4.2	4.2	4.3	44.5%
Oman	0.8	0.9	1.2	1.5	1.9	2.2	2.3	2.4	2.7	2.8	2.8	52.4%
Qatar	0.1	0.2	0.2	0.4	0.5	0.5	0.6	0.8	1.6	1.8	1.9	294.5%
Saudi Arabia	6.0	7.3	9.8	13.2	16.1	18.5	20.0	24.0	26.8	27.4	28.1	74.0%
Syrian Arab Republic	6.6	7.5	8.9	10.6	12.3	14.2	16.0	18.5	20.0	20.4	20.8	68.9%
United Arab Emirates	0.3	0.5	1.0	1.3	1.8	2.3	3.0	4.1	6.9	7.5	7.9	336.2%
Yemen	6.2	6.7	7.9	9.8	11.9	15.1	17.7	20.6	23.3	24.1	24.8	107.6%
Middle East	**64.9**	**73.6**	**88.1**	**106.7**	**126.3**	**143.4**	**160.4**	**180.3**	**199.6**	**204.3**	**208.7**	**65.2%**

CO_2 emissions / TPES

tonnes CO_2 / terajoule

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**60.8**	**60.5**	**59.8**	**57.5**	**57.1**	**56.5**	**56.3**	**57.0**	**56.6**	**56.5**	**57.1**	**0.0%**
Annex I Parties	*..*	*..*	*..*	*..*	*59.5*	*57.3*	*56.9*	*56.3*	*54.8*	*54.9*	*55.3*	*-7.0%*
Annex II Parties	*66.0*	*64.2*	*62.3*	*59.5*	*58.3*	*56.5*	*56.4*	*56.2*	*54.4*	*54.8*	*55.1*	*-5.5%*
North America	*64.0*	*62.2*	*60.9*	*60.1*	*59.6*	*58.2*	*58.9*	*58.3*	*56.4*	*57.7*	*56.9*	*-4.5%*
Europe	*69.0*	*66.4*	*64.5*	*58.6*	*55.9*	*53.3*	*51.8*	*51.1*	*49.0*	*48.5*	*48.5*	*-13.1%*
Asia Oceania	*67.1*	*67.2*	*62.4*	*59.8*	*59.6*	*57.5*	*57.3*	*59.7*	*59.5*	*58.4*	*63.9*	*7.3%*
Annex I EIT	*..*	*..*	*..*	*..*	*62.5*	*60.3*	*58.7*	*56.6*	*55.9*	*54.8*	*55.6*	*-11.1%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*51.5*	*54.1*	*54.2*	*56.7*	*57.3*	*56.9*	*57.7*	*11.9%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*58.8*	*56.0*	*54.8*	*54.2*	*53.1*	*52.4*	*53.7*	*-8.6%*
Non-OECD Total **	**50.3**	**53.3**	**54.7**	**53.1**	**54.3**	**54.7**	**54.4**	**56.5**	**57.1**	**56.5**	**57.4**	**5.7%**
OECD Total ***	**66.4**	**64.7**	**62.9**	**60.5**	**58.9**	**57.2**	**57.0**	**56.4**	**55.0**	**55.3**	**55.6**	**-5.6%**
Canada	57.4	54.4	53.1	49.8	49.0	47.7	50.3	48.7	49.4	50.2	50.2	2.5%
Chile	57.2	53.1	53.5	48.5	52.9	50.7	49.8	49.0	53.0	53.9	54.3	2.6%
Mexico	53.9	56.0	53.3	55.3	51.7	54.6	57.4	54.1	54.4	55.8	55.5	7.2%
United States	64.6	63.0	61.7	61.2	60.7	59.4	59.9	59.4	57.2	58.5	57.6	-5.1%
OECD Americas	**63.7**	**62.0**	**60.5**	**59.8**	**59.1**	**58.0**	**58.7**	**58.0**	**56.2**	**57.5**	**56.7**	**-4.0%**
Australia	66.7	71.2	71.4	72.5	72.0	73.7	74.8	80.0	79.1	77.2	77.1	7.1%
Israel	60.0	58.0	59.9	77.3	69.9	71.3	72.3	75.9	70.7	70.1	69.1	-1.1%
Japan	67.7	67.0	61.1	57.8	57.7	55.0	54.1	55.7	55.1	54.5	61.4	6.4%
Korea	73.3	75.0	72.1	68.4	58.8	59.2	55.6	53.3	53.7	53.9	53.9	-8.4%
New Zealand	47.5	46.5	43.7	41.9	41.4	40.5	43.3	48.0	42.6	40.5	39.9	-3.8%
OECD Asia Oceania	**67.3**	**67.5**	**63.2**	**61.0**	**59.7**	**58.1**	**57.2**	**58.5**	**58.3**	**57.5**	**61.1**	**2.4%**
Austria	61.8	59.5	57.4	56.2	54.3	53.0	51.6	52.8	48.0	48.9	49.5	-8.7%
Belgium	70.4	65.2	64.2	55.2	53.4	51.2	48.4	46.0	42.2	42.4	43.9	-17.8%
Czech Republic	79.4	83.5	84.3	84.0	74.8	71.2	71.0	63.6	62.6	62.0	62.0	-17.1%
Denmark	71.0	71.7	78.1	74.9	69.7	71.6	65.1	61.2	61.0	58.1	55.3	-20.6%
Estonia	..	..	..	..	87.0	73.5	74.1	78.0	73.7	79.3	82.3	-5.4%
Finland	52.3	53.8	53.6	44.9	45.8	46.3	41.0	38.5	39.6	41.4	38.2	-16.5%
France	65.1	62.3	57.5	42.2	37.6	35.7	35.9	34.3	32.9	32.6	31.0	-17.5%
Germany	76.6	74.3	70.6	67.8	64.6	61.6	58.5	57.0	56.2	55.7	57.3	-11.3%
Greece	69.2	70.3	72.3	74.3	78.1	79.9	77.1	75.0	73.2	72.8	74.8	-4.3%
Hungary	75.7	73.7	70.5	64.8	55.1	52.9	51.8	48.8	46.3	45.5	45.3	-17.8%
Iceland	37.0	34.7	27.7	21.8	21.6	20.7	16.5	15.0	9.2	8.6	7.7	-64.2%
Ireland	77.2	75.8	75.1	73.0	73.8	76.0	72.3	73.3	65.3	65.4	63.1	-14.4%
Italy	66.4	65.4	65.7	64.2	64.8	61.4	59.3	59.9	56.4	55.9	56.1	-13.4%
Luxembourg	90.7	76.6	80.0	77.4	73.0	61.1	57.3	62.1	60.3	59.7	59.7	-18.2%
Netherlands	60.8	57.0	61.9	60.7	56.7	57.7	56.1	55.3	53.8	53.5	53.8	-5.0%
Norway	42.2	39.4	36.5	32.5	32.2	33.4	30.7	32.4	29.7	29.1	32.3	0.5%
Poland	79.5	78.4	77.9	80.3	79.3	79.5	78.0	75.7	73.0	71.9	70.7	-10.8%
Portugal	55.0	56.3	56.9	53.7	56.0	57.0	57.5	56.7	52.6	48.8	49.8	-11.2%
Slovak Republic	65.4	62.4	66.6	62.7	63.5	54.9	50.3	48.3	47.8	47.2	46.6	-26.6%
Slovenia	..	..	..	..	55.8	55.2	52.5	51.1	51.0	50.5	50.3	-9.9%
Spain	67.2	65.0	66.2	59.0	54.4	55.1	55.6	57.1	52.8	50.1	51.4	-5.5%
Sweden	54.6	48.6	43.3	29.7	26.7	27.3	26.5	23.3	22.0	22.0	21.9	-18.1%
Switzerland	56.8	51.0	46.8	44.8	40.8	41.5	40.6	41.1	37.5	40.0	37.5	-8.0%
Turkey	50.6	52.9	53.9	57.5	57.5	59.2	62.7	61.2	62.7	60.4	60.7	5.6%
United Kingdom	71.4	69.4	68.7	64.8	63.7	57.1	56.2	57.2	56.5	57.1	56.3	-11.7%
OECD Europe ***	**69.9**	**67.7**	**66.2**	**61.3**	**58.3**	**55.6**	**54.1**	**53.1**	**51.4**	**50.8**	**51.0**	-12.5%
European Union - 27	*..*	*..*	*..*	*..*	*59.2*	*56.1*	*54.3*	*53.4*	*51.5*	*51.1*	*51.2*	-13.5%

* The ratio for the world has been calculated to include international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions / TPES

tonnes CO_2 / terajoule

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**50.3**	**53.3**	**54.7**	**53.1**	**54.3**	**54.7**	**54.4**	**56.5**	**57.1**	**56.5**	**57.4**	**5.7%**
Albania	54.0	53.5	59.0	63.2	55.8	33.4	41.3	43.9	39.9	42.9	42.6	-23.8%
Armenia	..	..	..	..	63.4	49.6	40.4	39.2	39.0	38.9	41.0	-35.3%
Azerbaijan	..	..	..	..	58.0	58.2	59.0	54.8	49.6	49.1	50.9	-12.1%
Belarus	..	..	..	..	65.3	59.3	56.8	55.2	55.6	56.2	53.5	-18.1%
Bosnia and Herzegovina	..	..	..	..	80.5	51.7	74.2	74.0	76.5	74.2	76.8	-4.6%
Bulgaria	78.9	74.2	70.5	63.2	63.4	55.2	53.9	55.4	57.9	59.2	61.2	-3.6%
Croatia	..	..	..	..	56.9	53.5	54.2	55.6	54.1	53.0	53.1	-6.6%
Cyprus **	72.2	70.8	71.9	72.3	67.5	70.9	70.1	75.3	70.6	70.6	69.9	3.5%
Georgia	..	..	..	..	64.0	51.8	38.3	36.4	41.3	37.8	42.2	-34.0%
Gibraltar	72.1	72.4	73.6	72.8	72.5	72.9	72.9	72.9	72.6	72.6	72.6	0.1%
Kazakhstan	..	..	..	..	76.9	76.6	75.6	73.8	75.1	75.0	71.6	-6.8%
Kosovo ***	..	..	..	..	..	..	77.8	80.3	81.1	82.0	80.1	..
Kyrgyzstan	..	..	..	..	71.6	44.3	45.4	46.4	49.9	53.4	51.4	-28.2%
Latvia	..	..	..	..	56.7	46.0	42.5	40.0	38.9	41.6	41.4	-26.9%
Lithuania	..	..	..	..	49.2	38.9	37.5	36.4	33.9	45.1	43.3	-12.0%
FYR of Macedonia	..	..	..	..	82.1	78.2	75.3	73.8	71.4	68.0	69.4	-15.5%
Malta	73.5	73.6	73.9	79.6	78.5	79.2	74.4	73.3	75.4	69.6	68.8	-12.3%
Republic of Moldova	..	..	..	..	72.9	59.8	53.9	52.4	55.2	55.3	56.6	-22.4%
Montenegro ***	..	..	..	..	..	..	..	40.6	39.0	50.4	50.5	..
Romania	65.1	64.8	64.5	63.7	64.3	60.2	57.4	58.8	53.9	51.5	54.5	-15.2%
Russian Federation	..	..	..	..	59.2	58.5	57.7	55.4	54.6	53.6	54.0	-8.7%
Serbia ***	..	..	..	..	74.4	76.2	74.0	73.1	71.3	70.4	73.5	-1.3%
Tajikistan	..	..	..	..	49.0	26.2	24.1	23.9	28.8	29.0	29.8	-39.2%
Turkmenistan	..	..	..	..	60.6	57.9	58.7	59.6	59.7	59.6	59.5	-1.9%
Ukraine	..	..	..	..	65.2	57.3	52.1	51.1	52.7	49.0	53.9	-17.3%
Uzbekistan	..	..	..	..	61.7	56.9	55.5	55.2	55.5	55.4	55.1	-10.7%
Former Soviet Union ****	62.0	65.3	65.8	61.2	..	..	..	..	..	..	..	..
Former Yugoslavia ****	68.9	70.4	62.1	70.7	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**62.7**	**65.5**	**65.7**	**61.7**	**61.9**	**59.0**	**57.4**	**55.9**	**55.9**	**55.0**	**55.7**	**-10.1%**
Algeria	61.5	60.7	60.6	58.5	56.8	56.2	56.2	58.6	56.6	58.2	59.3	4.4%
Angola	10.3	11.6	14.0	13.8	16.3	14.8	16.2	18.3	26.7	28.1	27.7	69.9%
Benin	6.5	8.8	6.9	7.2	3.6	2.8	17.0	25.3	28.8	29.5	29.7	714.4%
Botswana	..	..	..	42.5	55.6	53.2	54.5	54.9	50.4	53.1	50.6	-8.9%
Cameroon	6.4	8.2	10.8	13.0	12.8	10.8	10.5	10.0	16.6	17.3	18.2	41.7%
Congo	27.1	26.3	26.8	23.7	19.1	14.5	14.6	18.3	25.9	28.6	29.6	55.6%
Dem. Rep. of Congo	9.0	8.2	8.8	7.7	6.0	3.8	2.4	2.7	3.0	3.1	3.2	-46.8%
Côte d'Ivoire	23.2	24.3	22.5	19.6	14.6	15.1	21.7	14.5	15.6	15.1	12.5	-13.9%
Egypt	62.3	62.4	66.0	60.1	57.9	56.3	59.5	58.1	57.8	57.9	58.0	0.1%
Eritrea	..	..	..	..	..	18.5	20.6	18.1	14.6	15.3	15.9	..
Ethiopia	2.6	2.1	2.3	2.0	2.7	2.6	3.0	3.7	4.3	3.9	4.1	53.9%
Gabon	10.5	13.8	22.2	29.7	18.2	23.4	22.5	24.0	25.6	26.3	26.0	42.9%
Ghana	15.4	15.3	13.5	11.9	12.2	12.2	15.8	18.7	23.3	24.6	24.5	100.3%
Kenya	14.6	13.8	14.5	12.8	12.3	11.4	13.3	11.2	13.6	13.9	13.8	11.8%
Libya	56.8	59.8	64.3	53.9	58.5	60.0	59.3	61.0	61.5	61.4	62.5	6.8%
Morocco	67.2	69.4	68.4	70.5	67.6	72.2	68.6	70.7	67.7	68.1	69.3	2.6%
Mozambique	10.0	8.4	8.2	5.6	4.4	4.3	4.4	4.3	5.6	6.0	6.7	52.7%
Namibia	..	..	..	..	..	47.1	43.1	45.6	47.7	48.1	47.1	..
Nigeria	3.9	6.7	12.2	12.6	9.9	9.6	11.1	12.4	9.3	10.8	10.7	8.1%
Senegal	23.3	27.6	31.2	32.3	30.1	31.7	35.9	39.8	39.4	38.9	38.5	28.0%
South Africa	82.4	89.2	76.3	63.2	66.6	63.3	64.8	61.3	61.0	62.2	62.1	-6.8%
Sudan	11.1	10.5	10.6	10.6	12.4	9.1	10.6	15.7	22.0	22.0	20.8	68.6%
United Rep. of Tanzania	4.8	4.7	4.7	4.2	4.2	5.5	4.6	7.0	6.6	7.0	7.2	72.2%
Togo	11.2	9.6	9.8	7.1	10.8	8.8	10.8	9.8	10.3	10.5	10.8	-0.0%
Tunisia	53.1	52.7	57.3	55.0	58.3	58.5	58.9	58.0	55.2	54.2	53.1	-9.0%
Zambia	23.4	26.9	17.8	13.6	11.5	8.4	6.5	6.9	5.1	5.1	5.9	-48.5%
Zimbabwe	31.8	29.0	29.3	30.9	41.1	36.0	30.5	25.3	21.7	23.0	24.3	-41.0%
Other Africa	6.9	7.7	9.5	7.6	8.3	8.5	8.6	9.0	9.1	9.5	9.7	17.8%
Africa	**30.3**	**34.2**	**34.5**	**33.0**	**33.1**	**32.2**	**32.4**	**32.8**	**32.9**	**33.4**	**33.0**	**-0.4%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions / TPES

tonnes CO_2 / terajoule

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	13.4	16.5	20.5	21.2	25.4	30.8	32.5	36.8	41.2	41.4	41.3	62.3%
Brunei Darussalam	53.7	45.4	46.5	39.3	44.9	47.7	44.4	51.9	58.2	58.3	55.5	23.5%
Cambodia	..	..	..	..	..	12.3	13.7	18.3	17.7	17.9	18.0	..
Chinese Taipei	74.0	70.9	62.3	51.3	56.6	59.2	61.1	61.4	58.5	59.1	58.2	2.8%
India	30.6	32.4	33.0	38.5	43.9	48.3	50.8	51.6	56.1	56.4	55.6	26.6%
Indonesia	17.1	22.0	29.5	31.9	35.4	39.1	42.1	44.7	45.3	46.4	48.7	37.6%
DPR of Korea	83.1	82.3	83.0	83.8	82.0	81.3	83.1	82.7	81.8	81.1	81.3	-0.8%
Malaysia	49.8	52.3	48.7	51.9	55.0	58.4	57.1	56.8	57.5	60.3	61.0	10.9%
Mongolia	..	..	..	88.7	88.7	89.1	87.8	86.3	86.1	87.2	86.3	-2.7%
Myanmar	13.8	11.4	13.1	12.7	9.1	13.9	17.4	17.0	11.7	13.7	14.0	54.8%
Nepal	1.2	1.9	2.7	2.6	3.6	6.2	9.0	7.9	8.2	9.5	9.3	155.8%
Pakistan	23.3	24.5	25.2	29.0	32.7	35.5	37.0	37.8	40.0	38.4	38.4	17.5%
Philippines	35.9	38.0	35.5	28.6	31.9	40.7	40.4	43.6	44.4	45.1	45.5	42.7%
Singapore	53.7	54.5	59.1	57.6	61.0	52.8	60.8	54.0	47.1	44.8	46.3	-24.1%
Sri Lanka	17.3	15.6	19.5	17.0	16.2	22.2	30.5	35.6	31.2	31.8	34.3	112.4%
Thailand	28.3	29.2	36.5	40.4	45.8	54.1	51.1	50.8	48.1	48.0	48.8	6.5%
Vietnam	29.2	28.7	24.5	25.6	23.0	30.3	36.6	46.0	50.8	52.5	53.6	133.1%
Other Asia	55.3	56.5	51.3	37.6	35.5	32.4	31.8	38.7	40.9	42.8	43.2	21.9%
Asia	**33.0**	**35.0**	**37.3**	**39.7**	**43.1**	**46.5**	**48.4**	**49.6**	**51.7**	**52.1**	**52.2**	**21.1%**
People's Rep. of China	49.7	52.7	56.9	59.5	61.6	69.1	68.1	72.7	71.0	68.8	69.7	13.1%
Hong Kong, China	72.9	71.1	75.0	80.0	90.7	80.7	71.1	76.9	73.0	71.6	72.2	-20.4%
China	**49.9**	**52.9**	**57.0**	**59.7**	**61.9**	**69.2**	**68.1**	**72.7**	**71.0**	**68.8**	**69.7**	**12.6%**
Argentina	58.7	56.8	54.6	51.0	51.8	52.1	54.5	54.2	53.9	54.4	54.7	5.7%
Bolivia	50.9	51.9	41.0	40.6	47.1	44.2	45.6	43.4	49.1	45.7	47.3	0.3%
Brazil	30.9	35.6	37.3	30.3	32.8	34.9	38.7	35.8	33.6	34.9	36.1	10.1%
Colombia	46.0	43.8	47.2	47.3	45.6	50.5	54.8	51.2	48.2	46.1	50.4	10.5%
Costa Rica	37.3	41.7	41.5	37.7	37.0	44.7	37.0	35.2	32.9	33.6	34.3	-7.4%
Cuba	45.4	47.2	48.1	48.7	45.6	48.0	50.3	55.8	61.3	62.0	59.7	30.9%
Dominican Republic	35.2	39.9	43.5	42.6	43.3	50.1	54.4	60.3	62.2	60.6	58.3	34.8%
Ecuador	37.8	45.0	50.2	49.9	52.5	54.0	52.9	52.1	57.2	59.6	57.1	8.7%
El Salvador	19.4	21.3	16.6	16.0	21.6	32.9	31.4	33.2	35.0	33.2	33.3	54.4%
Guatemala	20.0	21.8	26.6	20.3	17.4	26.1	28.7	31.9	28.5	24.0	24.5	41.1%
Haiti	5.9	5.7	7.0	10.0	14.5	12.8	16.7	18.3	19.8	20.2	15.9	9.7%
Honduras	19.2	20.4	21.5	19.8	21.6	29.9	35.5	41.5	39.3	38.2	38.5	77.6%
Jamaica	65.5	66.0	68.2	64.3	61.6	62.2	60.6	65.8	59.0	60.5	59.2	-3.9%
Netherlands Antilles	63.0	63.1	53.2	60.9	45.0	51.4	50.3	53.0	57.2	55.7	49.2	9.1%
Nicaragua	28.7	29.5	27.8	22.2	21.6	26.4	33.4	33.9	34.3	36.4	35.6	64.5%
Panama	36.4	44.2	49.4	41.0	40.9	49.2	45.9	56.5	55.2	54.1	55.1	34.6%
Paraguay	9.9	11.2	15.5	15.0	14.9	21.0	20.2	20.8	22.0	23.4	24.1	62.1%
Peru	40.7	42.5	43.6	41.2	47.1	51.6	51.8	50.5	53.1	51.9	51.9	10.0%
Trinidad and Tobago	55.7	60.0	49.5	45.1	45.4	47.7	46.4	48.0	47.3	47.8	46.6	2.6%
Uruguay	51.6	53.3	50.2	37.3	39.8	42.0	40.7	42.8	44.3	36.8	40.8	2.7%
Venezuela	63.6	60.0	62.3	57.6	57.6	54.7	53.6	53.2	57.6	57.4	54.2	-6.0%
Other Non-OECD Americas	39.5	43.1	40.8	56.4	61.0	61.4	62.4	61.0	60.5	61.5	62.4	2.3%
Non-OECD Americas	**43.2**	**44.0**	**44.8**	**40.3**	**41.7**	**43.4**	**45.4**	**44.1**	**43.8**	**43.9**	**44.1**	**5.7%**
Bahrain	51.1	59.5	63.0	59.7	64.2	56.3	57.5	59.1	57.6	58.2	57.0	-11.3%
Islamic Republic of Iran	59.9	64.1	56.6	65.0	61.6	59.3	61.2	58.4	57.5	57.6	58.7	-4.7%
Iraq	59.9	60.8	66.8	63.7	64.7	67.4	64.7	66.6	65.2	63.9	64.3	-0.7%
Jordan	64.9	67.5	67.1	67.7	67.4	67.7	70.5	64.5	61.9	63.1	66.9	-0.8%
Kuwait	54.8	55.6	60.7	63.2	75.3	58.0	62.4	63.4	61.9	59.7	62.2	-17.3%
Lebanon	58.6	62.3	63.6	67.1	66.7	69.6	68.7	68.9	69.4	68.6	69.5	4.2%
Oman	26.7	71.5	46.3	64.3	58.0	57.8	59.6	62.6	70.3	58.8	60.0	3.5%
Qatar	57.5	57.3	55.4	51.8	52.3	55.2	52.6	52.2	53.8	52.3	51.2	-2.0%
Saudi Arabia	41.3	61.3	76.1	63.7	63.0	55.9	58.9	53.4	54.9	54.6	58.4	-7.3%
Syrian Arab Republic	60.5	70.6	70.3	64.3	64.3	64.7	60.3	63.1	64.4	63.4	63.6	-1.1%
United Arab Emirates	57.8	60.2	63.1	62.0	60.7	60.1	60.2	59.9	59.3	59.6	59.9	-1.2%
Yemen	38.7	60.0	64.6	66.1	61.1	65.3	66.5	67.6	68.3	67.8	68.1	11.5%
Middle East	**55.1**	**62.2**	**64.5**	**63.6**	**62.7**	**59.6**	**60.7**	**58.2**	**58.4**	**57.7**	**59.3**	**-5.4%**

CO_2 emissions / GDP using exchange rates

kilogrammes CO_2 / US dollar using 2005 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**0.87**	**0.84**	**0.80**	**0.73**	**0.69**	**0.65**	**0.60**	**0.60**	**0.59**	**0.60**	**0.60**	**-13.9%**
Annex I Parties	*..*	*..*	*..*	*..*	*0.56*	*0.49*	*0.44*	*0.40*	*0.36*	*0.37*	*0.36*	*-35.6%*
Annex II Parties	*0.68*	*0.62*	*0.56*	*0.47*	*0.42*	*0.40*	*0.37*	*0.34*	*0.31*	*0.31*	*0.30*	*-29.3%*
North America	*0.97*	*0.89*	*0.80*	*0.66*	*0.61*	*0.57*	*0.51*	*0.46*	*0.41*	*0.42*	*0.40*	*-33.8%*
Europe	*0.51*	*0.46*	*0.43*	*0.37*	*0.32*	*0.29*	*0.26*	*0.25*	*0.21*	*0.22*	*0.20*	*-35.6%*
Asia Oceania	*0.47*	*0.45*	*0.39*	*0.32*	*0.31*	*0.31*	*0.31*	*0.30*	*0.28*	*0.28*	*0.29*	*-7.0%*
Annex I EIT	*..*	*..*	*..*	*..*	*2.43*	*2.34*	*1.89*	*1.50*	*1.25*	*1.29*	*1.28*	*-47.1%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*1.22*	*1.21*	*1.11*	*1.16*	*1.12*	*1.11*	*1.11*	*-9.7%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*0.53*	*0.44*	*0.39*	*0.37*	*0.33*	*0.33*	*0.33*	*-37.1%*
Non-OECD Total **	**1.60**	**1.62**	**1.58**	**1.62**	**1.69**	**1.55**	**1.39**	**1.38**	**1.27**	**1.26**	**1.26**	**-25.7%**
OECD Total ***	**0.70**	**0.64**	**0.59**	**0.50**	**0.45**	**0.43**	**0.39**	**0.36**	**0.33**	**0.33**	**0.32**	**-28.3%**
Canada	0.85	0.80	0.75	0.62	0.57	0.56	0.53	0.49	0.45	0.44	0.43	-24.9%
Chile	0.69	0.66	0.58	0.51	0.58	0.48	0.53	0.47	0.47	0.47	0.49	-17.0%
Mexico	0.39	0.42	0.46	0.50	0.48	0.50	0.45	0.46	0.46	0.45	0.45	-6.7%
United States	0.98	0.90	0.80	0.67	0.61	0.57	0.51	0.46	0.41	0.42	0.40	-34.6%
OECD Americas	**0.94**	**0.86**	**0.78**	**0.65**	**0.60**	**0.56**	**0.51**	**0.46**	**0.41**	**0.42**	**0.41**	**-32.4%**
Australia	0.56	0.62	0.62	0.57	0.58	0.54	0.53	0.50	0.48	0.46	0.44	-23.5%
Israel	0.46	0.42	0.42	0.45	0.49	0.49	0.46	0.44	0.40	0.41	0.39	-21.1%
Japan	0.46	0.43	0.36	0.29	0.28	0.28	0.27	0.27	0.25	0.24	0.26	-6.9%
Korea	0.78	0.80	0.87	0.70	0.64	0.68	0.65	0.56	0.54	0.55	0.56	-12.6%
New Zealand	0.28	0.29	0.29	0.29	0.32	0.31	0.33	0.30	0.26	0.26	0.25	-20.7%
OECD Asia Oceania	**0.48**	**0.47**	**0.41**	**0.35**	**0.33**	**0.35**	**0.35**	**0.34**	**0.32**	**0.32**	**0.33**	**-1.3%**
Austria	0.38	0.34	0.32	0.29	0.26	0.25	0.22	0.24	0.20	0.21	0.20	-22.1%
Belgium	0.68	0.59	0.55	0.42	0.39	0.38	0.34	0.30	0.26	0.27	0.27	-31.0%
Czech Republic	2.16	1.91	1.86	1.85	1.54	1.27	1.15	0.92	0.76	0.77	0.75	-51.5%
Denmark	0.44	0.39	0.41	0.35	0.27	0.28	0.21	0.19	0.19	0.18	0.16	-40.7%
Estonia	..	..	..	..	3.56	2.26	1.49	1.21	1.08	1.32	1.27	-64.3%
Finland	0.54	0.50	0.53	0.41	0.39	0.41	0.32	0.28	0.28	0.31	0.27	-31.7%
France	0.46	0.40	0.36	0.26	0.22	0.21	0.19	0.18	0.16	0.16	0.15	-32.7%
Germany	0.72	0.65	0.60	0.54	0.43	0.35	0.31	0.29	0.26	0.26	0.25	-42.8%
Greece	0.25	0.29	0.31	0.37	0.45	0.46	0.44	0.40	0.36	0.35	0.37	-16.7%
Hungary	1.18	1.08	1.07	0.95	0.76	0.74	0.60	0.51	0.45	0.45	0.43	-43.7%
Iceland	0.29	0.28	0.22	0.18	0.18	0.19	0.16	0.13	0.12	0.12	0.11	-40.1%
Ireland	0.61	0.48	0.48	0.43	0.39	0.34	0.26	0.22	0.19	0.19	0.17	-57.6%
Italy	0.37	0.35	0.31	0.28	0.27	0.26	0.25	0.26	0.22	0.23	0.22	-18.9%
Luxembourg	1.63	1.14	1.00	0.74	0.54	0.34	0.25	0.30	0.25	0.26	0.25	-53.6%
Netherlands	0.48	0.46	0.47	0.41	0.36	0.35	0.29	0.29	0.26	0.27	0.25	-29.0%
Norway	0.24	0.20	0.19	0.16	0.15	0.14	0.12	0.12	0.12	0.12	0.12	-20.1%
Poland	2.11	1.94	2.28	2.29	1.90	1.65	1.11	0.96	0.78	0.80	0.75	-60.5%
Portugal	0.22	0.23	0.24	0.24	0.29	0.32	0.32	0.33	0.27	0.24	0.25	-13.3%
Slovak Republic	1.64	1.62	1.83	1.67	1.62	1.28	0.99	0.80	0.58	0.59	0.55	-66.4%
Slovenia	..	..	..	..	0.54	0.58	0.47	0.44	0.39	0.39	0.39	-27.5%
Spain	0.30	0.32	0.34	0.30	0.28	0.30	0.29	0.30	0.24	0.23	0.23	-18.7%
Sweden	0.47	0.40	0.35	0.25	0.20	0.21	0.16	0.14	0.11	0.12	0.11	-46.1%
Switzerland	0.16	0.15	0.15	0.15	0.13	0.13	0.12	0.12	0.10	0.10	0.09	-28.9%
Turkey	0.36	0.41	0.44	0.46	0.47	0.48	0.52	0.45	0.50	0.47	0.46	-1.2%
United Kingdom	0.64	0.55	0.49	0.42	0.36	0.31	0.26	0.23	0.20	0.20	0.19	-49.0%
OECD Europe ***	**0.57**	**0.52**	**0.49**	**0.43**	**0.37**	**0.33**	**0.30**	**0.28**	**0.25**	**0.25**	**0.24**	-35.9%
European Union - 27	*..*	*..*	*..*	*..*	*0.40*	*0.35*	*0.31*	*0.29*	*0.25*	*0.25*	*0.24*	-39.9%

* The ratio for the world has been calculated to include international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions / GDP using exchange rates

kilogrammes CO_2 / US dollar using 2005 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**1.60**	**1.62**	**1.58**	**1.62**	**1.69**	**1.55**	**1.39**	**1.38**	**1.27**	**1.26**	**1.26**	**-25.7%**
Albania	1.30	1.19	1.53	1.31	1.11	0.38	0.47	0.48	0.33	0.34	0.35	-68.5%
Armenia	..	..	..	..	5.04	1.59	1.24	0.84	0.74	0.68	0.75	-85.0%
Azerbaijan	..	..	..	..	4.60	6.78	3.96	2.33	0.92	0.84	0.94	-79.7%
Belarus	..	..	..	..	5.24	3.97	2.79	2.05	1.56	1.52	1.46	-72.2%
Bosnia and Herzegovina	..	..	..	..	10.26	1.28	1.57	1.43	1.55	1.56	1.75	-82.9%
Bulgaria	5.87	4.95	4.26	3.50	3.00	2.44	1.91	1.60	1.29	1.34	1.47	-51.1%
Croatia	..	..	..	..	0.51	0.52	0.49	0.46	0.42	0.41	0.41	-20.6%
Cyprus **	0.70	0.56	0.49	0.40	0.40	0.42	0.43	0.41	0.39	0.38	0.36	-10.1%
Georgia	..	..	..	..	2.77	2.38	1.02	0.68	0.69	0.60	0.71	-74.4%
Gibraltar	0.22	0.20	0.21	0.19	0.25	0.42	0.43	0.45	0.51	0.51	0.48	96.7%
Kazakhstan	..	..	..	..	4.71	5.43	3.24	2.75	2.77	3.03	2.82	-40.1%
Kosovo ***	..	..	..	..	..	..	1.90	1.75	1.78	1.78	1.68	..
Kyrgyzstan	..	..	..	..	7.32	2.85	2.16	1.97	1.69	2.05	2.07	-71.8%
Latvia	..	..	..	..	1.29	1.08	0.63	0.47	0.46	0.52	0.46	-64.2%
Lithuania	..	..	..	..	1.34	0.99	0.63	0.52	0.46	0.49	0.46	-65.9%
FYR of Macedonia	..	..	..	..	1.40	1.71	1.52	1.47	1.21	1.16	1.25	-11.2%
Malta	0.74	0.48	0.42	0.45	0.67	0.53	0.37	0.45	0.38	0.37	0.36	-45.7%
Republic of Moldova	..	..	..	..	5.06	4.94	3.06	2.57	2.24	2.26	2.12	-58.2%
Montenegro ***	..	..	..	..	..	..	..	0.74	0.59	0.88	0.86	..
Romania	3.03	2.45	2.13	1.78	1.88	1.47	1.16	0.96	0.70	0.66	0.72	-61.9%
Russian Federation	..	..	..	..	2.58	2.98	2.64	1.98	1.70	1.74	1.75	-32.5%
Serbia ***	..	..	..	..	1.45	2.01	2.02	1.95	1.64	1.64	1.75	21.0%
Tajikistan	..	..	..	..	2.91	1.71	1.52	1.01	0.94	0.90	0.87	-69.9%
Turkmenistan	..	..	..	..	5.53	6.53	5.78	5.90	4.09	4.26	4.04	-26.9%
Ukraine	..	..	..	..	5.02	5.97	4.90	3.55	2.90	3.00	2.99	-40.3%
Uzbekistan	..	..	..	..	10.68	11.16	10.73	7.59	5.26	4.72	4.74	-55.7%
Former Soviet Union ****	3.09	3.18	3.10	2.92	..	..	..	..	..	..	..	..
Former Yugoslavia ****	0.98	0.94	0.82	1.12	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**2.93**	**2.96**	**2.83**	**2.68**	**2.89**	**3.04**	**2.54**	**1.96**	**1.66**	**1.70**	**1.72**	**-40.6%**
Algeria	0.35	0.36	0.55	0.66	0.77	0.82	0.79	0.78	0.86	0.84	0.87	12.6%
Angola	0.12	0.15	0.19	0.19	0.23	0.28	0.27	0.23	0.27	0.29	0.28	22.2%
Benin	0.23	0.33	0.23	0.22	0.11	0.08	0.40	0.62	0.82	0.86	0.86	656.7%
Botswana	..	..	..	0.60	0.65	0.60	0.53	0.43	0.39	0.42	0.37	-41.9%
Cameroon	0.15	0.16	0.19	0.18	0.22	0.23	0.20	0.18	0.26	0.26	0.26	16.2%
Congo	0.37	0.28	0.26	0.17	0.14	0.11	0.10	0.14	0.21	0.23	0.25	77.3%
Dem. Rep. of Congo	0.26	0.25	0.33	0.31	0.29	0.29	0.29	0.32	0.33	0.33	0.32	13.6%
Côte d'Ivoire	0.30	0.30	0.28	0.25	0.20	0.23	0.37	0.36	0.35	0.34	0.34	68.0%
Egypt	1.28	1.41	1.44	1.61	1.58	1.42	1.34	1.70	1.50	1.47	1.53	-3.4%
Eritrea	..	..	..	..	..	0.93	0.70	0.53	0.43	0.45	0.44	..
Ethiopia	0.25	0.22	0.25	0.27	0.32	0.33	0.36	0.36	0.32	0.27	0.27	-15.8%
Gabon	0.16	0.12	0.23	0.27	0.13	0.17	0.17	0.20	0.22	0.22	0.21	56.1%
Ghana	0.43	0.55	0.51	0.50	0.49	0.49	0.61	0.60	0.66	0.70	0.64	29.9%
Kenya	0.65	0.54	0.51	0.47	0.42	0.41	0.50	0.40	0.48	0.49	0.47	12.1%
Libya	0.09	0.26	0.34	0.58	0.77	1.03	1.10	1.03	1.00	1.04	1.67	115.6%
Morocco	0.42	0.51	0.55	0.55	0.53	0.67	0.63	0.66	0.59	0.61	0.64	19.5%
Mozambique	0.99	0.95	0.93	0.76	0.43	0.38	0.31	0.23	0.26	0.27	0.29	-31.6%
Namibia	..	..	..	..	..	0.36	0.31	0.34	0.35	0.35	0.34	..
Nigeria	0.14	0.25	0.47	0.66	0.46	0.43	0.50	0.49	0.29	0.33	0.32	-31.1%
Senegal	0.36	0.43	0.51	0.46	0.42	0.44	0.52	0.53	0.55	0.54	0.54	28.9%
South Africa	1.42	1.59	1.42	1.45	1.48	1.54	1.45	1.33	1.30	1.28	1.23	-16.9%
Sudan	0.48	0.39	0.42	0.46	0.49	0.31	0.30	0.37	0.41	0.39	0.36	-26.4%
United Rep. of Tanzania	0.39	0.32	0.29	0.27	0.23	0.31	0.26	0.36	0.29	0.30	0.30	30.3%
Togo	0.36	0.27	0.25	0.21	0.35	0.36	0.48	0.46	0.48	0.48	0.48	35.7%
Tunisia	0.59	0.56	0.68	0.67	0.74	0.72	0.69	0.63	0.54	0.55	0.54	-27.2%
Zambia	0.82	0.94	0.70	0.57	0.49	0.41	0.30	0.29	0.18	0.18	0.20	-59.0%
Zimbabwe	1.96	1.68	1.73	1.69	2.25	1.97	1.49	1.78	1.70	1.69	1.69	-25.0%
Other Africa	0.23	0.26	0.33	0.29	0.31	0.37	0.33	0.29	0.28	0.29	0.29	-5.9%
Africa	**0.67**	**0.77**	**0.77**	**0.86**	**0.87**	**0.90**	**0.86**	**0.84**	**0.77**	**0.77**	**0.76**	**-12.5%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions / GDP using exchange rates

