IEA STATISTICS

2011 EDITION

CO_2 EMISSIONS FROM FUEL COMBUSTION

HIGHLIGHTS

International Energy Agency

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In the lead-up to the UN climate negotiations in Durban, 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:

- **estimates of CO_2 emissions by country from 1971 to 2009,**
- **selected indicators such as CO_2/GDP, CO_2/capita, CO_2/TPES and CO_2/kWh,**
- **CO_2 emissions from international marine and aviation bunkers, and other relevant information.**

The seventeenth session of the Conference of the Parties to the Climate Change Convention (COP 17), in conjunction with the seventh meeting of the Parties to the Kyoto Protocol (CMP 7), will be meeting in Durban, South Africa from 28 November to 9 December 2011. This volume of "Highlights", drawn from the full-scale study, was specially designed for delegations and observers of the meeting in Durban.

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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.

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FOREWORD

In the lead-up to the UN climate negotiations in Durban, South Africa, 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/co2highlights*.

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?

Starting with this year's edition, the countries **Chile**, **Estonia**, **Israel** and **Slovenia**, which joined the OECD in 2010, have been incorporated into the OECD regions. The regional aggregate OECD North America has been changed to **OECD Americas** and now includes Chile. OECD Pacific has been changed to **OECD Asia Oceania** and now includes Israel. **OECD Europe** now includes Estonia and Slovenia starting in 1990. Prior to 1990, data for Estonia are included in Former Soviet Union and data for Slovenia in Former Yugoslavia.

Following the inclusion of Estonia and Slovenia in OECD, the regions Former Soviet Union and Non-OECD Europe were merged and renamed **Non-OECD Europe and Eurasia**. This new regional aggregate includes data for Former Soviet Union and for Former Yugoslavia prior to 1990.

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. As a result, Malta has been included in Annex I starting with this edition.

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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 2009 for certain countries. Please see Chapter 3, "IEA emissions estimates" for further details.

Energy data on OECD member and non-member countries are collected by the Energy Statistics Division (ESD) of the IEA Secretariat, headed by 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. Karen Tréanton, with the assistance of Alex Blackburn, is responsible for the estimates of CO_2 emissions from fuel combustion. Desktop publishing support was provided by Sharon Burghgraeve.

CO_2 emission estimates from 1960 to 2009 for the Annex II countries and from 1971 to 2009 for all other countries are available on CD-ROM suitable for use on IBM-compatible personal computers. 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:

Karen Tréanton:
Telephone: (+33-1) 40-57-66-33,
E-mail: emissions@iea.org.

1. SNAPSHOT OF CO_2 EMISSIONS

Latest developments in 2009[1] (and beyond)

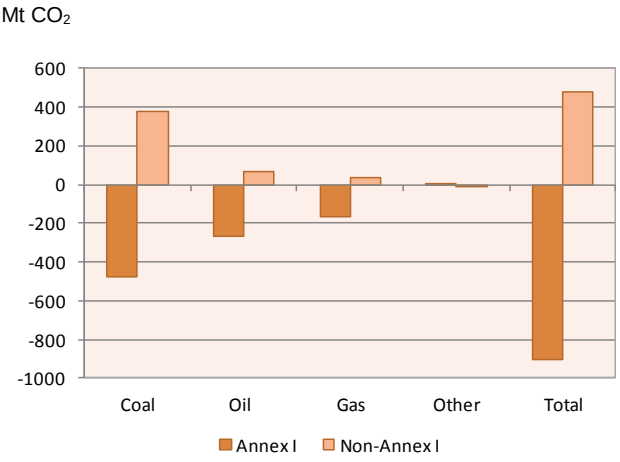
While the emissions of developing countries (non-Annex I[2]) continued to grow in 2009 (+3.3%), led by Asia and the Middle East, the emissions of developed countries (Annex I[3]) fell sharply (-6.5%), putting them at 6.4% below their 1990 collective level. It should be noted that 2009 emission levels for the group of countries participating in the Kyoto protocol were 14.7% below their 1990 level.

Global CO_2 emissions actually decreased by 0.5 Gt CO_2 between 2008 and 2009, which represented a decline of 1.5%. However, trends varied greatly: as already noted above, the emissions of Annex I countries decreased, whereas the emissions of non-Annex I countries increased. Due to these diverging trends, the share of total emissions for developing countries increased to 54% (excluding bunkers), after becoming larger than Annex I's share for the first time since 2008.

The changes were not equal across fuels, regions and sectors. The increase in emissions for developing countries was primarily due to an increase in coal demand (with oil and gas increasing more modestly). On the contrary, the reduction in emissions for developed countries was more spread out over fuels: 53% of the decrease came from coal, while 30% from oil and 18% from natural gas (Figure 1).

Early indications suggest that CO_2 emissions trends in developing countries in 2010 will continue to increase, through growing consumption of fossil fuels in some of the larger countries. The trend of emissions in developed countries will rebound in 2010 and CO_2 emissions will likely be at a similar level to 2008, before the recent financial crisis and the slowdown in economic activity.

Figure 1. Global change in CO_2 emissions (2008-2009)



Key point: CO_2 emissions in Annex I countries decreased by 6.5% in 2009, whereas emissions in developing countries rose by over 3%.

In the medium term, Annex I CO_2 emissions are expected to rebound when economic conditions pick up. In its New Policies Scenario, the *World Energy Outlook*

1. Energy consumption in 2009 was affected by the global financial crisis and some of the CO_2 emission trends seen may be deceptive.

2. In this publication, developing countries refers to non-Annex I Parties to the UNFCCC.

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, Lichtenstein, 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 EIT and Annex II, see Geographical Coverage.

(WEO 2010)[4] projects that world CO_2 emissions from fuel combustion will continue to grow unabated, albeit at a lower rate, reaching 35.4 Gt CO_2 by 2035. This is an improvement over the Current Policies Scenario of the WEO and is in line with the worst-case scenario presented by the Intergovernmental Panel on Climate Change (IPCC)[5] in the *Fourth Assessment Report* (2007), which projects a world average temperature increase of between 2.4°C and 6.4°C by 2100.

CO_2 emissions by fuel

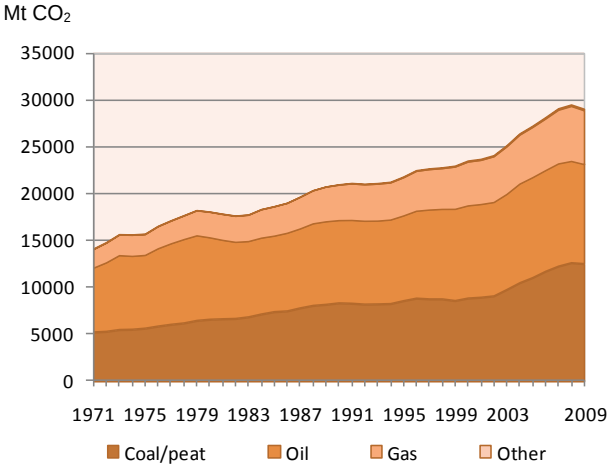
In 2009, 43% of CO_2 emissions from fuel combustion were produced from coal, 37% from oil and 20% from gas. Growth of these fuels in 2009 was quite different, reflecting varying trends that are expected to continue in the future.

Between 2008 and 2009, CO_2 emissions from the combustion of coal decreased by nearly 1% and represented 12.5 Gt CO_2. Currently, coal is filling 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 (Figure 2). Without additional measures, the *WEO 2010* projects that emissions from coal will grow to 14.4 Gt CO_2 in 2035. *Energy Technology Perspectives (ETP 2010)* shows that intensified use of coal would substantially increase CO_2 emissions unless there was a very widespread deployment of carbon capture and storage (CCS).

CO_2 emissions from oil fell in 2008, decreasing 2.2% throughout the year. The decreasing share of oil in total primary energy supply (TPES), as a result of the growth of coal and the penetration of gas, put downward pressure on CO_2 emissions from oil, which produced 10.6 Gt CO_2 in 2009. However, the *WEO 2010* projects that emissions from oil will grow to 12.6 Gt CO_2 in 2035.

Emissions of CO_2 from gas in 2009 represented 5.8 Gt CO_2, 2.2% higher than in the previous year. Again, the *WEO 2010* projects emissions from gas will continue to grow, rising to 8.4 Gt CO_2 in 2035.

Figure 2. CO_2 emissions by fuel



Key point: Combustion of coal drove the growth in global emissions through 2008; with a decline in 2009, which will most likely be reversed in 2010.

CO_2 emissions by region

Between 2008 and 2009, CO_2 emission trends varied markedly by region. As mentioned earlier, CO_2 emissions from non-Annex I countries grew by 3.3%, while those of Annex I countries decreased by 6.5%, causing the aggregate emissions of the developing countries to increase their small lead over those of the developed countries. At the regional level (Figure 3), CO_2 emissions increased significantly in Asia (5.5%), China (5%) and the Middle East (3.6%).

On the other hand, between 2008 and 2009, CO_2 emissions decreased in all other regions, ranging from 1.5% in Africa to 7.4% in the Annex II European countries.

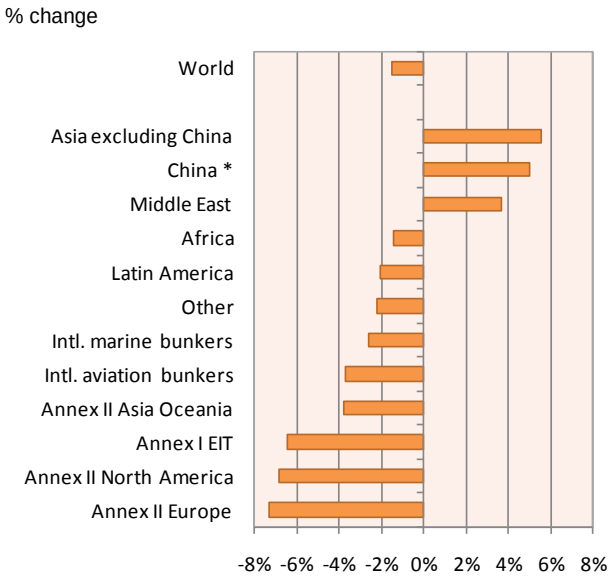
However, regional differences in contributions to global emissions conceal even larger differences among individual countries (Figure 4).

Two-thirds of global emissions for 2009 originated from just ten countries, with the shares of China and the United States far surpassing those of all others. Combined, these two countries alone produced 12.0 Gt CO_2, 41% of world CO_2 emissions.

4. Unless otherwise specified, projections from the *World Energy Outlook* refer to the New Policies Scenario from the 2010 edition. This scenario takes account of the broad policy commitments and plans that have been announced by countries around the world, including the national pledges to reduce greenhouse-gas 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 shrouding how they are to be put into effect.

5. The IPCC was created in 1988 by the World Meteorological Organisation and the United Nations Environment Programme to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts, and options for adaptation and mitigation.