kilogrammes CO_2 / US dollar using 2005 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	0.18	0.28	0.36	0.37	0.47	0.57	0.55	0.61	0.65	0.65	0.62	32.8%
Brunei Darussalam	0.10	0.28	0.32	0.43	0.47	0.56	0.51	0.51	0.77	0.80	0.88	87.8%
Cambodia	..	..	..	..	..	0.52	0.49	0.42	0.44	0.43	0.43	..
Chinese Taipei	1.01	0.91	0.91	0.65	0.68	0.67	0.71	0.72	0.62	0.61	0.56	-17.8%
India	1.30	1.38	1.39	1.57	1.66	1.73	1.62	1.40	1.46	1.39	1.32	-20.3%
Indonesia	0.62	0.69	0.85	0.83	0.97	0.98	1.20	1.17	1.07	1.09	1.06	8.8%
DPR of Korea	8.51	6.17	4.92	3.68	2.79	2.33	2.41	2.49	2.19	2.32	2.31	-17.3%
Malaysia	0.80	0.76	0.76	0.82	0.87	0.92	0.99	1.05	1.01	1.03	1.04	19.6%
Mongolia	..	..	..	7.53	6.85	6.24	4.78	3.76	3.61	3.65	3.21	-53.1%
Myanmar	2.38	1.87	1.78	1.60	1.23	1.57	1.43	0.88	0.42	0.46	0.45	-63.4%
Nepal	0.09	0.13	0.19	0.16	0.21	0.32	0.44	0.37	0.35	0.40	0.39	84.9%
Pakistan	0.82	0.89	0.82	0.89	1.00	1.09	1.16	1.10	1.08	1.01	0.99	-1.6%
Philippines	0.74	0.74	0.63	0.58	0.62	0.83	0.82	0.69	0.58	0.58	0.57	-8.1%
Singapore	0.56	0.55	0.54	0.50	0.60	0.56	0.49	0.40	0.38	0.38	0.37	-39.0%
Sri Lanka	0.52	0.43	0.46	0.35	0.31	0.35	0.53	0.55	0.39	0.39	0.42	34.7%
Thailand	0.72	0.74	0.81	0.77	0.90	1.04	1.13	1.20	1.11	1.12	1.16	27.9%
Vietnam	1.69	1.73	1.45	1.22	0.97	1.06	1.19	1.51	1.64	1.74	1.75	80.3%
Other Asia	0.56	0.60	0.84	0.47	0.39	0.31	0.34	0.36	0.33	0.36	0.36	-8.0%
Asia	**1.11**	**1.12**	**1.11**	**1.12**	**1.14**	**1.14**	**1.16**	**1.09**	**1.09**	**1.06**	**1.03**	**-9.5%**
People's Rep. of China	6.44	6.78	6.59	4.79	4.27	3.22	2.34	2.39	1.95	1.89	1.90	-55.6%
Hong Kong, China	0.41	0.36	0.28	0.32	0.33	0.28	0.27	0.22	0.22	0.19	0.20	-40.5%
China	**5.54**	**5.76**	**5.36**	**4.07**	**3.64**	**2.87**	**2.14**	**2.23**	**1.86**	**1.80**	**1.81**	**-50.3%**
Argentina	0.85	0.79	0.77	0.81	0.94	0.81	0.84	0.83	0.74	0.70	0.66	-29.2%
Bolivia	0.54	0.64	0.75	0.84	0.91	0.99	0.87	0.99	1.11	1.18	1.21	33.3%
Brazil	0.36	0.37	0.35	0.30	0.32	0.34	0.39	0.37	0.33	0.35	0.36	12.7%
Colombia	0.65	0.55	0.53	0.53	0.49	0.51	0.48	0.40	0.35	0.34	0.34	-29.8%
Costa Rica	0.27	0.29	0.28	0.26	0.26	0.34	0.27	0.29	0.26	0.26	0.26	-3.0%
Cuba	1.11	1.08	1.17	0.82	0.88	0.83	0.81	0.59	0.60	0.53	0.49	-44.4%
Dominican Republic	0.49	0.53	0.50	0.45	0.47	0.55	0.60	0.51	0.41	0.38	0.36	-22.7%
Ecuador	0.34	0.40	0.55	0.57	0.55	0.57	0.62	0.65	0.71	0.70	0.65	19.2%
El Salvador	0.17	0.20	0.17	0.20	0.23	0.35	0.34	0.37	0.34	0.32	0.32	40.7%
Guatemala	0.26	0.28	0.29	0.24	0.20	0.30	0.36	0.39	0.35	0.32	0.31	50.6%
Haiti	0.12	0.12	0.14	0.18	0.22	0.24	0.33	0.48	0.50	0.47	0.47	113.4%
Honduras	0.41	0.42	0.38	0.35	0.39	0.53	0.57	0.71	0.65	0.63	0.64	65.9%
Jamaica	0.77	0.98	1.01	0.71	0.86	0.82	0.97	0.93	0.68	0.65	0.68	-20.5%
Netherlands Antilles	13.67	8.49	6.36	3.13	1.60	1.47	1.90	1.87	2.10	1.62	1.90	18.4%
Nicaragua	0.33	0.33	0.40	0.39	0.47	0.59	0.65	0.64	0.59	0.62	0.60	26.1%
Panama	0.52	0.56	0.44	0.34	0.33	0.41	0.39	0.44	0.36	0.36	0.37	9.3%
Paraguay	0.29	0.27	0.32	0.30	0.34	0.51	0.48	0.46	0.49	0.48	0.47	39.5%
Peru	0.45	0.44	0.43	0.38	0.44	0.41	0.41	0.36	0.37	0.37	0.37	-15.0%
Trinidad and Tobago	1.01	0.85	0.79	1.07	1.42	1.43	1.92	2.11	2.12	2.26	2.24	58.3%
Uruguay	0.57	0.55	0.45	0.31	0.30	0.30	0.31	0.31	0.36	0.28	0.31	2.2%
Venezuela	0.70	0.74	0.96	1.04	1.01	0.96	0.99	1.02	0.95	1.04	0.88	-13.1%
Other Non-OECD Americas	0.62	0.82	0.58	0.50	0.52	0.52	0.48	0.46	0.48	0.51	0.52	1.2%
Non-OECD Americas	**0.56**	**0.53**	**0.52**	**0.48**	**0.50**	**0.50**	**0.54**	**0.52**	**0.48**	**0.49**	**0.47**	**-5.9%**
Bahrain	1.82	1.73	1.48	2.23	2.00	1.43	1.41	1.35	1.32	1.30	1.25	-37.6%
Islamic Republic of Iran	0.62	0.75	1.09	1.46	1.76	2.09	2.15	2.20	2.25	2.10	2.11	20.0%
Iraq	0.12	0.15	0.17	0.36	0.99	4.70	1.65	2.39	2.33	2.61	2.54	157.1%
Jordan	0.59	0.96	0.93	1.25	1.65	1.54	1.55	1.43	1.16	1.10	1.13	-31.4%
Kuwait	0.31	0.40	0.66	1.17	0.79	0.73	0.90	0.87	0.90	0.89	0.86	9.2%
Lebanon	0.32	0.40	0.55	0.39	0.57	0.76	0.78	0.66	0.69	0.61	0.60	4.3%
Oman	0.06	0.13	0.32	0.40	0.62	0.67	0.78	0.91	1.35	1.38	1.46	135.7%
Qatar	0.15	0.32	0.43	0.82	0.97	1.15	0.83	0.85	0.71	0.69	0.65	-32.9%
Saudi Arabia	0.17	0.15	0.46	0.72	0.79	0.89	0.95	1.03	1.16	1.21	1.18	50.3%
Syrian Arab Republic	1.27	1.12	1.18	1.64	2.04	1.62	1.75	1.90	1.61	1.57	1.48	-27.3%
United Arab Emirates	0.16	0.12	0.23	0.46	0.59	0.66	0.62	0.60	0.72	0.75	0.75	27.4%
Yemen	0.63	0.65	0.74	0.72	0.82	0.88	0.97	1.11	1.15	1.14	1.11	36.1%
Middle East	**0.30**	**0.33**	**0.48**	**0.80**	**1.00**	**1.23**	**1.18**	**1.23**	**1.30**	**1.29**	**1.26**	**26.2%**

CO_2 emissions / GDP using purchasing power parities

kilogrammes CO_2 / US dollar using 2005 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**0.75**	**0.71**	**0.67**	**0.61**	**0.58**	**0.54**	**0.49**	**0.48**	**0.45**	**0.45**	**0.45**	**-23.2%**
Annex I Parties	*..*	*..*	*..*	*..*	*0.55*	*0.49*	*0.44*	*0.40*	*0.36*	*0.36*	*0.36*	*-35.2%*
Annex II Parties	*0.73*	*0.66*	*0.60*	*0.51*	*0.46*	*0.43*	*0.40*	*0.37*	*0.33*	*0.33*	*0.32*	*-29.7%*
North America	*0.97*	*0.89*	*0.80*	*0.66*	*0.61*	*0.57*	*0.51*	*0.46*	*0.41*	*0.42*	*0.40*	*-33.8%*
Europe	*0.57*	*0.51*	*0.47*	*0.41*	*0.35*	*0.32*	*0.29*	*0.27*	*0.24*	*0.24*	*0.23*	*-35.5%*
Asia Oceania	*0.54*	*0.52*	*0.45*	*0.37*	*0.36*	*0.36*	*0.35*	*0.35*	*0.33*	*0.32*	*0.33*	*-7.6%*
Annex I EIT	*..*	*..*	*..*	*..*	*1.15*	*1.15*	*0.94*	*0.74*	*0.62*	*0.63*	*0.63*	*-45.2%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*0.60*	*0.59*	*0.54*	*0.56*	*0.52*	*0.52*	*0.52*	*-13.8%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*0.52*	*0.46*	*0.40*	*0.37*	*0.33*	*0.34*	*0.33*	*-36.1%*
Non-OECD Total **	**0.72**	**0.74**	**0.73**	**0.73**	**0.76**	**0.70**	**0.62**	**0.61**	**0.56**	**0.55**	**0.55**	**-27.7%**
OECD Total ***	**0.72**	**0.66**	**0.60**	**0.52**	**0.46**	**0.44**	**0.40**	**0.37**	**0.33**	**0.34**	**0.33**	**-29.6%**
Canada	0.86	0.80	0.75	0.62	0.57	0.57	0.53	0.49	0.45	0.44	0.43	-24.8%
Chile	0.41	0.39	0.35	0.30	0.35	0.29	0.32	0.28	0.28	0.28	0.29	-17.0%
Mexico	0.25	0.27	0.30	0.33	0.32	0.33	0.30	0.30	0.30	0.30	0.30	-6.7%
United States	0.98	0.90	0.80	0.67	0.61	0.57	0.51	0.46	0.41	0.42	0.40	-34.6%
OECD Americas	**0.91**	**0.84**	**0.75**	**0.63**	**0.58**	**0.55**	**0.49**	**0.45**	**0.40**	**0.41**	**0.39**	**-32.7%**
Australia	0.59	0.66	0.66	0.60	0.61	0.57	0.56	0.53	0.51	0.48	0.47	-23.4%
Israel	0.38	0.35	0.34	0.37	0.41	0.41	0.38	0.36	0.33	0.34	0.32	-21.1%
Japan	0.54	0.51	0.42	0.34	0.32	0.32	0.32	0.31	0.29	0.29	0.30	-6.9%
Korea	0.60	0.62	0.67	0.54	0.49	0.52	0.50	0.43	0.41	0.43	0.43	-12.6%
New Zealand	0.30	0.31	0.31	0.32	0.35	0.34	0.36	0.32	0.29	0.28	0.27	-20.7%
OECD Asia Oceania	**0.54**	**0.53**	**0.46**	**0.39**	**0.37**	**0.38**	**0.38**	**0.36**	**0.34**	**0.34**	**0.35**	**-5.8%**
Austria	0.42	0.38	0.36	0.32	0.29	0.27	0.24	0.27	0.22	0.24	0.23	-22.1%
Belgium	0.77	0.66	0.61	0.47	0.43	0.43	0.38	0.34	0.29	0.30	0.30	-31.0%
Czech Republic	1.29	1.14	1.11	1.11	0.92	0.76	0.68	0.55	0.45	0.46	0.45	-51.5%
Denmark	0.63	0.56	0.59	0.50	0.39	0.40	0.30	0.27	0.27	0.26	0.23	-40.7%
Estonia	..	..	..	..	2.22	1.41	0.93	0.76	0.68	0.82	0.79	-64.3%
Finland	0.66	0.61	0.65	0.50	0.47	0.50	0.39	0.34	0.34	0.38	0.32	-31.7%
France	0.53	0.45	0.41	0.30	0.25	0.24	0.22	0.21	0.19	0.19	0.17	-32.8%
Germany	0.77	0.70	0.65	0.58	0.46	0.38	0.33	0.31	0.28	0.28	0.26	-42.8%
Greece	0.22	0.26	0.28	0.33	0.40	0.41	0.39	0.35	0.32	0.31	0.33	-16.7%
Hungary	0.76	0.69	0.69	0.61	0.49	0.47	0.39	0.33	0.29	0.29	0.27	-43.7%
Iceland	0.46	0.44	0.35	0.29	0.29	0.30	0.26	0.21	0.19	0.19	0.17	-40.1%
Ireland	0.77	0.61	0.60	0.54	0.49	0.43	0.32	0.27	0.24	0.24	0.21	-57.6%
Italy	0.39	0.37	0.34	0.30	0.30	0.29	0.27	0.28	0.24	0.24	0.24	-19.0%
Luxembourg	1.93	1.35	1.19	0.87	0.64	0.41	0.30	0.36	0.30	0.30	0.29	-53.6%
Netherlands	0.54	0.51	0.53	0.46	0.40	0.39	0.32	0.32	0.29	0.30	0.28	-29.0%
Norway	0.33	0.28	0.26	0.22	0.21	0.20	0.17	0.17	0.16	0.17	0.16	-20.1%
Poland	1.22	1.12	1.32	1.32	1.10	0.95	0.64	0.56	0.45	0.46	0.43	-60.5%
Portugal	0.18	0.20	0.20	0.20	0.24	0.27	0.27	0.28	0.23	0.21	0.21	-13.3%
Slovak Republic	0.90	0.89	1.01	0.92	0.89	0.70	0.55	0.44	0.32	0.32	0.30	-66.4%
Slovenia	..	..	..	..	0.41	0.44	0.36	0.33	0.30	0.30	0.30	-27.4%
Spain	0.28	0.30	0.33	0.28	0.27	0.28	0.28	0.29	0.23	0.22	0.22	-18.7%
Sweden	0.59	0.50	0.43	0.32	0.25	0.26	0.20	0.17	0.14	0.15	0.14	-46.1%
Switzerland	0.23	0.22	0.21	0.21	0.18	0.18	0.16	0.16	0.14	0.14	0.13	-28.9%
Turkey	0.22	0.25	0.27	0.28	0.29	0.30	0.32	0.28	0.31	0.29	0.29	-1.2%
United Kingdom	0.74	0.63	0.57	0.49	0.42	0.36	0.31	0.27	0.23	0.24	0.21	-49.0%
OECD Europe ***	**0.60**	**0.55**	**0.52**	**0.46**	**0.39**	**0.35**	**0.31**	**0.29**	**0.26**	**0.26**	**0.25**	-36.9%
European Union - 27	*..*	*..*	*..*	*..*	*0.42*	*0.37*	*0.32*	*0.30*	*0.26*	*0.26*	*0.25*	-40.2%

* The ratio for the world has been calculated to include international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions / GDP using purchasing power parities

kilogrammes CO_2 / US dollar using 2005 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**0.72**	**0.74**	**0.73**	**0.73**	**0.76**	**0.70**	**0.62**	**0.61**	**0.56**	**0.55**	**0.55**	**-27.7%**
Albania	0.57	0.52	0.67	0.57	0.49	0.16	0.21	0.21	0.15	0.15	0.15	-68.5%
Armenia	..	..	..	..	1.96	0.62	0.48	0.33	0.29	0.27	0.29	-85.0%
Azerbaijan	..	..	..	..	1.62	2.38	1.39	0.82	0.32	0.30	0.33	-79.7%
Belarus	..	..	..	..	1.90	1.44	1.01	0.74	0.56	0.55	0.53	-72.2%
Bosnia and Herzegovina	..	..	..	..	4.69	0.58	0.72	0.65	0.71	0.71	0.80	-82.9%
Bulgaria	2.24	1.88	1.62	1.33	1.14	0.93	0.73	0.61	0.49	0.51	0.56	-51.1%
Croatia	..	..	..	..	0.34	0.34	0.32	0.30	0.28	0.27	0.27	-20.6%
Cyprus **	0.64	0.51	0.45	0.37	0.37	0.38	0.40	0.38	0.36	0.35	0.33	-10.1%
Georgia	..	..	..	..	1.13	0.97	0.42	0.28	0.28	0.24	0.29	-74.4%
Gibraltar	0.26	0.24	0.26	0.24	0.30	0.51	0.52	0.55	0.62	0.62	0.59	96.5%
Kazakhstan	..	..	..	..	2.04	2.35	1.40	1.19	1.20	1.31	1.22	-40.1%
Kosovo ***	..	..	..	..	..	..	0.76	0.70	0.71	0.71	0.67	..
Kyrgyzstan	..	..	..	..	2.03	0.79	0.60	0.55	0.47	0.57	0.57	-71.8%
Latvia	..	..	..	..	0.69	0.58	0.34	0.25	0.25	0.28	0.25	-64.2%
Lithuania	..	..	..	..	0.72	0.53	0.34	0.28	0.25	0.26	0.24	-65.9%
FYR of Macedonia	..	..	..	..	0.52	0.64	0.57	0.55	0.45	0.43	0.47	-11.2%
Malta	0.52	0.34	0.30	0.32	0.47	0.37	0.26	0.32	0.27	0.26	0.26	-45.7%
Republic of Moldova	..	..	..	..	1.78	1.74	1.08	0.90	0.79	0.80	0.75	-58.2%
Montenegro ***	..	..	..	..	..	..	..	0.32	0.26	0.39	0.38	..
Romania	1.48	1.19	1.04	0.87	0.92	0.72	0.57	0.47	0.34	0.32	0.35	-61.9%
Russian Federation	..	..	..	..	1.16	1.34	1.19	0.89	0.77	0.78	0.79	-32.5%
Serbia ***	..	..	..	..	0.58	0.80	0.80	0.78	0.65	0.65	0.70	21.0%
Tajikistan	..	..	..	..	0.69	0.41	0.36	0.24	0.22	0.22	0.21	-69.9%
Turkmenistan	..	..	..	..	1.98	2.34	2.07	2.12	1.46	1.53	1.45	-26.9%
Ukraine	..	..	..	..	1.64	1.96	1.61	1.16	0.95	0.98	0.98	-40.3%
Uzbekistan	..	..	..	..	2.92	3.05	2.93	2.07	1.44	1.29	1.29	-55.7%
Former Soviet Union ****	1.31	1.35	1.32	1.24	..	..	..	..	..	..	..	..
Former Yugoslavia ****	0.55	0.54	0.47	0.63	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**1.28**	**1.29**	**1.24**	**1.17**	**1.25**	**1.34**	**1.12**	**0.86**	**0.73**	**0.74**	**0.75**	**-40.0%**
Algeria	0.15	0.16	0.24	0.29	0.34	0.36	0.34	0.34	0.37	0.36	0.38	12.6%
Angola	0.07	0.08	0.11	0.11	0.13	0.16	0.15	0.13	0.15	0.16	0.15	22.2%
Benin	0.10	0.14	0.10	0.09	0.05	0.03	0.17	0.26	0.34	0.36	0.36	656.5%
Botswana	..	..	..	0.29	0.31	0.28	0.25	0.20	0.18	0.20	0.18	-41.9%
Cameroon	0.07	0.08	0.09	0.09	0.11	0.11	0.10	0.08	0.12	0.13	0.12	16.2%
Congo	0.19	0.15	0.13	0.09	0.07	0.05	0.05	0.07	0.11	0.12	0.13	77.5%
Dem. Rep. of Congo	0.12	0.11	0.15	0.14	0.13	0.13	0.13	0.14	0.15	0.15	0.15	13.7%
Côte d'Ivoire	0.16	0.17	0.15	0.13	0.11	0.12	0.20	0.19	0.19	0.19	0.19	68.1%
Egypt	0.34	0.38	0.39	0.43	0.43	0.38	0.36	0.46	0.40	0.40	0.41	-3.4%
Eritrea	..	..	..	..	..	0.38	0.29	0.22	0.18	0.19	0.18	..
Ethiopia	0.06	0.06	0.06	0.07	0.08	0.09	0.09	0.09	0.08	0.07	0.07	-15.9%
Gabon	0.08	0.06	0.11	0.13	0.06	0.08	0.08	0.10	0.11	0.11	0.10	56.2%
Ghana	0.18	0.23	0.21	0.20	0.20	0.20	0.25	0.25	0.27	0.29	0.26	30.0%
Kenya	0.25	0.21	0.20	0.18	0.17	0.16	0.19	0.16	0.19	0.19	0.19	12.1%
Libya	0.05	0.14	0.18	0.31	0.42	0.56	0.60	0.56	0.54	0.56	0.91	115.6%
Morocco	0.23	0.28	0.30	0.30	0.29	0.37	0.35	0.36	0.32	0.34	0.35	19.5%
Mozambique	0.47	0.45	0.44	0.36	0.20	0.18	0.14	0.11	0.12	0.13	0.14	-31.6%
Namibia	..	..	..	..	..	0.24	0.21	0.23	0.24	0.23	0.23	..
Nigeria	0.07	0.11	0.22	0.30	0.21	0.20	0.23	0.23	0.14	0.15	0.15	-31.1%
Senegal	0.17	0.20	0.25	0.22	0.20	0.21	0.25	0.26	0.26	0.26	0.26	28.8%
South Africa	0.87	0.97	0.86	0.89	0.90	0.94	0.88	0.81	0.79	0.78	0.75	-16.9%
Sudan	0.21	0.17	0.19	0.20	0.22	0.14	0.13	0.16	0.18	0.17	0.16	-26.4%
United Rep. of Tanzania	0.14	0.11	0.10	0.09	0.08	0.11	0.09	0.12	0.10	0.10	0.10	30.3%
Togo	0.16	0.12	0.11	0.09	0.16	0.16	0.22	0.21	0.22	0.22	0.22	35.7%
Tunisia	0.26	0.25	0.30	0.30	0.33	0.32	0.31	0.28	0.24	0.24	0.24	-27.2%
Zambia	0.44	0.51	0.38	0.31	0.27	0.22	0.16	0.16	0.10	0.10	0.11	-59.0%
Zimbabwe	2.90	2.48	2.55	2.50	3.33	2.91	2.21	2.64	2.51	2.50	2.50	-25.1%
Other Africa	0.10	0.11	0.14	0.12	0.13	0.15	0.14	0.13	0.12	0.12	0.12	-7.5%
Africa	**0.32**	**0.37**	**0.37**	**0.40**	**0.41**	**0.42**	**0.40**	**0.38**	**0.35**	**0.35**	**0.34**	**-15.7%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions / GDP using purchasing power parities

kilogrammes CO_2 / US dollar using 2005 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	0.07	0.10	0.13	0.13	0.17	0.21	0.20	0.22	0.24	0.24	0.23	32.9%
Brunei Darussalam	0.05	0.15	0.17	0.23	0.26	0.30	0.28	0.27	0.42	0.44	0.48	87.7%
Cambodia	..	..	..	..	..	0.16	0.15	0.13	0.14	0.14	0.14	..
Chinese Taipei	0.61	0.55	0.55	0.39	0.41	0.40	0.43	0.43	0.37	0.36	0.34	-17.9%
India	0.43	0.46	0.46	0.52	0.55	0.57	0.54	0.46	0.48	0.46	0.44	-20.3%
Indonesia	0.25	0.28	0.35	0.34	0.39	0.40	0.49	0.48	0.43	0.44	0.43	8.8%
DPR of Korea	2.35	1.70	1.36	1.02	0.77	0.64	0.66	0.69	0.61	0.64	0.64	-17.3%
Malaysia	0.36	0.35	0.35	0.37	0.40	0.42	0.45	0.48	0.46	0.47	0.47	19.6%
Mongolia	..	..	..	2.61	2.37	2.16	1.66	1.30	1.25	1.26	1.11	-53.1%
Myanmar	0.58	0.46	0.44	0.39	0.30	0.39	0.35	0.22	0.10	0.11	0.11	-63.4%
Nepal	0.03	0.04	0.06	0.05	0.07	0.10	0.14	0.12	0.11	0.12	0.12	84.9%
Pakistan	0.26	0.29	0.26	0.29	0.32	0.35	0.37	0.35	0.35	0.33	0.32	-1.6%
Philippines	0.29	0.29	0.25	0.23	0.24	0.33	0.32	0.27	0.23	0.23	0.22	-8.1%
Singapore	0.36	0.35	0.35	0.32	0.38	0.36	0.31	0.26	0.24	0.24	0.23	-39.0%
Sri Lanka	0.18	0.15	0.16	0.12	0.11	0.12	0.19	0.19	0.13	0.14	0.15	34.7%
Thailand	0.29	0.29	0.32	0.30	0.36	0.41	0.45	0.47	0.44	0.45	0.46	27.9%
Vietnam	0.50	0.52	0.43	0.36	0.29	0.31	0.36	0.45	0.49	0.52	0.52	80.3%
Other Asia	0.31	0.33	0.47	0.27	0.25	0.18	0.19	0.19	0.18	0.18	0.18	-29.9%
Asia	**0.42**	**0.43**	**0.43**	**0.43**	**0.44**	**0.45**	**0.46**	**0.43**	**0.42**	**0.41**	**0.40**	**-10.4%**
People's Rep. of China	2.71	2.85	2.77	2.02	1.80	1.36	0.98	1.01	0.82	0.80	0.80	-55.6%
Hong Kong, China	0.30	0.27	0.20	0.23	0.24	0.20	0.20	0.16	0.16	0.14	0.14	-40.6%
China	**2.49**	**2.60**	**2.46**	**1.84**	**1.64**	**1.27**	**0.94**	**0.97**	**0.80**	**0.77**	**0.78**	**-52.7%**
Argentina	0.37	0.35	0.34	0.35	0.41	0.35	0.37	0.36	0.32	0.31	0.29	-29.2%
Bolivia	0.15	0.18	0.21	0.23	0.25	0.28	0.24	0.27	0.31	0.33	0.34	33.4%
Brazil	0.20	0.20	0.19	0.17	0.18	0.19	0.22	0.20	0.18	0.20	0.20	12.6%
Colombia	0.30	0.26	0.25	0.25	0.23	0.24	0.22	0.18	0.16	0.16	0.16	-29.8%
Costa Rica	0.14	0.15	0.15	0.13	0.14	0.18	0.14	0.15	0.13	0.13	0.13	-3.0%
Cuba	0.98	0.95	1.03	0.72	0.77	0.73	0.72	0.52	0.53	0.47	0.43	-44.4%
Dominican Republic	0.28	0.31	0.29	0.26	0.27	0.31	0.34	0.29	0.23	0.22	0.21	-22.6%
Ecuador	0.14	0.17	0.23	0.24	0.23	0.24	0.26	0.28	0.30	0.30	0.28	19.2%
El Salvador	0.08	0.10	0.09	0.10	0.11	0.18	0.17	0.18	0.17	0.16	0.16	40.8%
Guatemala	0.14	0.15	0.15	0.12	0.11	0.16	0.19	0.20	0.19	0.17	0.16	50.5%
Haiti	0.05	0.05	0.06	0.08	0.10	0.10	0.14	0.21	0.22	0.21	0.20	113.3%
Honduras	0.18	0.18	0.16	0.15	0.17	0.23	0.25	0.31	0.28	0.27	0.28	65.9%
Jamaica	0.46	0.58	0.60	0.42	0.51	0.48	0.57	0.55	0.40	0.39	0.40	-20.5%
Netherlands Antilles	15.24	9.47	7.09	3.49	1.79	1.64	2.12	2.08	2.35	1.81	2.12	18.4%
Nicaragua	0.13	0.13	0.15	0.15	0.18	0.23	0.25	0.25	0.23	0.24	0.23	26.1%
Panama	0.27	0.29	0.23	0.18	0.17	0.21	0.21	0.23	0.19	0.19	0.19	9.4%
Paraguay	0.10	0.09	0.10	0.10	0.11	0.16	0.16	0.15	0.16	0.16	0.15	39.6%
Peru	0.20	0.20	0.20	0.17	0.20	0.19	0.18	0.16	0.17	0.17	0.17	-15.0%
Trinidad and Tobago	0.62	0.52	0.48	0.65	0.86	0.87	1.17	1.28	1.29	1.38	1.37	58.3%
Uruguay	0.31	0.30	0.24	0.17	0.17	0.16	0.17	0.17	0.20	0.15	0.17	2.2%
Venezuela	0.38	0.41	0.53	0.57	0.56	0.53	0.55	0.56	0.52	0.57	0.48	-13.1%
Other Non-OECD Americas	0.50	0.69	0.48	0.41	0.44	0.44	0.41	0.39	0.40	0.43	0.48	8.3%
Non-OECD Americas	**0.29**	**0.28**	**0.27**	**0.26**	**0.27**	**0.26**	**0.28**	**0.27**	**0.25**	**0.25**	**0.25**	**-7.3%**
Bahrain	1.20	1.15	0.98	1.47	1.33	0.95	0.93	0.89	0.87	0.86	0.83	-37.6%
Islamic Republic of Iran	0.18	0.22	0.33	0.44	0.53	0.62	0.64	0.66	0.67	0.63	0.63	20.0%
Iraq	0.05	0.06	0.06	0.14	0.37	1.78	0.63	0.91	0.88	0.99	0.96	157.1%
Jordan	0.32	0.52	0.50	0.67	0.89	0.83	0.83	0.77	0.62	0.59	0.61	-31.4%
Kuwait	0.22	0.29	0.48	0.85	0.57	0.53	0.66	0.63	0.66	0.65	0.63	9.2%
Lebanon	0.18	0.23	0.31	0.22	0.32	0.43	0.44	0.37	0.39	0.34	0.34	4.2%
Oman	0.04	0.08	0.19	0.24	0.37	0.40	0.47	0.55	0.82	0.84	0.88	135.7%
Qatar	0.11	0.24	0.33	0.62	0.73	0.87	0.63	0.64	0.53	0.52	0.49	-32.8%
Saudi Arabia	0.11	0.09	0.30	0.47	0.51	0.57	0.61	0.66	0.75	0.78	0.76	50.3%
Syrian Arab Republic	0.48	0.42	0.45	0.62	0.77	0.61	0.66	0.72	0.61	0.59	0.56	-27.3%
United Arab Emirates	0.10	0.08	0.15	0.30	0.39	0.44	0.41	0.40	0.48	0.49	0.50	27.4%
Yemen	0.23	0.24	0.27	0.26	0.30	0.32	0.35	0.40	0.42	0.41	0.40	36.1%
Middle East	**0.14**	**0.15**	**0.23**	**0.38**	**0.50**	**0.62**	**0.59**	**0.62**	**0.66**	**0.65**	**0.65**	**30.0%**

CO_2 emissions / population

tonnes CO_2 / capita

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
World *	**3.74**	**3.86**	**4.06**	**3.84**	**3.97**	**3.83**	**3.89**	**4.24**	**4.26**	**4.43**	**4.50**	**13.5%**
Annex I Parties	*..*	*..*	*..*	*..*	*11.82*	*10.89*	*11.16*	*11.23*	*10.09*	*10.46*	*10.33*	*-12.6%*
Annex II Parties	*12.20*	*12.18*	*12.64*	*11.82*	*12.25*	*12.31*	*12.89*	*12.81*	*11.28*	*11.63*	*11.33*	*-7.5%*
North America	*20.16*	*19.82*	*20.17*	*18.72*	*19.06*	*18.92*	*19.89*	*19.28*	*16.73*	*17.32*	*16.79*	*-11.9%*
Europe	*8.63*	*8.56*	*9.11*	*8.36*	*8.36*	*8.17*	*8.27*	*8.33*	*7.27*	*7.44*	*7.10*	*-15.1%*
Asia Oceania	*7.57*	*8.18*	*8.19*	*7.98*	*9.32*	*9.85*	*10.30*	*10.67*	*9.87*	*10.11*	*10.41*	*11.6%*
Annex I EIT	*..*	*..*	*..*	*..*	*12.39*	*8.78*	*8.11*	*8.48*	*8.10*	*8.59*	*8.90*	*-28.1%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*1.57*	*1.78*	*1.88*	*2.37*	*2.72*	*2.85*	*2.98*	*89.4%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*10.21*	*8.96*	*8.90*	*9.14*	*8.32*	*8.61*	*8.60*	*-15.7%*
Non-OECD Total **	**1.46**	**1.72**	**1.96**	**2.00**	**2.18**	**2.06**	**2.08**	**2.55**	**2.86**	**2.99**	**3.13**	**43.4%**
OECD Total ***	**10.47**	**10.48**	**10.93**	**10.24**	**10.48**	**10.50**	**10.96**	**10.92**	**9.81**	**10.14**	**9.95**	**-5.1%**
Canada	15.46	16.33	17.41	15.56	15.46	15.73	17.26	17.22	15.40	15.47	15.37	-0.6%
Chile	2.13	1.63	1.90	1.60	2.36	2.70	3.41	3.58	3.86	4.08	4.42	87.6%
Mexico	1.95	2.45	3.23	3.42	3.26	3.26	3.56	3.72	3.72	3.86	3.96	21.2%
United States	20.66	20.19	20.47	19.06	19.46	19.28	20.18	19.50	16.88	17.53	16.94	-12.9%
OECD Americas	**16.41**	**15.98**	**16.17**	**14.91**	**15.02**	**14.79**	**15.53**	**15.10**	**13.26**	**13.73**	**13.37**	**-11.0%**
Australia	10.92	12.89	14.05	13.90	15.14	15.69	17.58	18.51	18.28	17.66	17.43	15.1%
Israel	4.66	4.91	5.03	5.77	7.17	8.34	8.76	8.44	8.49	8.93	8.66	20.8%
Japan	7.23	7.66	7.52	7.25	8.59	9.09	9.26	9.50	8.51	8.89	9.28	8.0%
Korea	1.58	2.18	3.26	3.76	5.35	7.95	9.31	9.75	10.48	11.42	11.81	120.7%
New Zealand	4.80	5.52	5.23	6.00	6.62	6.85	7.99	8.17	7.19	7.08	6.87	3.8%
OECD Asia Oceania	**6.26**	**6.85**	**7.06**	**7.00**	**8.38**	**9.38**	**10.02**	**10.38**	**9.96**	**10.37**	**10.67**	**27.3%**
Austria	6.49	6.62	7.37	7.18	7.35	7.47	7.70	9.08	7.68	8.35	8.13	10.6%
Belgium	12.09	11.82	12.75	10.34	10.83	11.37	11.58	10.79	9.35	9.93	9.89	-8.7%
Czech Republic	15.35	15.17	16.06	16.75	14.97	11.97	11.86	11.69	10.50	10.88	10.73	-28.3%
Denmark	11.09	10.37	12.21	11.83	9.85	11.12	9.51	8.93	8.49	8.47	7.48	-24.0%
Estonia	..	..	..	..	22.74	11.10	10.66	12.52	10.94	13.79	14.40	-36.6%
Finland	8.62	9.42	11.54	9.91	10.91	10.97	10.69	10.53	10.32	11.79	10.32	-5.4%
France	8.24	7.99	8.37	6.37	6.06	5.97	6.24	6.17	5.42	5.51	5.04	-16.9%
Germany	12.49	12.40	13.48	13.06	11.97	10.63	10.04	9.70	9.00	9.41	9.14	-23.6%
Greece	2.80	3.75	4.62	5.41	6.78	7.13	8.01	8.56	8.00	7.44	7.40	9.0%
Hungary	5.82	6.72	7.82	7.64	6.41	5.55	5.31	5.59	4.81	4.89	4.75	-25.8%
Iceland	6.79	7.37	7.62	6.71	7.39	7.32	7.64	7.40	6.47	6.08	5.81	-21.4%
Ireland	7.29	6.64	7.62	7.45	8.69	9.16	10.80	10.57	8.65	8.54	7.63	-12.2%
Italy	5.42	5.76	6.38	6.14	7.01	7.20	7.48	7.86	6.47	6.59	6.47	-7.6%
Luxembourg	45.11	33.69	32.75	27.03	27.12	19.63	18.31	24.43	20.05	20.78	20.10	-25.9%
Netherlands	9.82	10.31	11.78	10.63	10.43	11.06	10.81	11.19	10.66	11.26	10.45	0.2%
Norway	6.02	6.01	6.85	6.54	6.67	7.53	7.47	7.87	7.68	8.06	7.69	15.3%
Poland	8.74	9.94	11.61	11.28	9.00	8.65	7.60	7.68	7.53	7.93	7.79	-13.4%
Portugal	1.66	1.97	2.41	2.44	3.93	4.81	5.81	5.95	5.00	4.52	4.51	14.9%
Slovak Republic	8.54	9.20	11.08	10.50	10.71	7.61	6.92	7.07	6.18	6.49	6.22	-41.9%
Slovenia	..	..	..	..	6.68	7.06	7.08	7.79	7.43	7.47	7.43	11.2%
Spain	3.49	4.39	4.98	4.54	5.26	5.91	7.05	7.82	6.15	5.82	5.86	11.4%
Sweden	10.18	9.69	8.84	7.04	6.16	6.52	5.95	5.58	4.49	5.03	4.75	-22.9%
Switzerland	6.14	5.73	6.14	6.34	6.12	5.91	5.89	5.95	5.43	5.63	5.07	-17.2%
Turkey	1.14	1.48	1.60	1.88	2.30	2.55	3.12	3.16	3.56	3.64	3.86	67.8%
United Kingdom	11.15	10.31	10.14	9.63	9.60	8.90	8.90	8.85	7.52	7.74	7.06	-26.4%
OECD Europe ***	**8.11**	**8.15**	**8.74**	**8.10**	**7.90**	**7.57**	**7.58**	**7.63**	**6.82**	**7.00**	**6.75**	-14.5%
European Union - 27	*..*	*..*	*..*	*..*	*8.57*	*8.04*	*7.94*	*8.07*	*7.12*	*7.30*	*7.04*	-17.9%

* The ratio for the world has been calculated to include international marine bunkers and international aviation bunkers.
** Includes Estonia and Slovenia prior to 1990.
*** Excludes Estonia and Slovenia prior to 1990.