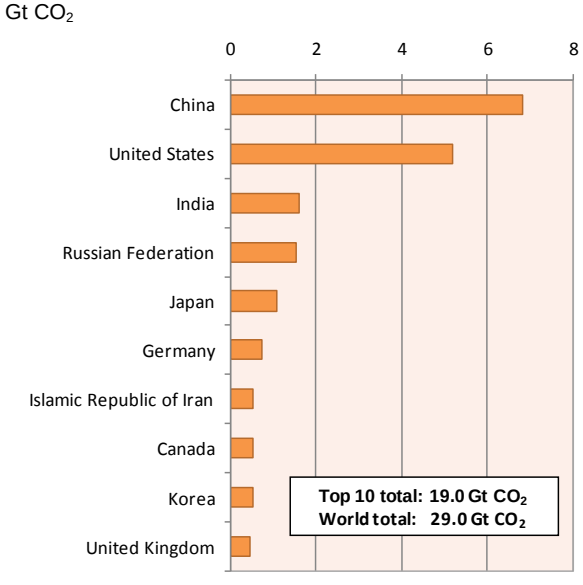
Figure 3. Change in CO_2 emissions by region (2008-2009)



* China includes Hong-Kong.

Key point: Between 2008 and 2009, CO_2 emissions increased significantly in Asia, China and the Middle East, while declining in the world as a whole.

Figure 4. Top 10 emitting countries in 2009

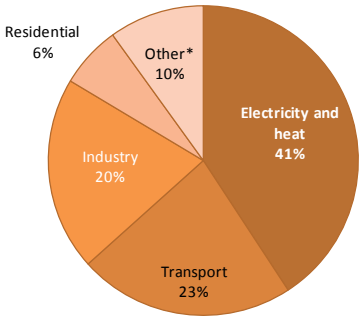


Key point: The top 10 emitting countries account for about two-thirds of the world CO_2 emissions.

CO_2 emissions by sector

Two sectors, electricity and heat generation and transport, produced nearly two-thirds of global CO_2 emissions in 2009 (Figure 5).

Figure 5. World CO_2 emissions by sector in 2009



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

Key point: The combined share of electricity and heat generation and transport represented nearly two-thirds of global emissions in 2009.

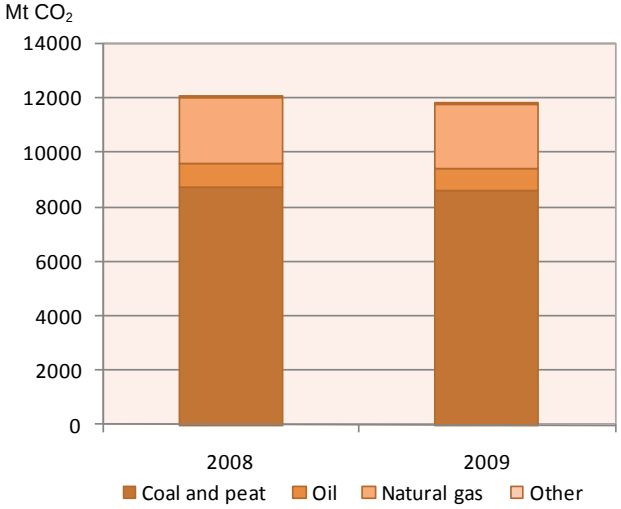
Generation of electricity and heat was by far the largest producer of CO_2 emissions and was responsible for 41% of the world CO_2 emissions in 2009. Worldwide, this sector relies heavily on coal, the most carbon-intensive of fossil fuels, amplifying its share in global emissions. Countries such as Australia, China, India, Poland and South Africa produce between 68% and 94% of their electricity and heat through the combustion of coal.

Between 2008 and 2009, total CO_2 emissions from the generation of electricity and heat decreased by 1.7% (Figure 6), while the fuel mix stayed similar. CO_2 emissions from oil decreased the most, by 2.8%, while coal and gas decreased by 1.9% and 0.7% respectively. The future development of the emissions intensity of this sector depends strongly on the fuels used to generate the electricity and on the share of non-emitting sources, such as renewables and nuclear.

By 2035, the *WEO 2010* projects that demand for electricity will be approximately three-quarters higher than current demand. This demand will be 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. The share of renewables in total electricity generation rises from 19% in 2008 to 23%, 32% and 45% in the Current Policies, New Policies and 450 scenarios, respectively.

Figure 6. CO_2 emissions from electricity and heat generation* in 2008 and 2009

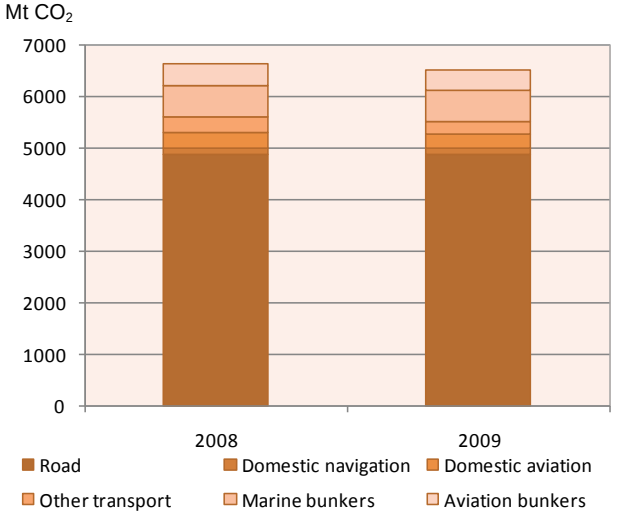


* Refers to main activity producers and autoproducers of electricity and heat.

Key point: CO_2 emissions from electricity and heat generation decreased slightly between 2008 and 2009, after remaining broadly flat the previous year.

Transport, the second-largest sector, represented 23% of global CO_2 emissions in 2009. CO_2 emissions in this sector decreased between 2008 and 2009 by 1.7% (Figure 7).

Figure 7. CO_2 emissions from transport in 2008 and 2009



Key point: CO_2 emissions from road make up the vast majority of emissions from transport.

The United States has the highest level of passenger travel per capita in the world (more than 25 000 km per person per year). Until recently, lower fuel prices in the United States contributed to the use of larger vehicles, while in Europe higher fuel prices encouraged improved fuel economy (along with the EU voluntary agreement with manufacturers). As a result, there is more than a 50% variation in the average fuel consumption of new light-duty vehicles across OECD member countries (*ETP 2010*, p. 262).

Global demand for transport appears unlikely to decrease in the foreseeable future; the *WEO 2010* projects that transport fuel demand will grow by about 40% by 2035. To limit emissions from this sector, policy makers should first and foremost consider 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 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 are also likely to help reduce oil prices below what the prices might otherwise be.

Coupling emissions with socio-economic indicators[6]

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

In 2009, the largest five emitters (China, the United States, India, the Russian Federation and Japan) comprised 45% of the total population and together produced 56% of the global CO_2 emissions

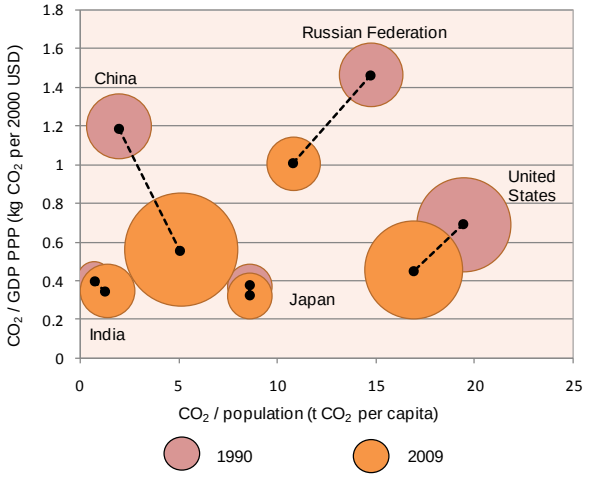
6. No single indicator can provide a complete picture of a country's CO_2 emissions performance or its relative capacity to reduce emissions. The indicators discussed here provide an indication of performance but are certainly incomplete.

and 51% of the world gross domestic product (GDP).[7] However, the relative shares of these five countries for all three variables were very diverse.

In the United States, the large share of global emissions is associated with a commensurate share of economic output (as measured by GDP), the largest in the world. Japan, with a GDP more than double that of the Russian Federation, emits 29% less than the Russian Federation.

Although climate and other variables also 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 supply chain (from fuel extraction to energy end-use).[8] Among the five largest emitters of CO_2 in 2009, China, the Russian Federation and the United States have significantly reduced their CO_2 emissions per unit of GDP between 1990 and 2009 (Figure 8). The other two countries, India and Japan, already had much lower emissions per GDP.

Figure 8. Trends in CO_2 emission intensities for the top 5 emitting countries*

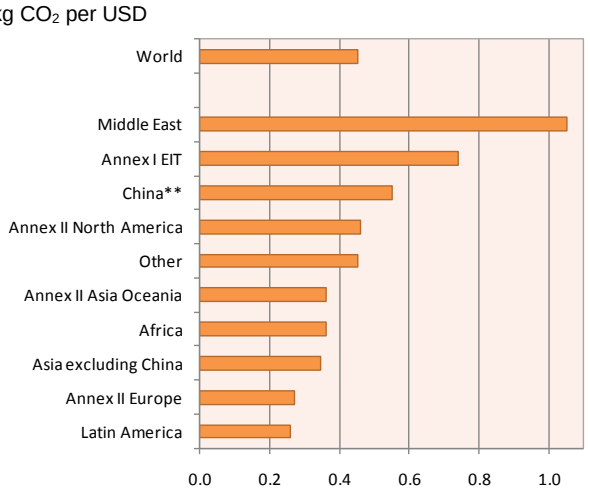


* Size of circle represents total CO_2 emissions from the country in that year.

Key point: China, the Russian Federation and the United States have all made significant improvements in the amount of CO_2 emissions emitted per unit of GDP.

Worldwide, the highest levels of emissions per GDP are observed for the oil and gas exporting region of the Middle East and for the relatively energy-intensive Economies in transition EITs[9] (Figure 9). China emissions per GDP have fallen close to the level of the United States.

Figure 9. CO_2 emissions per GDP* by major world regions in 2009



* GDP in 2000 USD, using purchasing power parities.

** China includes Hong Kong.

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

As compared to emissions per unit of GDP, the range of per capita emission levels across the world is even larger, highlighting wide divergences in the way different countries and regions use energy.

In 2009, the United States alone generated 18% of world CO_2 emissions, despite a population of less than 5% of the global total. Conversely, China contributed a comparable share of world emissions (24%) while accounting for 20% of the world population. India, with 17% of world population, contributed more than 5% of the CO_2 emissions. Among the five largest emitters, the levels of per capita emissions were very diverse, ranging from 1 t of CO_2 per capita for India and 5 t for China to 17 t for the United States.

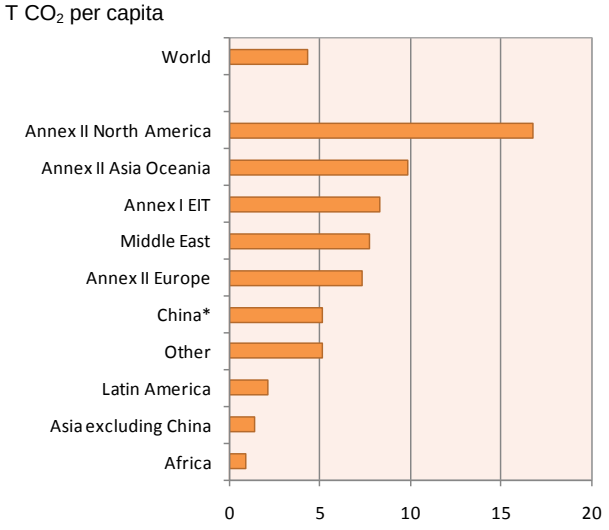
7. Throughout this analysis, GDP refers to GDP in 2000 USD, using purchasing power parities.

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

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

Industrialised countries emit far larger amounts of CO_2 per capita than the world average (Figure 10). However, some rapidly expanding economies are significantly increasing their emissions per capita. For example, between 1990 and 2009, among the top 5 emitting countries, China increased its per capita emissions by over two and a half times and India doubled them. Clearly, these two countries contributed much to the 8% increase of global per capita emissions over the period. Conversely, both the Russian Federation and the United States decreased their per capita emissions significantly, by 27% and 13% respectively, over the same period.

Figure 10. CO_2 emissions per capita by major world regions in 2009



* China includes Hong Kong.

Key point: Emissions per capita vary even more widely across world regions than GDP per capita.

Developing a low-carbon world

Until recently, industrialised countries have emitted the large majority of anthropogenic greenhouse gases. However shares of developing countries are rising very rapidly and are projected to continue to do so. 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.

Complementing various national policies and measures, the Kyoto Protocol of the UNFCCC is so far the most comprehensive binding multinational agreement to mitigate climate change. Having entered into force in February 2005, the Protocol commits industrialised countries (as a group) to curb domestic emissions by about 5% relative to 1990 by the 2008-12 first commitment period. The 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 EIT countries.

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 its jurisdiction and though most developing countries (*i.e.* non-Annex I countries) have signed the Protocol, they do not face emissions targets. The Kyoto Protocol implies action on less than one-third of global CO_2 emissions, as measured in 2008 (Table 1).

The Protocol has made carbon a tradable commodity, and has been a key driver for the development of emissions trading schemes as detailed below.

Emissions trading schemes

Emissions trading schemes (ETS) are developing or being proposed in several regions and countries around the world. Some are operational (EU ETS, New Zealand, Norway, Tokyo, Switzerland, the Regional Greenhouse Gas Initiative in the United States, Alberta, Canada and New South Wales, Australia) while others are under active development (California, Australia, Korea, China).

Given the significant uncertainties surrounding future international climate commitments, policy makers have allowed flexibility in changing design options over the longer term. Indeed, lessons from the first years of existing schemes are helping the elaboration of others (Hood, 2010).

In the European Union, the largest scheme in operation is the EU ETS, which covers emitters in the energy and industrial sectors (aviation will be added from 2012), representing about 45% of the energy-related CO_2 emissions of the region. Norway's ETS is fully linked to the EU system. 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 the climate change and energy package which implements a political commitment by the European Union to reduce its greenhouse-gas emissions by 20% by 2020 compared to 1990 levels.[10] The package also includes a target for renewables in the EU set at 20% of final energy demand by 2020.

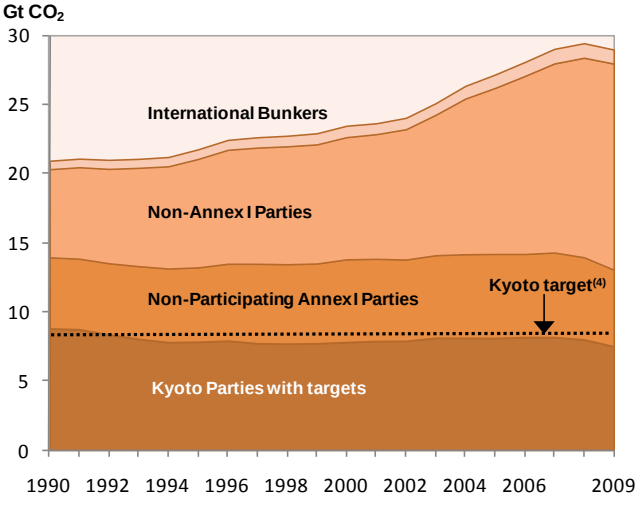
10. A 30% reduction target is proposed if other Parties were to take equally ambitious mitigation objectives.

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

Mt CO_2

	1990	2009	% change 90-09	Kyoto Target
KYOTO PARTIES WITH TARGETS	**8 785.6**	**7 497.2**	**-14.7%**	**-4.7% e**
North America	*432.3*	*520.7*	*20.4%*	
Canada	432.3	520.7	20.4%	-6%
Europe	*3 154.2*	*3 001.2*	*-4.9%*	
Austria	56.5	63.4	12.2%	-13%
Belgium	107.9	100.7	-6.7%	-7.5%
Denmark	50.4	46.8	-7.2%	-21%
Finland	54.4	55.0	1.1%	0%
France [2]	352.3	354.3	0.6%	0%
Germany	950.4	750.2	-21.1%	-21%
Greece	70.1	90.2	28.6%	+25%
Iceland	1.9	2.0	6.2%	+10%
Ireland	29.8	39.5	32.4%	+13%
Italy	397.4	389.3	-2.0%	-6.5%
Luxembourg	10.4	10.0	-4.4%	-28%
Netherlands	155.8	176.1	13.0%	-6%
Norway	28.3	37.3	31.9%	+1%
Portugal	39.3	53.1	35.3%	+27%
Spain	205.8	283.4	37.7%	+15%
Sweden	52.8	41.7	-20.9%	+4%
Switzerland	41.4	42.4	2.5%	-8%
United Kingdom	549.3	465.8	-15.2%	-12.5%
Asia Oceania	*1 347.8*	*1 519.0*	*12.7%*	
Australia	260.1	394.9	51.8%	+8%
Japan	1 064.4	1 092.9	2.7%	-6%
New Zealand	23.3	31.3	34.3%	0%
Economies in Transition	*3 851.3*	*2 456.2*	*-36.2%*	
Bulgaria	74.9	42.2	-43.7%	-8%
Croatia	21.6	19.8	-8.4%	-5%
Czech Republic	155.1	109.8	-29.2%	-8%
Estonia	36.1	14.7	-59.4%	-8%
Hungary	66.7	48.2	-27.8%	-6%
Latvia	18.6	6.8	-63.8%	-8%
Lithuania	33.1	12.4	-62.6%	-8%
Poland	342.1	286.8	-16.2%	-6%
Romania	167.1	78.4	-53.1%	-8%
Russian Federation	2 178.8	1 532.6	-29.7%	0%
Slovak Republic	56.7	33.2	-41.5%	-8%
Slovenia	12.5	15.2	21.2%	-8%
Ukraine	687.9	256.4	-62.7%	0%

	1990	2009	% change 90-09	Kyoto Target
OTHER COUNTRIES	**11 566.8**	**20 486.5**	**77.1%**	
Non-participating Annex I Parties	*5 122.4*	*5 514.6*	*7.7%*	
Belarus	124.6	60.8	-51.2%	none
Malta	2.3	2.4	7.0%	none
Turkey	126.9	256.3	102.0%	none
United States	4 868.7	5 195.0	6.7%	-7%
Other Regions	*6 333.8*	*14 815.0*	*133.9%*	none
Africa	545.4	927.5	70.1%	none
Middle East	556.8	1 509.0	171.0%	none
N-OECD Eur. & Eurasia [3]	641.9	458.4	-28.6%	none
Latin America [3]	843.3	1 374.2	63.0%	none
Asia (excl. China) [3]	1 502.3	3 668.7	144.2%	none
China	2 244.1	6 877.2	206.5%	none
INTL. MARINE BUNKERS	**357.9**	**592.2**	**65.5%**	
INTL. AVIATION BUNKERS	**255.9**	**423.4**	**65.5%**	
WORLD	**20 966.3**	**28 999.4**	**38.3%**	



(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) Emissions from Monaco are included with France.

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

(4) 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: Existing climate goals have not always led to reductions in CO_2 emissions from fuel combustion.

The EU ETS will play a key role in achieving this target, as the 2020 emissions cap for ETS installations is 21% below the actual level of 2005 emissions,[11] or 34% below if the overall target moves to a 30% reduction. There will be a significant increase in the proportion of allowances auctioned rather than allocated for free, including full auctioning (in general) for the power generation sector. Continued use of credits from the Kyoto Protocol flexible mechanisms Clean Development Mechanism (CDM) and Joint Implementation (JI) will be allowed, with both quantitative and qualitative restrictions.

In New Zealand, a comprehensive economy-wide emission trading scheme (NZ ETS) is being progressively introduced, starting with the forestry sector in January 2008. The energy, transport and industrial sectors are included from July 2010, and waste and agricultural emissions enter by 2015. There is a transition phase from 2010 to 2012 with 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 covering the electricity sector in the northeastern states) began on 1 January 2009. Small schemes are also in place in New South Wales (covering the power sector), 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.

A number of other domestic trading schemes are also under development, in both Annex I and non-Annex I countries. The Korean government has submitted 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. The Australian government also has legislation progressing to implement emissions trading, with a fixed-price transitional period starting in 2012, moving to full trading in 2015. As part of its 12th five-year plan (2011 to 2015), the Chinese government is investigating options for ETS pilots in two provinces and four cities. These pilots are to be developed by 2013, to inform the potential implementation of a nation-wide policy after 2015. California also intends to begin trading in its domestic market in 2013, and other US states and Canadian provinces may link to the California scheme thereafter under the umbrella of the Western Climate Initiative.

An important development in 2011 was the launch of 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 greenhouse gas reduction. Chile, China, Columbia, Costa Rica, Indonesia, Mexico, Thailand and Turkey received grants in the first round of funding.

Steps for future action

Held in late 2005, the first Meeting of the Parties to the Kyoto Protocol (COP/MOP1) witnessed the official opening of talks on post-2012 climate change policy. The Bali Road Map adopted at COP/MOP3 in Bali in 2007 established a two-track process, *i.e.* both for the Convention and Kyoto Protocol strands, aiming at the identification of a post-2012 global climate regime to be adopted by COP15 and COP/MOP5 in Copenhagen in 2009. In Bali, Parties organised two official fora: the Ad Hoc Working Group on the Kyoto Protocol (AWG-KP) and the Ad Hoc Working Group on Long-term Co-operative Action (AWG-LCA).

The AWG-KP focuses on the design of post-2012 commitments for Annex I Parties under the Protocol. Ideally, it would also provide some certainty to carbon-constrained investments in infrastructure and to the carbon market itself. However, the AWG has no mandate to encourage participation from non-Annex I Parties or from non-participating Annex I Parties.

By contrast, the broader AWG-LCA was designed to enable full and sustained implementation of the UN Framework Convention on Climate Change by all Parties, up to and beyond 2012, through long-term co-operative action. While the Bali Action Plan, adopted under the Convention track, did not introduce binding commitments to reduce greenhouse-gas emissions, it included the request for developing countries to contribute to the mitigation of global warming in the context of sustainable development. In addition, the plan envisaged enhanced actions on adaptation, technology development and on the provision of financial resources,

11. 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 in phase 2). If the overall target moves to a 30% reduction, the 2020 ETS cap will be reduced to 34% below 2005 levels.

as well as measures against deforestation. The Bali Action Plan introduced a focus on mitigation actions by all Parties and the provision of financial resources by developed countries that are "measurable, reportable and verifiable", now central to the establishment of a post-2012 framework for climate action.

After the unprecedented move at COP15 and COP/MOP5 in Copenhagen, where heads of states and high-level representatives negotiated the Copenhagen Accord, COP16 and COP/MOP6 in Cancún were widely seen as having put the international negotiating process back on track. 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 greenhouse-gas targets to 2020 as part of the accord, and several non-Annex I countries also listed mitigation actions, or sectoral or economy-wide greenhouse-gas targets. The Cancún meeting also set an ambitious forward work programme for issues to be considered in Durban at the end of 2011, including a peak year for global emissions, 2050 emissions targets, and options for new market-based mechanisms for emissions reduction.