CO_2 emissions / population

tonnes CO_2 / capita

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Non-OECD Total *	**1.46**	**1.72**	**1.96**	**2.00**	**2.18**	**2.06**	**2.08**	**2.55**	**2.86**	**2.99**	**3.13**	**43.4%**
Albania	1.78	1.85	2.84	2.43	1.90	0.59	0.99	1.27	1.08	1.15	1.20	-36.6%
Armenia	..	..	..	..	5.77	1.06	1.11	1.34	1.38	1.31	1.50	-73.9%
Azerbaijan	..	..	..	..	7.68	4.41	3.46	3.67	2.77	2.63	2.92	-62.0%
Belarus	..	..	..	..	12.21	6.03	5.87	6.35	6.54	6.86	6.97	-42.9%
Bosnia and Herzegovina	..	..	..	..	5.49	0.97	3.66	4.13	5.24	5.33	6.08	10.7%
Bulgaria	7.36	8.28	9.46	9.05	8.60	6.34	5.16	5.96	5.59	5.89	6.58	-23.4%
Croatia	..	..	..	..	4.50	3.38	3.99	4.67	4.46	4.30	4.26	-5.3%
Cyprus **	2.86	3.39	5.07	5.13	6.65	7.73	9.09	9.34	9.37	8.99	8.63	29.7%
Georgia	..	..	..	..	6.92	1.71	1.04	0.99	1.21	1.11	1.40	-79.9%
Gibraltar	3.78	3.76	4.14	4.17	6.24	11.14	13.46	15.07	17.05	17.25	16.66	166.8%
Kazakhstan	..	..	..	..	14.46	10.59	7.59	10.37	12.39	14.32	14.14	-2.2%
Kosovo ***	..	..	..	..	..	..	2.96	3.83	4.70	4.82	4.73	..
Kyrgyzstan	..	..	..	..	5.11	0.97	0.90	0.94	0.96	1.15	1.21	-76.3%
Latvia	..	..	..	..	7.00	3.56	2.87	3.29	3.18	3.61	3.41	-51.2%
Lithuania	..	..	..	..	8.95	3.91	3.20	3.95	3.72	4.05	4.13	-53.9%
FYR of Macedonia	..	..	..	..	4.46	4.17	4.19	4.31	4.08	3.98	4.40	-1.5%
Malta	2.14	2.12	3.11	3.42	6.46	6.36	5.53	6.70	5.93	5.94	5.90	-8.6%
Republic of Moldova	..	..	..	..	8.17	3.21	1.79	2.14	2.06	2.23	2.22	-72.9%
Montenegro ***	..	..	..	..	..	..	..	2.68	2.58	3.93	3.95	..
Romania	5.61	6.60	7.92	7.62	7.22	5.18	3.88	4.40	3.67	3.52	3.82	-47.0%
Russian Federation	..	..	..	..	14.69	10.52	10.23	10.56	10.42	11.11	11.65	-20.7%
Serbia ***	..	..	..	..	6.43	4.46	5.25	6.61	6.19	6.28	6.86	6.5%
Tajikistan	..	..	..	..	2.06	0.42	0.35	0.36	0.41	0.42	0.43	-79.1%
Turkmenistan	..	..	..	..	12.12	7.92	8.12	10.07	9.97	11.22	12.06	-0.6%
Ukraine	..	..	..	..	13.26	7.63	5.94	6.49	5.48	5.92	6.24	-52.9%
Uzbekistan	..	..	..	..	5.84	4.46	4.79	4.15	3.75	3.55	3.76	-35.7%
Former Soviet Union ****	8.14	10.09	11.50	11.51	..	..	..	..	..	..	..	..
Former Yugoslavia ****	3.12	3.60	4.04	5.43	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**7.54**	**9.28**	**10.60**	**10.68**	**11.63**	**7.73**	**7.08**	**7.51**	**7.27**	**7.72**	**8.08**	**-30.5%**
Algeria	0.63	0.88	1.51	1.97	2.08	2.00	2.08	2.41	2.77	2.76	2.89	38.5%
Angola	0.27	0.30	0.35	0.32	0.39	0.33	0.36	0.44	0.76	0.82	0.80	106.5%
Benin	0.10	0.14	0.11	0.11	0.05	0.04	0.22	0.35	0.48	0.51	0.51	866.4%
Botswana	..	..	..	1.33	2.12	2.10	2.38	2.36	2.16	2.51	2.31	8.8%
Cameroon	0.10	0.13	0.18	0.23	0.22	0.18	0.18	0.17	0.25	0.26	0.26	16.2%
Congo	0.42	0.39	0.39	0.36	0.26	0.17	0.16	0.23	0.39	0.45	0.50	92.0%
Dem. Rep. of Congo	0.12	0.11	0.12	0.10	0.08	0.05	0.03	0.04	0.04	0.05	0.05	-40.7%
Côte d'Ivoire	0.42	0.45	0.40	0.29	0.21	0.22	0.37	0.32	0.32	0.31	0.29	39.0%
Egypt	0.55	0.64	0.93	1.28	1.38	1.34	1.50	2.06	2.17	2.20	2.28	65.5%
Eritrea	..	..	..	..	..	0.24	0.17	0.13	0.09	0.09	0.09	..
Ethiopia	0.04	0.03	0.04	0.03	0.04	0.04	0.05	0.06	0.07	0.07	0.07	61.1%
Gabon	0.87	1.26	1.87	2.13	0.97	1.22	1.12	1.26	1.40	1.45	1.42	46.2%
Ghana	0.22	0.24	0.21	0.17	0.18	0.19	0.27	0.30	0.38	0.42	0.43	136.6%
Kenya	0.28	0.26	0.27	0.24	0.23	0.21	0.25	0.21	0.27	0.28	0.28	19.1%
Libya	1.79	3.72	6.06	5.84	6.31	7.35	7.55	7.82	8.35	8.74	5.43	-13.9%
Morocco	0.44	0.57	0.71	0.74	0.79	0.97	1.02	1.30	1.35	1.44	1.55	96.1%
Mozambique	0.30	0.22	0.19	0.11	0.08	0.07	0.07	0.07	0.10	0.11	0.12	48.9%
Namibia	..	..	..	..	..	1.06	0.93	1.19	1.33	1.37	1.35	..
Nigeria	0.10	0.18	0.35	0.38	0.30	0.28	0.34	0.40	0.27	0.33	0.33	8.8%
Senegal	0.29	0.34	0.38	0.34	0.29	0.30	0.38	0.43	0.45	0.45	0.44	51.2%
South Africa	6.93	8.15	7.57	7.31	7.21	7.02	6.74	6.98	7.39	7.41	7.27	0.8%
Sudan	0.22	0.19	0.18	0.18	0.21	0.15	0.17	0.25	0.35	0.35	0.33	56.5%
United Rep. of Tanzania	0.11	0.09	0.09	0.07	0.07	0.08	0.08	0.13	0.12	0.13	0.14	102.2%
Togo	0.16	0.13	0.14	0.09	0.16	0.14	0.20	0.18	0.19	0.20	0.20	30.3%
Tunisia	0.71	0.85	1.23	1.32	1.48	1.59	1.88	2.01	2.04	2.08	1.98	33.6%
Zambia	0.80	0.90	0.58	0.41	0.33	0.23	0.17	0.18	0.13	0.13	0.16	-53.0%
Zimbabwe	1.34	1.17	1.09	1.08	1.53	1.27	1.01	0.82	0.64	0.69	0.74	-51.5%
Other Africa	0.11	0.12	0.15	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.16	24.5%
Africa	**0.66**	**0.77**	**0.84**	**0.86**	**0.86**	**0.83**	**0.84**	**0.91**	**0.93**	**0.95**	**0.93**	**7.7%**

* Includes Estonia and Slovenia prior to 1990.

** Please refer to Chapter 5, Geographical Coverage.

*** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

**** Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions / population

tonnes CO_2 / capita

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	% change 90-11
Bangladesh	0.05	0.07	0.09	0.10	0.13	0.17	0.20	0.26	0.34	0.36	0.36	179.0%
Brunei Darussalam	3.04	8.97	13.91	13.40	12.89	15.49	13.54	13.28	18.92	19.84	21.94	70.2%
Cambodia	..	..	..	..	..	0.13	0.16	0.20	0.26	0.27	0.28	..
Chinese Taipei	2.08	2.63	4.08	3.69	5.64	7.43	9.85	11.57	10.90	11.66	11.31	100.6%
India	0.35	0.39	0.40	0.52	0.67	0.81	0.92	1.02	1.36	1.40	1.41	110.9%
Indonesia	0.21	0.28	0.46	0.52	0.79	1.08	1.28	1.48	1.60	1.71	1.76	121.8%
DPR of Korea	4.61	4.77	6.12	6.75	5.66	3.44	3.00	3.11	2.74	2.62	2.65	-53.2%
Malaysia	1.14	1.31	1.76	2.14	2.73	3.99	4.81	5.78	6.01	6.46	6.72	146.5%
Mongolia	..	..	..	6.02	5.77	4.36	3.66	3.72	4.32	4.58	4.66	-19.3%
Myanmar	0.17	0.14	0.16	0.16	0.10	0.16	0.21	0.23	0.15	0.17	0.17	65.5%
Nepal	0.02	0.02	0.03	0.03	0.05	0.08	0.13	0.11	0.12	0.14	0.13	187.7%
Pakistan	0.27	0.31	0.32	0.41	0.52	0.62	0.69	0.76	0.82	0.78	0.77	47.2%
Philippines	0.63	0.71	0.71	0.53	0.62	0.83	0.87	0.83	0.77	0.82	0.81	31.0%
Singapore	2.91	3.74	5.26	5.96	9.65	11.79	11.81	11.62	11.17	12.66	12.49	29.5%
Sri Lanka	0.22	0.20	0.25	0.22	0.22	0.30	0.56	0.68	0.58	0.64	0.72	227.0%
Thailand	0.43	0.50	0.71	0.80	1.41	2.35	2.45	3.16	3.15	3.42	3.50	148.3%
Vietnam	0.37	0.35	0.28	0.29	0.26	0.39	0.57	0.97	1.32	1.49	1.56	500.3%
Other Asia	0.30	0.33	0.51	0.29	0.25	0.27	0.28	0.35	0.40	0.45	0.47	83.6%
Asia	**0.41**	**0.46**	**0.54**	**0.62**	**0.78**	**0.95**	**1.08**	**1.23**	**1.43**	**1.49**	**1.51**	**93.2%**
People's Rep. of China	0.97	1.17	1.45	1.64	1.98	2.51	2.62	4.14	5.10	5.42	5.92	199.3%
Hong Kong, China	2.27	2.42	2.87	4.04	5.76	5.85	5.98	5.98	6.51	5.87	6.37	10.5%
China	**0.98**	**1.17**	**1.46**	**1.65**	**2.00**	**2.52**	**2.64**	**4.15**	**5.11**	**5.42**	**5.92**	**196.5%**
Argentina	3.40	3.28	3.40	2.91	3.06	3.38	3.76	3.93	4.29	4.40	4.50	47.2%
Bolivia	0.50	0.68	0.78	0.72	0.77	0.92	0.86	1.03	1.30	1.42	1.51	95.3%
Brazil	0.92	1.25	1.46	1.21	1.29	1.46	1.74	1.74	1.75	1.99	2.07	61.4%
Colombia	1.22	1.18	1.30	1.32	1.39	1.60	1.49	1.35	1.36	1.34	1.42	2.1%
Costa Rica	0.68	0.85	0.93	0.74	0.85	1.27	1.14	1.32	1.37	1.40	1.41	66.8%
Cuba	2.31	2.52	3.08	3.16	3.20	2.04	2.44	2.23	2.81	2.61	2.49	-22.2%
Dominican Republic	0.74	1.00	1.08	0.95	1.03	1.41	1.99	1.86	1.85	1.84	1.79	74.6%
Ecuador	0.58	0.86	1.32	1.29	1.25	1.35	1.40	1.79	2.13	2.14	2.11	68.6%
El Salvador	0.37	0.48	0.38	0.35	0.42	0.81	0.88	1.04	1.00	0.94	0.97	131.3%
Guatemala	0.41	0.49	0.60	0.40	0.36	0.58	0.75	0.83	0.79	0.72	0.71	96.6%
Haiti	0.08	0.08	0.11	0.12	0.13	0.11	0.16	0.21	0.23	0.20	0.21	58.9%
Honduras	0.40	0.42	0.46	0.39	0.44	0.63	0.71	1.01	0.98	0.96	0.98	123.1%
Jamaica	2.91	3.68	3.05	2.01	3.00	3.36	3.75	3.86	2.77	2.65	2.80	-6.6%
Netherlands Antilles	89.64	60.06	50.55	24.88	14.55	14.19	21.21	21.22	24.39	18.99	22.48	54.5%
Nicaragua	0.60	0.66	0.55	0.49	0.44	0.54	0.69	0.74	0.73	0.78	0.77	73.5%
Panama	1.63	1.81	1.50	1.23	1.06	1.54	1.67	2.11	2.25	2.39	2.62	147.8%
Paraguay	0.22	0.25	0.42	0.38	0.45	0.72	0.61	0.58	0.65	0.73	0.75	65.6%
Peru	1.15	1.22	1.19	0.94	0.89	1.00	1.02	1.05	1.33	1.44	1.52	71.6%
Trinidad and Tobago	6.29	5.78	7.36	8.19	9.36	9.73	16.31	25.78	30.08	31.89	30.29	223.7%
Uruguay	1.85	1.93	1.91	1.04	1.21	1.40	1.59	1.60	2.29	1.91	2.25	86.4%
Venezuela	4.71	4.95	6.15	5.45	5.32	5.37	5.21	5.57	5.92	6.30	5.44	2.2%
Other Non-OECD Americas	2.97	4.02	3.66	3.18	4.13	4.18	4.43	4.45	4.60	4.96	5.13	24.3%
Non-OECD Americas	**1.53**	**1.70**	**1.89**	**1.63**	**1.69**	**1.83**	**2.03**	**2.10**	**2.22**	**2.36**	**2.36**	**39.9%**
Bahrain	13.69	20.04	20.65	24.92	23.73	20.80	22.14	25.03	19.24	18.28	17.13	-27.8%
Islamic Republic of Iran	1.42	2.18	2.34	3.15	3.26	4.20	4.82	6.05	7.03	6.87	6.97	113.9%
Iraq	1.00	1.32	1.96	2.35	2.94	4.66	2.89	2.71	2.89	3.16	3.28	11.9%
Jordan	0.85	1.18	1.96	2.81	2.92	2.91	2.99	3.33	3.27	3.10	3.20	9.8%
Kuwait	17.31	14.30	19.30	21.29	13.75	22.18	25.31	30.97	30.16	29.77	30.07	118.6%
Lebanon	1.79	2.04	2.36	2.27	1.85	3.71	3.77	3.57	4.61	4.33	4.34	134.5%
Oman	0.33	0.80	1.89	3.69	5.48	6.61	8.90	11.62	19.84	20.51	22.31	307.1%
Qatar	18.87	30.05	34.60	33.28	30.13	37.57	40.56	44.33	35.17	36.06	38.17	26.7%
Saudi Arabia	2.11	3.06	10.11	9.27	9.76	11.09	12.46	13.53	15.05	15.99	16.28	66.8%
Syrian Arab Republic	0.91	1.20	1.48	1.99	2.28	2.31	2.49	2.97	2.86	2.81	2.56	11.8%
United Arab Emirates	8.97	9.15	18.81	26.38	28.68	29.65	28.22	26.64	21.70	20.95	21.02	-26.7%
Yemen	0.19	0.26	0.43	0.49	0.54	0.62	0.75	0.90	0.95	0.99	0.84	55.2%
Middle East	**1.54**	**2.16**	**3.48**	**4.19**	**4.40**	**5.38**	**5.67**	**6.60**	**7.46**	**7.58**	**7.70**	**75.1%**

Per capita emissions by sector in 2011 *

kilogrammes CO_2 / capita

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy industry own use **	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
World * **	**4 504**	**1 878**	**222**	**935**	**1 006**	**743**	**463**	**266**
Annex I Parties	*10 331*	*4 324*	*513*	*1 514*	*2 620*	*2 253*	*1 360*	*788*
Annex II Parties	*11 329*	*4 405*	*609*	*1 602*	*3 197*	*2 819*	*1 517*	*829*
North America	*16 787*	*6 694*	*935*	*2 018*	*5 206*	*4 458*	*1 933*	*1 024*
Europe	*7 098*	*2 362*	*378*	*1 126*	*1 938*	*1 818*	*1 295*	*815*
Asia Oceania	*10 407*	*4 732*	*499*	*1 939*	*2 059*	*1 823*	*1 177*	*432*
Annex I EIT	*8 904*	*4 766*	*318*	*1 443*	*1 371*	*967*	*1 007*	*712*
Non-Annex I Parties	*2 978*	*1 320*	*155*	*803*	*441*	*399*	*259*	*147*
Annex I Kyoto Parties	*8 601*	*3 606*	*429*	*1 439*	*1 886*	*1 625*	*1 241*	*733*
Non-OECD Total	**3 129**	**1 426**	**150**	**829**	**447**	**386**	**276**	**164**
OECD Total	**9 948**	**3 960**	**552**	**1 425**	**2 685**	**2 390**	**1 326**	**735**
Canada	15 365	3 125	1 678	2 941	4 815	4 039	2 807	1 228
Chile	4 419	1 680	169	914	1 253	1 134	403	208
Mexico	3 958	1 219	528	527	1 392	1 351	293	171
United States	16 944	7 089	852	1 916	5 250	4 505	1 837	1 001
OECD Americas	**13 373**	**5 247**	**813**	**1 633**	**4 181**	**3 620**	**1 499**	**797**
Australia	17 432	9 130	1 489	2 193	3 779	3 161	841	361
Israel	8 660	5 581	258	195	1 425	1 425	1 201	352
Japan	9 278	4 064	326	1 915	1 718	1 553	1 255	455
Korea	11 807	6 020	784	2 054	1 720	1 638	1 229	673
New Zealand	6 866	1 417	384	1 339	3 058	2 727	668	124
OECD Asia Oceania	**10 671**	**5 065**	**557**	**1 902**	**1 956**	**1 765**	**1 190**	**486**
Austria	8 133	1 995	937	1 444	2 567	2 481	1 190	786
Belgium	9 892	1 783	425	3 042	2 401	2 335	2 241	1 352
Czech Republic	10 734	5 997	230	1 849	1 575	1 498	1 084	644
Denmark	7 485	3 222	413	715	2 210	2 022	924	482
Estonia	14 404	11 406	139	696	1 666	1 574	497	141
Finland	10 323	4 621	731	1 823	2 277	2 089	871	258
France	5 042	691	237	927	1 875	1 800	1 311	700
Germany	9 141	3 968	318	1 396	1 819	1 750	1 641	1 088
Greece	7 395	3 790	237	640	1 723	1 513	1 006	773
Hungary	4 752	1 527	174	606	1 129	1 108	1 316	794
Iceland	5 808	10	-	1 453	2 536	2 420	1 809	29
Ireland	7 632	2 578	44	806	2 302	2 247	1 901	1 325
Italy	6 471	2 209	292	903	1 782	1 679	1 285	839
Luxembourg	20 102	2 085	-	1 874	13 282	13 246	2 861	1 741
Netherlands	10 452	3 327	673	2 445	2 002	1 948	2 006	998
Norway	7 692	586	2 207	1 497	2 737	1 986	665	92
Poland	7 787	4 105	195	926	1 231	1 202	1 330	822
Portugal	4 514	1 603	243	659	1 608	1 521	401	205
Slovak Republic	6 224	1 586	871	1 473	1 296	1 093	999	543
Slovenia	7 434	3 006	2	849	2 703	2 683	873	497
Spain	5 861	1 824	368	982	1 979	1 744	707	401
Sweden	4 752	874	245	959	2 375	2 274	298	35
Switzerland	5 065	352	120	673	2 143	2 103	1 777	1 170
Turkey	3 864	1 506	133	729	618	535	877	589
United Kingdom	7 062	2 655	481	783	1 861	1 718	1 282	1 000
OECD Europe	**6 752**	**2 439**	**329**	**1 065**	**1 688**	**1 581**	**1 232**	**776**
European Union - 27	*7 038*	*2 622*	*334*	*1 087*	*1 771*	*1 669*	*1 224*	*768*

* This table shows per capita emissions for the same sectors which are present throughout this publication. In particular, the emissions from electricity and heat production are shown separately and not reallocated to end use sectors.

** Includes emissions from own use in petroleum refining, the manufacture of solid fuels, coal mining, oil and gas extraction and other energy-producing industries.

*** World includes international bunkers in the transport sector.

Per capita emissions by sector in 2011

kilogrammes CO_2 / capita

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy industry own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Non-OECD Total	**3 129**	**1 426**	**150**	**829**	**447**	**386**	**276**	**164**
Albania	1 204	9	30	269	722	700	174	72
Armenia	1 504	303	-	197	415	415	589	333
Azerbaijan	2 922	1 044	232	225	632	579	788	641
Belarus	6 972	3 172	312	1 540	1 162	1 012	785	490
Bosnia and Herzegovina	6 080	4 176	112	466	899	899	428	149
Bulgaria	6 584	4 553	136	578	1 055	976	262	152
Croatia	4 260	998	446	759	1 318	1 225	739	437
Cyprus *	8 625	4 495	-	664	2 669	2 665	797	372
Georgia	1 395	231	37	307	511	496	309	214
Gibraltar	16 657	4 151	-	2 017	10 489	10 489	-	-
Kazakhstan	14 143	4 759	2 781	4 164	753	705	1 686	901
Kosovo	4 727	3 594	-	386	550	548	198	98
Kyrgyzstan	1 211	214	-	394	509	509	94	6
Latvia	3 415	977	-	459	1 381	1 258	597	228
Lithuania	4 128	906	546	947	1 313	1 222	416	223
FYR of Macedonia	4 396	2 790	37	718	682	670	169	68
Malta	5 899	4 512	-	22	1 234	1 234	130	130
Republic of Moldova	2 216	985	-	290	311	297	630	449
Montenegro	3 948	2 746	5	152	1 014	1 002	32	20
Romania	3 823	1 813	211	684	659	603	457	286
Russian Federation	11 648	6 617	430	1 769	1 744	993	1 088	808
Serbia	6 855	4 641	38	846	787	716	543	256
Tajikistan	429	61	-	-	44	44	324	-
Turkmenistan	12 056	3 418	1 036	910	1 401	726	5 291	-
Ukraine	6 243	2 827	146	1 623	714	527	934	785
Uzbekistan	3 757	1 255	125	660	270	149	1 446	1 103
Non-OECD Europe and Eurasia	**8 077**	**4 121**	**407**	**1 408**	**1 133**	**755**	**1 009**	**665**
Algeria	2 887	791	309	375	899	854	512	403
Angola	801	112	10	138	348	309	193	64
Benin	514	12	-	16	360	359	126	125
Botswana	2 312	327	-	647	1 046	1 023	291	38
Cameroon	255	60	20	19	139	132	18	18
Congo	497	72	-	21	379	368	25	25
Dem. Rep. of Congo	48	-	-	17	26	26	5	5
Côte d'Ivoire	292	132	6	24	77	64	54	16
Egypt	2 283	868	175	489	484	449	268	183
Eritrea	94	53	-	4	28	28	10	9
Ethiopia	69	-	-	18	34	34	17	10
Gabon	1 419	436	19	501	298	298	165	91
Ghana	433	97	13	63	219	201	43	26
Kenya	280	56	6	80	113	107	25	21
Libya	5 433	2 732	165	413	1 870	1 869	252	252
Morocco	1 554	562	44	247	442	442	260	110
Mozambique	119	1	-	24	81	74	13	4
Namibia	1 349	15	-	124	771	723	439	-
Nigeria	325	72	40	27	145	145	42	14
Senegal	444	163	3	78	164	154	36	22
South Africa	7 267	4 461	66	1 260	1 011	944	468	215
Sudan	325	39	12	57	171	169	45	14
United Rep. of Tanzania	136	33	-	19	70	70	13	12
Togo	202	5	-	15	158	158	25	25
Tunisia	1 980	688	7	444	533	533	308	158
Zambia	156	3	4	81	54	36	14	-
Zimbabwe	742	250	5	143	100	91	243	7
Other Africa	155	51	-	20	69	60	16	8
Africa	**926**	**394**	**38**	**156**	**235**	**223**	**102**	**57**

* Please refer to Chapter 5, Geographical Coverage.

Per capita emissions by sector in 2011

kilogrammes CO_2 / capita

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy industry own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Bangladesh	360	165	1	80	56	44	57	42
Brunei Darussalam	21 936	6 576	6 070	5 905	3 133	3 129	251	251
Cambodia	282	58	-	43	141	116	39	39
Chinese Taipei	11 315	6 400	588	2 391	1 529	1 480	407	196
India	1 406	725	51	380	137	124	113	64
Indonesia	1 757	568	114	487	474	418	115	67
DPR of Korea	2 651	420	2	1 663	54	54	513	5
Malaysia	6 721	3 100	726	1 135	1 491	1 472	269	72
Mongolia	4 656	2 849	10	581	581	393	635	326
Myanmar	171	39	14	54	48	35	15	-
Nepal	133	-	-	38	63	63	33	13
Pakistan	771	220	7	239	205	189	100	82
Philippines	813	358	14	133	246	214	63	26
Singapore	12 494	4 434	1 205	5 212	1 569	1 569	73	38
Sri Lanka	718	262	2	58	344	334	52	19
Thailand	3 498	1 171	222	986	838	828	281	77
Vietnam	1 564	484	17	538	374	364	150	88
Other Asia	468	140	-	107	180	159	41	13
Asia	**1 506**	**674**	**67**	**408**	**241**	**223**	**117**	**62**
People's Rep. of China	5 918	2 962	212	1 851	464	368	430	238
Hong Kong, China	6 366	4 239	-	1 014	769	769	345	112
China	**5 920**	**2 968**	**211**	**1 846**	**465**	**370**	**429**	**237**
Argentina	4 503	1 240	411	880	1 150	1 061	822	534
Bolivia	1 512	310	127	172	584	554	319	122
Brazil	2 075	184	139	637	925	830	191	88
Colombia	1 421	142	153	438	508	486	179	85
Costa Rica	1 413	133	9	209	972	967	90	29
Cuba	2 486	1 506	31	663	122	109	165	55
Dominican Republic	1 793	958	3	100	491	394	241	222
Ecuador	2 109	477	68	259	1 092	922	212	188
El Salvador	968	227	7	158	495	495	82	79
Guatemala	707	158	-	127	374	373	48	47
Haiti	211	27	-	56	108	39	20	20
Honduras	984	341	-	156	395	395	92	16
Jamaica	2 804	1 177	39	100	770	531	718	102
Netherlands Antilles	22 477	4 034	6 808	3 872	6 834	6 834	929	929
Nicaragua	771	307	16	94	285	285	69	16
Panama	2 621	786	-	639	1 010	1 009	186	136
Paraguay	747	-	-	22	682	675	42	30
Peru	1 520	397	144	299	573	536	107	62
Trinidad and Tobago	30 294	3 332	6 625	17 917	2 108	2 108	313	294
Uruguay	2 248	605	134	242	937	933	330	133
Venezuela	5 438	977	838	1 926	1 468	1 467	229	171
Other Non-OECD Americas	5 131	2 869	-	184	1 550	1 283	528	221
Non-OECD Americas	**2 362**	**443**	**204**	**644**	**833**	**766**	**238**	**133**
Bahrain	17 127	6 278	3 337	5 124	2 215	2 160	173	173
Islamic Rep. of Iran	6 965	1 851	358	1 394	1 567	1 534	1 796	1 411
Iraq	3 284	1 486	131	289	1 038	1 038	340	340
Jordan	3 203	1 511	109	339	853	850	391	245
Kuwait	30 070	16 051	4 917	4 808	4 099	4 099	193	193
Lebanon	4 340	2 716	-	287	1 176	1 176	162	162
Oman	22 305	5 697	3 029	10 258	3 078	3 078	243	102
Qatar	38 172	8 048	15 707	6 513	7 751	7 751	153	153
Saudi Arabia	16 284	6 718	1 876	3 633	3 890	3 811	167	167
Syrian Arab Republic	2 555	1 187	67	396	574	563	331	191
United Arab Emirates	21 023	7 543	274	9 203	3 919	3 700	85	85
Yemen	835	158	83	137	232	232	224	65
Middle East	**7 701**	**2 732**	**701**	**1 750**	**1 712**	**1 680**	**806**	**629**

Electricity output *

terawatt hours

	1990	1995	2000	2004	2005	2006	2007	2008	2009	2010	2011	% change 90-11
World	**11 818.5**	**13 231.2**	**15 410.7**	**17 490.5**	**18 251.1**	**18 946.4**	**19 803.8**	**20 203.2**	**20 136.8**	**21 437.6**	**22 125.8**	**87.2%**
Annex I Parties	*8 940.5*	*9 360.4*	*10 347.3*	*10 827.9*	*11 073.3*	*11 174.9*	*11 363.4*	*11 382.3*	*10 897.9*	*11 362.4*	*11 276.3*	*26.1%*
Annex II Parties	*7 030.9*	*7 787.6*	*8 723.9*	*9 071.2*	*9 276.3*	*9 303.6*	*9 451.6*	*9 441.6*	*9 054.1*	*9 420.7*	*9 288.6*	*32.1%*
North America	*3 684.9*	*4 118.4*	*4 631.5*	*4 747.9*	*4 894.9*	*4 888.4*	*4 962.8*	*4 983.9*	*4 779.3*	*4 956.2*	*4 963.5*	*34.7%*
Europe	*2 323.9*	*2 500.1*	*2 794.4*	*2 982.8*	*3 020.1*	*3 044.1*	*3 076.6*	*3 095.2*	*2 939.2*	*3 058.9*	*2 985.3*	*28.5%*
Asia Oceania	*1 022.1*	*1 169.2*	*1 298.1*	*1 340.4*	*1 361.2*	*1 371.1*	*1 412.2*	*1 362.4*	*1 335.5*	*1 405.6*	*1 339.8*	*31.1%*
Annex I EIT	*1 851.0*	*1 484.9*	*1 496.6*	*1 603.8*	*1 632.8*	*1 692.8*	*1 717.9*	*1 740.1*	*1 646.9*	*1 728.3*	*1 756.2*	*-5.1%*
Non-Annex I Parties	*2 878.0*	*3 870.8*	*5 063.4*	*6 662.6*	*7 177.8*	*7 771.5*	*8 440.4*	*8 820.9*	*9 238.9*	*10 075.2*	*10 849.5*	*277.0%*
Annex I Kyoto Parties	*5 639.5*	*5 689.2*	*6 168.5*	*6 495.7*	*6 609.2*	*6 689.5*	*6 813.8*	*6 803.6*	*6 505.2*	*6 759.8*	*6 685.9*	*18.6%*
Non-OECD Total	**4 189.2**	**4 685.8**	**5 682.2**	**7 244.8**	**7 750.3**	**8 372.5**	**9 023.5**	**9 407.1**	**9 739.7**	**10 582.4**	**11 323.7**	**170.3%**
OECD Total	**7 629.3**	**8 545.4**	**9 728.5**	**10 245.7**	**10 500.7**	**10 573.9**	**10 780.3**	**10 796.2**	**10 397.1**	**10 855.2**	**10 802.2**	**41.6%**
Canada	482.0	560.0	605.6	599.9	626.0	613.4	638.9	640.9	613.9	601.9	636.9	32.1%
Chile	18.4	28.0	40.1	51.2	52.5	55.3	58.5	59.7	60.7	60.4	65.7	257.7%
Mexico	115.8	152.2	204.2	232.6	243.8	249.5	257.3	261.9	261.0	271.1	295.8	155.4%
United States	3 202.8	3 558.4	4 025.9	4 148.1	4 268.9	4 275.0	4 323.9	4 343.0	4 165.4	4 354.4	4 326.6	35.1%
OECD Americas	**3 819.1**	**4 298.7**	**4 875.7**	**5 031.8**	**5 191.2**	**5 193.2**	**5 278.6**	**5 305.5**	**5 101.1**	**5 287.7**	**5 325.1**	**39.4%**
Australia	154.3	172.8	209.9	229.6	228.3	232.7	243.0	243.1	248.7	252.1	252.6	63.7%
Israel	20.9	30.4	42.7	47.3	48.6	50.6	53.8	57.0	55.0	58.6	59.6	185.4%
Japan	835.5	960.3	1 049.0	1 068.3	1 089.9	1 094.8	1 125.5	1 075.5	1 043.4	1 108.7	1 042.7	24.8%
Korea	105.4	181.1	288.5	366.6	387.9	402.3	425.9	443.9	451.7	496.7	520.1	393.5%
New Zealand	32.3	36.1	39.2	42.5	43.0	43.6	43.8	43.8	43.5	44.9	44.5	37.9%
OECD Asia Oceania	**1 148.3**	**1 380.7**	**1 629.3**	**1 754.3**	**1 797.7**	**1 823.9**	**1 891.9**	**1 863.3**	**1 842.2**	**1 960.9**	**1 919.5**	**67.2%**
Austria	49.3	55.2	59.9	61.9	64.1	62.1	62.6	64.5	66.3	67.9	62.2	26.1%
Belgium	70.3	73.5	82.8	84.4	85.7	84.3	87.5	83.6	89.8	93.8	89.0	26.6%
Czech Republic	62.3	60.6	72.9	83.8	81.9	83.7	87.8	83.2	81.7	85.3	86.8	39.3%
Denmark	26.0	36.8	36.1	40.4	36.2	45.6	39.3	36.6	36.4	38.8	35.2	35.4%
Estonia	17.4	8.8	8.5	10.3	10.2	9.7	12.2	10.6	8.8	13.0	12.9	-25.9%
Finland	54.4	64.0	70.0	85.8	70.6	82.3	81.2	77.4	72.1	80.7	73.5	35.1%
France	417.2	491.1	536.1	569.1	571.5	569.3	564.2	569.2	530.8	564.3	556.9	33.5%
Germany	547.7	532.8	572.3	608.5	613.4	629.4	629.5	631.2	584.3	622.0	602.4	10.0%
Greece	34.8	41.3	53.4	58.8	59.4	60.2	62.7	62.9	61.1	57.4	59.2	70.2%
Hungary	28.4	34.0	35.2	33.7	35.8	35.9	40.0	40.0	35.9	37.4	36.0	26.5%
Iceland	4.5	5.0	7.7	8.6	8.7	9.9	12.0	16.5	16.8	17.1	17.2	281.6%
Ireland	14.2	17.6	23.7	25.2	25.6	27.1	27.8	29.9	28.0	28.4	27.7	94.4%
Italy	213.1	237.4	269.9	295.8	296.8	307.7	308.2	313.5	288.3	298.8	300.6	41.1%
Luxembourg	0.6	0.5	0.4	3.4	3.3	3.5	3.2	2.7	3.2	3.2	2.6	323.9%
Netherlands	71.9	80.9	89.6	102.4	100.2	98.4	105.2	107.6	113.5	118.1	113.0	57.0%
Norway	121.6	122.2	142.5	110.1	137.2	121.2	136.1	141.2	131.0	123.2	126.9	4.3%
Poland	134.4	137.0	143.2	152.6	155.4	160.8	158.8	154.7	151.1	157.1	163.1	21.4%
Portugal	28.4	33.2	43.4	44.8	46.2	48.6	46.9	45.5	49.5	53.7	51.9	83.0%
Slovak Republic	25.5	26.4	30.8	30.5	31.4	31.3	27.9	28.8	25.9	27.5	28.3	10.9%
Slovenia	12.4	12.9	13.6	15.3	15.1	15.1	15.0	16.4	16.4	16.2	15.9	27.9%
Spain	151.2	165.6	220.9	276.7	289.4	295.6	301.8	311.0	291.9	298.3	289.0	91.2%
Sweden	146.0	148.3	145.2	151.7	158.4	143.3	148.8	149.9	136.6	148.5	150.3	2.9%
Switzerland	55.0	62.2	66.1	63.9	57.8	62.1	66.4	67.0	66.7	66.1	62.9	14.4%
Turkey	57.5	86.2	124.9	150.7	162.0	176.3	191.6	198.4	194.8	211.2	229.4	298.6%
United Kingdom	317.8	332.5	374.4	391.3	395.4	393.4	393.0	384.9	373.1	378.6	364.9	14.8%
OECD Europe	**2 661.9**	**2 866.1**	**3 223.5**	**3 459.6**	**3 511.8**	**3 556.8**	**3 609.8**	**3 627.3**	**3 453.8**	**3 606.5**	**3 557.6**	33.6%
European Union - 27	*2 567.8*	*2 713.0*	*2 995.4*	*3 254.1*	*3 275.5*	*3 319.3*	*3 333.7*	*3 339.7*	*3 172.3*	*3 314.7*	*3 250.7*	*26.6%*

* Includes electricity from both electricity-only and combined heat and power plants, and from both main activity producer and autoproducer plants.

Electricity output

terawatt hours

	1990	1995	2000	2004	2005	2006	2007	2008	2009	2010	2011	% change 90-11
Non-OECD Total	**4 189.2**	**4 685.8**	**5 682.2**	**7 244.8**	**7 750.3**	**8 372.5**	**9 023.5**	**9 407.1**	**9 739.7**	**10 582.4**	**11 323.7**	**170.3%**
Albania	3.2	4.4	4.7	5.6	5.4	5.5	2.9	3.8	5.2	7.6	4.2	30.1%
Armenia	10.4	5.6	6.0	6.0	6.3	5.9	5.9	5.8	5.7	6.5	7.4	-28.3%
Azerbaijan	23.2	17.0	18.7	21.7	22.9	24.5	21.8	21.6	18.9	18.7	20.3	-12.3%
Belarus	39.5	24.9	26.1	31.2	31.0	31.8	31.8	35.0	30.4	34.9	32.2	-18.6%
Bosnia and Herzegovina	14.6	4.4	10.4	12.7	12.6	13.3	11.8	14.8	15.7	17.1	15.3	4.4%
Bulgaria	42.1	41.8	40.6	41.4	44.0	45.5	42.9	44.6	42.4	46.0	50.0	18.7%
Croatia	8.7	8.9	10.7	13.2	12.4	12.3	12.1	12.2	12.7	14.0	10.7	23.1%
Cyprus *	2.0	2.5	3.4	4.2	4.4	4.7	4.9	5.1	5.2	5.3	4.9	149.7%
Georgia	13.7	8.2	7.4	6.9	7.3	7.3	8.3	8.5	8.6	10.1	10.2	-25.7%
Gibraltar	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	116.5%
Kazakhstan	87.4	66.7	51.3	66.9	67.8	71.7	76.6	80.3	78.7	82.6	86.6	-0.9%
Kosovo **	..	..	3.0	4.1	4.5	4.4	4.8	5.2	5.0	5.2	5.8	..
Kyrgyzstan	15.7	14.3	14.9	15.1	14.9	14.5	14.8	11.8	11.1	12.1	15.2	-3.6%
Latvia	6.6	4.0	4.1	4.7	4.9	4.9	4.8	5.3	5.6	6.6	6.1	-8.3%
Lithuania	28.4	13.5	11.1	18.8	14.4	12.1	13.5	13.3	14.6	5.0	4.2	-85.1%
FYR of Macedonia	5.8	6.1	6.8	6.7	6.9	7.0	6.5	6.3	6.8	7.3	6.9	19.4%
Malta	1.1	1.6	1.9	2.2	2.2	2.3	2.3	2.3	2.2	2.1	2.2	99.5%
Republic of Moldova	16.2	7.6	5.6	5.8	6.0	6.1	5.9	6.0	6.2	6.1	5.8	-64.3%
Montenegro **	..	..	..	..	2.9	3.0	2.1	2.8	2.8	4.0	2.7	..
Romania	64.3	59.3	51.9	56.5	59.4	62.7	61.7	65.0	57.7	60.6	62.0	-3.6%
Russian Federation	1 082.2	859.0	876.5	929.9	951.2	993.9	1 013.4	1 038.4	990.0	1 036.1	1 053.0	-2.7%
Serbia **	40.9	34.5	34.1	37.7	36.5	36.5	36.6	36.8	37.7	37.4	38.0	-7.1%
Tajikistan	18.1	14.8	14.2	16.5	17.1	16.9	17.5	16.1	16.1	16.4	16.2	-10.6%
Turkmenistan	14.6	9.8	9.8	11.9	12.8	13.7	14.9	15.0	16.0	16.7	17.2	17.9%
Ukraine	298.6	193.8	171.3	182.0	185.9	193.2	196.1	192.6	173.6	188.6	194.9	-34.7%
Uzbekistan	56.3	47.5	46.9	50.0	49.2	50.9	49.0	49.4	50.0	51.7	52.4	-7.0%
Non-OECD Europe and Eurasia	**1 893.8**	**1 450.2**	**1 431.7**	**1 552.1**	**1 582.9**	**1 644.7**	**1 663.0**	**1 698.3**	**1 618.9**	**1 699.0**	**1 724.6**	**-8.9%**
Algeria	16.1	19.7	25.4	31.3	33.9	35.2	37.2	40.2	38.5	45.7	51.2	218.1%
Angola	0.8	1.0	1.4	2.2	2.8	3.3	3.2	4.2	4.7	5.4	5.7	571.9%
Benin	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	633.3%
Botswana	0.9	1.0	0.9	0.8	0.9	0.9	0.7	0.6	0.6	0.5	0.4	-58.9%
Cameroon	2.7	2.8	3.5	4.1	4.0	5.1	5.2	5.7	5.8	5.9	6.0	122.3%
Congo	0.5	0.4	0.3	0.4	0.4	0.5	0.4	0.5	0.5	0.8	1.3	162.3%
Dem. Rep. of Congo	5.7	6.2	6.0	7.1	7.4	7.5	7.9	7.5	7.8	7.9	7.9	39.5%
Côte d'Ivoire	2.0	2.9	4.8	5.5	5.7	5.7	5.6	5.8	5.9	6.0	6.1	207.6%
Egypt	42.3	52.0	78.1	101.3	108.7	115.4	125.1	131.0	139.0	146.8	156.6	270.6%
Eritrea	..	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	..
Ethiopia	1.2	1.5	1.7	2.5	2.8	3.3	3.5	3.8	4.0	5.0	5.2	329.4%
Gabon	1.0	1.1	1.3	1.5	1.6	1.7	1.7	1.8	1.9	1.9	1.8	80.9%
Ghana	5.7	6.1	7.2	6.0	6.8	8.4	7.0	8.3	9.0	10.2	11.2	95.8%
Kenya	3.2	4.1	4.2	5.6	6.0	6.5	6.7	6.8	6.9	7.5	7.8	142.6%
Libya	10.2	11.4	15.5	20.3	22.7	24.8	26.2	30.7	31.0	32.8	27.6	171.6%
Morocco	9.6	12.1	12.9	17.7	19.3	19.9	19.9	20.6	21.1	23.5	24.9	158.3%
Mozambique	0.5	0.4	9.7	11.7	13.3	14.7	16.1	15.1	17.0	16.7	16.8	+
Namibia	..	1.2	1.3	1.6	1.6	1.5	1.7	1.6	1.5	1.3	1.4	..
Nigeria	13.5	15.9	14.7	24.3	23.5	23.1	23.0	21.1	19.8	26.1	27.0	100.8%
Senegal	0.9	1.1	1.6	2.3	2.5	2.4	2.7	2.4	2.9	3.1	3.0	218.9%
South Africa	165.4	185.4	207.8	240.9	242.1	250.9	260.5	255.5	246.8	256.6	259.6	57.0%
Sudan	1.5	1.9	2.6	3.5	3.8	4.5	5.0	5.5	6.5	7.7	8.6	467.7%
United Rep. of Tanzania	1.6	1.9	2.5	2.5	3.6	3.4	4.1	4.4	4.5	5.1	5.3	225.7%
Togo	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	-12.0%
Tunisia	5.8	7.7	10.6	11.9	12.7	13.1	13.7	14.4	15.3	16.1	16.1	177.6%
Zambia	8.0	7.9	7.8	8.5	8.9	9.9	9.8	9.7	10.4	11.3	11.5	42.9%
Zimbabwe	9.4	7.8	7.0	9.7	10.3	8.2	7.8	7.8	7.4	8.2	8.9	-4.7%
Other Africa	7.4	8.9	12.0	14.5	15.1	15.3	16.3	17.2	17.8	18.4	19.3	161.1%
Africa	**316.0**	**362.9**	**441.4**	**538.3**	**560.8**	**585.7**	**611.9**	**622.8**	**627.0**	**670.9**	**691.8**	**118.9%**

* Please refer to Chapter 5, Geographical Coverage.

** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

Electricity output

terawatt hours

	1990	1995	2000	2004	2005	2006	2007	2008	2009	2010	2011	% change 90-11
Bangladesh	7.7	10.8	15.8	24.7	26.4	29.5	31.0	34.3	37.2	41.7	44.1	469.9%
Brunei Darussalam	1.2	2.0	2.5	3.3	3.3	3.3	3.4	3.4	3.6	3.8	3.7	217.8%
Cambodia	..	0.2	0.4	0.8	1.0	1.2	1.5	1.5	1.3	1.0	1.1	..
Chinese Taipei	88.4	129.1	180.6	215.1	223.5	231.6	239.2	234.8	226.4	243.9	249.1	181.8%
India	289.4	417.6	561.2	666.6	698.2	753.3	813.9	841.7	906.8	959.9	1 052.3	263.6%
Indonesia	32.7	59.2	93.3	120.2	127.4	133.1	142.2	149.4	155.6	168.7	182.4	458.3%
DPR of Korea	27.7	23.0	19.4	22.0	22.9	22.4	21.5	23.2	21.1	21.7	21.6	-21.9%
Malaysia	23.0	45.5	69.3	82.3	82.7	89.8	97.5	97.8	116.3	125.1	130.1	465.2%
Mongolia	3.5	2.7	3.0	3.4	3.5	3.6	3.8	4.1	4.2	4.5	4.8	36.9%
Myanmar	2.5	4.1	5.1	5.6	6.0	6.2	6.4	6.6	7.0	7.5	7.3	195.7%
Nepal	0.9	1.2	1.7	2.4	2.5	2.7	2.8	2.8	3.1	3.2	3.3	277.2%
Pakistan	37.7	57.0	68.1	85.7	93.8	98.4	95.7	91.6	95.4	94.5	95.3	152.9%
Philippines	26.3	33.6	45.3	56.0	56.6	56.8	59.6	60.8	61.9	67.7	69.2	162.8%
Singapore	15.7	22.2	31.7	36.8	38.2	39.4	41.1	41.7	41.8	45.4	46.0	192.7%
Sri Lanka	3.2	4.8	7.0	8.2	9.3	9.5	9.9	9.2	10.0	10.8	11.6	269.7%
Thailand	44.2	80.1	96.0	125.7	132.2	138.7	143.4	147.4	148.4	159.5	156.0	253.1%
Vietnam	8.7	14.6	26.6	46.2	53.7	60.5	67.0	73.4	83.2	94.9	99.2	+
Other Asia	8.4	9.0	13.8	16.3	16.7	18.4	20.3	20.6	20.8	20.9	22.4	165.4%
Asia	**621.1**	**916.5**	**1 240.7**	**1 521.2**	**1 598.0**	**1 698.5**	**1 800.3**	**1 844.6**	**1 944.1**	**2 074.7**	**2 199.4**	**254.1%**
People's Rep. of China	621.2	1 007.8	1 356.2	2 204.7	2 502.5	2 869.8	3 287.5	3 482.0	3 742.0	4 208.1	4 715.7	659.1%
Hong Kong, China	28.9	27.9	31.3	37.1	38.5	38.6	39.0	38.0	38.7	38.3	39.0	34.9%
China	**650.1**	**1 035.7**	**1 387.6**	**2 241.9**	**2 540.9**	**2 908.4**	**3 326.5**	**3 520.0**	**3 780.8**	**4 246.4**	**4 754.7**	**631.3%**
Argentina	50.7	67.0	88.9	100.2	105.5	96.4	102.5	121.6	121.9	125.3	129.6	155.3%
Bolivia	2.3	3.0	3.9	4.5	4.9	5.3	5.7	5.8	6.1	6.8	7.2	212.5%
Brazil	222.8	275.6	348.9	387.5	403.0	419.3	445.1	463.1	466.2	515.8	531.8	138.6%
Colombia	36.4	42.7	43.1	49.7	50.3	53.8	55.2	56.0	57.2	56.8	61.8	70.0%
Costa Rica	3.5	4.9	6.9	8.2	8.3	8.7	9.1	9.5	9.3	9.6	9.8	183.5%
Cuba	15.0	12.5	15.0	15.6	15.3	16.5	17.6	17.7	17.7	17.4	17.8	18.2%
Dominican Republic	3.7	5.5	8.5	10.8	10.1	11.1	11.5	11.9	11.6	12.5	13.0	250.9%
Ecuador	6.3	8.4	10.6	12.9	12.6	13.9	16.2	18.6	18.4	19.3	20.3	219.2%
El Salvador	2.2	3.3	3.4	4.5	4.8	5.7	5.8	6.0	5.8	6.0	5.8	161.7%
Guatemala	2.2	3.5	6.0	7.5	7.8	8.2	8.8	8.7	9.0	8.8	8.1	272.6%
Haiti	0.6	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.7	0.6	0.7	20.3%
Honduras	2.3	2.7	3.7	4.9	5.6	6.0	6.3	6.5	6.6	6.7	7.1	207.3%
Jamaica	2.5	5.8	6.6	7.2	7.4	7.5	6.0	6.0	5.5	4.2	5.1	109.2%
Netherlands Antilles	0.8	1.0	1.1	1.2	1.2	1.2	1.3	1.2	1.3	1.3	1.3	65.2%
Nicaragua	1.5	1.9	2.4	2.9	3.1	3.1	3.2	3.4	3.5	3.7	3.8	162.5%
Panama	2.7	3.5	4.9	5.8	5.8	6.0	6.5	6.4	7.0	7.4	7.9	195.3%
Paraguay	27.2	42.2	53.5	51.9	51.2	53.8	53.7	55.5	55.0	54.1	57.6	112.0%
Peru	13.8	16.1	19.9	24.3	25.5	27.4	29.9	32.4	32.9	35.9	39.2	184.1%
Trinidad and Tobago	3.6	4.3	5.5	6.4	7.1	6.9	7.7	7.7	7.7	8.5	8.9	147.9%
Uruguay	7.4	6.3	7.6	5.9	7.7	5.6	9.4	8.8	8.9	11.0	10.3	39.0%
Venezuela	59.3	73.4	85.3	98.6	105.5	112.4	114.6	119.3	119.6	118.4	122.1	105.8%
Other Non-OECD Americas	22.2	27.8	32.5	36.6	37.7	38.2	38.4	37.1	37.1	37.8	38.6	73.7%
Non-OECD Americas	**489.0**	**612.1**	**758.8**	**847.6**	**880.9**	**907.4**	**954.9**	**1 003.6**	**1 009.0**	**1 067.6**	**1 107.8**	**126.5%**
Bahrain	3.5	4.6	6.3	8.4	8.9	9.7	10.9	11.9	12.1	13.2	13.8	297.1%
Islamic Republic of Iran	59.1	85.0	121.4	166.9	178.1	192.7	204.0	214.5	221.4	233.0	239.7	305.6%
Iraq	24.0	29.7	31.9	32.3	30.4	33.8	33.2	36.8	45.6	50.2	54.2	126.0%
Jordan	3.6	5.6	7.4	9.0	9.7	11.1	13.0	13.8	14.3	14.8	14.6	302.6%
Kuwait	18.5	23.7	32.3	41.3	43.7	47.6	48.8	51.7	53.2	57.0	57.5	211.0%
Lebanon	1.5	5.3	9.8	12.5	12.4	11.6	12.1	13.4	13.8	15.7	16.4	991.0%
Oman	4.5	6.5	9.1	11.5	12.6	13.3	14.2	15.8	17.8	19.8	21.9	386.0%
Qatar	4.8	6.0	9.1	13.2	14.4	17.1	19.5	21.6	24.2	28.1	30.7	537.8%
Saudi Arabia	69.2	97.8	126.2	159.9	176.1	181.4	190.5	204.2	217.1	240.1	250.1	261.3%
Syrian Arab Republic	11.6	16.6	25.2	32.1	34.9	37.3	38.6	41.0	43.3	46.4	41.1	253.8%
United Arab Emirates	17.1	25.0	39.9	52.4	60.7	66.8	76.1	86.3	90.6	97.7	99.1	480.4%
Yemen	1.7	2.4	3.4	4.4	4.8	5.4	6.0	6.5	6.7	7.8	6.2	273.2%
Middle East	**219.1**	**308.3**	**422.0**	**543.8**	**586.7**	**627.8**	**666.9**	**717.7**	**760.0**	**823.8**	**845.3**	**285.9%**

CO_2 emissions per kWh from electricity generation *

grammes CO_2 / kilowatt hour

	1990	1995	2000	2004	2005	2006	2007	2008	2009	2010	2011	average 09-11
World	**524**	**526**	**528**	**539**	**542**	**543**	**546**	**539**	**533**	**529**	**536**	**533**
Annex I Parties	*493*	*472*	*466*	*460*	*461*	*454*	*460*	*447*	*426*	*426*	*429*	*427*
Annex II Parties	*483*	*469*	*466*	*462*	*459*	*448*	*456*	*441*	*420*	*420*	*418*	*419*
North America	*531*	*534*	*544*	*531*	*526*	*507*	*512*	*499*	*472*	*481*	*460*	*471*
Europe	*408*	*367*	*335*	*335*	*330*	*333*	*335*	*315*	*299*	*290*	*290*	*293*
Asia Oceania	*482*	*461*	*468*	*499*	*504*	*495*	*521*	*512*	*500*	*486*	*547*	*511*
Annex I EIT	*527*	*484*	*464*	*454*	*474*	*484*	*480*	*472*	*449*	*454*	*480*	*461*
Non-Annex I Parties	*625*	*658*	*655*	*669*	*668*	*673*	*663*	*658*	*660*	*647*	*648*	*651*
Annex I Kyoto Parties	*442*	*398*	*382*	*386*	*388*	*391*	*396*	*382*	*365*	*362*	*379*	*369*
Non-OECD Total	**573**	**604**	**611**	**636**	**643**	**652**	**643**	**640**	**639**	**627**	**633**	**633**
OECD Total	**496**	**482**	**478**	**470**	**467**	**457**	**465**	**451**	**434**	**434**	**434**	**434**
Canada	196	176	216	209	194	190	190	190	167	179	167	171
Chile	457	267	349	322	318	304	408	411	373	410	441	408
Mexico	549	539	559	495	509	482	479	431	455	457	450	454
United States	582	590	593	577	574	552	560	545	517	522	503	514
OECD Americas	**532**	**532**	**543**	**527**	**523**	**503**	**509**	**495**	**470**	**479**	**459**	**469**
Australia	817	810	853	880	900	899	887	887	911	844	823	859
Israel	827	820	765	809	776	774	770	713	694	687	727	703
Japan	435	412	402	429	431	420	454	440	416	418	497	444
Korea	520	554	529	503	487	491	481	487	525	534	545	535
New Zealand	109	89	165	196	237	231	196	215	168	151	141	153
OECD Asia Oceania	**492**	**481**	**487**	**508**	**507**	**502**	**519**	**512**	**512**	**504**	**552**	**523**
Austria	238	206	170	224	218	217	204	187	163	193	215	190
Belgium	347	361	291	285	275	263	254	254	218	220	196	211
Czech Republic	744	794	728	617	614	606	636	621	588	589	591	589
Denmark	669	588	450	404	370	459	426	399	399	359	315	358
Estonia	932	1 062	1 063	1 029	1 048	965	1 048	1 084	1 078	1 014	1 086	1 059
Finland	188	223	173	258	164	265	238	177	190	230	191	203
France	105	73	75	67	79	72	76	72	74	77	61	71
Germany	607	581	526	504	487	485	511	481	473	461	477	470
Greece	990	946	820	780	779	731	752	748	725	718	720	721
Hungary	496	512	469	448	372	373	368	351	313	317	317	316
Iceland	1	1	0	0	0	0	1	1	0	0	0	0
Ireland	740	727	642	575	584	537	510	471	452	458	427	445
Italy	575	545	498	497	486	479	475	452	411	406	402	406
Luxembourg	2 552	1 738	528	393	389	387	381	385	376	379	387	381
Netherlands	607	546	477	467	454	452	455	442	420	415	404	413
Norway	1	2	1	3	2	3	4	3	11	16	13	14
Poland	988	905	866	833	818	821	820	815	799	781	780	787
Portugal	519	576	486	465	521	431	396	394	379	255	303	313
Slovak Republic	389	364	245	233	221	214	221	208	210	197	200	202
Slovenia	429	382	343	345	349	362	375	332	318	325	338	327
Spain	427	454	432	383	396	369	387	327	297	237	291	275
Sweden	12	22	22	23	19	23	17	18	19	26	17	21
Switzerland	24	23	25	28	32	33	30	29	26	27	30	28
Turkey	568	512	529	426	438	452	494	511	496	460	472	476
United Kingdom	672	529	472	492	491	515	506	499	453	457	441	450
OECD Europe	**448**	**407**	**376**	**370**	**365**	**368**	**374**	**356**	**340**	**331**	**334**	335
European Union - 27	*488*	*440*	*401*	*391*	*387*	*389*	*396*	*375*	*357*	*347*	*352*	352

* CO_2 emissions from fossil fuels consumed for electricity generation, in both electricity-only and combined heat and power plants, divided by output of electricity generated from all fossil and non-fossil sources. Both main activity producers and autoproducers have been included in the calculation.

CO_2 emissions per kWh from electricity generation

grammes CO_2 / kilowatt hour

	1990	1995	2000	2004	2005	2006	2007	2008	2009	2010	2011	average 09-11
Non-OECD Total	**573**	**604**	**611**	**636**	**643**	**652**	**643**	**640**	**639**	**627**	**633**	**633**
Albania	162	38	43	30	26	26	31	-	1	2	7	3
Armenia	495	211	238	114	131	130	157	159	102	92	123	106
Azerbaijan	574	696	739	535	536	519	549	518	481	431	455	456
Belarus	548	500	472	463	459	461	452	465	466	449	441	452
Bosnia and Herzegovina	713	176	824	772	797	852	1 007	830	805	723	974	834
Bulgaria	761	582	478	538	506	493	597	566	540	542	591	558
Croatia	382	263	313	312	330	337	422	367	290	236	334	287
Cyprus *	838	822	838	772	788	758	761	759	746	705	732	728
Georgia	574	510	225	89	101	147	161	79	123	69	102	98
Gibraltar	737	766	760	743	761	751	751	757	757	762	752	757
Kazakhstan	611	621	730	597	597	866	683	566	441	409	431	427
Kosovo **	..	..	1 316	1 297	1 121	1 126	1 089	1 088	1 286	1 287	1 109	1 227
Kyrgyzstan	165	99	78	73	64	66	65	84	50	56	45	51
Latvia	115	134	135	97	88	113	106	114	96	120	133	116
Lithuania	158	65	99	68	101	100	88	83	84	338	270	230
FYR of Macedonia	917	879	799	798	791	783	870	904	798	684	811	764
Malta	1 587	957	819	913	1 034	954	1 012	849	850	871	862	861
Republic of Moldova	723	712	642	494	493	483	491	487	500	493	486	493
Montenegro **	..	..	..	..	384	429	455	530	290	420	653	454
Romania	855	741	579	528	493	521	542	512	472	412	499	461
Russian Federation	406	363	394	402	436	445	428	426	402	412	437	417
Serbia **	892	1 001	886	884	764	817	734	733	740	711	784	745
Tajikistan	68	25	26	22	21	21	20	20	17	14	12	15
Turkmenistan	686	931	872	872	872	872	872	927	865	954	983	934
Ukraine	654	566	400	360	397	430	440	432	411	416	450	426
Uzbekistan	624	572	629	588	588	582	609	543	566	550	559	558
Non-OECD Europe and Eurasia	**500**	**449**	**441**	**430**	**451**	**476**	**463**	**452**	**426**	**427**	**459**	**437**
Algeria	631	633	620	632	606	621	597	596	638	546	556	580
Angola	343	177	499	290	273	260	300	330	465	430	390	429
Benin	1 200	951	601	740	709	698	662	679	719	720	722	720
Botswana	1 791	1 800	1 876	2 190	2 073	1 927	1 587	1 789	1 787	1 790	1 787	1 788
Cameroon	13	10	10	28	40	83	162	161	196	207	200	201
Congo	6	9	-	97	103	102	130	100	245	267	230	247
Dem. Rep. of Congo	4	4	1	1	1	2	3	4	3	3	3	3
Côte d'Ivoire	205	275	379	356	457	385	409	449	391	461	437	430
Egypt	521	443	343	489	474	473	450	460	466	450	457	458
Eritrea	..	1 703	1 333	1 003	975	962	941	802	833	850	849	844
Ethiopia	136	42	11	6	3	3	44	119	122	7	7	45
Gabon	270	255	326	327	382	348	424	350	356	383	378	373
Ghana	-	3	66	84	147	276	360	215	188	295	215	233
Kenya	51	63	455	217	247	259	249	322	397	274	294	322
Libya	779	1 131	1 022	851	902	883	779	692	705	680	636	674
Morocco	783	928	831	860	830	819	802	787	698	687	729	705
Mozambique	241	64	5	3	1	1	1	0	1	1	1	1
Namibia	..	37	5	1	29	95	98	148	71	59	24	51
Nigeria	420	371	338	362	359	385	385	386	416	405	433	418
Senegal	889	881	940	674	741	751	635	617	683	665	689	679
South Africa	849	884	893	871	851	831	827	948	906	927	869	901
Sudan	325	465	508	607	615	658	580	601	413	165	204	261
United Rep. of Tanzania	152	284	192	141	349	415	232	218	253	269	288	270
Togo	422	185	558	439	350	456	401	206	200	216	206	207
Tunisia	651	588	574	477	469	492	506	494	472	463	455	463
Zambia	11	7	7	6	6	5	3	3	2	2	3	3
Zimbabwe	714	920	740	572	572	461	422	328	357	358	358	358
Other Africa	374	323	443	460	487	528	518	518	516	527	527	523
Africa	**670**	**690**	**651**	**649**	**636**	**627**	**612**	**655**	**630**	**620**	**596**	**616**

* Please refer to Chapter 5, Geographical Coverage.

** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004.

CO_2 emissions per kWh from electricity generation

grammes CO_2 / kilowatt hour

	1990	1995	2000	2004	2005	2006	2007	2008	2009	2010	2011	average 09-11
Bangladesh	554	601	556	546	553	578	593	585	597	604	564	588
Brunei Darussalam	924	880	795	820	800	839	739	791	789	730	717	745
Cambodia	..	805	834	806	793	797	805	820	816	804	793	804
Chinese Taipei	463	533	625	644	649	657	653	648	635	624	601	620
India	812	901	920	931	920	906	916	934	942	913	856	904
Indonesia	679	592	654	708	719	736	768	747	752	716	755	741
DPR of Korea	566	481	584	528	522	533	469	481	498	465	475	480
Malaysia	677	543	495	561	618	598	611	653	597	724	688	669
Mongolia	693	1 273	1 097	872	887	841	953	851	857	947	837	880
Myanmar	510	508	457	436	395	374	357	308	199	262	255	239
Nepal	-	26	12	6	7	5	4	4	4	1	1	2
Pakistan	408	405	479	397	380	413	433	451	458	425	409	431
Philippines	341	463	493	448	491	429	443	483	475	481	492	483
Singapore	908	933	762	561	534	524	521	507	487	498	500	495
Sri Lanka	2	51	448	513	476	335	394	420	429	379	469	426
Thailand	626	605	567	543	535	511	546	529	513	513	522	516
Vietnam	552	301	427	438	447	435	426	406	384	432	429	415
Other Asia	348	264	253	406	411	357	327	311	316	315	315	315
Asia	**664**	**704**	**729**	**725**	**723**	**717**	**730**	**740**	**740**	**730**	**707**	**725**
People's Rep. of China	897	904	889	882	869	863	823	797	790	758	764	771
Hong Kong, China	828	855	712	749	755	754	775	757	763	723	768	751
China	**894**	**903**	**885**	**879**	**867**	**862**	**822**	**797**	**790**	**758**	**764**	**771**
Argentina	394	273	338	308	313	370	395	369	366	366	390	374
Bolivia	307	400	314	295	329	326	334	375	393	430	433	419
Brazil	55	55	88	85	84	81	73	90	64	86	68	73
Colombia	208	205	160	117	131	127	127	107	176	176	108	153
Costa Rica	20	155	8	8	28	55	72	63	40	56	64	53
Cuba	765	858	690	820	832	767	750	733	1 063	1 014	955	1 011
Dominican Republic	868	895	782	777	810	832	820	816	757	754	743	751
Ecuador	187	314	215	283	378	430	366	279	329	376	345	350
El Salvador	67	391	324	312	302	310	316	270	273	220	243	246
Guatemala	74	296	392	323	299	345	369	343	349	286	286	307
Haiti	408	327	346	301	307	305	372	351	399	393	382	391
Honduras	10	327	281	451	411	267	420	409	346	332	371	350
Jamaica	757	888	824	618	572	484	611	626	568	746	620	645
Netherlands Antilles	717	714	714	713	711	710	708	707	707	707	708	707
Nicaragua	345	473	591	536	481	522	533	480	506	460	471	479
Panama	170	317	231	266	275	310	317	273	302	301	357	320
Paraguay	0	2	-	-	-	-	-	-	-	-	-	-
Peru	184	186	154	212	209	183	199	240	253	290	297	280
Trinidad and Tobago	708	711	685	751	759	753	753	704	719	699	506	641
Uruguay	43	53	57	151	103	296	104	307	253	80	197	177
Venezuela	323	219	191	222	208	222	208	203	207	258	234	233
Other Non-OECD Americas	223	216	213	233	227	225	236	253	253	252	284	263
Non-OECD Americas	**184**	**167**	**174**	**179**	**179**	**183**	**181**	**187**	**185**	**196**	**184**	**188**
Bahrain	1 061	815	868	881	873	824	837	651	665	640	601	635
Islamic Republic of Iran	603	606	574	542	541	549	546	582	578	565	578	573
Iraq	569	1 678	641	579	573	387	423	672	932	1 003	903	946
Jordan	815	834	708	682	660	626	588	594	584	575	637	599
Kuwait	887	578	780	727	799	786	782	778	870	758	787	805
Lebanon	1 835	678	737	599	591	706	662	715	717	709	707	711
Oman	762	830	795	885	861	885	874	826	791	755	741	763
Qatar	1 077	1 131	771	649	618	617	565	534	507	493	490	497
Saudi Arabia	831	813	805	754	739	749	726	736	757	737	754	749
Syrian Arab Republic	553	586	567	571	607	612	623	627	629	594	602	608
United Arab Emirates	743	737	728	913	844	820	720	729	632	600	600	611
Yemen	746	946	930	874	841	781	679	636	630	655	633	640
Middle East	**737**	**809**	**701**	**679**	**676**	**668**	**650**	**673**	**687**	**668**	**674**	**677**

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
World * **												
CO_2 emissions	67	75	86	89	100	104	113	131	138	145	149	1.9%
Population	71	77	84	92	100	108	115	123	129	130	132	1.3%
GDP per population (GDP per capita)	73	80	89	93	100	103	115	129	139	144	148	1.9%
Energy intensity (TPES/GDP)	121	115	110	104	100	95	86	83	78	78	77	-1.2%
Carbon intensity: ESCII (CO_2/TPES)	107	106	105	101	100	99	99	100	99	99	100	0.0%
Annex I Parties												
CO_2 emissions	..	..	..	..	100	95	99	102	93	97	96	-0.2%
Population	..	..	..	..	100	103	105	107	109	110	110	0.5%
GDP per population (GDP per capita)	..	..	..	..	100	102	117	129	130	133	135	1.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	93	84	78	71	72	70	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	96	96	95	92	92	93	-0.3%
Annex II Parties												
CO_2 emissions	88	91	97	94	100	104	112	115	104	108	106	0.3%
Population	88	91	94	97	100	104	107	110	113	114	114	0.6%
GDP per population (GDP per capita)	62	68	78	87	100	107	121	130	128	130	132	1.3%
Energy intensity (TPES/GDP)	141	132	123	109	100	97	90	84	77	78	74	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	113	110	107	102	100	97	97	96	93	94	95	-0.3%
Annex II North America												
CO_2 emissions	87	89	96	93	100	106	118	119	108	112	110	0.4%
Population	83	86	91	95	100	106	113	118	123	124	125	1.1%
GDP per population (GDP per capita)	66	71	80	90	100	106	124	133	130	132	133	1.4%
Energy intensity (TPES/GDP)	149	141	129	108	100	96	85	78	72	71	69	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	107	104	102	101	100	98	99	98	95	97	95	-0.2%
Annex II Europe												
CO_2 emissions	97	98	106	98	100	100	102	106	95	97	93	-0.3%
Population	94	96	97	98	100	102	103	106	109	109	110	0.4%
GDP per population (GDP per capita)	64	70	81	86	100	107	121	129	128	130	132	1.3%
Energy intensity (TPES/GDP)	131	122	117	110	100	96	88	85	77	79	74	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	124	119	115	105	100	95	93	91	88	87	87	-0.7%
Annex II Asia Oceania												
CO_2 emissions	68	78	82	83	100	108	115	121	113	116	120	0.9%
Population	84	89	94	97	100	102	104	106	107	107	108	0.3%
GDP per population (GDP per capita)	54	60	69	82	100	106	111	118	116	121	121	0.9%
Energy intensity (TPES/GDP)	134	130	121	104	100	103	103	97	91	92	86	-0.7%
Carbon intensity: ESCII (CO_2/TPES)	113	113	105	100	100	96	96	100	100	98	107	0.3%
Annex I EIT												
CO_2 emissions	..	..	..	..	100	71	64	65	62	66	68	-1.8%
Population	..	..	..	..	100	99	98	96	95	95	95	-0.3%
GDP per population (GDP per capita)	..	..	..	..	100	71	80	107	122	126	131	1.3%
Energy intensity (TPES/GDP)	..	..	..	..	100	104	87	71	60	63	62	-2.3%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	96	94	90	89	88	89	-0.6%
Non-Annex I Parties												
CO_2 emissions	..	..	..	..	100	123	142	192	232	247	261	4.7%
Population	..	..	..	..	100	109	119	127	134	136	138	1.5%
GDP per population (GDP per capita)	..	..	..	..	100	115	133	162	198	210	220	3.8%
Energy intensity (TPES/GDP)	..	..	..	..	100	94	85	84	79	78	77	-1.2%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	105	105	110	111	110	112	0.5%
Annex I Kyoto Parties												
CO_2 emissions	..	..	..	..	100	89	89	92	85	88	88	-0.6%
Population	..	..	..	..	100	101	102	103	104	104	104	0.2%
GDP per population (GDP per capita)	..	..	..	..	100	100	112	124	127	130	132	1.3%
Energy intensity (TPES/GDP)	..	..	..	..	100	92	83	78	71	73	70	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	95	93	92	90	89	91	-0.4%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

*** Total world includes non-OECD total, OECD total as well as international marine bunkers and international aviation bunkers.