The challenge of post-2012 discussions is the need to engage developing countries with approaches, possibly including the carbon market, which 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 processes seek to involve developed and developing nations in common measures to address climate change. Other international fora gathering both developed and developing countries have emerged to further mitigation efforts in specific areas, such as the Clean Energy Ministerial (CEM), 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 the 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 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 was reiterated at all 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 further its work in this area. It remains to be seen how this group, whose membership has a high degree of overlap with the CEM and IPEEC will coordinate its work with those bodies.

In all these efforts, timely and accurate CO_2 and other greenhouse-gas statistics will prove central to ascertain compliance to international agreements and to inform 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 greenhouse-gas mitigation.

References

Ellerman, D.A., F.J. Convery, C. de Perthuis, E. Alberola, R. Baron, B.K. Buchner, A. Delbosc, C. Hight, F. Matthes and J. Keppler (2010), *Pricing Carbon, The European Emissions Trading Scheme*, Cambridge University Press, Cambridge.

Hood, C. (2010), *Reviewing existing and proposed emissions trading systems*, IEA information paper, OECD/IEA, Paris.

IEA (2010), *World Energy Outlook 2010* (WEO 2010), OECD/IEA, Paris.

IEA (2010), *Energy Technology Perspectives 2010* (ETP 2010), OECD/IEA, Paris.

IPCC (2007), *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (1996 IPCC Guidelines)*, IPCC, Bracknell, UK.

2. REGIONAL ASPECTS OF THE ENERGY-CLIMATE CHALLENGE

A growing body of evidence has established links between climate change and the CO_2 emissions that arise from energy production and consumption. This chapter provides background on the link between energy use and climate change and then examines how growing demand in some rapidly expanding economies, all of which are in non-OECD regions, will dramatically change future emissions trends. It closes with a call for all countries (and not just the industrialised countries) to address this increasingly urgent global issue.

Understanding energy and climate change

In its *Fourth Assessment Report*[12], the IPCC concluded: "Most of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic greenhouse-gas concentrations". The language "very likely" has been upgraded from "likely," which was referred to six years earlier in the Third Assessment Report, thus confirming the broad acceptance by scientists of the link between greenhouse-gas emissions and global climate change. Energy production and use have various environmental implications: since energy represents about 65% of global anthropogenic greenhouse-gas emissions, reducing emissions must necessarily start with actions geared to reduce emissions from fuel combustion.

Greenhouse gases and global warming

The increased concentrations of key greenhouse gases are a direct consequence of human activities. Since anthropogenic greenhouse gases accumulate in the atmosphere, they produce net warming by strengthening the natural "greenhouse effect".

Carbon dioxide (CO_2) concentrations in the atmosphere have been increasing 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 2005 concentration of CO_2 (379 ppmv) was about 35% higher than in the mid-1800s, with the fastest growth occurring in the last ten years (1.9 ppmv/year in the period 1995-2005). Significant increases have also occurred in levels of methane (CH_4) and nitrous oxide (N_2O).

Some impacts of the increased greenhouse-gas 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 on the longer term.

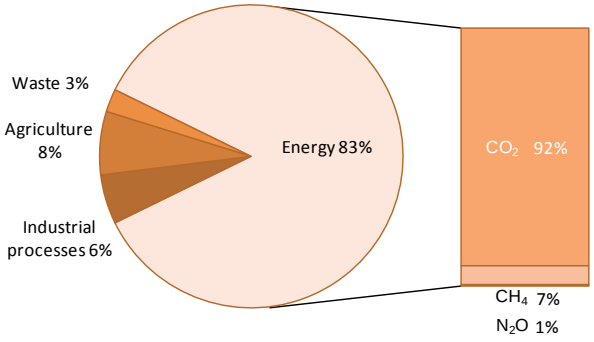
12. *IPCC Fourth Assessment Report – Climate Change 2007*, available at *www.ipcc.ch*. In the summary for policy makers, the following terms have been used to indicate the assessed likelihood, using expert judgement, of an outcome or a result: *Virtually certain* > 99% probability of occurrence, *Extremely likely* > 95%, *Very likely* > 90%, *Likely* > 66%, *More likely than not* > 50%, *Unlikely* < 33%, *Very unlikely* < 10%, *Extremely unlikely* < 5%.

The UNFCCC creates a structure for intergovernmental efforts to tackle the challenge posed by climate change. The Convention's ultimate objective is to stabilise greenhouse-gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. This would require significant reductions in global greenhouse-gas emissions.

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. Energy accounts for over 80% of the anthropogenic greenhouse gases in Annex I countries, with emissions resulting from the production, transformation, handling and consumption of all kinds of energy commodities (Figure 11). 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 11. Shares of anthropogenic greenhouse-gas emissions in Annex I countries, 2009*



* Based on Annex I data for 2009; 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: Accounting for the largest share of global greenhouse-gas emissions, energy emissions are predominantly CO_2.

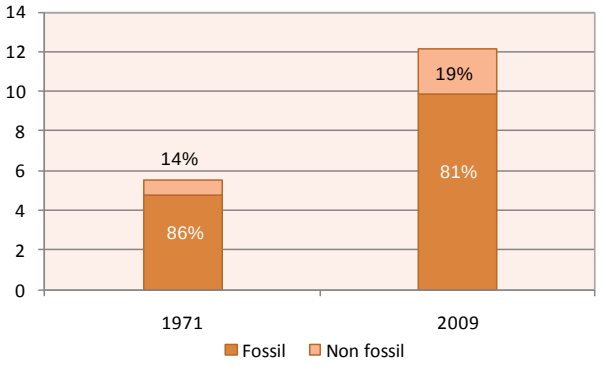
Greenhouse-gas emissions from the energy sector are dominated by the direct combustion of fuels.[13] A by-product of fuel combustion, CO_2 results from the oxidation of carbon in fuels.

CO_2 from energy represents about 83% of the anthropogenic greenhouse-gas emissions for the Annex I countries and about 65% of global emissions. This percentage varies greatly by country, due to diverse national energy structures.

Worldwide economic stability and development require energy. Global total primary energy supply (TPES) doubled between 1971 and 2009, mainly relying on fossil fuels (Figure 12).

Figure 12. World primary energy supply*

Gt of oil equivalent



* World primary energy supply includes international bunkers.

Key point: Fossil fuels still account for most of the world energy supply.

Despite the growth of non-fossil energy (such as nuclear and hydropower) considered as non-emitting,[14] fossil fuels have maintained their shares of the world energy supply relatively unchanged over the course of the past 35 years. In 2009, fossil sources accounted for 81% of the global TPES.

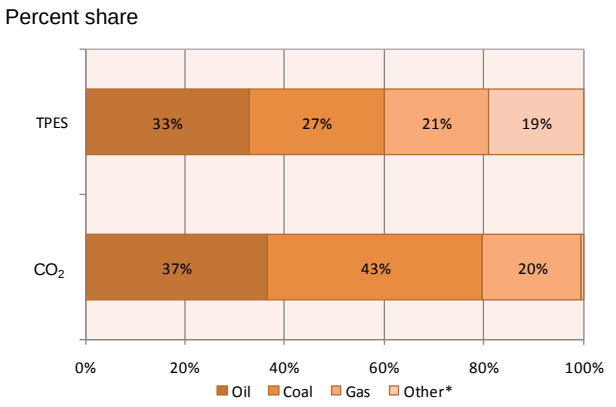
Though coal represented only one-quarter of the world TPES in 2009, it accounted for 43% of the global CO_2 emissions due to its heavy carbon content per unit of energy released (Figure 13). As compared to gas, coal is nearly twice as emission intensive on average.[15]

13. Energy 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 or oil and gas systems).

14. 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).

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

Figure 13. World primary energy supply and CO_2 emissions: Shares by fuel in 2009

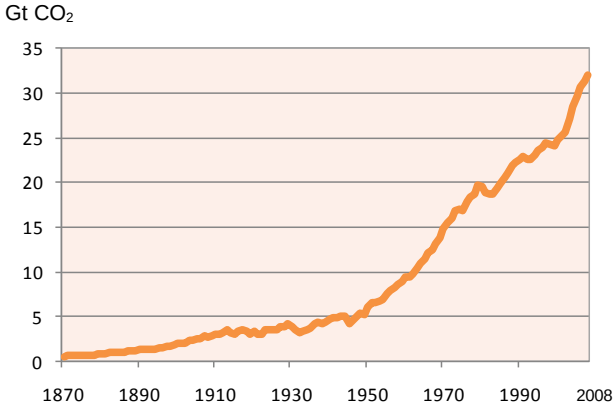


* Other includes nuclear, hydro, geothermal, solar, tide, wind, biofuels and waste.

Key point: Coal generates about twice the CO_2 emissions of gas, while having a comparable share in the world energy supply.

Growing world energy demand from fossil fuels plays a key role in the upward trend in CO_2 emissions (Figure 14). Since the Industrial Revolution, annual CO_2 emissions from fuel combustion dramatically increased from near zero to 29 Gt CO_2 in 2009.

Figure 14. 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.

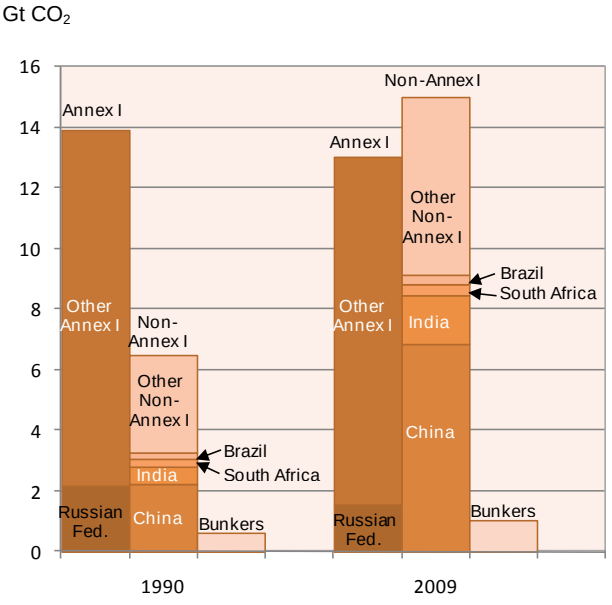
Key point: Since 1870, CO_2 emissions from fuel combustion have risen exponentially.

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.

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. Already, the BRICS represent almost one-third of world GDP, up from 18% in 1990. In 2009, these five countries represented 33% of global energy use and 37% of CO_2 emissions from fuel combustion (Figure 15). These shares are 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 15. The growing importance of the BRICS countries



Key point: With the exception of the Russian Federation, the BRICS countries represent a growing share of CO_2 emissions in the world.

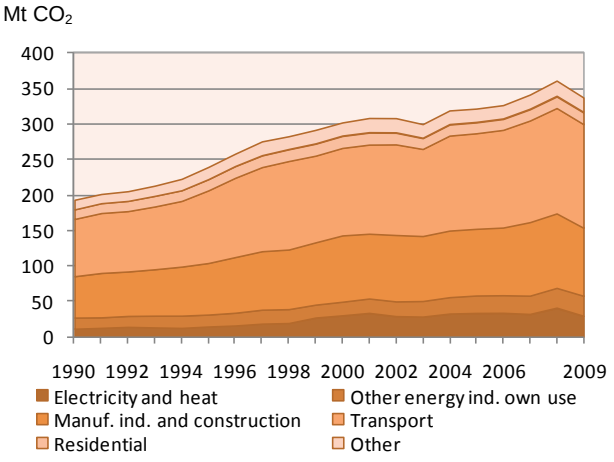
This brief discussion focuses on the BRICS countries, of which only the Russian Federation is a member of Annex I Parties to the UNFCCC. Each of these countries has very different endemic resources, energy supply constraints and sectoral consumption patterns. Consequently, the issues relating to CO_2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

Brazil

Brazil is the third-largest emitter of total greenhouse gases in the world, with the particularity that the country's energy system has a relatively minor impact on greenhouse-gas emissions (only 15%). The bulk of Brazilian greenhouse-gas emissions (85%) comes, instead, 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 1.2% of global CO_2 emissions from fuel combustion. Brazil's energy matrix is one of the cleanest in the world with renewables accounting for 46% of TPES. Brazil is also one of the world's largest producers of hydropower. Within the energy sector, the sub-sectors that contribute the most to total greenhouse-gas emissions – transport (44% in 2009) and industry (28%) – are those likely to grow the most over the next years (Figure 16).

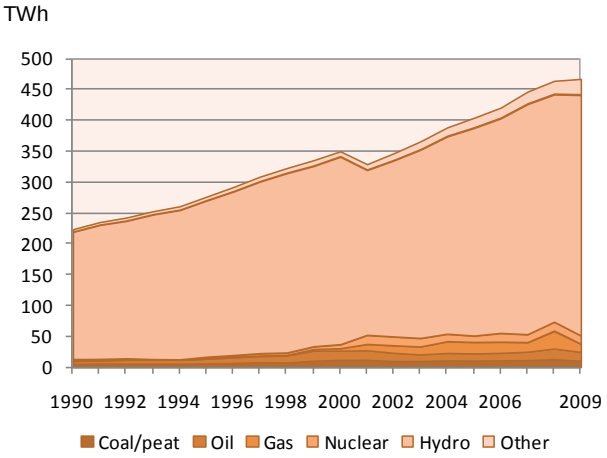
Figure 16. Brazil: CO_2 emissions by sector



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 17). Over the last three decades, the number of major dams has grown steadily and hydropower accounted for 84% of total electricity generation in 2009. 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, increasing the use of natural gas. Electricity generation from natural gas rose to 6% in 2008 before falling back to 3% in 2009.

Figure 17. Brazil: Electricity generation by fuel



Key point: Brazilian electricity generation draws heavily on hydropower.

In 2009, the 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, unclear regulation of the power sector remains a source of concern. Environmental issues have also delayed some of the large hydropower projects.

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 anticipates 5.3 GW of additional installed generation capacity from new nuclear plants (Angra 3 and four other plants) by 2030. Moreover, electricity produced from CHP plants, mainly from sugarcane bagasse, is planned to constitute 11.4% of the country's electricity supply by 2030.

Biofuels supply a comparatively significant share of the energy consumed for road transport (Figure 18). As such, Brazilian transport has a relatively low CO_2 emissions intensity.[16] CO_2 emissions per unit of fuel consumed in road traffic are 20% lower than the world average (2.3 versus 2.9 t CO_2 per toe).

16. See box on "Using biofuels to reduce emissions" for a more complete discussion on the advantages and limitations of using biofuels to replace oil. 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.

Using biofuels to reduce emissions

Compatible with many conventional engines (in low-percentage blends) and blendable with current transport fuels, biofuels have the potential to reduce greenhouse-gas 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 greenhouse-gas emissions, biofuels can be compared on the basis of their well-to-wheel* performance with respect to conventional fossil fuels. When ethanol is derived from corn, the well-to-wheel 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 70-120%**. Similarly, oilseed-derived biodiesel typically leads to greenhouse-gas reductions, on a well-to-wheel 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 dramatically 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 still at the edge between demonstration and first commercial plants.

For both conventional and advanced biofuels, production cost is a main barrier to their larger penetration in the transport fuel mix. Only ethanol from sugarcane produced in Brazil has been more or less the only biofuel competitive with petroleum fuels without direct subsidies, but this may change with the higher oil prices occurring recently and the relatively high sugar price. In most regions the cost barrier for biofuels is such that market introduction has typically required substantial regulatory intervention and governmental support.

Currently, several countries have mandated or promoted biofuel blending to displace oil in domestic transport supply. In Brazil, gasoline contains 20% to 25% ethanol. Furthermore, 84% of cars produced in Brazil in 2009 can run on either 100% ethanol or on a gasoline/ethanol blend. Depending on the oil price, most drivers are choosing to operate these vehicles mainly on ethanol. In 2006, the United States introduced mandatory standards and these were extended in 2007 under the EISA law. Blending requirements will reach 12.9 billion gallons in 2010 and 36 billion gallons by 2022 (of which more than half will be required to be "advanced biofuels"*** and about one-third cellulosic).****

Several years ago, the European Union introduced a target for biofuel use equivalent to 2% of the market share of motor fuel by 2005 (although it was not reached) and 5.75% by the end of 2010. The target for renewable energy sources in transport for 2020 is now set at 10%. The current legislation also requires "sustainability criteria" favouring biofuels derived from waste, residues and lignocellulosic material in order to prevent mass investment in biofuels when their use may potentially be harmful to the environment. 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 the most sustainable biofuels, through a continuous monitoring and assessment of their effectiveness in reducing greenhouse-gas emissions and in providing social, environmental and economic benefits. Suitable land availability and potential influence of biofuel production on global food prices also need to be carefully monitored, taking into account global food, fibre and energy needs for a steadily growing world population. However, barriers to the commercial viability of biofuels shrink as technologies evolve and as prices of conventional fossil fuels remain high. Moreover, 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.

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

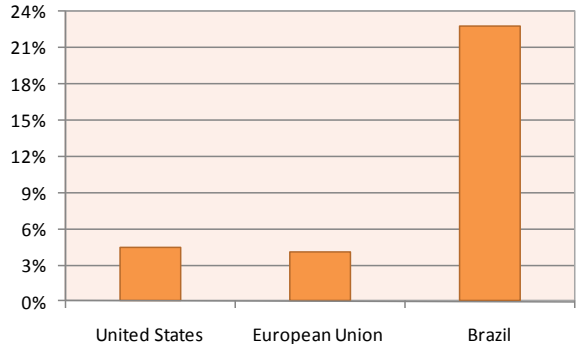
** GHG savings of more than 100% are possible through use of co-products.

*** Advanced biofuels in the US Renewable Fuels Standard refers 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.

Brazil is the world's largest exporter and consumer of fuel ethanol from sugarcane.[17] In 2009, Brazil produced 450 000 bbl/d of ethanol, up from 410 000 bbl/d in 2008. 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 18: Share of biofuels energy in road transport (2009)



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 a major deepwater oilfield in the Santos Basin, which is now being developed with some fields already in production. Brazil's oil and gas reserves are currently estimated at 14 billion barrels.

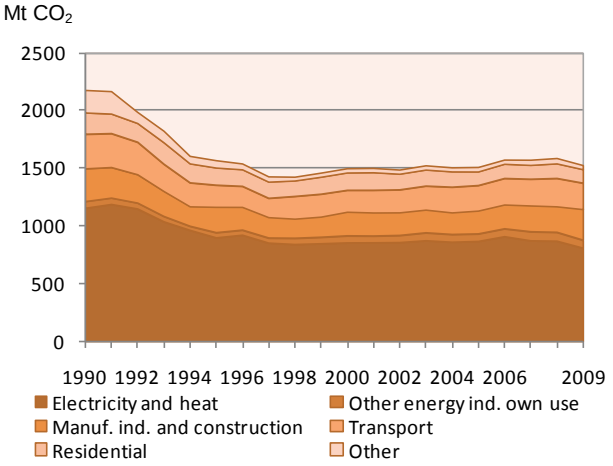
Russian Federation

The Russian Federation is the only one of the BRICS countries where CO_2 emissions fell between 1990 and 2009, with a 30% drop over the period (Figure 19). The economic downturn after the break-up of the former Soviet Union caused emissions to fall by 34% between 1990 and 1998. Yet, CO_2 emissions grew in 1999 and 2000 (2% and 3% a year, respectively) due to the Russian Federation's strong economic recovery, stimulated by the increase in world energy prices. CO_2 emissions remained fairly constant for the next five years. After a 4% increase in 2006, the CO_2 emissions were stable in 2007, increased by 1% in 2008, before falling 4% in 2009, largely due to the global financial crisis.

The *WEO 2010* New Policies Scenario projects that the Russian Federation CO_2 emissions will continue to increase steadily, and in 2035 will represent around 75% of the estimated 1990 level.

17. In 2005, the United States displaced Brazil as the largest ethanol producer, although mainly derived from corn and not sugarcane.

Figure 19. Russian Federation: CO_2 emissions by sector



Key point: CO_2 emissions in the Russian Federation have remained fairly constant over the last ten years.

CO_2 emissions from fuel combustion in the Russian Federation have stabilised over the 2000s. However, other sources of greenhouse gases (in particular CH_4 emissions from leaks in the oil and gas transmission/distribution system and CO_2 emissions from flaring of associated gas) represent an important share of the Russian greenhouse-gas emissions. To effectively reduce greenhouse-gas emissions from energy, these two problems would also need to be addressed (IEA, 2006a).

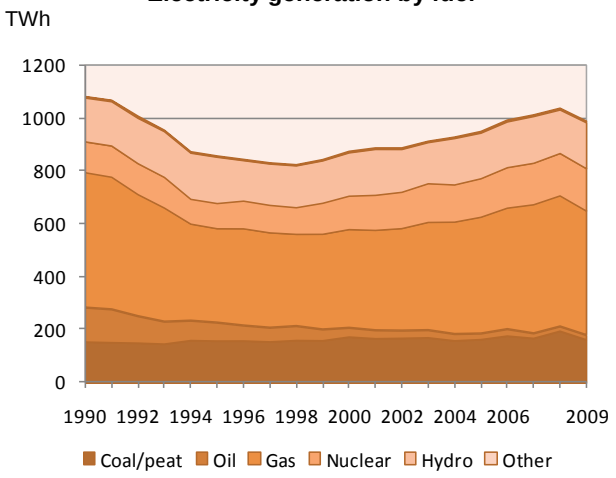
In early 2009, the Russian government passed the resolution "On the Measures Stimulating Reduction of Atmospheric Pollution by Products of Associated Gas Flaring." The document set a target for 2012 and beyond, limiting associated petroleum gas (APG) flaring levels to only 5% of the entire APG output. Starting 1 January 2012, producers will be liable to paying increased fees for excessive flaring. The fees will be hiked by 4.5 times. In case a producer fails to install at his production facilities the tools to measure and log the actual volumes of APG production, utilisation and flaring, a factor of 6 would be used to calculate the excessive flaring fee.

In 2009, the electricity and heat generation sector represented 53% of Russian CO_2 emissions, compared to a global average of 41%. Within this sector, 47% of the electricity was generated by natural gas, 17% by coal and only 2% by oil (Figure 20).

The Russian government enacted a decree in January 2009 that sets targets to increase the share of electricity generated by renewable energy sources (excluding large hydro) from less than 1% to 4.5% by 2020. This decree could go a long way to get the

Russian Federation more in line with the global average. However, to stimulate the utilisation of renewable energy sources including wind, biofuels, solar and recovered methane from coal mines (coalmine methane), a range of supporting regulations will be needed, amplifying this important framework legislation.