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Non-OECD Total												
CO_2 emissions	46	58	74	83	100	103	112	146	173	183	194	3.2%
Population	68	74	82	91	100	109	117	125	132	134	135	1.5%
GDP per population (GDP per capita)	71	82	94	95	100	102	117	146	178	189	198	3.3%
Energy intensity (TPES/GDP)	102	98	95	98	100	91	81	77	70	70	68	-1.8%
Carbon intensity: ESCII (CO_2/TPES)	93	98	101	98	100	101	100	104	105	104	106	0.3%
OECD Total												
CO_2 emissions	84	88	96	94	100	105	113	117	108	112	111	0.5%
Population	84	88	92	96	100	104	108	112	115	116	117	0.7%
GDP per population (GDP per capita)	64	70	80	88	100	106	121	131	130	133	135	1.4%
Energy intensity (TPES/GDP)	138	129	122	108	100	97	89	83	77	77	75	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	113	110	107	103	100	97	97	96	93	94	94	-0.3%
Canada												
CO_2 emissions	79	88	100	94	100	108	124	130	121	123	124	1.0%
Population	79	84	89	93	100	106	111	116	122	123	125	1.1%
GDP per population (GDP per capita)	67	76	86	93	100	103	120	130	128	130	132	1.3%
Energy intensity (TPES/GDP)	128	126	121	107	100	102	90	86	77	75	73	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	117	111	108	102	100	97	103	99	101	102	102	0.1%
Chile												
CO_2 emissions	67	55	68	63	100	125	169	187	211	225	246	4.4%
Population	74	79	85	92	100	109	117	123	128	130	131	1.3%
GDP per population (GDP per capita)	77	61	81	79	100	139	159	188	205	215	226	4.0%
Energy intensity (TPES/GDP)	109	112	98	95	100	86	97	87	80	79	81	-1.0%
Carbon intensity: ESCII (CO_2/TPES)	108	100	101	92	100	96	94	93	100	102	103	0.1%
Mexico												
CO_2 emissions	37	52	80	95	100	112	132	145	151	158	163	2.4%
Population	61	70	81	90	100	112	121	128	132	133	134	1.4%
GDP per population (GDP per capita)	75	87	103	102	100	96	116	121	121	126	130	1.3%
Energy intensity (TPES/GDP)	76	80	93	96	100	98	84	90	90	87	87	-0.7%
Carbon intensity: ESCII (CO_2/TPES)	104	108	103	107	100	106	111	105	105	108	107	0.3%
United States												
CO_2 emissions	88	90	96	93	100	106	117	119	106	112	109	0.4%
Population	83	86	91	95	100	107	113	118	123	124	125	1.1%
GDP per population (GDP per capita)	66	70	80	90	100	106	124	133	130	132	133	1.4%
Energy intensity (TPES/GDP)	151	142	129	109	100	95	85	77	71	71	69	-1.8%
Carbon intensity: ESCII (CO_2/TPES)	106	104	102	101	100	98	99	98	94	96	95	-0.2%
OECD Americas												
CO_2 emissions	85	88	95	93	100	106	119	121	110	115	113	0.6%
Population	78	82	88	94	100	108	115	120	125	126	127	1.1%
GDP per population (GDP per capita)	69	74	84	91	100	105	122	131	128	130	132	1.3%
Energy intensity (TPES/GDP)	146	137	126	107	100	96	85	78	72	72	70	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	108	105	102	101	100	98	99	98	95	97	96	-0.2%
Australia												
CO_2 emissions	55	69	80	85	100	110	130	146	156	152	153	2.0%
Population	77	81	86	93	100	106	112	120	129	131	133	1.4%
GDP per population (GDP per capita)	75	79	86	93	100	111	126	141	146	148	150	2.0%
Energy intensity (TPES/GDP)	104	110	109	98	100	91	88	78	75	74	71	-1.6%
Carbon intensity: ESCII (CO_2/TPES)	93	99	99	101	100	102	104	111	110	107	107	0.3%
Israel												
CO_2 emissions	43	51	58	73	100	138	165	175	189	203	200	3.4%
Population	66	74	83	91	100	119	135	149	160	163	166	2.4%
GDP per population (GDP per capita)	69	80	83	89	100	117	131	132	145	149	153	2.1%
Energy intensity (TPES/GDP)	109	102	99	82	100	98	90	82	81	83	80	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	86	83	86	111	100	102	103	109	101	100	99	-0.1%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Japan												
CO_2 emissions	71	81	83	83	100	108	111	114	103	107	112	0.5%
Population	85	90	95	98	100	102	103	103	104	104	103	0.2%
GDP per population (GDP per capita)	51	57	67	80	100	106	109	115	111	117	116	0.7%
Energy intensity (TPES/GDP)	142	135	123	105	100	105	106	100	93	94	88	-0.6%
Carbon intensity: ESCII (CO_2/TPES)	117	116	106	100	100	95	94	96	95	94	106	0.3%
Korea												
CO_2 emissions	23	33	54	67	100	156	191	205	225	246	256	4.6%
Population	77	82	89	95	100	105	110	112	115	115	116	0.7%
GDP per population (GDP per capita)	24	32	44	64	100	139	172	209	232	245	252	4.5%
Energy intensity (TPES/GDP)	98	99	112	94	100	106	107	96	93	95	95	-0.2%
Carbon intensity: ESCII (CO_2/TPES)	125	127	123	116	100	101	94	91	91	92	92	-0.4%
New Zealand												
CO_2 emissions	62	76	74	88	100	113	138	152	140	139	136	1.5%
Population	85	92	93	97	100	109	115	123	128	130	131	1.3%
GDP per population (GDP per capita)	84	92	88	99	100	106	117	132	132	130	131	1.3%
Energy intensity (TPES/GDP)	75	81	85	91	100	99	99	81	80	84	82	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	115	112	105	101	100	98	104	116	103	98	96	-0.2%
OECD Asia Oceania												
CO_2 emissions	61	71	78	81	100	116	127	134	131	137	141	1.7%
Population	82	87	92	97	100	103	106	108	110	111	111	0.5%
GDP per population (GDP per capita)	52	58	68	80	100	110	118	128	129	134	135	1.4%
Energy intensity (TPES/GDP)	128	125	118	102	100	105	106	99	95	96	92	-0.4%
Carbon intensity: ESCII (CO_2/TPES)	113	113	106	102	100	97	96	98	98	96	102	0.1%
Austria												
CO_2 emissions	86	89	99	96	100	105	109	132	114	124	121	0.9%
Population	98	99	98	99	100	104	104	107	109	109	110	0.4%
GDP per population (GDP per capita)	60	69	81	87	100	108	125	132	136	139	142	1.7%
Energy intensity (TPES/GDP)	128	119	116	108	100	97	88	96	87	91	85	-0.8%
Carbon intensity: ESCII (CO_2/TPES)	114	110	106	103	100	98	95	97	88	90	91	-0.4%
Belgium												
CO_2 emissions	108	107	116	94	100	107	110	105	93	100	101	0.0%
Population	97	98	99	99	100	102	103	105	108	109	110	0.5%
GDP per population (GDP per capita)	63	71	83	87	100	106	121	128	129	131	132	1.3%
Energy intensity (TPES/GDP)	135	125	118	106	100	103	97	90	85	88	84	-0.8%
Carbon intensity: ESCII (CO_2/TPES)	132	122	120	103	100	96	91	86	79	79	82	-0.9%
Czech Republic												
CO_2 emissions	97	98	107	112	100	80	79	77	71	74	73	-1.5%
Population	95	97	100	100	100	100	99	99	101	101	101	0.1%
GDP per population (GDP per capita)	73	81	88	93	100	96	106	130	142	145	148	1.9%
Energy intensity (TPES/GDP)	132	111	108	107	100	87	78	70	59	60	59	-2.5%
Carbon intensity: ESCII (CO_2/TPES)	106	112	113	112	100	95	95	85	84	83	83	-0.9%
Denmark												
CO_2 emissions	109	104	124	120	100	115	100	96	93	93	82	-0.9%
Population	97	98	100	99	100	102	104	105	107	108	108	0.4%
GDP per population (GDP per capita)	70	72	82	94	100	110	124	130	126	127	128	1.2%
Energy intensity (TPES/GDP)	159	141	135	119	100	100	83	79	78	81	75	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	102	103	112	108	100	103	93	88	88	83	79	-1.1%
Estonia												
CO_2 emissions	..	..	..	..	100	45	40	47	41	51	53	-2.9%
Population	..	..	..	..	100	91	86	85	84	84	84	-0.8%
GDP per population (GDP per capita)	..	..	..	..	100	77	112	162	158	164	177	2.8%
Energy intensity (TPES/GDP)	..	..	..	..	100	75	49	38	36	41	38	-4.5%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	84	85	90	85	91	95	-0.3%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Finland												
CO_2 emissions	73	82	101	89	100	103	102	102	101	116	102	0.1%
Population	92	94	96	98	100	102	104	105	107	108	108	0.4%
GDP per population (GDP per capita)	56	67	77	86	100	95	118	133	132	135	138	1.6%
Energy intensity (TPES/GDP)	123	110	117	107	100	105	93	86	83	88	82	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	114	118	117	98	100	101	90	84	86	91	83	-0.9%
France												
CO_2 emissions	122	122	131	102	100	100	107	110	99	101	93	-0.3%
Population	90	93	95	97	100	102	104	108	111	111	112	0.5%
GDP per population (GDP per capita)	64	72	83	88	100	104	116	122	120	122	124	1.0%
Energy intensity (TPES/GDP)	122	110	108	107	100	100	93	92	85	86	81	-1.0%
Carbon intensity: ESCII (CO_2/TPES)	173	166	153	112	100	95	95	91	88	87	83	-0.9%
Germany												
CO_2 emissions	103	103	111	107	100	91	87	84	78	81	79	-1.1%
Population	99	99	99	98	100	103	104	104	103	103	103	0.1%
GDP per population (GDP per capita)	62	68	81	87	100	107	117	120	124	130	133	1.4%
Energy intensity (TPES/GDP)	141	133	128	120	100	87	79	76	70	70	65	-2.1%
Carbon intensity: ESCII (CO_2/TPES)	119	115	109	105	100	95	91	88	87	86	89	-0.6%
Greece												
CO_2 emissions	36	49	65	78	100	108	125	136	129	120	119	0.8%
Population	87	89	95	98	100	103	106	107	109	109	109	0.4%
GDP per population (GDP per capita)	74	86	98	96	100	103	119	143	149	141	131	1.3%
Energy intensity (TPES/GDP)	63	72	75	87	100	99	100	92	85	84	87	-0.7%
Carbon intensity: ESCII (CO_2/TPES)	89	90	93	95	100	102	99	96	94	93	96	-0.2%
Hungary ***												
CO_2 emissions	75	88	104	101	83	72	68	70	60	61	59	-2.1%
Population	98	100	102	100	98	98	97	96	95	95	95	-0.2%
GDP per population (GDP per capita)	60	75	88	97	102	91	106	132	130	132	134	1.2%
Energy intensity (TPES/GDP)	108	102	105	101	96	97	81	73	67	68	65	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	119	116	111	102	87	83	81	77	73	72	71	-1.4%
Iceland												
CO_2 emissions	74	85	92	86	100	104	114	116	109	103	98	-0.1%
Population	81	85	89	95	100	105	110	116	125	125	125	1.1%
GDP per population (GDP per capita)	58	66	85	91	100	97	117	137	133	128	131	1.3%
Energy intensity (TPES/GDP)	93	94	94	99	100	106	115	105	155	161	167	2.5%
Carbon intensity: ESCII (CO_2/TPES)	172	161	129	101	100	96	77	70	42	40	36	-4.8%
Ireland												
CO_2 emissions	71	69	85	86	100	108	135	144	129	128	115	0.7%
Population	85	91	97	101	100	103	109	119	129	130	131	1.3%
GDP per population (GDP per capita)	54	62	72	79	100	122	189	220	207	205	207	3.5%
Energy intensity (TPES/GDP)	149	120	119	110	100	84	67	56	54	54	50	-3.3%
Carbon intensity: ESCII (CO_2/TPES)	105	103	102	99	100	103	98	99	89	89	86	-0.7%
Italy												
CO_2 emissions	74	80	91	87	100	103	107	116	98	100	99	-0.1%
Population	95	98	99	100	100	100	100	103	106	107	107	0.3%
GDP per population (GDP per capita)	58	65	79	86	100	106	117	119	113	114	114	0.6%
Energy intensity (TPES/GDP)	130	126	113	103	100	102	100	102	94	96	94	-0.3%
Carbon intensity: ESCII (CO_2/TPES)	103	101	101	99	100	95	92	92	87	86	87	-0.7%
Luxembourg												
CO_2 emissions	149	117	115	96	100	78	77	110	96	102	101	0.0%
Population	90	94	95	96	100	107	114	122	130	133	136	1.5%
GDP per population (GDP per capita)	55	59	65	73	100	113	143	160	159	161	160	2.3%
Energy intensity (TPES/GDP)	244	202	170	130	100	77	60	66	56	58	57	-2.7%
Carbon intensity: ESCII (CO_2/TPES)	124	105	110	106	100	84	78	85	83	82	82	-1.0%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

*** The reference year for Hungary corresponds to its base year under the Convention (the average of 1985-1987).

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Netherlands												
CO_2 emissions	83	90	107	99	100	110	110	117	113	120	112	0.5%
Population	88	91	95	97	100	103	107	109	111	111	112	0.5%
GDP per population (GDP per capita)	70	76	85	88	100	108	128	134	139	141	141	1.7%
Energy intensity (TPES/GDP)	126	129	122	109	100	96	82	82	77	81	75	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	107	101	109	107	100	102	99	98	95	94	95	-0.2%
Norway												
CO_2 emissions	83	85	99	96	100	116	119	129	131	139	135	1.4%
Population	92	94	96	98	100	103	106	109	114	115	117	0.7%
GDP per population (GDP per capita)	57	66	81	94	100	117	136	147	146	145	144	1.8%
Energy intensity (TPES/GDP)	121	111	112	103	100	93	86	79	86	92	79	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	131	123	113	101	100	104	95	101	92	90	101	0.0%
Poland * **												
CO_2 emissions	67	79	96	98	80	77	68	68	67	71	70	-1.6%
Population	87	90	94	98	100	101	101	101	101	102	102	0.1%
GDP per population (GDP per capita)	78	96	96	92	89	98	128	150	181	187	195	2.9%
Energy intensity (TPES/GDP)	96	90	106	104	87	76	52	46	39	40	39	-4.1%
Carbon intensity: ESCII (CO_2/TPES)	102	101	100	104	102	102	100	98	94	93	91	-0.4%
Portugal												
CO_2 emissions	37	46	61	63	100	123	151	160	135	122	122	1.0%
Population	87	92	99	101	100	100	102	106	106	106	107	0.3%
GDP per population (GDP per capita)	56	62	74	75	100	108	131	132	132	135	133	1.3%
Energy intensity (TPES/GDP)	77	81	82	86	100	111	110	113	103	98	98	-0.1%
Carbon intensity: ESCII (CO_2/TPES)	98	100	102	96	100	102	103	101	94	87	89	-0.6%
Slovak Republic												
CO_2 emissions	69	77	98	96	100	72	66	67	59	62	60	-2.4%
Population	86	90	94	98	100	101	102	102	102	102	103	0.1%
GDP per population (GDP per capita)	79	86	92	95	100	90	106	135	161	168	173	2.6%
Energy intensity (TPES/GDP)	98	101	108	104	100	91	77	64	48	49	46	-3.7%
Carbon intensity: ESCII (CO_2/TPES)	103	98	105	99	100	86	79	76	75	74	73	-1.5%
Slovenia **												
CO_2 emissions	..	..	..	..	93	97	98	108	105	106	106	0.2%
Population	..	..	..	..	101	100	100	101	103	103	104	0.1%
GDP per population (GDP per capita)	..	..	..	..	112	109	135	161	170	171	172	2.2%
Energy intensity (TPES/GDP)	..	..	..	..	86	94	81	77	69	70	69	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	95	94	89	87	87	86	85	-0.6%
Spain												
CO_2 emissions	58	76	91	85	100	113	138	165	138	131	132	1.3%
Population	88	91	97	99	100	101	103	111	118	118	118	0.8%
GDP per population (GDP per capita)	62	74	78	81	100	107	128	139	137	137	137	1.5%
Energy intensity (TPES/GDP)	86	94	100	98	100	104	103	102	88	88	86	-0.7%
Carbon intensity: ESCII (CO_2/TPES)	124	120	122	108	100	101	102	105	97	92	95	-0.3%
Sweden												
CO_2 emissions	156	151	139	111	100	109	100	95	79	90	85	-0.8%
Population	95	96	97	98	100	103	104	106	109	110	110	0.5%
GDP per population (GDP per capita)	71	79	83	90	100	100	119	133	131	139	143	1.7%
Energy intensity (TPES/GDP)	114	110	107	114	100	103	82	78	67	71	66	-2.0%
Carbon intensity: ESCII (CO_2/TPES)	205	182	162	111	100	102	99	87	82	82	82	-0.9%
Switzerland												
CO_2 emissions	94	88	94	100	100	101	102	107	102	105	96	-0.2%
Population	93	94	94	96	100	104	106	110	115	115	116	0.7%
GDP per population (GDP per capita)	79	78	85	90	100	97	105	108	112	115	116	0.7%
Energy intensity (TPES/GDP)	91	96	102	105	100	98	92	90	86	81	77	-1.2%
Carbon intensity: ESCII (CO_2/TPES)	139	125	115	110	100	102	99	101	92	98	92	-0.4%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

*** The reference year for Poland corresponds to its base year under the Convention (1988).

**** The reference year for Slovenia corresponds to its base year under the Convention (1986).

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Turkey												
CO_2 emissions	33	47	56	75	100	120	158	170	202	209	225	3.9%
Population	66	73	81	91	100	108	117	124	131	132	134	1.4%
GDP per population (GDP per capita)	65	74	75	84	100	108	123	144	147	158	170	2.6%
Energy intensity (TPES/GDP)	87	95	99	98	100	100	101	89	96	95	94	-0.3%
Carbon intensity: ESCII (CO_2/TPES)	88	92	94	100	100	103	109	107	109	105	106	0.3%
United Kingdom												
CO_2 emissions	114	106	104	99	100	94	95	97	85	88	81	-1.0%
Population	98	98	98	99	100	101	103	105	108	109	110	0.4%
GDP per population (GDP per capita)	66	71	78	86	100	109	128	144	142	144	144	1.8%
Energy intensity (TPES/GDP)	157	138	126	115	100	95	82	71	62	63	58	-2.6%
Carbon intensity: ESCII (CO_2/TPES)	112	109	108	102	100	90	88	90	89	90	88	-0.6%
OECD Europe												
CO_2 emissions	92	95	105	99	100	98	100	104	95	98	95	-0.3%
Population	90	92	95	97	100	102	104	107	110	110	111	0.5%
GDP per population (GDP per capita)	66	74	83	88	100	106	121	130	131	133	135	1.5%
Energy intensity (TPES/GDP)	129	121	118	111	100	95	86	82	75	76	72	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	120	116	114	105	100	96	93	91	88	87	87	-0.6%
European Union - 27												
CO_2 emissions	..	..	..	..	100	95	95	98	88	90	87	-0.6%
Population	..	..	..	..	100	101	102	104	106	106	106	0.3%
GDP per population (GDP per capita)	..	..	..	..	100	106	121	131	133	136	137	1.5%
Energy intensity (TPES/GDP)	..	..	..	..	100	93	83	79	72	73	69	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	95	92	90	87	86	86	-0.7%
Albania												
CO_2 emissions	62	71	122	115	100	30	49	64	55	59	62	-2.3%
Population	67	73	81	90	100	96	93	96	97	97	98	-0.1%
GDP per population (GDP per capita)	80	91	108	108	100	92	123	156	190	196	201	3.4%
Energy intensity (TPES/GDP)	121	111	130	104	100	57	58	55	42	40	41	-4.1%
Carbon intensity: ESCII (CO_2/TPES)	97	96	106	113	100	60	74	79	71	77	76	-1.3%
Armenia												
CO_2 emissions	..	..	..	..	100	17	17	20	21	20	23	-6.8%
Population	..	..	..	..	100	91	87	86	87	87	87	-0.6%
GDP per population (GDP per capita)	..	..	..	..	100	58	78	139	164	167	174	2.7%
Energy intensity (TPES/GDP)	..	..	..	..	100	40	39	27	24	22	23	-6.7%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	78	64	62	61	61	65	-2.1%
Azerbaijan												
CO_2 emissions	..	..	..	..	100	62	51	56	45	43	49	-3.4%
Population	..	..	..	..	100	107	112	117	125	126	128	1.2%
GDP per population (GDP per capita)	..	..	..	..	100	39	52	95	181	187	187	3.0%
Energy intensity (TPES/GDP)	..	..	..	..	100	147	85	53	23	22	23	-6.7%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	100	102	95	86	85	88	-0.6%
Belarus												
CO_2 emissions	..	..	..	..	100	49	47	50	50	52	53	-3.0%
Population	..	..	..	..	100	100	98	96	93	93	93	-0.3%
GDP per population (GDP per capita)	..	..	..	..	100	65	90	133	180	194	205	3.5%
Energy intensity (TPES/GDP)	..	..	..	..	100	83	61	46	35	34	34	-5.0%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	91	87	84	85	86	82	-0.9%
Bosnia and Herzegovina												
CO_2 emissions	..	..	..	..	100	14	57	66	83	85	96	-0.2%
Population	..	..	..	..	100	77	86	88	87	87	87	-0.7%
GDP per population (GDP per capita)	..	..	..	..	100	142	435	541	631	637	649	9.3%
Energy intensity (TPES/GDP)	..	..	..	..	100	19	17	15	16	17	18	-7.9%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	64	92	92	95	92	95	-0.2%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Bulgaria * **												
CO_2 emissions	77	88	102	99	91	65	51	56	52	54	60	-2.2%
Population	95	97	99	100	97	94	91	86	84	84	83	-0.8%
GDP per population (GDP per capita)	40	53	70	82	91	82	86	118	137	138	142	1.5%
Energy intensity (TPES/GDP)	161	145	131	120	102	95	77	62	48	49	52	-2.8%
Carbon intensity: ESCII (CO_2/TPES)	126	119	113	101	101	88	86	89	92	95	98	-0.1%
Croatia												
CO_2 emissions	..	..	..	..	100	73	82	96	92	88	87	-0.6%
Population	..	..	..	..	100	98	93	93	93	92	92	-0.4%
GDP per population (GDP per capita)	..	..	..	..	100	74	92	115	120	119	119	0.8%
Energy intensity (TPES/GDP)	..	..	..	..	100	108	101	93	87	86	85	-0.8%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	94	95	98	95	93	93	-0.3%
Cyprus **												
CO_2 emissions	46	43	67	72	100	130	163	181	194	187	180	2.8%
Population	107	85	88	93	100	112	119	129	137	138	138	1.6%
GDP per population (GDP per capita)	25	37	62	77	100	111	126	137	143	144	144	1.8%
Energy intensity (TPES/GDP)	164	133	116	94	100	100	104	92	94	90	87	-0.7%
Carbon intensity: ESCII (CO_2/TPES)	107	105	106	107	100	105	104	112	105	105	104	0.2%
Georgia												
CO_2 emissions	..	..	..	..	100	24	14	13	16	15	19	-7.6%
Population	..	..	..	..	100	99	92	91	92	93	93	-0.3%
GDP per population (GDP per capita)	..	..	..	..	100	29	41	59	70	74	79	-1.1%
Energy intensity (TPES/GDP)	..	..	..	..	100	106	62	43	39	37	39	-4.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	81	60	57	65	59	66	-2.0%
Gibraltar												
CO_2 emissions	56	56	66	67	100	185	223	267	302	306	295	5.3%
Population	93	93	100	100	100	104	104	111	111	111	111	0.5%
GDP per population (GDP per capita)	69	75	76	85	100	105	124	131	132	133	136	1.5%
Energy intensity (TPES/GDP)	88	80	86	78	100	169	173	183	207	207	196	3.3%
Carbon intensity: ESCII (CO_2/TPES)	99	100	102	100	100	101	101	101	100	100	100	0.0%
Kazakhstan												
CO_2 emissions	..	..	..	..	100	71	48	66	84	99	99	-0.0%
Population	..	..	..	..	100	97	91	93	98	100	101	0.1%
GDP per population (GDP per capita)	..	..	..	..	100	63	76	123	146	154	163	2.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	116	70	61	60	66	64	-2.1%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	100	98	96	98	98	93	-0.3%
Kosovo ***												
CO_2 emissions	..	..	..	..	..	..	100	130	164	170	169	4.9%
Population	..	..	..	..	..	..	100	100	104	104	106	0.5%
GDP per population (GDP per capita)	..	..	..	..	..	..	100	141	169	175	181	5.6%
Energy intensity (TPES/GDP)	..	..	..	..	..	..	100	89	90	89	85	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	..	100	103	104	105	103	0.3%
Kyrgyzstan												
CO_2 emissions	..	..	..	..	100	20	20	22	23	28	30	-5.6%
Population	..	..	..	..	100	104	112	118	123	124	125	1.1%
GDP per population (GDP per capita)	..	..	..	..	100	49	60	68	82	80	84	-0.8%
Energy intensity (TPES/GDP)	..	..	..	..	100	63	46	42	33	38	39	-4.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	62	63	65	70	75	72	-1.6%
Latvia												
CO_2 emissions	..	..	..	..	100	47	37	41	38	43	41	-4.2%
Population	..	..	..	..	100	93	89	86	85	84	83	-0.9%
GDP per population (GDP per capita)	..	..	..	..	100	61	84	129	128	128	136	1.5%
Energy intensity (TPES/GDP)	..	..	..	..	100	103	65	52	52	55	49	-3.3%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	81	75	70	69	73	73	-1.5%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

*** The reference year for Bulgaria corresponds to its base year under the Convention (1988).

**** Please refer to Chapter 5, Geographical Coverage.

***** Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004. The reference year for Kosovo is the first year of available data (2000).

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Lithuania												
CO_2 emissions	..	..	..	..	100	43	34	41	38	40	40	-4.3%
Population	..	..	..	..	100	98	95	92	90	89	87	-0.7%
GDP per population (GDP per capita)	..	..	..	..	100	59	76	114	121	124	135	1.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	94	62	53	50	40	39	-4.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	79	76	74	69	92	88	-0.6%
FYR of Macedonia												
CO_2 emissions	..	..	..	..	100	96	99	103	99	96	106	0.3%
Population	..	..	..	..	100	103	105	107	108	108	108	0.4%
GDP per population (GDP per capita)	..	..	..	..	100	77	87	92	106	108	111	0.5%
Energy intensity (TPES/GDP)	..	..	..	..	100	128	118	116	99	100	105	0.2%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	95	92	90	87	83	85	-0.8%
Malta												
CO_2 emissions	28	28	43	50	100	103	92	118	107	108	108	0.4%
Population	86	86	90	95	100	105	108	114	117	118	118	0.8%
GDP per population (GDP per capita)	30	46	76	78	100	125	156	154	162	166	168	2.5%
Energy intensity (TPES/GDP)	117	76	67	67	100	78	58	72	59	63	62	-2.3%
Carbon intensity: ESCII (CO_2/TPES)	94	94	94	101	100	101	95	93	96	89	88	-0.6%
Republic of Moldova												
CO_2 emissions	..	..	..	..	100	39	22	25	24	26	26	-6.2%
Population	..	..	..	..	100	99	98	97	96	96	96	-0.2%
GDP per population (GDP per capita)	..	..	..	..	100	40	36	52	57	61	65	-2.0%
Energy intensity (TPES/GDP)	..	..	..	..	100	119	82	71	58	59	54	-2.9%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	82	74	72	76	76	78	-1.2%
Montenegro * **												
CO_2 emissions	..	..	..	..	..	..	..	100	97	148	149	6.8%
Population	..	..	..	..	..	..	..	100	100	101	101	0.1%
GDP per population (GDP per capita)	..	..	..	..	..	..	..	100	121	123	127	4.1%
Energy intensity (TPES/GDP)	..	..	..	..	..	..	..	100	83	96	93	-1.2%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	..	..	100	96	124	124	3.7%
Romania **												
CO_2 emissions	61	75	94	92	89	63	46	51	42	40	44	-3.7%
Population	88	92	96	98	100	98	97	93	93	93	92	-0.4%
GDP per population (GDP per capita)	46	66	91	105	94	87	82	112	130	131	131	1.2%
Energy intensity (TPES/GDP)	151	123	107	91	95	79	66	53	42	42	43	-3.8%
Carbon intensity: ESCII (CO_2/TPES)	100	100	99	98	99	93	89	91	83	79	84	-0.8%
Russian Federation												
CO_2 emissions	..	..	..	..	100	72	69	69	68	72	76	-1.3%
Population	..	..	..	..	100	100	99	97	96	96	96	-0.2%
GDP per population (GDP per capita)	..	..	..	..	100	62	68	94	108	113	117	0.8%
Energy intensity (TPES/GDP)	..	..	..	..	100	117	105	82	71	74	74	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	99	98	94	92	91	91	-0.4%
Serbia * **												
CO_2 emissions	..	..	..	..	100	72	69	80	74	75	81	-1.0%
Population	..	..	..	..	100	103	85	78	77	76	76	-1.3%
GDP per population (GDP per capita)	..	..	..	..	100	50	59	76	85	86	88	-0.6%
Energy intensity (TPES/GDP)	..	..	..	..	100	136	140	137	118	120	123	1.0%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	102	99	98	96	95	99	-0.1%
Tajikistan												
CO_2 emissions	..	..	..	..	100	22	20	21	26	26	27	-6.0%
Population	..	..	..	..	100	109	116	122	128	130	132	1.3%
GDP per population (GDP per capita)	..	..	..	..	100	35	33	51	62	65	69	-1.7%
Energy intensity (TPES/GDP)	..	..	..	..	100	110	106	72	55	53	49	-3.3%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	53	49	49	59	59	61	-2.3%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

*** Serbia includes Kosovo from 1990 to 1999 & Montenegro from 1990 to 2004. The reference year for Montenegro is the first year of available data (2005).

**** The reference year for Romania corresponds to its base year under the Convention (1989).

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Turkmenistan												
CO_2 emissions	..	..	..	..	100	75	82	108	112	127	138	1.6%
Population	..	..	..	..	100	114	123	129	136	137	139	1.6%
GDP per population (GDP per capita)	..	..	..	..	100	55	64	78	111	120	136	1.5%
Energy intensity (TPES/GDP)	..	..	..	..	100	124	108	109	75	78	74	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	95	97	98	98	98	98	-0.1%
Ukraine												
CO_2 emissions	..	..	..	..	100	57	42	44	37	39	41	-4.1%
Population	..	..	..	..	100	99	95	91	89	88	88	-0.6%
GDP per population (GDP per capita)	..	..	..	..	100	48	46	69	71	75	79	-1.1%
Energy intensity (TPES/GDP)	..	..	..	..	100	135	122	90	72	79	72	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	88	80	78	81	75	83	-0.9%
Uzbekistan												
CO_2 emissions	..	..	..	..	100	85	98	91	87	85	92	-0.4%
Population	..	..	..	..	100	111	120	128	135	139	143	1.7%
GDP per population (GDP per capita)	..	..	..	..	100	73	82	100	130	138	145	1.8%
Energy intensity (TPES/GDP)	..	..	..	..	100	113	112	79	55	49	50	-3.3%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	92	90	89	90	90	89	-0.5%
Non-OECD Europe and Eurasia												
CO_2 emissions	56	72	86	90	100	67	60	63	62	66	69	-1.8%
Population	87	90	94	98	100	100	99	98	98	99	99	-0.0%
GDP per population (GDP per capita)	63	77	92	98	100	62	68	94	107	112	116	0.7%
Energy intensity (TPES/GDP)	101	98	94	94	100	112	97	76	65	67	67	-1.9%
Carbon intensity: ESCII (CO_2/TPES)	101	106	106	100	100	95	93	90	90	89	90	-0.5%
Algeria												
CO_2 emissions	17	27	54	82	100	108	120	151	183	185	197	3.3%
Population	56	63	74	87	100	112	121	130	138	140	142	1.7%
GDP per population (GDP per capita)	67	89	102	110	100	91	98	115	120	122	123	1.0%
Energy intensity (TPES/GDP)	41	44	66	83	100	107	103	97	111	106	108	0.4%
Carbon intensity: ESCII (CO_2/TPES)	108	107	107	103	100	99	99	103	100	103	104	0.2%
Angola												
CO_2 emissions	41	50	67	72	100	99	127	179	351	392	392	6.7%
Population	59	64	74	88	100	117	135	160	180	185	190	3.1%
GDP per population (GDP per capita)	132	121	106	97	100	68	80	108	166	167	169	2.5%
Energy intensity (TPES/GDP)	85	90	99	99	100	137	118	92	72	74	72	-1.6%
Carbon intensity: ESCII (CO_2/TPES)	63	71	86	85	100	91	99	113	164	173	170	2.6%
Benin												
CO_2 emissions	119	180	154	184	100	86	556	1044	1636	1775	1844	14.9%
Population	61	67	76	87	100	118	137	160	180	185	191	3.1%
GDP per population (GDP per capita)	95	94	102	110	100	104	117	121	127	127	128	1.2%
Energy intensity (TPES/GDP)	115	119	106	97	100	90	75	78	90	93	93	-0.3%
Carbon intensity: ESCII (CO_2/TPES)	179	241	189	199	100	78	466	694	790	807	814	10.5%
Botswana												
CO_2 emissions	..	..	..	54	100	114	143	151	146	171	160	2.3%
Population	..	..	..	86	100	115	127	136	143	145	147	1.9%
GDP per population (GDP per capita)	..	..	..	67	100	106	137	166	170	179	187	3.0%
Energy intensity (TPES/GDP)	..	..	..	122	100	97	83	68	66	69	64	-2.1%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	76	100	96	98	99	91	95	91	-0.4%
Cameroon												
CO_2 emissions	27	39	62	91	100	93	104	110	179	188	191	3.1%
Population	58	64	75	86	100	114	129	144	157	161	164	2.4%
GDP per population (GDP per capita)	69	82	96	130	100	79	89	95	97	98	100	0.0%
Energy intensity (TPES/GDP)	136	115	102	79	100	121	111	102	90	88	82	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	50	64	84	101	100	85	82	78	129	135	142	1.7%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Congo												
CO_2 emissions	93	98	112	122	100	76	80	134	248	292	333	5.9%
Population	58	65	75	87	100	114	131	148	165	169	173	2.7%
GDP per population (GDP per capita)	63	76	83	117	100	89	88	95	101	107	108	0.4%
Energy intensity (TPES/GDP)	181	144	128	97	100	98	91	99	109	107	114	0.6%
Carbon intensity: ESCII (CO_2/TPES)	142	138	141	124	100	76	76	96	136	150	156	2.1%
Dem. Rep. of Congo												
CO_2 emissions	85	87	105	109	100	71	56	77	97	104	110	0.5%
Population	57	64	74	85	100	121	136	158	176	181	186	3.0%
GDP per population (GDP per capita)	163	154	123	118	100	57	41	44	48	50	52	-3.0%
Energy intensity (TPES/GDP)	61	64	78	84	100	162	251	244	229	222	214	3.7%
Carbon intensity: ESCII (CO_2/TPES)	151	137	146	129	100	64	40	45	50	52	53	-3.0%
Côte d'Ivoire												
CO_2 emissions	90	114	128	115	100	122	233	222	236	235	224	3.9%
Population	45	54	68	84	100	117	132	144	155	158	161	2.3%
GDP per population (GDP per capita)	135	141	137	113	100	92	95	87	88	89	83	-0.9%
Energy intensity (TPES/GDP)	93	90	89	91	100	109	124	178	161	162	195	3.2%
Carbon intensity: ESCII (CO_2/TPES)	159	167	155	135	100	103	149	100	108	104	86	-0.7%
Egypt												
CO_2 emissions	26	33	53	83	100	106	129	195	220	228	240	4.3%
Population	65	71	79	89	100	109	119	131	140	143	145	1.8%
GDP per population (GDP per capita)	50	52	74	91	100	108	128	139	166	171	171	2.6%
Energy intensity (TPES/GDP)	75	83	80	98	100	92	83	107	95	93	97	-0.2%
Carbon intensity: ESCII (CO_2/TPES)	108	108	114	104	100	97	103	100	100	100	100	0.0%
Eritrea * **												
CO_2 emissions	..	..	..	..	..	178	141	133	102	110	118	0.9%
Population	..	..	..	..	..	101	115	141	160	165	170	2.8%
GDP per population (GDP per capita)	..	..	..	..	..	140	128	132	110	109	115	0.7%
Energy intensity (TPES/GDP)	..	..	..	..	..	80	55	47	47	47	45	-4.2%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	157	175	153	124	129	135	1.6%
Ethiopia * **												
CO_2 emissions	60	54	63	64	100	108	146	203	262	247	265	4.8%
Population	62	68	74	85	100	111	127	144	158	161	165	2.4%
GDP per population (GDP per capita)	128	118	112	91	100	95	103	124	169	182	191	3.1%
Energy intensity (TPES/GDP)	78	83	88	108	100	106	97	82	61	57	55	-2.8%
Carbon intensity: ESCII (CO_2/TPES)	98	80	86	77	100	97	114	138	160	147	154	2.1%
Gabon												
CO_2 emissions	52	83	142	187	100	147	153	192	229	243	241	4.3%
Population	58	64	74	85	100	117	133	148	159	162	165	2.4%
GDP per population (GDP per capita)	76	141	114	110	100	99	89	87	87	91	94	-0.3%
Energy intensity (TPES/GDP)	205	122	139	122	100	99	105	113	118	114	109	0.4%
Carbon intensity: ESCII (CO_2/TPES)	58	76	122	163	100	128	123	132	140	144	143	1.7%
Ghana												
CO_2 emissions	71	87	84	80	100	122	189	238	336	380	399	6.8%
Population	60	67	74	87	100	115	130	146	161	165	169	2.5%
GDP per population (GDP per capita)	136	115	109	91	100	107	118	133	154	163	182	2.9%
Energy intensity (TPES/GDP)	69	90	94	104	100	99	96	80	71	70	65	-2.0%
Carbon intensity: ESCII (CO_2/TPES)	126	125	110	97	100	100	129	153	191	201	200	3.4%
Kenya												
CO_2 emissions	58	63	81	84	100	105	142	137	195	209	211	3.6%
Population	50	58	69	84	100	117	133	152	168	173	177	2.8%
GDP per population (GDP per capita)	76	86	97	91	100	93	90	95	101	105	106	0.3%
Energy intensity (TPES/GDP)	130	114	103	107	100	105	109	105	104	102	100	0.0%
Carbon intensity: ESCII (CO_2/TPES)	118	112	117	104	100	92	108	91	110	113	112	0.5%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

*** Data for Ethiopia include Eritrea until 1991. The reference year for Eritrea is the first year of available data (1992).

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Libya												
CO_2 emissions	14	34	68	82	100	128	144	165	191	203	128	1.2%
Population	48	57	71	89	100	110	121	133	145	147	148	1.9%
GDP per population (GDP per capita)	253	173	219	124	100	87	84	93	102	104	40	-4.3%
Energy intensity (TPES/GDP)	12	33	40	81	100	130	140	127	123	127	202	3.4%
Carbon intensity: ESCII (CO_2/TPES)	97	102	110	92	100	103	101	104	105	105	107	0.3%
Morocco												
CO_2 emissions	35	51	71	84	100	132	150	201	217	235	255	4.6%
Population	63	70	79	90	100	109	116	123	128	129	130	1.3%
GDP per population (GDP per capita)	69	75	87	90	100	96	109	131	154	159	164	2.4%
Energy intensity (TPES/GDP)	80	94	102	100	100	118	117	119	110	114	117	0.7%
Carbon intensity: ESCII (CO_2/TPES)	99	103	101	104	100	107	102	105	100	101	103	0.1%
Mozambique												
CO_2 emissions	267	216	214	137	100	106	122	140	206	230	263	4.7%
Population	71	78	90	98	100	118	134	153	169	173	177	2.7%
GDP per population (GDP per capita)	161	124	110	78	100	101	127	169	199	208	218	3.8%
Energy intensity (TPES/GDP)	101	116	115	140	100	89	71	55	48	46	45	-3.8%
Carbon intensity: ESCII (CO_2/TPES)	229	192	188	128	100	100	100	98	128	138	153	2.0%
Namibia * **												
CO_2 emissions	..	..	..	..	..	156	157	220	267	279	280	5.3%
Population	..	..	..	..	..	113	129	142	153	156	159	2.3%
GDP per population (GDP per capita)	..	..	..	..	..	104	108	125	135	141	144	1.8%
Energy intensity (TPES/GDP)	..	..	..	..	..	121	112	117	116	113	112	0.5%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	110	101	106	111	112	110	0.5%
Nigeria												
CO_2 emissions	20	40	92	111	100	107	144	189	145	178	181	2.9%
Population	60	67	77	88	100	113	127	143	158	162	167	2.5%
GDP per population (GDP per capita)	107	111	116	88	100	100	104	123	143	151	158	2.2%
Energy intensity (TPES/GDP)	79	80	83	113	100	97	98	85	68	67	64	-2.1%
Carbon intensity: ESCII (CO_2/TPES)	40	68	123	128	100	97	112	126	94	109	108	0.4%
Senegal												
CO_2 emissions	57	75	96	99	100	116	169	219	254	263	267	4.8%
Population	58	66	75	86	100	116	131	150	167	172	176	2.7%
GDP per population (GDP per capita)	112	111	104	103	100	96	103	113	116	117	117	0.8%
Energy intensity (TPES/GDP)	113	112	119	104	100	100	105	97	100	101	101	0.0%
Carbon intensity: ESCII (CO_2/TPES)	77	92	104	107	100	105	119	132	131	129	128	1.2%
South Africa												
CO_2 emissions	62	79	82	90	100	108	117	130	144	146	145	1.8%
Population	64	70	78	89	100	111	125	134	140	142	144	1.7%
GDP per population (GDP per capita)	100	105	110	104	100	94	96	108	117	119	121	0.9%
Energy intensity (TPES/GDP)	78	80	84	103	100	109	100	98	95	92	89	-0.5%
Carbon intensity: ESCII (CO_2/TPES)	124	134	115	95	100	95	97	92	92	93	93	-0.3%
Sudan												
CO_2 emissions	59	60	67	76	100	83	107	177	273	278	264	4.7%
Population	57	65	76	89	100	114	129	145	160	164	168	2.5%
GDP per population (GDP per capita)	105	115	103	91	100	113	136	162	203	208	213	3.7%
Energy intensity (TPES/GDP)	110	95	101	110	100	88	72	60	47	46	44	-3.9%
Carbon intensity: ESCII (CO_2/TPES)	90	85	85	86	100	73	85	127	178	178	169	2.5%
United Rep. of Tanzania												
CO_2 emissions	89	88	93	89	100	148	151	295	315	342	367	6.4%
Population	55	63	73	86	100	118	134	152	171	176	181	2.9%
GDP per population (GDP per capita)	95	100	99	88	100	93	101	124	145	150	155	2.1%
Energy intensity (TPES/GDP)	148	126	114	119	100	104	102	93	80	78	76	-1.3%
Carbon intensity: ESCII (CO_2/TPES)	115	112	113	99	100	130	109	168	159	166	172	2.6%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

*** The reference year for Namibia is the first year of available data (1991).

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Togo												
CO_2 emissions	60	55	64	52	100	101	168	171	200	207	219	3.8%
Population	59	65	73	86	100	111	131	148	161	164	168	2.5%
GDP per population (GDP per capita)	101	110	124	103	100	90	95	89	92	94	96	-0.2%
Energy intensity (TPES/GDP)	97	86	78	88	100	123	135	143	141	139	136	1.5%
Carbon intensity: ESCII (CO_2/TPES)	104	90	91	66	100	81	101	91	96	97	100	-0.0%
Tunisia												
CO_2 emissions	30	40	65	79	100	118	149	167	176	182	175	2.7%
Population	64	69	78	89	100	110	117	123	128	129	131	1.3%
GDP per population (GDP per capita)	60	75	90	97	100	110	135	160	186	189	184	2.9%
Energy intensity (TPES/GDP)	87	85	94	97	100	97	93	86	78	80	80	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	91	90	98	94	100	100	101	99	95	93	91	-0.4%
Zambia												
CO_2 emissions	132	169	129	108	100	79	65	80	64	67	81	-1.0%
Population	54	62	73	86	100	113	130	146	162	164	171	2.6%
GDP per population (GDP per capita)	145	142	123	107	100	82	82	93	106	112	115	0.7%
Energy intensity (TPES/GDP)	82	82	92	99	100	116	108	99	85	81	80	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	203	234	155	118	100	73	57	60	44	45	51	-3.1%
Zimbabwe												
CO_2 emissions	45	45	50	60	100	93	79	64	50	54	59	-2.5%
Population	51	59	70	85	100	112	119	120	119	120	122	0.9%
GDP per population (GDP per capita)	101	102	93	95	100	95	100	68	55	60	65	-2.0%
Energy intensity (TPES/GDP)	113	105	107	100	100	100	89	129	143	134	127	1.1%
Carbon intensity: ESCII (CO_2/TPES)	77	71	71	75	100	88	74	62	53	56	59	-2.5%
Other Africa												
CO_2 emissions	52	64	91	81	100	116	136	165	191	206	216	3.7%
Population	61	67	77	87	100	110	127	146	164	169	173	2.7%
GDP per population (GDP per capita)	113	110	108	100	100	92	101	118	129	132	135	1.4%
Energy intensity (TPES/GDP)	92	94	94	101	100	111	102	88	82	80	79	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	83	93	115	92	100	103	105	109	110	116	118	0.8%
Africa												
CO_2 emissions	46	60	74	87	100	110	125	152	170	178	178	2.8%
Population	60	66	76	87	100	113	128	144	158	161	165	2.4%
GDP per population (GDP per capita)	96	99	107	101	100	94	100	113	126	129	128	1.2%
Energy intensity (TPES/GDP)	87	88	87	100	100	105	100	95	87	85	85	-0.8%
Carbon intensity: ESCII (CO_2/TPES)	91	103	104	100	100	97	98	99	99	101	100	-0.0%
Bangladesh												
CO_2 emissions	23	34	53	65	100	151	187	271	370	393	399	6.8%
Population	64	67	77	88	100	112	123	134	140	141	143	1.7%
GDP per population (GDP per capita)	94	84	91	95	100	111	130	156	190	199	210	3.6%
Energy intensity (TPES/GDP)	74	93	95	94	100	101	91	90	86	86	82	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	53	65	80	83	100	121	128	145	162	163	162	2.3%
Brunei Darussalam												
CO_2 emissions	12	43	81	90	100	138	136	148	228	244	274	4.9%
Population	52	62	75	87	100	115	130	144	156	158	161	2.3%
GDP per population (GDP per capita)	116	119	160	115	100	101	96	96	90	90	91	-0.5%
Energy intensity (TPES/GDP)	17	58	65	104	100	111	111	93	127	131	152	2.0%
Carbon intensity: ESCII (CO_2/TPES)	120	101	104	88	100	106	99	116	130	130	124	1.0%
Cambodia * **												
CO_2 emissions	..	..	..	..	..	100	134	180	248	256	275	6.5%
Population	..	..	..	..	..	100	111	120	125	127	128	1.6%
GDP per population (GDP per capita)	..	..	..	..	..	100	128	186	232	243	257	6.1%
Energy intensity (TPES/GDP)	..	..	..	..	..	100	85	54	60	58	57	-3.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	100	111	149	143	145	146	2.4%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

*** The reference year for Cambodia is the first year of available data (1995).

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Chinese Taipei												
CO_2 emissions	27	37	64	62	100	138	191	230	219	236	231	4.1%
Population	74	80	88	95	100	105	109	112	113	114	115	0.7%
GDP per population (GDP per capita)	25	35	54	69	100	135	167	195	213	234	244	4.3%
Energy intensity (TPES/GDP)	113	107	121	105	100	93	97	97	88	85	80	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	131	125	110	91	100	105	108	108	103	104	103	0.1%
India												
CO_2 emissions	34	41	49	71	100	133	167	200	282	294	300	5.4%
Population	65	71	80	90	100	110	121	130	138	140	142	1.7%
GDP per population (GDP per capita)	68	70	73	83	100	116	142	183	232	251	265	4.7%
Energy intensity (TPES/GDP)	112	112	111	107	100	95	84	71	69	65	63	-2.2%
Carbon intensity: ESCII (CO_2/TPES)	70	74	75	88	100	110	116	117	128	129	127	1.1%
Indonesia												
CO_2 emissions	17	26	47	60	100	147	187	230	260	281	292	5.2%
Population	66	73	82	91	100	108	116	123	129	130	131	1.3%
GDP per population (GDP per capita)	41	51	66	78	100	135	131	154	184	193	204	3.4%
Energy intensity (TPES/GDP)	131	113	105	94	100	91	104	96	85	85	79	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	48	62	83	90	100	111	119	126	128	131	138	1.5%
DPR of Korea												
CO_2 emissions	59	67	93	111	100	66	60	65	58	56	57	-2.7%
Population	73	80	86	93	100	108	114	118	120	121	121	0.9%
GDP per population (GDP per capita)	27	38	61	90	100	73	61	62	62	56	57	-2.7%
Energy intensity (TPES/GDP)	301	220	174	129	100	84	85	88	79	84	83	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	101	100	101	102	100	99	101	101	100	99	99	-0.0%
Malaysia												
CO_2 emissions	26	32	49	68	100	167	227	304	339	369	391	6.7%
Population	61	68	76	87	100	114	129	143	153	156	158	2.2%
GDP per population (GDP per capita)	45	55	74	83	100	138	155	175	189	199	206	3.5%
Energy intensity (TPES/GDP)	102	92	99	100	100	100	110	118	112	108	108	0.4%
Carbon intensity: ESCII (CO_2/TPES)	90	95	89	94	100	106	104	103	104	110	111	0.5%
Mongolia												
CO_2 emissions	..	..	..	92	100	79	70	75	93	100	103	0.1%
Population	..	..	..	88	100	105	110	116	124	126	128	1.2%
GDP per population (GDP per capita)	..	..	..	95	100	83	91	118	142	149	172	2.6%
Energy intensity (TPES/GDP)	..	..	..	110	100	91	70	56	54	54	48	-3.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	100	100	100	99	97	97	98	97	-0.1%
Myanmar												
CO_2 emissions	113	99	128	145	100	169	231	260	172	198	204	3.4%
Population	68	75	84	92	100	107	114	118	121	122	123	1.0%
GDP per population (GDP per capita)	85	86	105	121	100	123	173	308	414	432	453	7.5%
Energy intensity (TPES/GDP)	127	121	100	92	100	84	61	38	27	25	24	-6.6%
Carbon intensity: ESCII (CO_2/TPES)	152	126	145	141	100	153	192	188	129	151	155	2.1%
Nepal												
CO_2 emissions	21	36	58	62	100	197	346	343	386	458	459	7.5%
Population	64	70	79	89	100	113	128	143	154	157	160	2.3%
GDP per population (GDP per capita)	79	80	80	90	100	114	127	134	148	152	155	2.1%
Energy intensity (TPES/GDP)	125	124	125	110	100	90	86	82	76	74	72	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	34	51	74	70	100	170	247	218	224	260	256	4.6%
Pakistan												
CO_2 emissions	28	36	45	67	100	136	169	206	238	231	233	4.1%
Population	55	61	72	85	100	114	129	142	152	155	158	2.2%
GDP per population (GDP per capita)	63	66	76	88	100	110	114	132	145	148	150	1.9%
Energy intensity (TPES/GDP)	115	118	106	100	100	100	102	95	88	86	84	-0.8%
Carbon intensity: ESCII (CO_2/TPES)	71	75	77	89	100	109	113	116	123	117	117	0.8%
Philippines												
CO_2 emissions	60	76	87	74	100	150	177	185	185	200	202	3.4%
Population	59	66	76	88	100	112	125	139	149	151	154	2.1%
GDP per population (GDP per capita)	85	95	111	90	100	99	106	120	132	140	143	1.7%
Energy intensity (TPES/GDP)	107	101	93	105	100	105	105	82	68	67	64	-2.1%
Carbon intensity: ESCII (CO_2/TPES)	113	119	111	90	100	128	127	137	139	141	143	1.7%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Singapore												
CO_2 emissions	21	29	43	55	100	141	162	169	190	219	220	3.8%
Population	69	74	79	90	100	116	132	140	164	167	170	2.6%
GDP per population (GDP per capita)	32	42	60	74	100	130	151	180	183	207	212	3.7%
Energy intensity (TPES/GDP)	106	103	94	89	100	108	81	76	82	86	80	-1.0%
Carbon intensity: ESCII (CO_2/TPES)	88	89	97	94	100	87	100	89	77	73	76	-1.3%
Sri Lanka												
CO_2 emissions	74	72	99	95	100	148	285	359	318	351	401	6.8%
Population	75	79	87	93	100	107	112	115	120	121	123	1.0%
GDP per population (GDP per capita)	59	65	77	91	100	122	148	175	212	227	243	4.3%
Energy intensity (TPES/GDP)	158	145	124	107	100	83	91	81	65	65	63	-2.1%
Carbon intensity: ESCII (CO_2/TPES)	107	97	121	105	100	137	188	220	193	197	212	3.7%
Thailand												
CO_2 emissions	20	26	42	52	100	174	192	262	269	294	302	5.4%
Population	67	74	83	92	100	105	111	117	120	121	122	0.9%
GDP per population (GDP per capita)	38	43	56	67	100	145	140	170	182	195	194	3.2%
Energy intensity (TPES/GDP)	129	129	112	96	100	98	111	119	117	119	120	0.9%
Carbon intensity: ESCII (CO_2/TPES)	62	64	80	88	100	118	112	111	105	105	106	0.3%
Vietnam												
CO_2 emissions	94	97	86	100	100	162	256	464	662	753	799	10.4%
Population	66	73	81	89	100	109	118	125	130	132	133	1.4%
GDP per population (GDP per capita)	81	75	71	89	100	136	177	239	301	318	333	5.9%
Energy intensity (TPES/GDP)	138	143	140	113	100	83	77	78	76	79	77	-1.2%
Carbon intensity: ESCII (CO_2/TPES)	127	125	107	111	100	132	159	200	221	228	233	4.1%
Other Asia												
CO_2 emissions	82	100	161	99	100	91	107	150	186	215	230	4.0%
Population	71	76	81	88	100	85	96	108	119	122	125	1.1%
GDP per population (GDP per capita)	93	99	107	104	100	150	145	183	225	244	262	4.7%
Energy intensity (TPES/GDP)	80	83	128	101	100	78	86	70	60	60	58	-2.6%
Carbon intensity: ESCII (CO_2/TPES)	156	159	144	106	100	91	90	109	115	121	122	0.9%
Asia												
CO_2 emissions	34	42	56	72	100	134	167	205	251	266	272	4.9%
Population	65	71	80	90	100	110	120	130	137	139	141	1.7%
GDP per population (GDP per capita)	56	61	72	82	100	120	134	163	193	207	216	3.7%
Energy intensity (TPES/GDP)	123	118	112	106	100	94	92	84	79	77	74	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	77	81	86	92	100	108	112	115	120	121	121	0.9%
People's Rep. of China												
CO_2 emissions	36	48	63	77	100	135	147	241	303	323	354	6.2%
Population	74	81	86	93	100	106	111	115	117	118	118	0.8%
GDP per population (GDP per capita)	33	37	48	74	100	168	242	374	564	620	674	9.5%
Energy intensity (TPES/GDP)	187	185	167	116	100	67	49	48	40	40	39	-4.4%
Carbon intensity: ESCII (CO_2/TPES)	81	86	92	97	100	112	111	118	115	112	113	0.6%
Hong Kong, China												
CO_2 emissions	28	33	44	67	100	110	121	124	139	126	137	1.5%
Population	71	78	89	96	100	108	117	119	123	124	124	1.0%
GDP per population (GDP per capita)	31	38	59	72	100	120	126	152	168	177	186	3.0%
Energy intensity (TPES/GDP)	156	141	102	110	100	95	105	81	84	73	75	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	80	78	83	88	100	89	78	85	80	79	80	-1.1%
China (incl. Hong Kong)												
CO_2 emissions	36	47	63	77	100	134	147	239	300	320	351	6.2%
Population	74	81	86	93	100	106	111	115	117	118	118	0.8%
GDP per population (GDP per capita)	32	37	49	74	100	163	231	352	525	577	626	9.1%
Energy intensity (TPES/GDP)	188	185	162	116	100	69	52	50	42	42	42	-4.0%
Carbon intensity: ESCII (CO_2/TPES)	81	85	92	97	100	112	110	118	115	111	113	0.6%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Argentina												
CO_2 emissions	83	86	96	88	100	118	139	152	172	178	184	2.9%
Population	75	80	86	93	100	107	113	119	123	124	125	1.1%
GDP per population (GDP per capita)	123	127	135	110	100	129	138	145	178	193	208	3.5%
Energy intensity (TPES/GDP)	79	77	78	88	100	85	85	84	76	71	67	-1.9%
Carbon intensity: ESCII (CO_2/TPES)	113	110	105	98	100	101	105	105	104	105	106	0.3%
Bolivia												
CO_2 emissions	42	62	81	83	100	134	138	183	247	273	296	5.3%
Population	65	72	80	89	100	112	125	137	147	149	152	2.0%
GDP per population (GDP per capita)	109	125	123	100	100	109	116	123	138	141	146	1.8%
Energy intensity (TPES/GDP)	55	64	95	108	100	117	99	118	117	133	133	1.4%
Carbon intensity: ESCII (CO_2/TPES)	108	110	87	86	100	94	97	92	104	97	100	0.0%
Brazil												
CO_2 emissions	47	71	92	85	100	122	158	168	176	202	212	3.6%
Population	66	72	81	91	100	108	117	124	129	130	131	1.3%
GDP per population (GDP per capita)	64	86	105	99	100	108	110	119	132	141	143	1.7%
Energy intensity (TPES/GDP)	117	105	95	102	100	99	104	104	101	103	102	0.1%
Carbon intensity: ESCII (CO_2/TPES)	94	109	114	93	100	107	118	109	103	106	110	0.5%
Colombia												
CO_2 emissions	58	61	76	86	100	126	128	126	134	135	144	1.8%
Population	66	72	81	90	100	110	120	130	138	139	141	1.7%
GDP per population (GDP per capita)	66	75	87	87	100	112	109	120	136	139	145	1.8%
Energy intensity (TPES/GDP)	131	118	104	105	100	93	82	72	68	69	64	-2.1%
Carbon intensity: ESCII (CO_2/TPES)	101	96	104	104	100	111	120	112	106	101	111	0.5%
Costa Rica												
CO_2 emissions	48	67	84	77	100	169	171	219	241	251	257	4.6%
Population	61	67	76	88	100	113	128	140	150	152	154	2.1%
GDP per population (GDP per capita)	79	91	102	89	100	116	130	145	162	168	172	2.6%
Energy intensity (TPES/GDP)	100	98	96	96	100	107	103	113	112	109	105	0.2%
Carbon intensity: ESCII (CO_2/TPES)	101	113	112	102	100	121	100	95	89	91	93	-0.4%
Cuba												
CO_2 emissions	60	70	89	94	100	66	80	74	94	87	83	-0.9%
Population	84	89	93	95	100	103	105	106	107	107	106	0.3%
GDP per population (GDP per capita)	57	64	72	106	100	67	82	104	129	134	140	1.6%
Energy intensity (TPES/GDP)	128	119	126	87	100	90	84	55	51	45	43	-4.0%
Carbon intensity: ESCII (CO_2/TPES)	100	103	105	107	100	105	110	122	134	136	131	1.3%
Dominican Republic												
CO_2 emissions	47	70	85	83	100	151	231	234	245	247	244	4.3%
Population	64	72	81	90	100	110	119	129	136	138	140	1.6%
GDP per population (GDP per capita)	68	86	98	97	100	117	151	166	206	219	226	4.0%
Energy intensity (TPES/GDP)	130	123	106	97	100	101	102	78	61	58	57	-2.6%
Carbon intensity: ESCII (CO_2/TPES)	81	92	101	98	100	116	126	139	144	140	135	1.4%
Ecuador												
CO_2 emissions	28	46	82	91	100	120	135	188	236	242	241	4.3%
Population	60	67	78	89	100	111	120	131	139	141	143	1.7%
GDP per population (GDP per capita)	74	94	105	99	100	103	99	120	130	133	141	1.7%
Energy intensity (TPES/GDP)	86	85	105	110	100	102	112	120	120	113	110	0.4%
Carbon intensity: ESCII (CO_2/TPES)	72	86	96	95	100	103	101	99	109	114	109	0.4%
El Salvador												
CO_2 emissions	64	90	78	79	100	207	233	280	276	262	270	4.8%
Population	72	79	87	94	100	108	111	113	116	116	117	0.7%
GDP per population (GDP per capita)	120	131	119	96	100	126	141	155	161	163	164	2.4%
Energy intensity (TPES/GDP)	82	88	98	118	100	101	102	104	92	90	91	-0.4%
Carbon intensity: ESCII (CO_2/TPES)	90	98	77	74	100	152	145	154	162	154	154	2.1%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Guatemala												
CO_2 emissions	71	95	132	100	100	181	264	327	347	321	325	5.8%
Population	63	70	79	89	100	112	126	143	157	161	165	2.4%
GDP per population (GDP per capita)	89	99	116	97	100	110	119	122	128	129	131	1.3%
Energy intensity (TPES/GDP)	111	109	94	99	100	98	107	102	105	112	107	0.3%
Carbon intensity: ESCII (CO_2/TPES)	115	125	153	117	100	150	165	184	164	138	141	1.7%
Haiti												
CO_2 emissions	40	43	65	83	100	96	149	210	240	216	226	4.0%
Population	67	72	80	90	100	111	121	131	138	140	142	1.7%
GDP per population (GDP per capita)	110	109	130	113	100	79	82	74	77	71	74	-1.4%
Energy intensity (TPES/GDP)	131	140	129	119	100	124	130	171	165	154	194	3.2%
Carbon intensity: ESCII (CO_2/TPES)	41	39	49	69	100	88	116	127	137	140	110	0.4%
Honduras												
CO_2 emissions	52	61	78	77	100	164	206	322	339	338	354	6.2%
Population	57	63	74	86	100	114	127	141	152	155	159	2.2%
GDP per population (GDP per capita)	86	88	106	99	100	104	109	123	131	132	134	1.4%
Energy intensity (TPES/GDP)	121	116	100	98	100	100	91	97	93	93	93	-0.3%
Carbon intensity: ESCII (CO_2/TPES)	89	94	99	91	100	138	164	192	181	176	178	2.8%
Jamaica												
CO_2 emissions	77	103	91	65	100	116	135	143	104	100	106	0.3%
Population	79	84	89	97	100	104	108	111	113	113	113	0.6%
GDP per population (GDP per capita)	107	108	86	81	100	117	110	118	117	116	117	0.8%
Energy intensity (TPES/GDP)	85	106	107	79	100	95	115	102	82	77	83	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	106	107	111	104	100	101	98	107	96	98	96	-0.2%
Netherlands Antilles												
CO_2 emissions	525	369	318	166	100	103	162	170	201	158	187	3.0%
Population	85	89	92	97	100	105	111	116	120	121	121	0.9%
GDP per population (GDP per capita)	72	78	88	88	100	106	123	125	128	129	130	1.3%
Energy intensity (TPES/GDP)	610	378	336	144	100	80	106	99	103	82	109	0.4%
Carbon intensity: ESCII (CO_2/TPES)	140	140	118	135	100	114	112	118	127	124	109	0.4%
Nicaragua												
CO_2 emissions	80	100	98	98	100	137	192	220	227	246	247	4.4%
Population	60	68	79	90	100	113	123	132	139	140	142	1.7%
GDP per population (GDP per capita)	191	209	146	132	100	97	113	124	131	133	138	1.5%
Energy intensity (TPES/GDP)	53	52	66	81	100	102	89	86	79	78	77	-1.3%
Carbon intensity: ESCII (CO_2/TPES)	133	136	128	103	100	122	154	157	158	168	165	2.4%
Panama												
CO_2 emissions	99	122	114	105	100	161	193	267	304	329	366	6.4%
Population	64	71	81	90	100	111	122	134	143	146	148	1.9%
GDP per population (GDP per capita)	99	102	108	115	100	118	134	151	196	208	227	4.0%
Energy intensity (TPES/GDP)	174	155	109	101	100	103	105	96	80	82	81	-1.0%
Carbon intensity: ESCII (CO_2/TPES)	89	108	121	100	100	120	112	138	135	132	135	1.4%
Paraguay												
CO_2 emissions	30	36	71	74	100	180	170	180	216	245	256	4.6%
Population	60	66	75	87	100	113	126	139	149	152	155	2.1%
GDP per population (GDP per capita)	57	68	101	95	100	107	95	95	101	113	119	0.8%
Energy intensity (TPES/GDP)	130	107	89	89	100	106	105	97	97	91	86	-0.7%
Carbon intensity: ESCII (CO_2/TPES)	67	75	104	101	100	141	136	140	148	157	162	2.3%
Peru												
CO_2 emissions	81	96	107	95	100	124	138	150	199	217	233	4.1%
Population	63	70	80	90	100	110	119	127	133	134	136	1.5%
GDP per population (GDP per capita)	126	139	136	123	100	119	124	143	178	191	202	3.4%
Energy intensity (TPES/GDP)	119	110	107	99	100	86	85	77	75	77	77	-1.2%
Carbon intensity: ESCII (CO_2/TPES)	86	90	93	87	100	110	110	107	113	110	110	0.5%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Trinidad and Tobago												
CO_2 emissions	54	51	70	84	100	108	185	298	353	376	359	6.3%
Population	80	83	89	97	100	104	106	108	110	110	111	0.5%
GDP per population (GDP per capita)	94	103	141	116	100	103	128	185	215	214	205	3.5%
Energy intensity (TPES/GDP)	58	45	51	76	100	96	133	141	143	151	154	2.1%
Carbon intensity: ESCII (CO_2/TPES)	123	132	109	99	100	105	102	106	104	105	103	0.1%
Uruguay												
CO_2 emissions	139	146	148	83	100	121	140	141	204	171	202	3.4%
Population	91	91	94	97	100	104	106	106	108	108	108	0.4%
GDP per population (GDP per capita)	82	88	107	85	100	117	132	133	160	173	182	2.9%
Energy intensity (TPES/GDP)	144	135	117	107	100	94	98	93	107	99	100	-0.0%
Carbon intensity: ESCII (CO_2/TPES)	130	134	126	94	100	106	102	107	111	92	103	0.1%
Venezuela												
CO_2 emissions	50	60	88	91	100	113	121	141	160	173	152	2.0%
Population	56	64	76	88	100	112	123	135	144	146	148	1.9%
GDP per population (GDP per capita)	128	127	121	100	100	106	100	104	118	115	118	0.8%
Energy intensity (TPES/GDP)	63	70	88	103	100	100	105	110	94	104	92	-0.4%
Carbon intensity: ESCII (CO_2/TPES)	110	104	108	100	100	95	93	92	100	100	94	-0.3%
Other Non-OECD Americas												
CO_2 emissions	63	87	82	74	100	108	121	129	139	151	158	2.2%
Population	87	89	93	96	100	106	112	120	124	126	127	1.1%
GDP per population (GDP per capita)	63	62	80	82	100	101	115	121	121	122	115	0.7%
Energy intensity (TPES/GDP)	176	222	165	102	100	100	91	89	93	98	106	0.3%
Carbon intensity: ESCII (CO_2/TPES)	65	71	67	92	100	101	102	100	99	101	102	0.1%
Non-OECD Americas												
CO_2 emissions	60	73	91	88	100	118	141	156	173	186	188	3.1%
Population	66	73	82	91	100	109	118	126	132	133	135	1.4%
GDP per population (GDP per capita)	83	97	110	100	100	110	113	122	139	146	151	2.0%
Energy intensity (TPES/GDP)	106	99	95	99	100	95	97	96	90	91	88	-0.6%
Carbon intensity: ESCII (CO_2/TPES)	104	106	108	97	100	104	109	106	105	105	106	0.3%
Bahrain												
CO_2 emissions	26	45	63	89	100	99	121	155	192	197	194	3.2%
Population	45	54	73	85	100	113	129	147	237	256	269	4.8%
GDP per population (GDP per capita)	64	98	118	94	100	122	133	157	123	119	116	0.7%
Energy intensity (TPES/GDP)	114	93	75	120	100	82	79	73	74	71	70	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	79	93	98	93	100	88	90	92	90	91	89	-0.6%
Islamic Republic of Iran												
CO_2 emissions	23	40	50	82	100	141	176	236	288	284	292	5.2%
Population	54	60	70	85	100	109	119	127	133	135	136	1.5%
GDP per population (GDP per capita)	124	157	116	117	100	109	121	149	169	177	178	2.8%
Energy intensity (TPES/GDP)	36	41	67	79	100	124	123	131	137	128	126	1.1%
Carbon intensity: ESCII (CO_2/TPES)	97	104	92	106	100	96	99	95	93	94	95	-0.2%
Iraq												
CO_2 emissions	19	29	51	69	100	182	132	140	168	190	203	3.4%
Population	57	65	76	86	100	115	134	152	171	176	181	2.9%
GDP per population (GDP per capita)	269	301	387	217	100	33	59	38	42	41	44	-3.9%
Energy intensity (TPES/GDP)	14	16	17	37	100	458	167	236	234	268	259	4.6%
Carbon intensity: ESCII (CO_2/TPES)	93	94	103	98	100	104	100	103	101	99	99	-0.0%
Jordan												
CO_2 emissions	14	23	46	80	100	132	155	195	209	203	214	3.7%
Population	50	57	69	83	100	132	151	171	187	191	195	3.2%
GDP per population (GDP per capita)	81	69	119	127	100	107	109	132	159	159	160	2.3%
Energy intensity (TPES/GDP)	37	58	57	75	100	93	90	91	77	71	69	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	96	100	99	100	100	100	105	96	92	94	99	-0.0%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) *

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2009	2010	2011	avg. ch. ref-11**
Kuwait												
CO_2 emissions	49	52	93	129	100	126	171	244	278	284	295	5.3%
Population	39	50	66	83	100	78	93	108	127	131	135	1.4%
GDP per population (GDP per capita)	324	206	167	104	100	174	160	204	191	190	200	3.4%
Energy intensity (TPES/GDP)	53	68	104	177	100	120	139	131	140	143	132	1.3%
Carbon intensity: ESCII (CO_2/TPES)	73	74	81	84	100	77	83	84	82	79	83	-0.9%
Lebanon												
CO_2 emissions	83	103	121	120	100	235	259	265	354	336	339	6.0%
Population	86	94	95	98	100	117	127	137	142	143	144	1.8%
GDP per population (GDP per capita)	176	158	132	180	100	151	150	167	207	220	225	3.9%
Energy intensity (TPES/GDP)	63	75	101	68	100	127	132	112	115	104	100	0.0%
Carbon intensity: ESCII (CO_2/TPES)	88	93	95	101	100	104	103	103	104	103	104	0.2%
Oman												
CO_2 emissions	2	7	22	56	100	144	197	276	526	557	620	9.1%
Population	41	48	63	82	100	119	121	130	145	149	152	2.0%
GDP per population (GDP per capita)	62	68	67	104	100	111	130	144	165	167	173	2.6%
Energy intensity (TPES/GDP)	22	17	64	58	100	109	122	137	181	220	228	4.0%
Carbon intensity: ESCII (CO_2/TPES)	46	123	80	111	100	100	103	108	121	102	104	0.2%
Qatar												
CO_2 emissions	16	34	54	86	100	132	168	255	394	444	500	8.0%
Population	25	34	47	78	100	106	125	173	337	371	395	6.8%
GDP per population (GDP per capita)	411	301	257	131	100	105	157	168	159	169	189	3.1%
Energy intensity (TPES/GDP)	14	30	42	85	100	113	85	88	71	71	69	-1.8%
Carbon intensity: ESCII (CO_2/TPES)	110	110	106	99	100	106	101	100	103	100	98	-0.1%
Saudi Arabia												
CO_2 emissions	8	14	63	78	100	130	159	207	256	279	290	5.2%
Population	37	46	61	82	100	115	124	149	166	170	174	2.7%
GDP per population (GDP per capita)	98	168	176	103	100	101	105	106	104	106	111	0.5%
Energy intensity (TPES/GDP)	34	19	49	91	100	127	130	155	170	178	162	2.3%
Carbon intensity: ESCII (CO_2/TPES)	66	97	121	101	100	89	94	85	87	87	93	-0.4%
Syrian Arab Republic												
CO_2 emissions	21	32	47	75	100	116	141	195	203	204	189	3.1%
Population	53	61	72	86	100	115	130	150	163	166	169	2.5%
GDP per population (GDP per capita)	64	95	111	108	100	127	127	139	158	160	154	2.1%
Energy intensity (TPES/GDP)	66	50	53	80	100	79	92	95	79	78	74	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	94	110	109	100	100	101	94	98	100	99	99	-0.1%
United Arab Emirates												
CO_2 emissions	5	9	37	69	100	134	165	209	290	303	320	5.7%
Population	15	30	56	75	100	130	168	225	384	415	436	7.3%
GDP per population (GDP per capita)	116	153	168	118	100	93	94	91	62	58	58	-2.6%
Energy intensity (TPES/GDP)	28	21	38	76	100	113	105	103	126	129	129	1.2%
Carbon intensity: ESCII (CO_2/TPES)	95	99	104	102	100	99	99	99	98	98	99	-0.1%
Yemen												
CO_2 emissions	19	27	54	75	100	145	205	290	345	369	322	5.7%
Population	52	56	66	82	100	127	148	173	195	201	208	3.5%
GDP per population (GDP per capita)	46	60	89	104	100	106	117	123	125	131	114	0.6%
Energy intensity (TPES/GDP)	122	81	85	82	100	101	109	123	126	126	122	1.0%
Carbon intensity: ESCII (CO_2/TPES)	63	98	106	108	100	107	109	111	112	111	111	0.5%
Middle East												
CO_2 emissions	18	29	55	80	100	139	164	214	268	279	289	5.2%
Population	51	58	70	84	100	114	127	143	158	162	165	2.4%
GDP per population (GDP per capita)	125	159	169	124	100	98	108	120	128	131	135	1.4%
Energy intensity (TPES/GDP)	32	31	45	76	100	132	123	135	142	143	137	1.5%
Carbon intensity: ESCII (CO_2/TPES)	88	99	103	101	100	95	97	93	93	92	95	-0.3%

* Please see Chapter 3 for methodological notes.