Figure 20. Russian Federation: Electricity generation by fuel



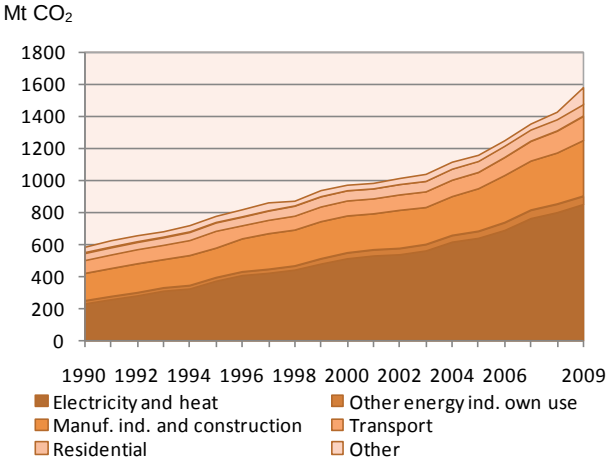
Key point: A large portion of the Russian Federation's electricity and heat generation comes from non-emitting (nuclear and hydro) or low-emitting (natural gas) sources.

Of the BRICS countries, in 2009, the Russian Federation had the highest CO_2 emissions per capita (10.8 t CO_2), which put it close to the average of OECD member countries (9.8 t CO_2). In terms of CO_2/GDP, the Russian Federation's economy remains CO_2 intensive with 1.0 kg CO_2 per unit of GDP, more than 2.5 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 0.5 kg CO_2/USD – 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 since 1998. It is not clear how much this can be attributed to energy efficiency improvements or changes in the sectoral composition of GDP and industrial product mix as opposed to the dramatic increase in GDP due to the Russian Federation's much higher export earnings from oil and gas.

India

India emits more than 5% of global CO_2 emissions, and emissions continue to grow. CO_2 emissions have almost tripled between 1990 and 2009. The *WEO 2010* New Policies Scenario projects that CO_2 emissions in India will increase by almost 2.5 times between 2008 and 2035. A large share of these emissions are produced by the electricity and heat sector, which represented 54% of CO_2 in 2009, up from 40% in 1990. CO_2 emissions in the transport sector accounted for only 9% of total emissions in 2009, but transport is one of the fastest growing sectors (Figure 21).

Figure 21. India: CO_2 emissions by sector



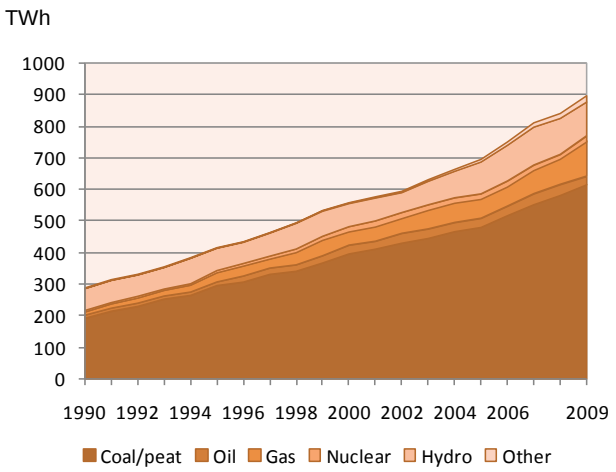
Key point: The bulk of CO_2 emissions in India comes from the electricity and heat generation sector and its share is continuing to grow.

In 2009, 69% of electricity in India came from coal, another 12% from natural gas and 3% from oil (Figure 22). The share of fossil fuels in the generation mix grew from 73% in 1990 to 85% in 2002. The share of fossil fuels has declined steadily since then, falling to 81% in 2006, although increasing back up to 84% in 2009. Although electricity produced from hydro has actually risen during this period, the share fell from 25% in 1990 to 12% in 2009.

India is promoting the addition of other renewable power sources into its generation mix and had an installed capacity of 17 GW of renewable energy sources on 30 June 2010. Under its National Action Plan on Climate Change, India plans to install 20 GW of solar power by 2020. With an installed wind capacity of 12 GW in June 2010,[18] India has the world's fifth-largest installed capacity of wind power.

18. According to the website of the Ministry of New and Renewable Energy of the Government of India. See *www.mnre.gov.in*.

Figure 22. 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 t CO_2 in 2009), about one-third that of the world average. However, due to the recent large increases in emissions, the Indian ratio is more than two times that of its ratio in 1990 and will continue to grow. India's per capita emissions in 2035 will, however, still be well below those in the OECD member countries today.

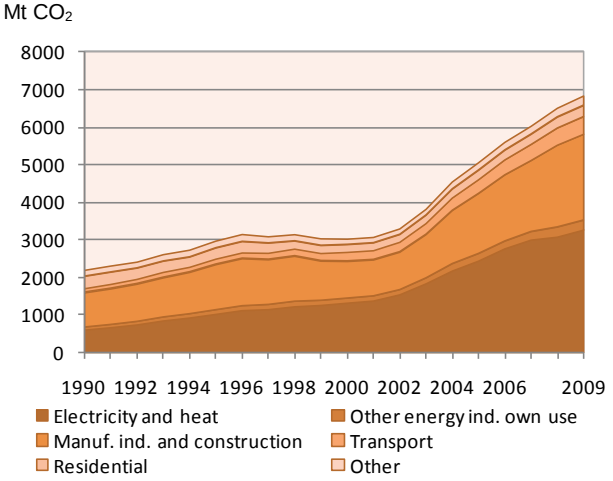
In terms of CO_2/GDP, India has continuously improved the efficiency of its economy and reduced the CO_2 emissions per unit of GDP by 16% between 1990 and 2009. India aims to further reduce emissions intensity of GDP by 20-25% by 2020 compared with the 2005 level.[19]

China

With almost 7 billion tonnes of CO_2 in 2009 (24% of global emissions), Chinese emissions far surpass those of the other BRICS countries. In fact, China overtook the United States in 2007 as the world's largest annual emitter of energy-related CO_2, although in cumulative and per capita terms the United States remains the largest. Chinese CO_2 emissions tripled between 1990 and 2009. The increases were especially large in recent years (16% in 2003, 19% in 2004, 11% in both 2005 and 2006, and 8% in 2007 and 2008). However, due to the world economic crisis, the rate of growth slowed to 5% in 2009. The *WEO 2010* New Policies Scenario projects that the growth in Chinese emissions could slow down to 1.5% per year between 2009 and 2035. Even with this further slowed growth, emissions in 2035 would be 1.5 times current levels.

Since 1990, the electricity and heat generation sector grew the most, representing 48% of Chinese CO_2 emissions in 2009 (Figure 23). The transport sector also grew rapidly, but from a much smaller base, representing 7% of CO_2 emissions in 2009. The *WEO 2010* New Policies Scenario projects that the transport sector will continue to grow, rising to an estimated 13% in 2035, as switching to low- or zero-carbon energy sources is much more difficult in transport than in other sectors.

Figure 23. China: CO_2 emissions by sector

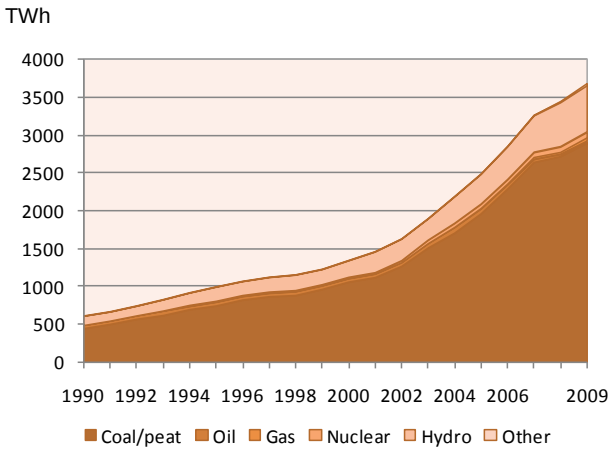


Key point: In recent years, and in line with vigorous economic expansion, China showed dramatic growth in CO_2 emissions from electricity and heat generation.

Chinese demand for electricity was the largest driver of the rise in emissions. The rate of capacity additions peaked in 2006, but in 2009 China's installed capacity rose by a net 81 GW (China Electricity Council, 2010), slightly more than the total installed capacity of South Korea. At the same time, it closed over 26 GW of small, inefficient fossil fuel-fired plants (Zhang, 2010), about the size of Ireland and Switzerland's combined installed capacity. Coal played a major role in supporting the growing demand for electricity generation (Figure 24). Nearly all of the 1990-2009 emissions growth from power generation derived from coal, although the emissions performance of coal-fired power generation has improved significantly (IEA, 2009), and China has started to add some natural gas (electricity generated from natural gas increased by 64% in 2009).

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

Figure 24. China: Electricity generation by fuel



Key point: Coal dominates China's electricity generation and its very fast growth.

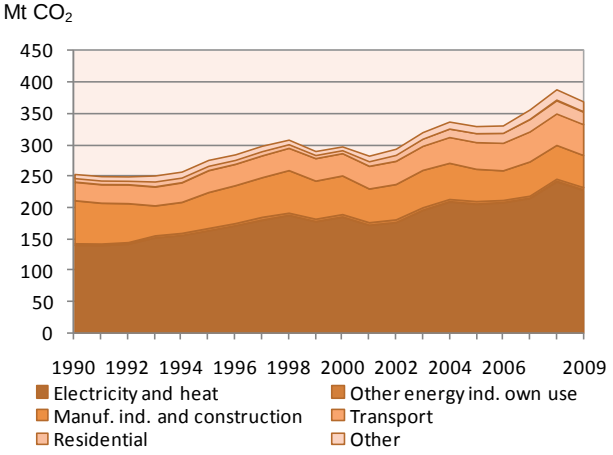
In the past few decades, China experienced a rapid decoupling of energy consumption and CO_2 emissions from economic growth. During the 1980s, the central government in China reduced industrial energy intensity by establishing standards and quotas for the energy supplied to firms and had the authority to shut off the power supply when enterprises exceeded their limits (Lin, 2005). However, as the Chinese economy has moved towards an open-market operation, investment in energy conservation as a percentage of total energy investment gradually declined (IEA, 2006b).

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 2004. Still, the 2009 CO_2/GDP is 53% less than in 1990, and a recent push by the government to reduce energy intensity has helped to resume the long-term intensity decline, albeit at a much slower rate than in the past. The increasing share of coal in power generation, however, despite some of the world's largest investments in renewables, means that a small decline in energy intensity may still be paired with an increase in emissions intensity, as was the case in 2003 and 2004. Although per-capita emissions in China in 2009 were only about one-half that of the OECD average, they have increased two and a half times since 1990, with the largest increases occurring in the last seven 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 as a primary energy source (88% in 2009); with coal providing most of it. Although South Africa accounted for 40% of CO_2 emissions from fuel combustion in Africa in 2009, it represented only 1% of the global total. The electricity and heat sector produced 62% of South Africa's CO_2 emissions in 2009 (Figure 25).

Figure 25. South Africa: CO_2 emissions by sector

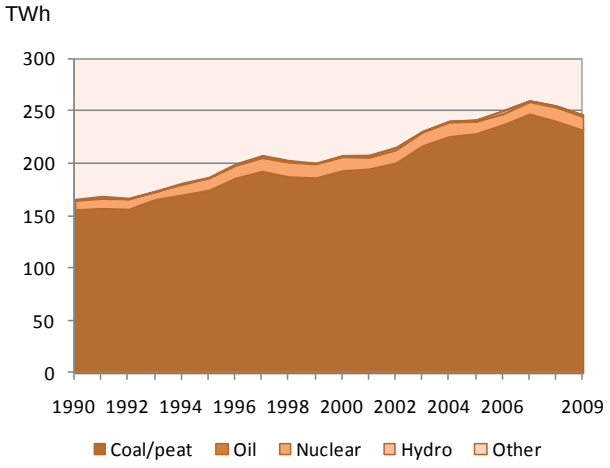


Key point: The largest share of CO_2 emissions in South Africa comes from the electricity and heat sector, but growth remains moderate compared to some of the other BRICS countries.