** Average annual percentage change between the reference year and 2011. The reference year is 1990 unless otherwise specified.

7. REGIONAL TOTALS

World

Figure 1. CO_2 emissions by fuel

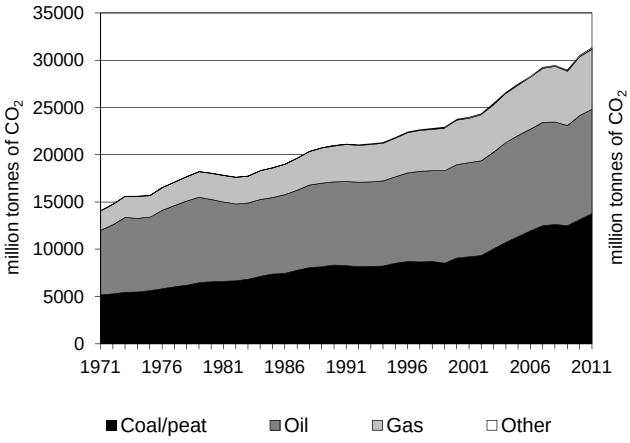


Figure 2. CO_2 emissions by sector

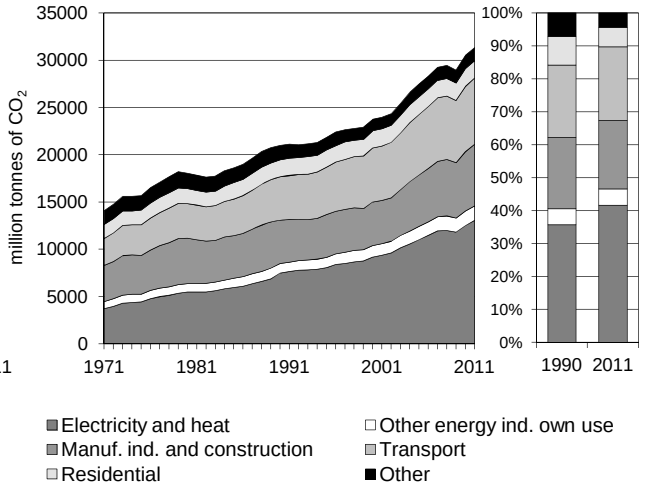


Figure 3. Reference vs Sectoral Approach

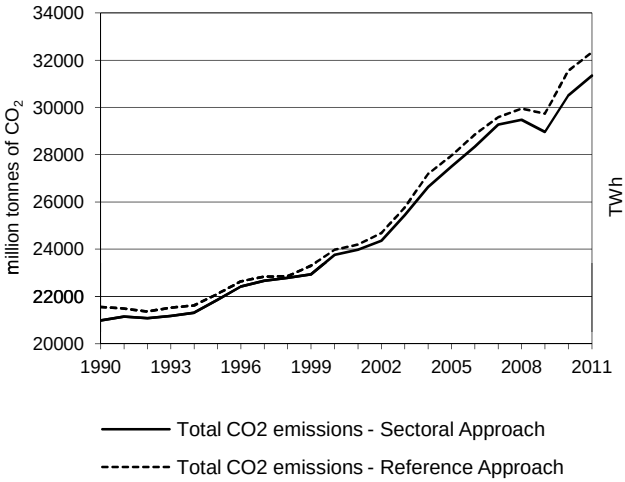


Figure 4. Electricity generation by fuel

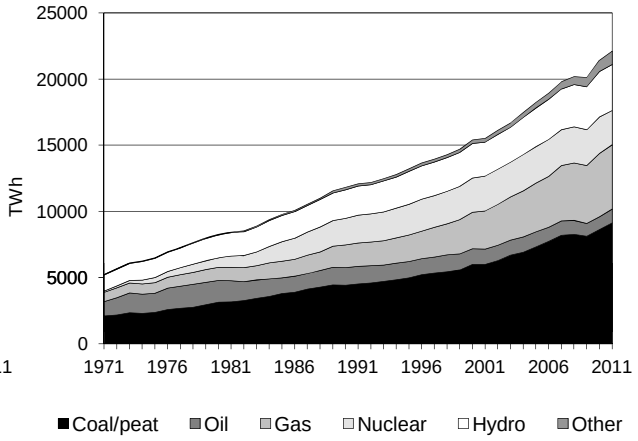


Figure 5. Changes in selected indicators *

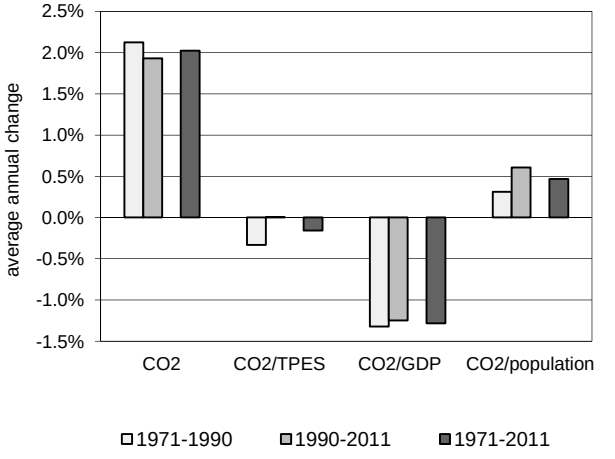
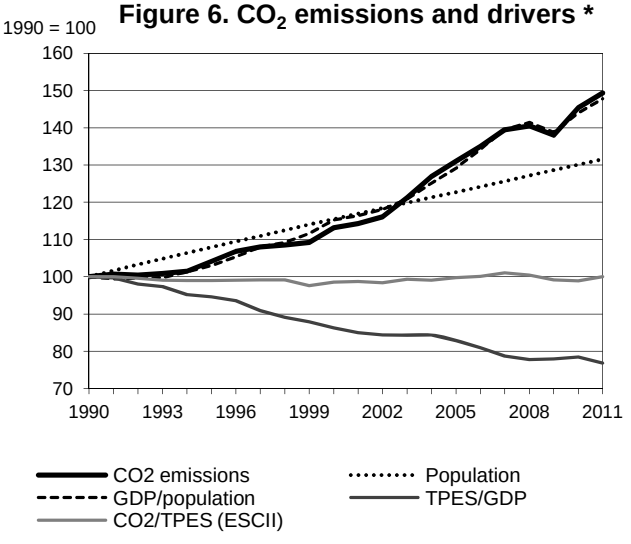


Figure 6. CO_2 emissions and drivers *



* Based on GDP in 2005 USD, using purchasing power parities.

World

Key indicators

	1990	1995	2000	2005	2009	2010	2011	% change 90-11
CO_2 Sectoral Approach ($MtCO_2$)	20 988.7	21 851.0	23 758.6	27 501.4	28 966.4	30 509.4	31 342.3	49.3%
TPES (PJ)	367 681	386 762	422 125	482 823	511 536	540 299	549 031	49.3%
GDP (billion 2005 USD)	30 249.8	33 550.5	39 708.0	45 674.2	49 080.0	51 052.1	52 485.9	73.5%
GDP PPP (billion 2005 USD)	36 173.4	40 210.4	48 150.8	57 343.2	64 565.9	67 779.1	70 313.0	94.4%
Population (millions)	5 288.9	5 706.6	6 108.3	6 491.3	6 801.6	6 880.1	6 958.0	31.6%
CO_2 / TPES (tCO_2 per TJ)	57.1	56.5	56.3	57.0	56.6	56.5	57.1	0.0%
CO_2 / GDP ($kgCO_2$ per 2005 USD)	0.69	0.65	0.60	0.60	0.59	0.60	0.60	-13.9%
CO_2 / GDP PPP ($kgCO_2$ per 2005 USD)	0.58	0.54	0.49	0.48	0.45	0.45	0.45	-23.2%
CO_2 / population (tCO_2 per capita)	3.97	3.83	3.89	4.24	4.26	4.43	4.50	13.5%
CO_2 emissions and drivers - Kaya decomposition (1990=100) *								
CO_2 emissions	100	104	113	131	138	145	149	49.3%
Population	100	108	115	123	129	130	132	31.6%
GDP per population (GDP per capita)	100	103	115	129	139	144	148	47.7%
Energy intensity (TPES/GDP)	100	95	86	83	78	78	77	-23.2%
Carbon intensity: ESCII (CO_2/TPES)	100	99	99	100	99	99	100	0.0%

* Please see Chapter 3 for methodological notes. Based on GDP in 2005 USD, using purchasing power parities.

2011 CO_2 emissions by sector

million tonnes of CO_2	Coal/peat	Oil	Natural gas	Other **	Total	% change 90-11
Sectoral Approach ***	**13 773.1**	**11 071.7**	**6 334.8**	**162.7**	**31 342.3**	**49.3%**
Main activity producer elec. and heat	8 933.9	726.2	2 194.0	44.7	11 898.9	79.9%
Unallocated autoproducers	504.9	165.4	429.1	68.5	1 167.9	31.7%
Other energy industry own use	298.0	628.8	615.4	0.7	1 542.9	53.2%
Manufacturing industries and construction	3 515.0	1 496.1	1 454.0	43.6	6 508.7	42.7%
Transport ***	13.3	6 771.6	216.2	-	7 001.1	52.3%
of which: road	*-*	*5 097.0*	*75.0*	*-*	*5 172.0*	57.0%
Other	508.1	1 283.5	1 426.1	5.2	3 222.9	-3.0%
of which: residential	*301.9*	*578.9*	*970.8*	*0.0*	*1 851.6*	1.9%
Reference Approach ***	**14 704.0**	**11 081.5**	**6 383.3**	**162.8**	**32 331.6**	**50.1%**
Diff. due to losses and/or transformation	365.9	43.9	72.6	0.1	482.5	
Statistical differences	564.9	- 34.1	- 24.1	0.0	506.8	
Memo: international marine bunkers	*0.0*	*645.1*	-	-	*645.1*	*78.1%*
Memo: international aviation bunkers	*-*	*468.5*	-	-	*468.5*	*82.7%*

** Other includes industrial waste and non-renewable municipal waste.

*** World includes international marine bunkers and international aviation bunkers.

Key sources for CO_2 emissions from fuel combustion in 2011

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-11	Level assessment (%) ****	Cumulative total (%)
Main activity prod. elec. and heat - coal/peat	8 933.9	96.3%	19.6	19.6
Road - oil	5 097.0	55.0%	11.2	30.7
Manufacturing industries - coal/peat	3 515.0	58.3%	7.7	38.4
Main activity prod. elec. and heat - gas	2 194.0	112.9%	4.8	43.2
Other transport - oil	1 674.5	48.7%	3.7	46.9
Manufacturing industries - oil	1 496.1	10.6%	3.3	50.1
Manufacturing industries - gas	1 454.0	48.1%	3.2	53.3
Residential - gas	970.8	51.5%	2.1	55.4
Main activity prod. elec. and heat - oil	726.2	-29.4%	1.6	57.0
Memo: total CO_2 from fuel combustion	*31 342.3*	*49.3%*	*68.6*	*68.6*

**** Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from land use change and forestry.

Annex I Parties

Figure 1. CO_2 emissions by fuel

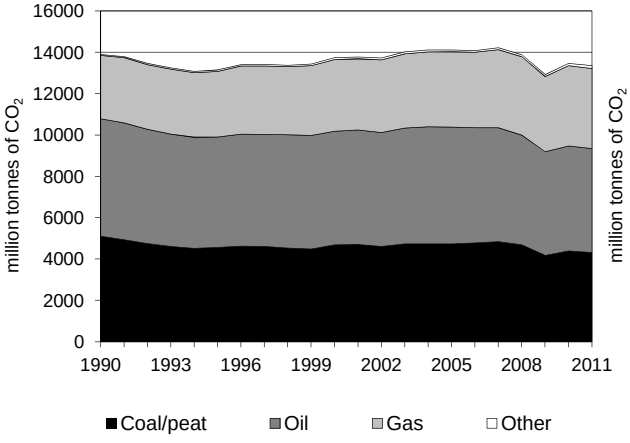


Figure 2. CO_2 emissions by sector

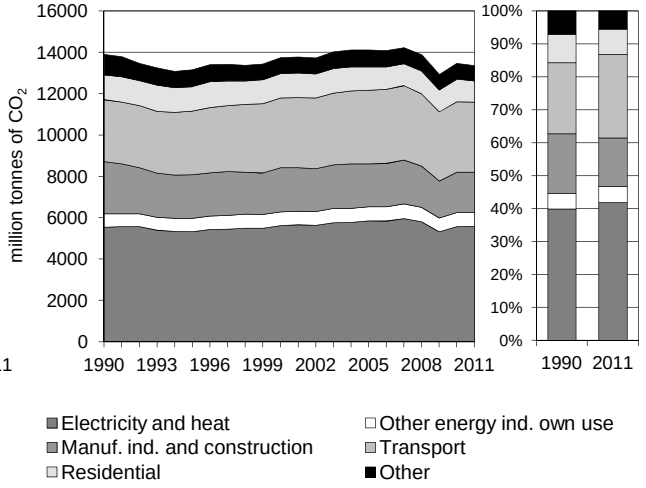


Figure 3. Reference vs Sectoral Approach

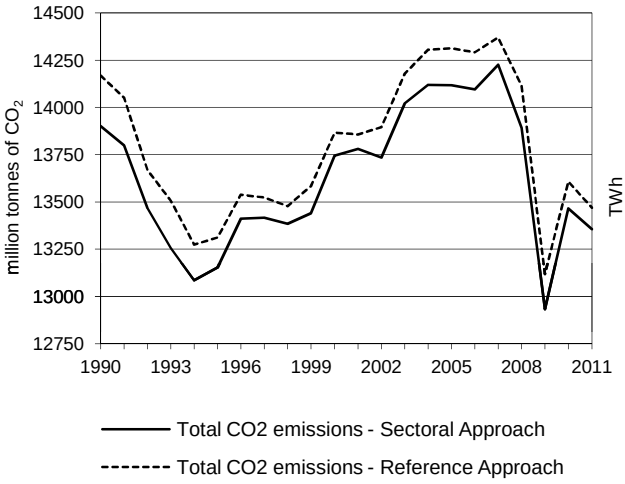


Figure 4. Electricity generation by fuel

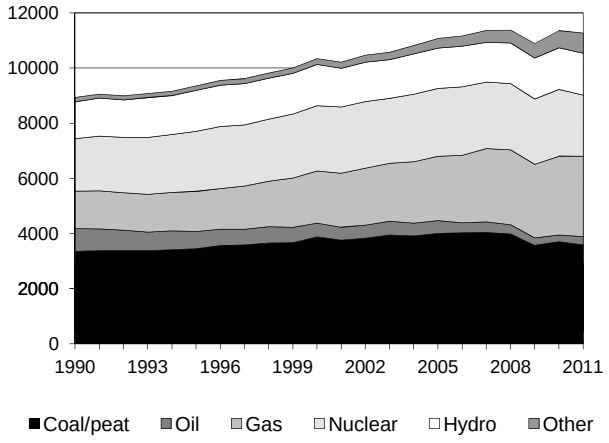


Figure 5. Changes in selected indicators *

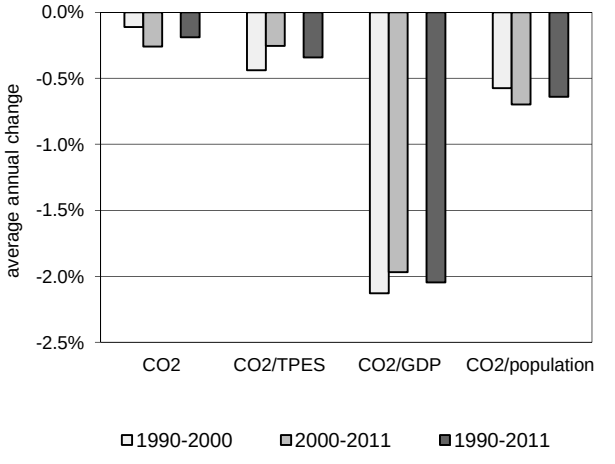
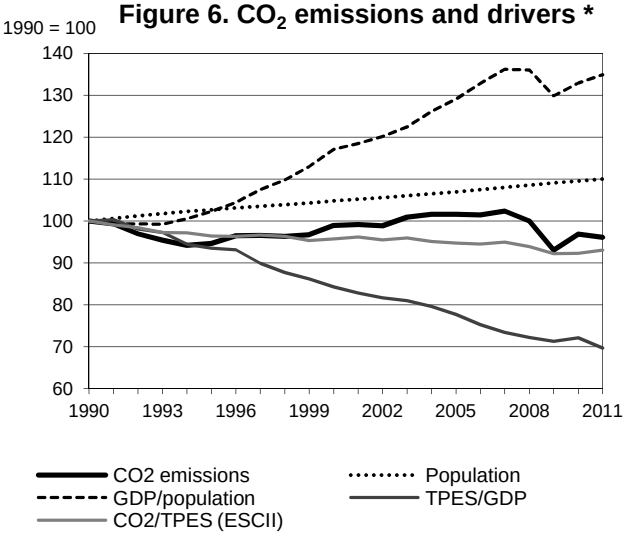


Figure 6. CO_2 emissions and drivers *



* Based on GDP in 2005 USD, using purchasing power parities.

Annex I Parties

Key indicators

	1990	1995	2000	2005	2009	2010	2011	% change 90-11
CO_2 Sectoral Approach ($MtCO_2$)	13 900.6	13 152.4	13 744.5	14 117.5	12 932.6	13 465.9	13 354.9	-3.9%
TPES (PJ)	233 718	229 470	241 486	250 691	235 796	245 328	241 338	3.3%
GDP (billion 2005 USD)	24 965.9	26 926.6	31 427.1	35 006.6	35 653.1	36 625.7	37 229.7	49.1%
GDP PPP (billion 2005 USD)	25 364.9	26 638.3	31 100.5	35 011.7	35 904.9	36 915.1	37 604.3	48.3%
Population (millions)	1 175.8	1 207.3	1 231.6	1 257.5	1 281.9	1 287.8	1 292.7	9.9%
CO_2 / TPES (tCO_2 per TJ)	59.5	57.3	56.9	56.3	54.8	54.9	55.3	-7.0%
CO_2 / GDP ($kgCO_2$ per 2005 USD)	0.56	0.49	0.44	0.40	0.36	0.37	0.36	-35.6%
CO_2 / GDP PPP ($kgCO_2$ per 2005 USD)	0.55	0.49	0.44	0.40	0.36	0.36	0.36	-35.2%
CO_2 / population (tCO_2 per capita)	11.82	10.89	11.16	11.23	10.09	10.46	10.33	-12.6%
CO_2 emissions and drivers - Kaya decomposition (1990=100) *								
CO_2 emissions	100	95	99	102	93	97	96	-3.9%
Population	100	103	105	107	109	110	110	9.9%
GDP per population (GDP per capita)	100	102	117	129	130	133	135	34.8%
Energy intensity (TPES/GDP)	100	93	84	78	71	72	70	-30.3%
Carbon intensity: ESCII (CO_2/TPES)	100	96	96	95	92	92	93	-7.0%

* Please see Chapter 3 for methodological notes. Based on GDP in 2005 USD, using purchasing power parities.

2011 CO_2 emissions by sector

million tonnes of CO_2	Coal/peat	Oil	Natural gas	Other **	Total	% change 90-11
Sectoral Approach	**4 315.2**	**5 030.8**	**3 882.3**	**126.6**	**13 354.9**	**-3.9%**
Main activity producer elec. and heat	3 364.5	173.1	1 317.7	43.7	4 899.0	2.5%
Unallocated autoproducers	240.4	76.5	331.3	42.3	690.5	-10.1%
Other energy industry own use	71.9	354.5	236.5	0.7	663.6	1.9%
Manufacturing industries and construction	534.6	596.9	788.8	36.7	1 956.9	-22.5%
Transport	0.7	3 251.2	134.7	-	3 386.6	13.3%
of which: road	*-*	*2 907.1*	*5.2*	*-*	*2 912.3*	19.6%
Other	103.1	578.7	1 073.3	3.2	1 758.3	-19.7%
of which: residential	*70.9*	*242.1*	*705.3*	*0.0*	*1 018.3*	-15.1%
Reference Approach	**4 451.9**	**5 000.8**	**3 888.9**	**126.6**	**13 468.2**	**-4.9%**
Diff. due to losses and/or transformation	86.6	- 32.9	28.0	0.1	81.7	
Statistical differences	50.2	2.9	- 21.3	- 0.1	31.7	
Memo: international marine bunkers	*0.0*	*265.3*	-	-	*265.3*	*13.7%*
Memo: international aviation bunkers	-	*258.8*	-	-	*258.8*	*53.5%*

** Other includes industrial waste and non-renewable municipal waste.

Key sources for CO_2 emissions from fuel combustion in 2011

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-11	Level assessment (%) ***	Cumulative total (%)
Main activity prod. elec. and heat - coal/peat	3 364.5	0.9%	19.3	19.3
Road - oil	2 907.1	19.5%	16.7	36.1
Main activity prod. elec. and heat - gas	1 317.7	62.8%	7.6	43.6
Manufacturing industries - gas	788.8	2.7%	4.5	48.2
Residential - gas	705.3	17.6%	4.1	52.2
Manufacturing industries - oil	596.9	-26.8%	3.4	55.7
Manufacturing industries - coal/peat	534.6	-42.9%	3.1	58.7
Non-specified other - gas	368.1	27.6%	2.1	60.9
Other energy industry own use - oil	354.5	-11.0%	2.0	62.9
Memo: total CO_2 from fuel combustion	*13 354.9*	*-3.9%*	*76.8*	*76.8*

*** Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from land use change and forestry.

Annex II Parties

Figure 1. CO_2 emissions by fuel

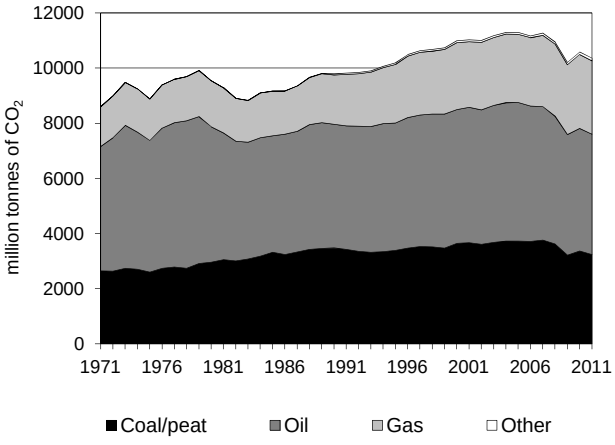


Figure 2. CO_2 emissions by sector

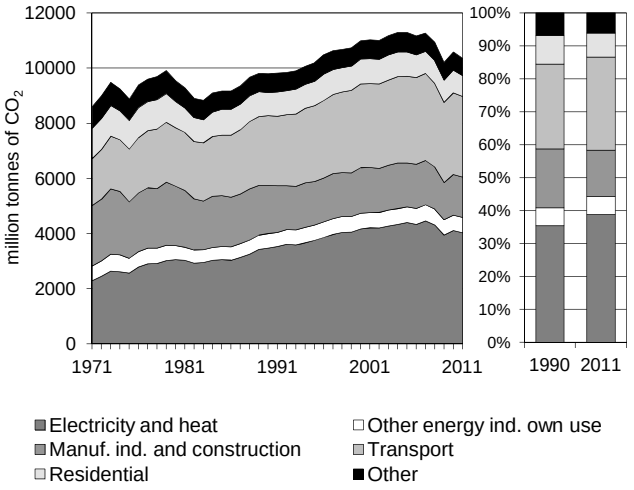


Figure 3. Reference vs Sectoral Approach

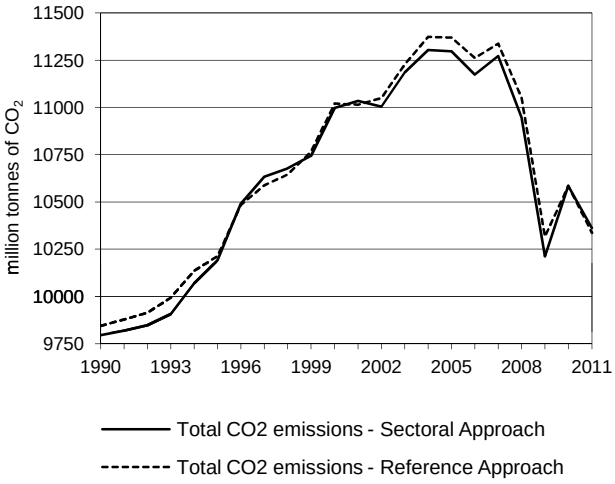


Figure 4. Electricity generation by fuel

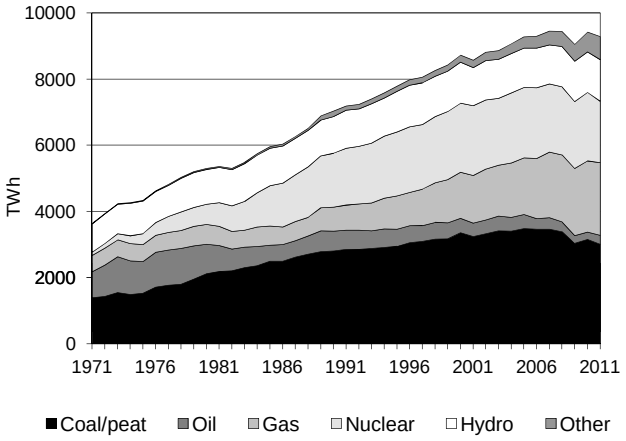


Figure 5. Changes in selected indicators *

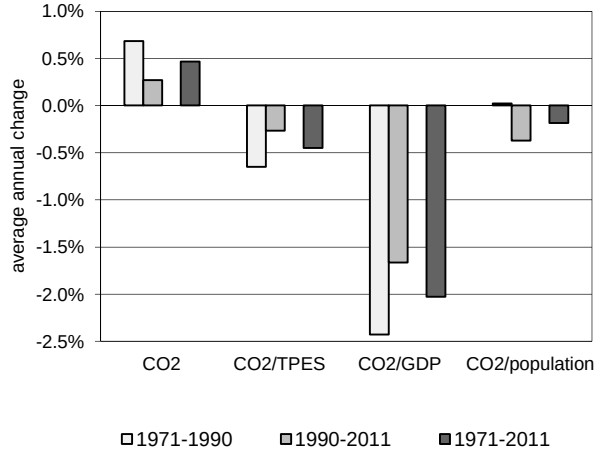
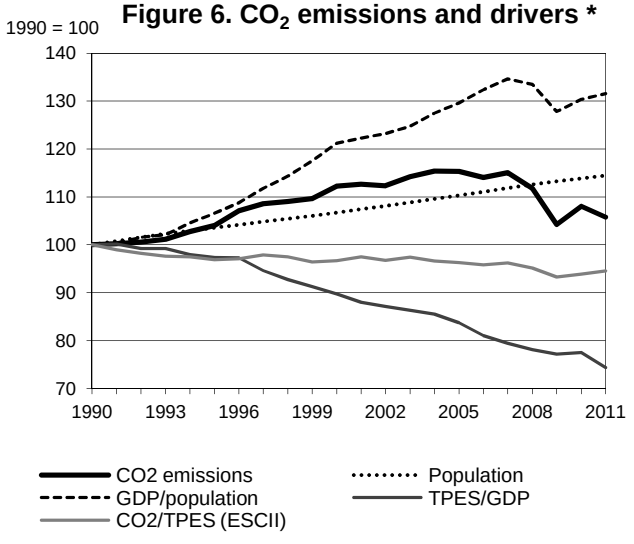


Figure 6. CO_2 emissions and drivers *



* Based on GDP in 2005 USD, using purchasing power parities.

Annex II Parties

Key indicators

	1990	1995	2000	2005	2009	2010	2011	% change 90-11
CO_2 Sectoral Approach ($MtCO_2$)	9 794.8	10 191.9	10 996.5	11 296.4	10 211.3	10 586.0	10 363.0	5.8%
TPES (PJ)	167 905	180 349	194 911	201 128	187 637	193 272	187 944	11.9%
GDP (billion 2005 USD)	23 054.9	25 407.7	29 690.2	32 780.8	33 165.6	34 022.5	34 502.8	49.7%
GDP PPP (billion 2005 USD)	21 453.2	23 673.0	27 753.9	30 682.4	31 056.6	31 845.4	32 298.0	50.6%
Population (millions)	799.3	827.7	853.1	881.8	905.5	910.3	914.7	14.4%
CO_2 / TPES (tCO_2 per TJ)	58.3	56.5	56.4	56.2	54.4	54.8	55.1	-5.5%
CO_2 / GDP ($kgCO_2$ per 2005 USD)	0.42	0.40	0.37	0.34	0.31	0.31	0.30	-29.3%
CO_2 / GDP PPP ($kgCO_2$ per 2005 USD)	0.46	0.43	0.40	0.37	0.33	0.33	0.32	-29.7%
CO_2 / population (tCO_2 per capita)	12.25	12.31	12.89	12.81	11.28	11.63	11.33	-7.5%
CO_2 emissions and drivers - Kaya decomposition (1990=100) *								
CO_2 emissions	100	104	112	115	104	108	106	5.8%
Population	100	104	107	110	113	114	114	14.4%
GDP per population (GDP per capita)	100	107	121	130	128	130	132	31.6%
Energy intensity (TPES/GDP)	100	97	90	84	77	78	74	-25.6%
Carbon intensity: ESCII (CO_2/TPES)	100	97	97	96	93	94	95	-5.5%

* Please see Chapter 3 for methodological notes. Based on GDP in 2005 USD, using purchasing power parities.

2011 CO_2 emissions by sector

million tonnes of CO_2	Coal/peat	Oil	Natural gas	Other **	Total	% change 90-11
Sectoral Approach	**3 240.4**	**4 363.2**	**2 657.9**	**101.5**	**10 363.0**	**5.8%**
Main activity producer elec. and heat	2 714.4	141.9	843.4	42.9	3 742.6	17.7%
Unallocated autoproducers	107.3	43.5	110.3	25.5	286.6	-2.1%
Other energy industry own use	51.8	299.6	205.8	-	557.2	5.2%
Manufacturing industries and construction	344.3	510.1	580.0	30.6	1 465.0	-16.2%
Transport	0.5	2 873.3	50.3	-	2 924.1	15.8%
of which: road	*-*	*2 574.1*	*4.6*	*-*	*2 578.7*	20.9%
Other	22.2	494.8	868.0	2.5	1 387.5	-8.7%
of which: residential	*11.3*	*217.6*	*529.7*	*0.0*	*758.6*	-10.0%
Reference Approach	**3 297.9**	**4 293.8**	**2 643.2**	**101.5**	**10 336.4**	**5.0%**
Diff. due to losses and/or transformation	37.4	- 67.1	7.5	0.0	- 22.1	
Statistical differences	20.1	- 2.3	- 22.2	- 0.1	- 4.4	
Memo: international marine bunkers	*0.0*	*248.8*	*-*	*-*	*248.8*	*11.5%*
Memo: international aviation bunkers	*-*	*230.6*	*-*	*-*	*230.6*	*75.7%*

** Other includes industrial waste and non-renewable municipal waste.

Key sources for CO_2 emissions from fuel combustion in 2011

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-11	Level assessment (%) ***	Cumulative total (%)
Main activity prod. elec. and heat - coal/peat	2 714.4	7.7%	20.9	20.9
Road - oil	2 574.1	20.7%	19.8	40.7
Main activity prod. elec. and heat - gas	843.4	179.0%	6.5	47.1
Manufacturing industries - gas	580.0	10.8%	4.5	51.6
Residential - gas	529.7	18.9%	4.1	55.7
Manufacturing industries - oil	510.1	-15.3%	3.9	59.6
Manufacturing industries - coal/peat	344.3	-44.4%	2.6	62.2
Non-specified other - gas	338.3	36.2%	2.6	64.8
Other energy industry own use - oil	299.6	-9.2%	2.3	67.2
Memo: total CO_2 from fuel combustion	*10 363.0*	*5.8%*	*79.7*	*79.7*

*** Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from land use change and forestry.

Economies in Transition

Figure 1. CO_2 emissions by fuel

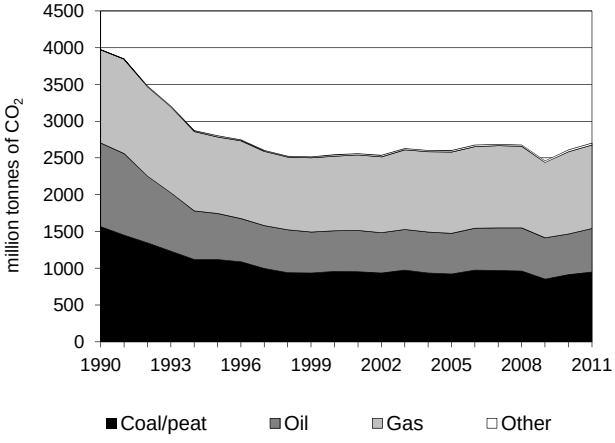


Figure 2. CO_2 emissions by sector

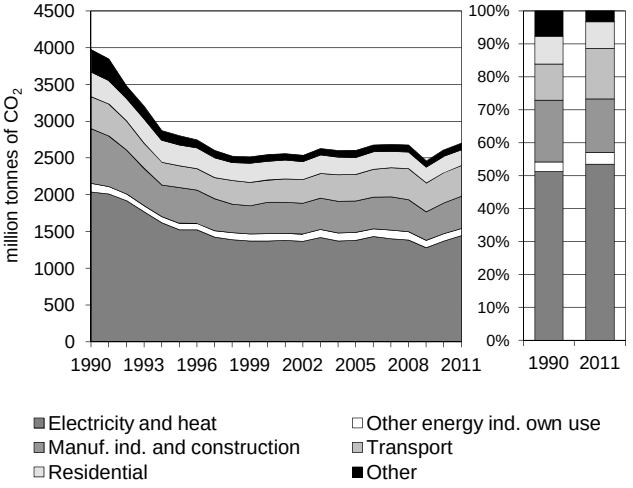


Figure 3. Reference vs Sectoral Approach

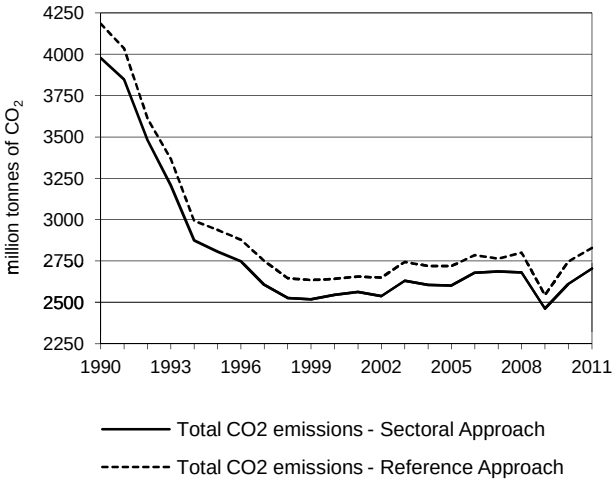


Figure 4. Electricity generation by fuel

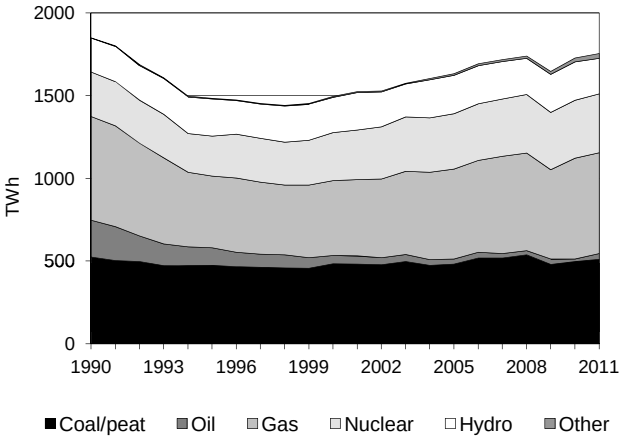


Figure 5. Changes in selected indicators *

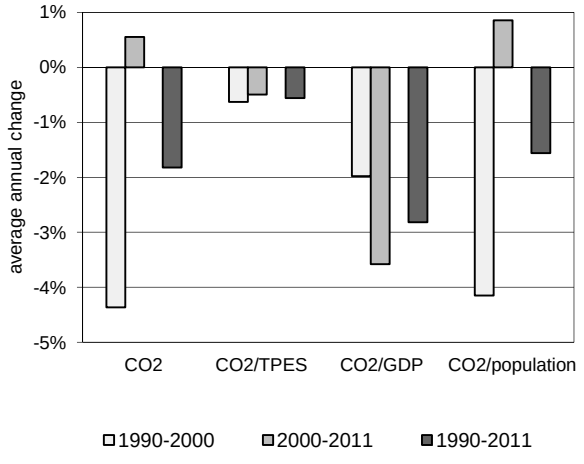
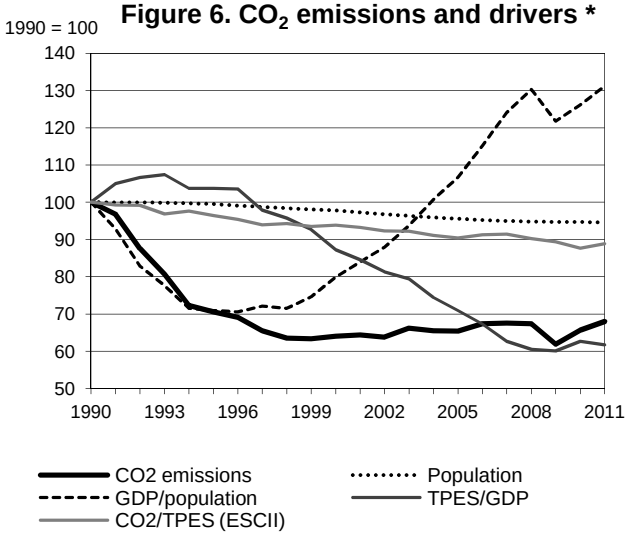


Figure 6. CO_2 emissions and drivers *



* Based on GDP in 2005 USD, using purchasing power parities.

Economies in Transition

Key indicators

	1990	1995	2000	2005	2009	2010	2011	% change 90-11
CO_2 Sectoral Approach ($MtCO_2$)	3 976.6	2 805.5	2 545.3	2 602.0	2 462.5	2 611.6	2 703.7	-32.0%
TPES (PJ)	63 575	46 515	43 350	45 993	44 038	47 618	48 649	-23.5%
GDP (billion 2005 USD)	1 637.8	1 198.6	1 344.6	1 736.8	1 963.4	2 031.4	2 105.5	28.6%
GDP PPP (billion 2005 USD)	3 470.7	2 448.1	2 713.2	3 539.6	4 001.7	4 146.2	4 302.4	24.0%
Population (millions)	321.1	319.5	313.9	306.8	304.0	304.1	303.6	-5.4%
CO_2 / TPES (tCO_2 per TJ)	62.6	60.3	58.7	56.6	55.9	54.8	55.6	-11.1%
CO_2 / GDP ($kgCO_2$ per 2005 USD)	2.43	2.34	1.89	1.50	1.25	1.29	1.28	-47.1%
CO_2 / GDP PPP ($kgCO_2$ per 2005 USD)	1.15	1.15	0.94	0.74	0.62	0.63	0.63	-45.2%
CO_2 / population (tCO_2 per capita)	12.39	8.78	8.11	8.48	8.10	8.59	8.90	-28.1%
CO_2 emissions and drivers - Kaya decomposition (1990=100) *								
CO_2 emissions	100	71	64	65	62	66	68	-32.0%
Population	100	99	98	96	95	95	95	-5.4%
GDP per population (GDP per capita)	100	71	80	107	122	126	131	31.1%
Energy intensity (TPES/GDP)	100	104	87	71	60	63	62	-38.3%
Carbon intensity: ESCII (CO_2/TPES)	100	96	94	90	89	88	89	-11.1%

* Please see Chapter 3 for methodological notes. Based on GDP in 2005 USD, using purchasing power parities.

2011 CO_2 emissions by sector

million tonnes of CO_2	Coal/peat	Oil	Natural gas	Other **	Total	% change 90-11
Sectoral Approach	**949.7**	**590.4**	**1 138.6**	**24.9**	**2 703.7**	**-32.0%**
Main activity producer elec. and heat	587.9	29.0	436.8	0.8	1 054.6	-32.8%
Unallocated autoproducers	126.5	32.5	216.8	16.7	392.5	-16.4%
Other energy industry own use	16.3	51.8	27.7	0.7	96.5	-16.8%
Manufacturing industries and construction	162.5	79.5	189.9	6.0	438.0	-41.1%
Transport	0.1	332.1	84.0	-	416.2	-4.7%
of which: road	*-*	*293.1*	*0.5*	*-*	*293.5*	6.1%
Other	56.2	65.4	183.5	0.7	305.9	-52.3%
of which: residential	*36.4*	*21.0*	*158.6*	*-*	*216.1*	-35.5%
Reference Approach	**1 018.7**	**626.9**	**1 159.9**	**24.9**	**2 830.4**	**-32.3%**
Diff. due to losses and/or transformation	47.4	34.8	20.5	0.0	102.7	
Statistical differences	21.5	1.7	0.8	- 0.0	24.0	
Memo: international marine bunkers	*-*	*12.1*	*-*	*-*	*12.1*	*23.9%*
Memo: international aviation bunkers	*-*	*24.5*	*-*	*-*	*24.5*	*-33.1%*

** Other includes industrial waste and non-renewable municipal waste.

Key sources for CO_2 emissions from fuel combustion in 2011

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-11	Level assessment (%) ***	Cumulative total (%)
Main activity prod. elec. and heat - coal/peat	587.9	-25.8%	14.8	14.8
Main activity prod. elec. and heat - gas	436.8	-13.0%	11.0	25.8
Road - oil	293.1	7.0%	7.4	33.2
Unallocated autoproducers - gas	216.8	-1.8%	5.5	38.7
Manufacturing industries - gas	189.9	-21.8%	4.8	43.5
Manufacturing industries - coal/peat	162.5	-45.5%	4.1	47.6
Residential - gas	158.6	2.9%	4.0	51.6
Unallocated autoproducers - coal/peat	126.5	-22.9%	3.2	54.8
Other transport - gas	83.5	8.1%	2.1	56.9
Memo: total CO_2 from fuel combustion	*2 703.7*	*-32.0%*	*68.2*	*68.2*

*** Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from land use change and forestry.

Non-Annex I Parties

Figure 1. CO_2 emissions by fuel

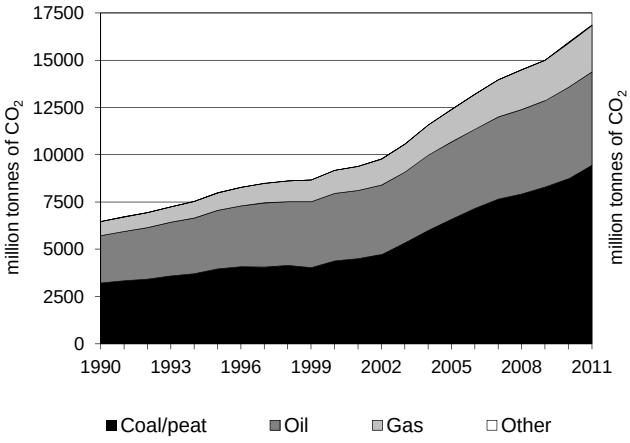


Figure 2. CO_2 emissions by sector

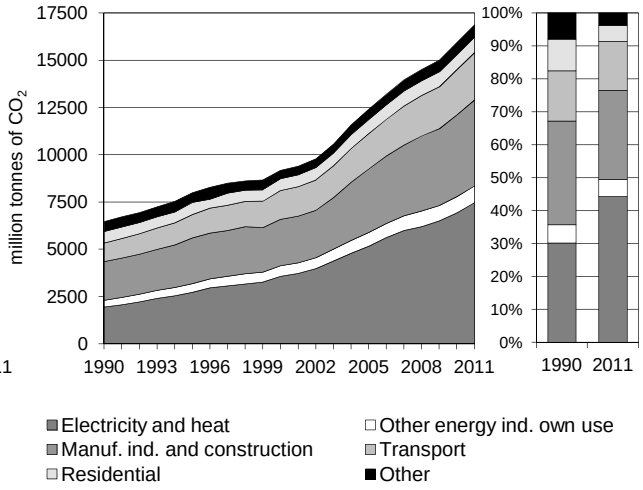


Figure 3. Reference vs Sectoral Approach

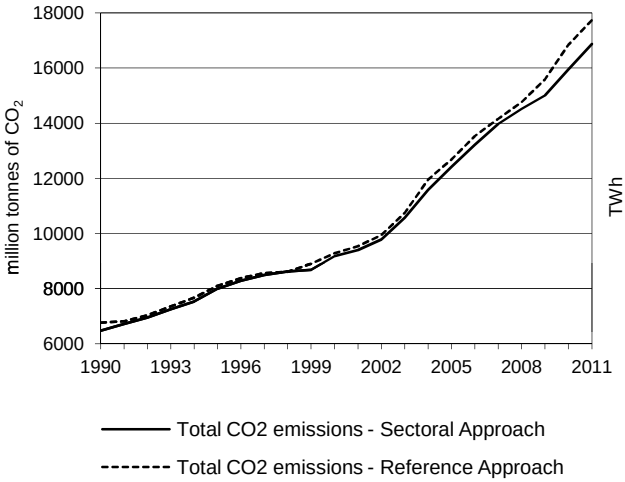


Figure 4. Electricity generation by fuel

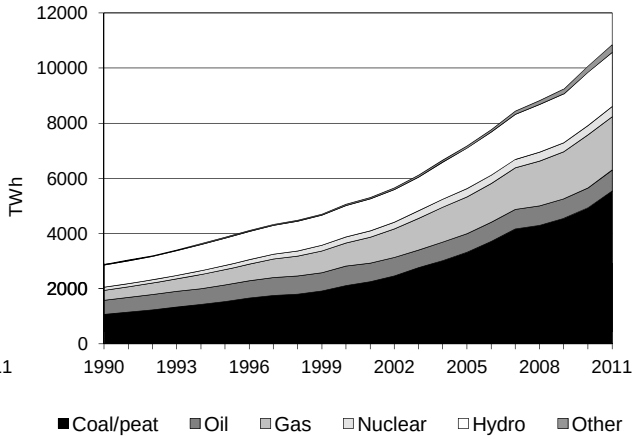


Figure 5. Changes in selected indicators *

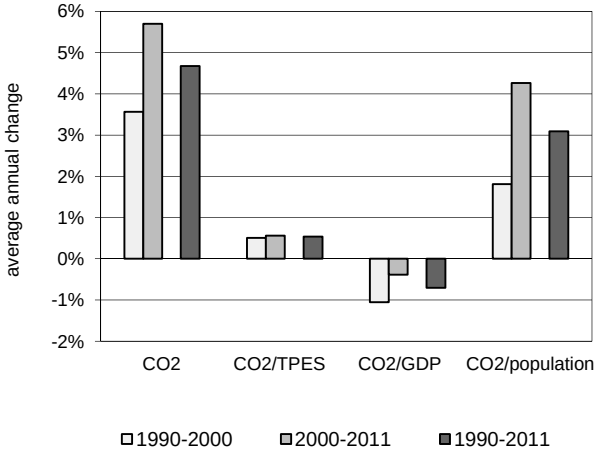
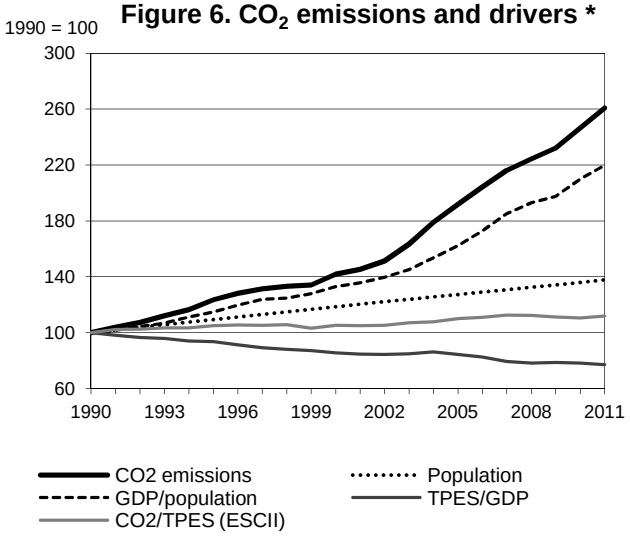


Figure 6. CO_2 emissions and drivers *



* Based on GDP in 2005 USD, using purchasing power parities.

Non-Annex I Parties

Key indicators

	1990	1995	2000	2005	2009	2010	2011	% change 90-11
CO_2 Sectoral Approach ($MtCO_2$)	6 469.4	7 989.3	9 177.7	12 410.4	15 010.1	15 947.1	16 873.7	160.8%
TPES (PJ)	125 561	147 671	169 285	218 921	261 862	280 114	292 592	133.0%
GDP (billion 2005 USD)	5 283.9	6 624.0	8 280.9	10 667.6	13 426.9	14 426.4	15 256.1	188.7%
GDP PPP (billion 2005 USD)	10 808.5	13 572.2	17 050.2	22 331.4	28 660.9	30 864.1	32 708.7	202.6%
Population (millions)	4 113.1	4 499.3	4 876.6	5 233.8	5 519.7	5 592.3	5 665.3	37.7%
CO_2 / TPES (tCO_2 per TJ)	51.5	54.1	54.2	56.7	57.3	56.9	57.7	11.9%
CO_2 / GDP ($kgCO_2$ per 2005 USD)	1.22	1.21	1.11	1.16	1.12	1.11	1.11	-9.7%
CO_2 / GDP PPP ($kgCO_2$ per 2005 USD)	0.60	0.59	0.54	0.56	0.52	0.52	0.52	-13.8%
CO_2 / population (tCO_2 per capita)	1.57	1.78	1.88	2.37	2.72	2.85	2.98	89.4%
CO_2 emissions and drivers - Kaya decomposition (1990=100) *								
CO_2 emissions	100	123	142	192	232	247	261	160.8%
Population	100	109	119	127	134	136	138	37.7%
GDP per population (GDP per capita)	100	115	133	162	198	210	220	119.7%
Energy intensity (TPES/GDP)	100	94	85	84	79	78	77	-23.0%
Carbon intensity: ESCII (CO_2/TPES)	100	105	105	110	111	110	112	11.9%

* Please see Chapter 3 for methodological notes. Based on GDP in 2005 USD, using purchasing power parities.

2011 CO_2 emissions by sector

million tonnes of CO_2	Coal/peat	Oil	Natural gas	Other **	Total	% change 90-11
Sectoral Approach	**9 457.9**	**4 927.2**	**2 452.5**	**36.1**	**16 873.7**	**160.8%**
Main activity producer elec. and heat	5 569.4	553.1	876.3	1.0	6 999.9	281.0%
Unallocated autoproducers	264.5	88.9	97.8	26.1	477.4	301.5%
Other energy industry own use	226.1	274.4	378.8	-	879.3	147.0%
Manufacturing industries and construction	2 980.4	899.2	665.2	6.9	4 551.7	123.7%
Transport	12.6	2 406.8	81.5	-	2 500.9	153.1%
of which: road	*-*	*2 189.9*	*69.8*	*-*	*2 259.7*	163.6%
Other	405.0	704.8	352.8	2.0	1 464.6	29.1%
of which: residential	*231.0*	*336.8*	*265.5*	*-*	*833.3*	34.9%
Reference Approach	**10 252.0**	**4 967.1**	**2 494.4**	**36.2**	**17 749.7**	**162.6%**
Diff. due to losses and/or transformation	279.4	76.9	44.6	-	400.9	
Statistical differences	514.7	- 37.0	- 2.7	0.1	475.1	
Memo: international marine bunkers	*-*	*379.9*	*-*	*-*	*379.9*	*194.7%*
Memo: international aviation bunkers	*-*	*209.7*	*-*	*-*	*209.7*	*138.8%*

** Other includes industrial waste and non-renewable municipal waste.

Key sources for CO_2 emissions from fuel combustion in 2011

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-11	Level assessment (%) ***	Cumulative total (%)
Main activity prod. elec. and heat - coal/peat	5 569.4	358.1%	20.5	20.5
Manufacturing industries - coal/peat	2 980.4	132.3%	11.0	31.4
Road - oil	2 189.9	155.6%	8.1	39.5
Manufacturing industries - oil	899.2	67.5%	3.3	42.8
Main activity prod. elec. and heat - gas	876.3	295.9%	3.2	46.0
Manufacturing industries - gas	665.2	211.7%	2.4	48.5
Main activity prod. elec. and heat - oil	553.1	38.3%	2.0	50.5
Other energy industry own use - gas	378.8	191.6%	1.4	51.9
Non-specified other - oil	368.0	47.8%	1.4	53.3
Memo: total CO_2 from fuel combustion	*16 873.7*	*160.8%*	*62.1*	*62.1*

*** Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from land use change and forestry.

Annex I Kyoto Parties

Figure 1. CO_2 emissions by fuel

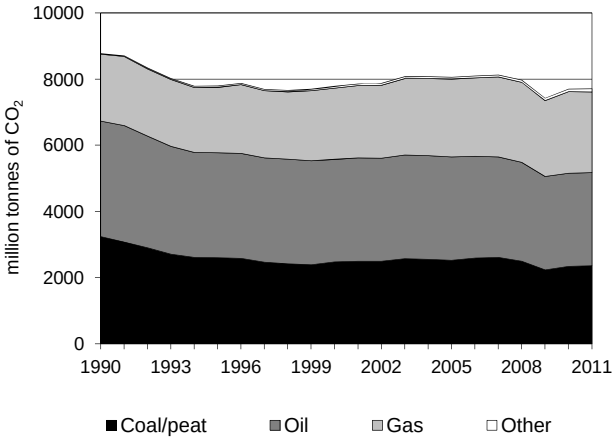


Figure 2. CO_2 emissions by sector

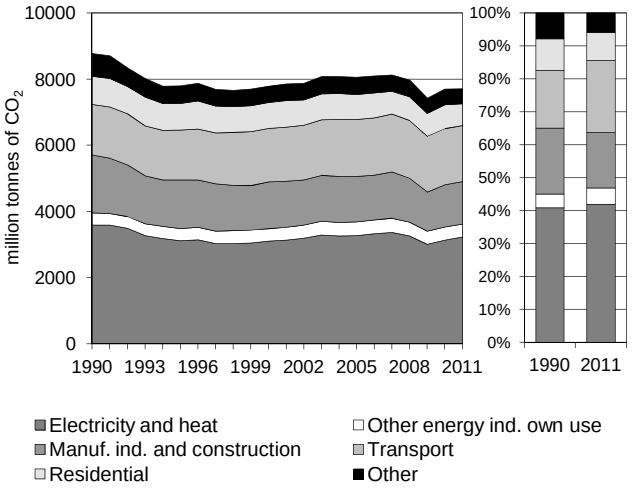


Figure 3. Reference vs Sectoral Approach

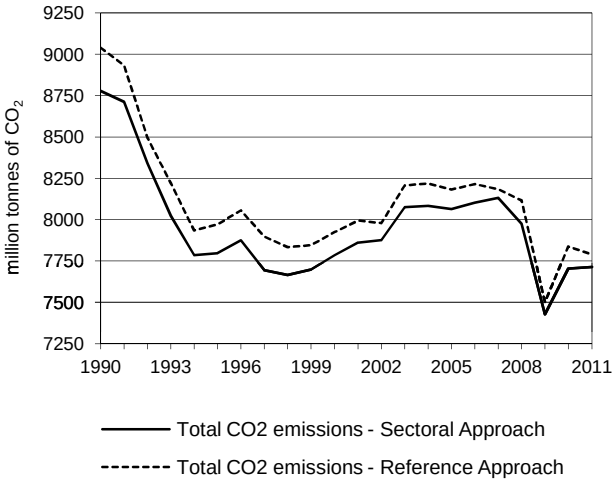


Figure 4. Electricity generation by fuel

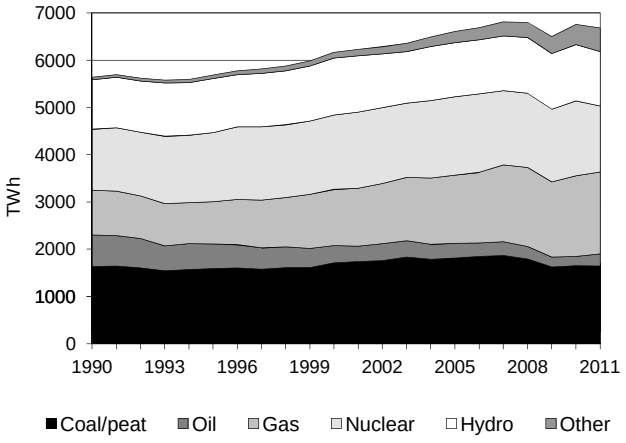


Figure 5. Changes in selected indicators *

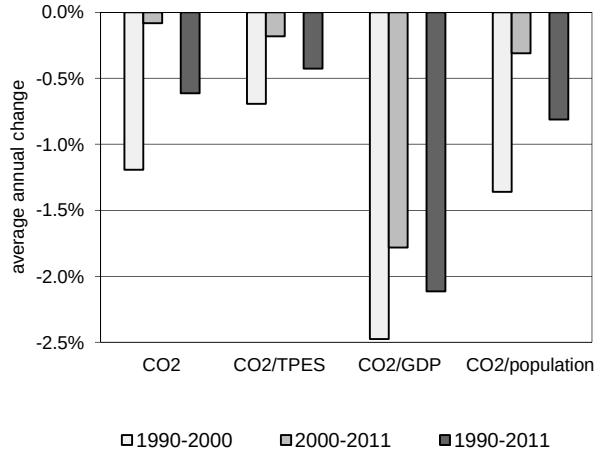
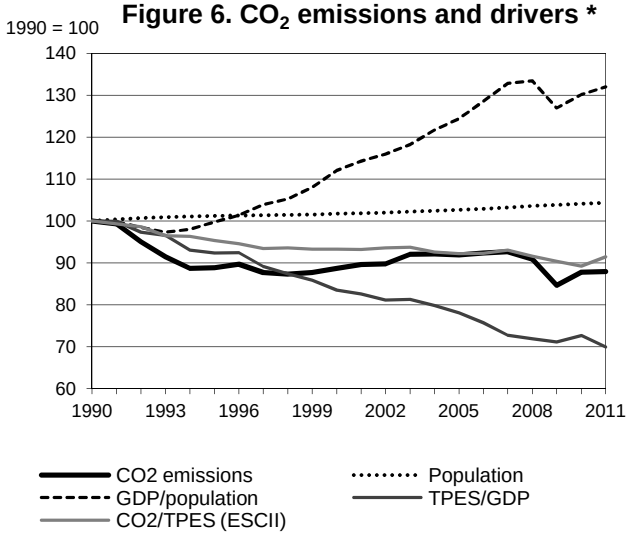


Figure 6. CO_2 emissions and drivers *



* Based on GDP in 2005 USD, using purchasing power parities.

Annex I Kyoto Parties

Key indicators

	1990	1995	2000	2005	2009	2010	2011	% change 90-11
CO_2 Sectoral Approach ($MtCO_2$)	8 778.3	7 797.3	7 784.9	8 064.7	7 426.8	7 703.1	7 713.5	-12.1%
TPES (PJ)	149 398	139 277	142 047	148 910	139 934	146 973	143 617	-3.9%
GDP (billion 2005 USD)	16 706.5	17 570.9	19 855.7	21 923.1	22 399.1	23 019.0	23 337.1	39.7%
GDP PPP (billion 2005 USD)	16 895.7	17 058.3	19 250.9	21 574.2	22 258.2	22 880.9	23 249.5	37.6%
Population (millions)	860.0	870.4	874.6	882.8	892.7	895.1	896.8	4.3%
CO_2 / TPES (tCO_2 per TJ)	58.8	56.0	54.8	54.2	53.1	52.4	53.7	-8.6%
CO_2 / GDP ($kgCO_2$ per 2005 USD)	0.53	0.44	0.39	0.37	0.33	0.33	0.33	-37.1%
CO_2 / GDP PPP ($kgCO_2$ per 2005 USD)	0.52	0.46	0.40	0.37	0.33	0.34	0.33	-36.1%
CO_2 / population (tCO_2 per capita)	10.21	8.96	8.90	9.14	8.32	8.61	8.60	-15.7%
CO_2 emissions and drivers - Kaya decomposition (1990=100) *								
CO_2 emissions	100	89	89	92	85	88	88	-12.1%
Population	100	101	102	103	104	104	104	4.3%
GDP per population (GDP per capita)	100	100	112	124	127	130	132	32.0%
Energy intensity (TPES/GDP)	100	92	83	78	71	73	70	-30.1%
Carbon intensity: ESCII (CO_2/TPES)	100	95	93	92	90	89	91	-8.6%

* Please see Chapter 3 for methodological notes. Based on GDP in 2005 USD, using purchasing power parities.

2011 CO_2 emissions by sector

million tonnes of CO_2	Coal/peat	Oil	Natural gas	Other **	Total	% change 90-11
Sectoral Approach	**2 357.6**	**2 818.2**	**2 442.9**	**94.7**	**7 713.5**	**-12.1%**
Main activity producer elec. and heat	1 606.1	145.4	846.8	28.2	2 626.5	-10.5%
Unallocated autoproducers	213.9	70.2	288.6	35.0	607.7	-7.1%
Other energy industry own use	58.3	207.3	118.5	0.7	384.8	4.8%
Manufacturing industries and construction	406.4	385.5	470.2	28.4	1 290.5	-26.5%
Transport	0.6	1 595.8	94.8	-	1 691.2	10.5%
of which: road	*-*	*1 453.7*	*3.3*	*-*	*1 457.0*	15.4%
Other	72.3	413.9	624.0	2.5	1 112.8	-27.6%
of which: residential	*46.9*	*180.9*	*429.8*	*0.0*	*657.6*	-22.4%
Reference Approach	**2 437.6**	**2 815.8**	**2 441.7**	**94.7**	**7 789.7**	**-13.8%**
Diff. due to losses and/or transformation	68.5	24.7	30.4	0.1	123.5	
Statistical differences	11.5	- 27.1	- 31.5	- 0.1	- 47.3	
Memo: international marine bunkers	*0.0*	*177.5*	*-*	*-*	*177.5*	*24.8%*
Memo: international aviation bunkers	*-*	*190.3*	*-*	*-*	*190.3*	*47.5%*

** Other includes industrial waste and non-renewable municipal waste.

Key sources for CO_2 emissions from fuel combustion in 2011

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-11	Level assessment (%) ***	Cumulative total (%)
Main activity prod. elec. and heat - coal/peat	1 606.1	-9.8%	15.5	15.5
Road - oil	1 453.7	15.4%	14.1	29.6
Main activity prod. elec. and heat - gas	846.8	33.3%	8.2	37.8
Manufacturing industries - gas	470.2	-2.6%	4.5	42.3
Residential - gas	429.8	20.0%	4.2	46.5
Manufacturing industries - coal/peat	406.4	-42.7%	3.9	50.4
Manufacturing industries - oil	385.5	-30.8%	3.7	54.2
Unallocated autoproducers - gas	288.6	20.1%	2.8	57.0
Non-specified other - oil	233.1	-34.7%	2.3	59.2
Memo: total CO_2 from fuel combustion	*7 713.5*	*-12.1%*	*74.6*	*74.6*

*** Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from land use change and forestry.

Energy Data Manager / Statistician

Possible Staff Vacancies

International Energy Agency, Paris, France

The IEA

The International Energy Agency, based in Paris, acts as energy policy advisor to 28 member countries in their effort to ensure reliable, affordable and clean energy for their citizens. Founded during the oil crisis of 1973-74, the IEA's initial role was to co-ordinate measures in times of oil supply emergencies. As energy markets have changed, so has the IEA. Its mandate has broadened to incorporate the "Three E's" of balanced energy policy making: energy security, economic development and environmental protection. Current work focuses on climate change policies, market reform, energy technology collaboration and outreach to the rest of the world, especially major consumers and producers of energy like China, India, Russia and the OPEC countries.

The Energy Data Centre, with a staff of around 30 people, provides a dynamic environment for young people just finishing their studies or with one to two years of work experience.

Job description

The data managers/statisticians compile, verify and disseminate information on all aspects of energy including production, transformation and consumption of all fuels, renewables, the emergency reporting system, energy efficiency indicators, CO_2 emissions, and energy prices and taxes. The data managers are responsible for receiving, reviewing and inputting data submissions from member countries and other sources into large computerised databases. They check for completeness, correct calculations, internal consistency, accuracy and consistency with definitions. Often this entails proactively investigating and helping to resolve anomalies in collaboration with national administrations of member and non-member countries. The data managers/statisticians also play a key role in helping to design and implement computer macros used in the preparation of their energy statistics publication(s).

Principal Qualifications

- University degree in a topic relevant to energy, computer programming or statistics. We currently have staff with degrees in Mathematics, Statistics, Information Technology, Economics, Engineering, Physics, Chemistry, Environmental Studies, Hydrology, Public Administration and Business.
- Experience in the basic use of databases and computer software. Good computer programming skills in Visual Basic.
- Ability to work accurately, pay attention to detail and work to deadlines. Ability to deal simultaneously with a wide variety of tasks and to organise work efficiently.
- Good communication skills; ability to work well in a team and in a multicultural environment, particularly in liaising with contacts in national administrations and industry.
- Very good knowledge of one of the two official languages of the Organisation (English or French). Knowledge of other languages would be an advantage.
- Some knowledge of energy industry operations and terminology would also be an advantage, but is not required.

Nationals of any OECD Member country are eligible for appointment. Basic salaries start at 3 158 Euros per month. The possibilities for advancement are good for candidates with appropriate qualifications and experience. Tentative enquiries about future vacancies are welcomed from men and women with relevant qualifications and experience. Applications in French or English, accompanied by a curriculum vitae, should be sent to:

Office of Management and Administration
International Energy Agency
9 rue de la Fédération
75739 Paris Cedex 15, France
Email: recruitment@iea.org

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Ten Annual Publications

Energy Statistics of OECD Countries, 2013 Edition

No other publication offers such in-depth statistical coverage. It is intended for anyone involved in analytical or policy work related to energy issues. It contains data on energy supply and consumption in original units for coal, oil, natural gas, biofuels/waste and products derived from these primary fuels, as well as for electricity and heat. Complete data are available for 2010 and 2011 and supply estimates are available for the most recent year (*i.e.* 2012). Historical tables summarise data on production, trade and final consumption. Each issue includes definitions of products and flows and explanatory notes on the individual country data.

Published July 2013 - Price €120

Energy Balances of OECD Countries, 2013 Edition

A companion volume to *Energy Statistics of OECD Countries*, this publication presents standardised energy balances expressed in million tonnes of oil equivalent. Energy supply and consumption data are divided by main fuel: coal, oil, natural gas, nuclear, hydro, geothermal/solar, biofuels/waste, electricity and heat. This allows for easy comparison of the contributions each fuel makes to the economy and their interrelationships through the conversion of one fuel to another. All of this is essential for estimating total energy supply, forecasting, energy conservation, and analysing the potential for interfuel substitution. Complete data are available for 2010 and 2011 and supply estimates are available for the most recent year (*i.e.* 2012). Historical tables summarise key energy and economic indicators as well as data on production, trade and final consumption. Each issue includes definitions of products and flows and explanatory notes on the individual country data as well as conversion factors from original units to tonnes of oil equivalent.

Published July 2013 - Price €120

Energy Statistics of Non-OECD Countries, 2013 Edition

This publication offers the same in-depth statistical coverage as the homonymous publication covering OECD countries. It includes data in original units for more than 100 individual countries and nine main regions. The consistency of OECD and non-OECD countries' detailed statistics provides an accurate picture of the global energy situation for 2010 and 2011. For a description of the content, please see *Energy Statistics of OECD Countries* above.

Published August 2013 - Price €120

Energy Balances of Non-OECD Countries, 2013 Edition

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This reference document provides essential statistics on electricity and heat for each OECD member country by bringing together information on production, installed capacity, input energy mix to electricity and heat production, input fuel prices, consumption, end-user electricity prices and electricity trades.

Published August 2013 - Price €150

Coal Information 2013

This well-established publication provides detailed information on past and current evolution of the world coal market. It presents country-specific statistics for OECD member countries and selected non-OECD countries on coal production, demand, trade and prices. This publication represents a key reference tool for all those involved in the coal supply or consumption stream, as well as institutions and governments involved in market and policy analysis of the world coal market.

Published August 2013 - Price €165

Natural Gas Information 2013

A detailed reference work on gas supply and demand, covering not only OECD countries but also the rest of the world. Contains essential information on LNG and pipeline trade, gas reserves, storage capacity and prices. The main part of the book, however, concentrates on OECD countries, showing a detailed gas supply and demand balance for each individual country and for the three OECD regions, as well as a breakdown of gas consumption by end-user. Import and export data are reported by source and destination.

Published August 2013 - Price €165

Oil Information 2013

A comprehensive reference book on current developments in oil supply and demand. The first part of this publication contains key data on world production, trade, prices and consumption of major oil product groups, with time series back to the early 1970s. The second part gives a more detailed and comprehensive picture of oil supply, demand, trade, production and consumption by end-user for each OECD country individually and for OECD regions. Trade data are reported extensively by origin and destination.

Published August 2013 - Price €165

Renewables Information 2013

This reference document brings together in one volume essential statistics on renewables and waste energy sources. It presents a detailed and comprehensive picture of developments for renewable and waste energy sources for each of the OECD member countries, encompassing energy indicators, generating capacity, electricity and heat production from renewable and waste sources, as well as production and consumption of renewable and waste products.

Published August 2013 - Price €110

CO_2 Emissions from Fuel Combustion, 2013 Edition

In order for nations to tackle the problem of climate change, they need accurate greenhouse gas emissions data. This publication provides a basis for comparative analysis of CO_2 emissions from fossil fuel combustion, a major source of anthropogenic emissions. The data in this book are designed to assist in understanding the evolution of the emissions of CO_2 from 1971 to 2011 for more than 140 countries and regions by sector and by fuel. Emissions were calculated using IEA energy databases and the default methods and emissions factors from the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*.

Published November 2013 - Price €165

Two Quarterlies

Oil, Gas, Coal and Electricity, Quarterly Statistics

This publication provides up-to-date, detailed quarterly statistics on oil, coal, natural gas and electricity for OECD countries. Oil statistics cover production, trade, refinery intake and output, stock changes and consumption for crude oil, NGL and nine selected oil product groups. Statistics for electricity, natural gas and coal show supply and trade. Import and export data are reported by origin and destination. Moreover, oil as well as hard coal and brown coal production are reported on a worldwide basis.

Published Quarterly - Price €120, annual subscription €380

Energy Prices and Taxes

This publication responds to the needs of the energy industry and OECD governments for up-to-date information on prices and taxes in national and international energy markets. It contains crude oil import prices by crude stream, industry prices and consumer prices. The end-user prices for OECD member countries cover main petroleum products, gas, coal and electricity. Every issue includes full notes on sources and methods and a description of price mechanisms in each country. Time series availability varies with each data series.

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The service provides monthly natural gas data for OECD countries:

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- highly detailed trade data with about 50 imports origins and exports destinations;
- LNG trade detail available from January 2002.

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