Coal dominates the South African energy system, accounting for 68% of primary energy supply and one-quarter of final energy consumption. In 2009, South Africa generated 94% of its electricity using coal (Figure 26). In South Africa's Long-Term Mitigation Scenarios (LTMS), emissions would quadruple between 2003 and 2050 in the absence of radical energy-choice changes, dominated by energy-related emissions, notably from the electricity, industrial and transport sectors. One of the major climate change

mitigation issues facing South Africa is a reduction of its greenhouse-gas 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, 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 greenhouse-gas emissions in absolute terms by 2050 (including increasing capacity from renewables). South Africa's current target is to have 1 000 MW of renewable capacity by 2013 and 3 800 MW by 2016.

Figure 26. South Africa: Electricity generation by fuel



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

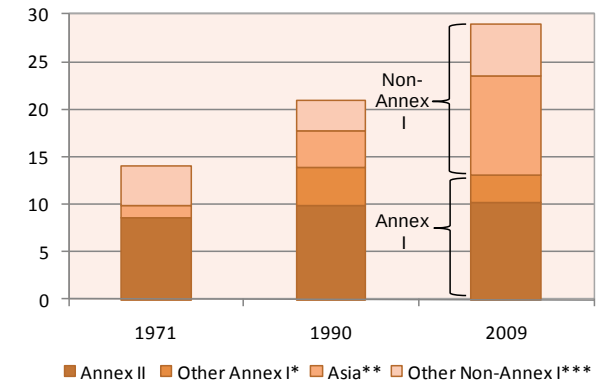
The prices of commercial forms of energy in South Africa are, in general, quite low by international standards. Given the relatively lower rate of electrification (about 88% in urban areas and only 55% in rural areas in 2008), the direct use of commercial forms of energy by households is more limited. Biofuels (especially wood) dominates energy use by rural households, generating health and safety problems, as well as concerns about the sustainability of wood supplies. Over the last 19 years, per-capita CO_2 emissions in South Africa have remained fairly constant while emissions per unit of GDP have decreased by 12%. South Africa aims to reduce greenhouse-gas emissions 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

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 2010* 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.

Between 1971 and 2008, global CO_2 emissions doubled. 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 (Figure 27) due to economic contraction arising from the recession and high oil prices in 2008.

Figure 27. 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 points: In 2009, CO_2 emissions from Annex I countries fell back to 1990 levels, while emissions from non-Annex I countries continued to grow. The CO_2 emissions from non-Annex I countries continued to surpass those of Annex I countries (which occurred first in 2008).

The share of CO_2 emissions in Annex I countries to the UNFCCC progressively shrank (66% in 1990 and 45% in 2008), 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 2009, CO_2 emissions rose by 132% for non-Annex I countries as a whole and nearly tripled for Asia. This is in contrast to the reduction in emissions below 1990 levels (a 6% drop between 1990 and 2009) which occurred in the Annex I countries.

Emission trends within Annex I countries were very different. Emissions of CO_2 in Annex II countries in 2009 were 4% higher than in 1990. On the other hand, emissions in Annex I EIT countries were 37% lower due to a rapid decline in industrial productivity subsequent to the collapse of their centrally planned economies in 1989.

Since the Industrial Revolution, the bulk of annual CO_2 emissions have originated from industrialised countries. However, this long period of dominance will soon end given the size of some developing economies and the growth in their energy needs. Effective emissions mitigation will require all countries, regardless of energy demand and infrastructure, to use energy in a sustainable manner.

References

China Electricity Council (2010), *China National Power Industry Statistics Flash Report 2009*, China Electricity Council, Beijing.

IEA (2006a), *Optimising Russian Natural Gas: Reform and Climate Policy*, OECD/IEA, Paris.

IEA (2006b), *China's Power Sector Reforms: Where to Next?* OECD/IEA, Paris.

IEA (2009), *Cleaner Coal in China*, OECD/IEA, Paris.

IEA (2010), *World Energy Outlook 2010* (WEO 2010), OECD/IEA, Paris.

IEA (2010), *Energy Technology Perspectives 2010* (ETP 2010), OECD/IEA, Paris.

IPCC (2007), *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (1996 IPCC Guidelines), IPCC, Bracknell, UK.

Lin, J. (2005), *Trends in Energy Efficiency Investments in China and the US*, Lawrence Berkeley National Laboratory, Berkeley, CA.

Zhang G.B. (ed.) (2010), *Report on China's Energy Development for 2010*, Economic Science Press, Beijing.

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.

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-scale study).

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, 2011.

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:

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 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%. 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 is still using 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" sources of data 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 greenhouse-gas inventories. As a result, starting in the 2006 edition of this publication, all military consumption should be reported in *non-specified other*. Seagoing 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 greenhouse-gas 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.

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-scale study.

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 11 largest sources, split by coal, oil, gas and other, are shown in the key sources table.

To calculate the level assessment, the IEA has started with the CO_2 emissions from fuel combustion as calculated by the IEA. To supplement this, where possible, the IEA has used the emissions that were submitted by the Annex I Parties to the UNFCCC in the 2011 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 2009 emissions were estimated by PBL.

The cumulative contribution only includes the 11 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* and key sources from fugitive emissions, industrial processes, solvents, agriculture and waste will not be shown. The percentage of CO_2 emissions from fuel combustion in total greenhouse-gas emissions has been included as a memo item at the bottom of the table.

Notes on tables and graphs

Table of CO_2 emissions by sector

Row 1: *Sectoral Approach* contains 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: *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

21. As recommended in the Good Practice Guidance.

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.

Figures 2 and 3: Emissions by sector

Other includes emissions from commercial/public services, agriculture/forestry and fishing. Emissions from unallocated autoproducers are included in *Electricity and heat*.

Figure 5: 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.

Country notes

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.

Cyprus

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 Commission:

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.

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.

Israel

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

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.

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.

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. INDICATORS

Population

The main source of the 1970 to 2009 population data for the OECD member countries is *National Accounts of OECD Countries, Volume 1*, OECD, Paris, 2011. 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., 2011. Population data for **Chinese Taipei**, **Gibraltar**, **Iraq** and a few countries within the regions[3] **Other Africa**, **Other Latin America** and **Other Asia** are based on the CHELEM-CEPII online database, 2011. Population data for 2009 for **Cyprus** are calculated using the population growth rate supplied by Eurostat, 2011.

GDP

The main source of the 1970 to 2009 GDP series for the OECD member countries is *National Accounts of OECD Countries, Volume 1*, 2011. 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., 2011. GDP figures for **Chinese Taipei**, **Cuba**, **Eritrea** (2009), **Gibraltar**, **Iraq**, **Democratic People's Republic of Korea**, **Libyan Arab Jamahiriya**, **Myanmar**, **Namibia** (1971-1979), **Netherlands Antilles** (available from 1980), **Qatar**, **Former Soviet Union** (before 1990), **Former Yugoslavia** (before 1990) and a few countries within the regions[22] **Other Africa**, **Other Latin America** and **Other Asia** are based on the CHELEM-CEPII online databases 2011. GDP figures for **Albania** (1971-1979), **Angola** (1971-1984), **Bahrain** (1971-1979, 2006-2008), **Bosnia and Herzegovina** (1990-1993), **Brunei Darussalam** (1971-1973, 2008-2009), **Bulgaria** (1971-1979), **Cyprus** (2008-2009), **Ethiopia** (1971-1980), **Jordan** (1971-1974), **Kuwait** (1990-1991, 2007-2009), **Lebanon** (1971-1987), **Malta** (2008-2009), **Mozambique** (1971-1979), **Oman** (2006-2009), **Romania** (1971-1979), **Serbia**[23] (1990-1998), **United Republic of Tanzania** (1971-1987), the **United Arab Emirates** (1971-1972 and 2007-2009), **Vietnam** (1971-1983), **Yemen** (1971-1989) and **Zimbabwe**

22. Due to lack of complete time series, figures for population and for GDP of Other Latin America do not include British Virgin Islands, Cayman Islands, Falkland Islands, Martinique, Montserrat, Saint Pierre and Miquelon, and Turks and Caicos Islands; and figures for population and GDP of Other Asia do not include Cook Islands.

23. Data for GDP for Serbia include Montenegro until 2004.

(2006-2009) have been estimated based on the growth rates of the CHELEM-CEPII online database, 2011.

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 2000 and then converted to US dollars using the yearly average 2000 exchange rates or purchasing power parities (PPPs).[24]

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 *Purchasing Power Parities and Real Expenditures, GK Results, Volume II, 1990*, OECD, 1993. The PPPs for the other countries come from the World Bank and CHELEM-CEPII.

For the OECD non-member countries, while both the World Bank and CHELEM-CEPII rebased their GDP PPP time series on 2005, this publication shows GDP data on a 2000 basis. Therefore, only time series of GDP PPP 2000 USD were obtained by applying the ratio GDP 2000 USD to GDP PPP 2000 USD of last year's edition to the new GDP 2000 USD figures.

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.

Total primary energy supply

Total primary energy supply (TPES) is made up of production + imports - exports - international marine bunkers - ***international aviation bunkers*** ± stock changes.

Note: In October 2008 the IEA hosted the third meeting of InterEnerStat. This group is made up of 24 international organisations that collect or use energy statistics. One of the objectives of the group is to improve the quality of energy data by harmonising definitions for energy sources and flows. As a result of this meeting, the IEA has decided to align its energy statistics and balances with most other international organisations and to treat international aviation bunkers in the same way as international marine bunkers. Starting with the 2009 edition, international aviation bunkers is subtracted out of supply in the same way as international marine bunkers.

Electricity and heat output

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

Both **main activity**[25] **producer** and **autoproducer**[26] **plants** have been included where available.

For electricity, data include the total number of TWh generated by both **electricity plants** and **CHP plants**.

For heat, data include the total amount of TJ generated by both **CHP plants** and **heat plants**.

To calculate the total electricity and heat output, the heat generated in TJ has been converted to TWh using the relationship 1 TWh = 3 600 TJ and added to electricity generated.

24. 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.

25. 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.

26. 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.

Ratios

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 2000 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.

CO_2 emissions per kWh: These ratios are expressed in grammes of CO_2 per kWh. They have been calculated using CO_2 emissions from electricity and heat as shown in the country tables in the rows "main activity producer electricity and heat" and "unallocated autoproducers", and electricity and heat output as described above.

In the first table on CO_2 emissions per kWh, the CO_2 emissions include emissions from fossil fuels, industrial waste and non-renewable municipal waste that are consumed for electricity and heat generation in transformation and output includes electricity and heat generated from fossil fuels, nuclear, hydro (excluding pumped storage), geothermal, solar, biofuels, etc. As a result, the emissions per kWh can vary from year to year depending on the generation mix.

In the ratios of 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.

Implied emission factors from electricity and heat generation

Summary tables presenting CO_2 emissions per kWh from electricity and heat generation by country are presented in Part II. However, these values will vary enormously depending on the fuel mix of individual countries. Average implied emission factors by individual product for this sector are presented below. These values represent the average grammes of CO_2 per kWh of electricity and heat produced in the OECD member countries between 2007 and 2009. These figures will reflect any problems that may occur in net calorific values or in input/output efficiencies. Consequently, these values are given as an approximation and actual values may vary considerably.

Fuel	g CO_2 / kWh
Anthracite *	835
Coking coal *	715
Other bituminous coal	830
Sub-bituminous coal	920
Lignite	940
Patent fuel	890
Coke oven coke *	510
BKB/peat briquettes *	500-1100
Gas works gas *	380
Coke oven gas *	390
Blast furnace gas *	2100
Oxygen steel furnace gas *	1900
Natural gas	370
Crude oil *	610
Natural gas liquids *	500
Liquefied petroleum gases *	600
Kerosene *	650
Gas/diesel oil *	650
Fuel oil	620
Petroleum coke *	970
Peat *	560
Industrial waste *	450-1300
Municipal waste (non-renewable)*	450-2500

* These fuels represent less than 1% of electricity and heat output in the OECD. 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, Libyan Arab Jamahiriya, Morocco, Mozambique, Namibia (from 1991), Nigeria, Senegal, South Africa, Sudan, 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[27], Georgia, Gibraltar, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Former Yugoslav Republic of Macedonia (FYROM), Malta, Republic of Moldova, Romania, Russian Federation, Serbia[28], Tajikistan, Turkmenistan, Ukraine, Uzbekistan, Former Soviet Union[29] (prior to 1990) and Former Yugoslavia[29] (prior to 1990).

Latin America includes Argentina, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, Venezuela and **Other Latin America**.

Other Latin America 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[30] (for natural gas and electricity), St. Kitts and Nevis, Saint Lucia, Saint Pierre et Miquelon, St. Vincent and the Grenadines, Suriname and Turks/Caicos Islands.

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

Asia includes Bangladesh, Brunei Darussalam, Cambodia (from 1995), Chinese Taipei, India, Indonesia, DPR of Korea, Malaysia, Mongolia (from 1985), 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[31], Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan,

27. See the note concerning Cyprus in Chapter 3.

28. Serbia includes Montenegro until 2004 and Kosovo until 1999.

29. Prior to 1990, data for Estonia are included in Former Soviet Union and data for Slovenia in Former Yugoslavia.

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

31. 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.

Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia[31], 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 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 the oil data. 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[32], Guam, the Virgin Islands, American Samoa, Johnston Atoll, Midway Islands, Wake Island and the Northern Mariana Islands.

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 include Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, the Czech Republic[33], Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein (not available in this publication), Lithuania, Luxembourg, Malta, Monaco (included with France), the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, the Slovak Republic[33], 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 are 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 include 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.

32. Natural gas and electricity data for Puerto Rico are included under Other Latin America.

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

Economies in Transition (EITs) are those countries in Annex I that are undergoing the process of transition to a market economy. This includes Belarus, Bulgaria, Croatia, the Czech Republic[33], Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, the Slovak Republic[33], Slovenia and Ukraine.

Annex I Kyoto Parties include Australia, Austria, Belgium, Bulgaria, Canada, Croatia, the Czech Republic, 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, 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. Australia ratified the Protocol on 12 December 2007 and has been included in the Kyoto aggregate in this edition.

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

Africa: Saint Helena.

Asia and Oceania: Christmas Island, Nauru and Niue.

Latin America: Anguilla.

Non-OECD Europe and Eurasia: Liechtenstein[34] (except for oil data) and Montenegro[35] (after 2004).

34. Oil data for Liechtenstein are included under Switzerland.

35. Data for Montenegro are included under Serbia until 2004.

6. SUMMARY TABLES

CO_2 emissions: Sectoral Approach

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
World *	**14 084.6**	**15 678.0**	**18 051.5**	**18 628.4**	**20 966.3**	**21 791.6**	**23 492.9**	**27 188.3**	**29 047.9**	**29 454.0**	**28 999.4**	**38.3%**
Annex I Parties	*..*	*..*	*..*	*..*	*13 908.1*	*13 179.2*	*13 761.9*	*14 149.8*	*14 255.7*	*13 912.9*	*13 011.7*	*-6.4%*
Annex II Parties	*8 607.3*	*8 884.2*	*9 544.4*	*9 172.9*	*9 803.0*	*10 204.0*	*11 006.0*	*11 327.7*	*11 291.4*	*10 956.6*	*10 236.0*	*4.4%*
North America	*4 630.7*	*4 738.0*	*5 088.5*	*4 948.0*	*5 301.0*	*5 604.0*	*6 230.9*	*6 330.5*	*6 330.8*	*6 137.9*	*5 715.8*	*7.8%*
Europe	*3 059.9*	*3 092.8*	*3 350.9*	*3 106.2*	*3 154.2*	*3 140.6*	*3 221.7*	*3 353.9*	*3 296.4*	*3 239.3*	*3 001.2*	*-4.9%*
Asia Oceania	*916.7*	*1 053.4*	*1 105.1*	*1 118.7*	*1 347.8*	*1 459.5*	*1 553.4*	*1 643.3*	*1 664.2*	*1 579.4*	*1 519.0*	*12.7%*
Annex I EIT	*..*	*..*	*..*	*..*	*3 975.9*	*2 820.2*	*2 553.2*	*2 603.0*	*2 696.6*	*2 690.2*	*2 517.0*	*-36.7%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*6 444.4*	*7 913.9*	*8 905.9*	*12 074.5*	*13 736.6*	*14 493.3*	*14 972.0*	*132.3%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*8 785.6*	*7 824.1*	*7 802.4*	*8 097.0*	*8 161.3*	*7 995.8*	*7 497.2*	*-14.7%*
Intl. marine bunkers	**342.8**	**328.6**	**345.1**	**293.9**	**357.9**	**413.7**	**480.0**	**556.1**	**624.5**	**608.1**	**592.2**	**65.5%**
Intl. aviation bunkers	**167.7**	**172.0**	**200.0**	**222.8**	**255.9**	**284.7**	**345.2**	**407.8**	**431.2**	**439.7**	**423.4**	**65.5%**
Non-OECD Total **	**4 204.1**	**5 379.0**	**6 795.9**	**7 667.5**	**9 194.8**	**9 414.1**	**10 033.8**	**13 168.7**	**14 850.7**	**15 607.5**	**15 939.0**	**73.3%**
OECD Total ***	**9 370.0**	**9 798.3**	**10 710.5**	**10 444.2**	**11 157.6**	**11 679.0**	**12 633.9**	**13 055.6**	**13 141.6**	**12 798.7**	**12 044.7**	**8.0%**
Canada	339.4	377.1	426.9	402.2	432.3	465.2	532.8	558.8	568.0	551.1	520.7	20.4%
Chile	20.8	17.0	21.2	19.4	31.1	39.0	52.5	58.5	66.5	67.8	64.9	108.9%
Mexico	97.1	138.8	212.1	251.6	264.9	296.6	349.3	385.5	409.8	403.7	399.7	50.9%
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	5 762.7	5 586.8	5 195.0	6.7%
OECD Americas	**4 748.7**	**4 893.7**	**5 321.8**	**5 219.0**	**5 596.9**	**5 939.6**	**6 632.8**	**6 774.5**	**6 807.1**	**6 609.3**	**6 180.4**	**10.4%**
Australia	144.1	180.0	208.0	221.0	260.1	285.5	338.8	389.1	389.5	393.1	394.9	51.8%
Israel	14.4	17.1	19.6	24.5	33.1	45.8	54.8	60.2	66.9	66.4	64.6	95.0%
Japan	758.8	856.3	880.7	878.1	1 064.4	1 147.9	1 184.0	1 220.7	1 242.3	1 152.6	1 092.9	2.7%
Korea	52.1	76.8	124.4	153.3	229.3	358.6	437.7	467.9	490.3	501.7	515.5	124.8%
New Zealand	13.7	17.1	16.4	19.6	23.3	26.1	30.6	33.6	32.4	33.7	31.3	34.3%
OECD Asia Oceania	**983.1**	**1 147.2**	**1 249.1**	**1 296.4**	**1 610.2**	**1 863.9**	**2 045.8**	**2 171.4**	**2 221.5**	**2 147.4**	**2 099.1**	**30.4%**
Austria	48.7	50.2	55.7	54.3	56.5	59.4	61.8	75.0	70.0	70.2	63.4	12.2%
Belgium	116.8	115.6	125.7	101.9	107.9	115.2	118.6	112.6	105.6	111.0	100.7	-6.7%
Czech Republic	151.0	152.6	165.8	173.1	155.1	123.7	121.9	119.6	122.0	116.8	109.8	-29.2%
Denmark	55.0	52.5	62.5	60.5	50.4	58.0	50.6	48.3	51.4	48.4	46.8	-7.2%
Estonia	..	..	..	..	36.1	16.1	14.6	16.9	19.3	17.7	14.7	-59.4%
Finland	39.8	44.4	55.2	48.6	54.4	56.0	54.2	55.3	64.7	57.2	55.0	1.1%
France	431.9	430.6	461.4	360.3	352.3	353.8	376.9	388.4	373.6	370.6	354.3	0.6%
Germany	978.6	975.5	1 055.6	1 014.6	950.4	869.4	827.1	811.8	800.1	804.1	750.2	-21.1%
Greece	25.2	34.5	45.3	54.6	70.1	75.8	87.4	95.0	97.8	94.3	90.2	28.6%
Hungary	60.3	70.7	83.7	80.8	66.7	57.3	54.2	56.4	54.1	53.0	48.2	-27.8%
Iceland	1.4	1.6	1.7	1.6	1.9	1.9	2.1	2.2	2.3	2.2	2.0	6.2%
Ireland	21.7	21.1	25.9	26.4	29.8	32.3	40.9	43.6	44.0	43.9	39.5	32.4%
Italy	292.9	319.6	359.8	347.5	397.4	409.4	426.0	460.8	447.3	435.1	389.3	-2.0%
Luxembourg	15.4	12.1	11.9	9.9	10.4	8.1	8.0	11.3	10.6	10.5	10.0	-4.4%
Netherlands	129.6	140.8	166.7	154.0	155.8	170.9	172.1	182.7	181.0	182.8	176.1	13.0%
Norway	23.5	24.1	28.0	27.2	28.3	32.8	33.5	36.3	38.0	37.5	37.3	31.9%
Poland	286.7	338.2	413.1	419.5	342.1	331.1	290.9	292.9	303.5	298.6	286.8	-16.2%
Portugal	14.4	18.1	23.8	24.6	39.3	48.3	59.4	62.8	55.9	53.3	53.1	35.3%
Slovak Republic	39.1	43.8	55.3	54.4	56.7	40.8	37.4	38.1	36.8	36.2	33.2	-41.5%
Slovenia	..	..	..	..	12.5	13.3	14.1	15.6	15.8	16.7	15.2	21.2%
Spain	120.0	156.6	187.9	175.5	205.8	233.3	283.9	339.7	344.1	317.6	283.4	37.7%
Sweden	82.4	79.4	73.4	58.8	52.8	57.5	52.8	50.3	46.3	44.6	41.7	-20.9%
Switzerland	38.9	36.7	39.2	41.4	41.4	41.6	42.5	44.6	42.3	43.9	42.4	2.5%
Turkey	41.4	59.2	70.9	94.6	126.9	152.7	200.6	216.4	265.0	263.5	256.3	102.0%
United Kingdom	623.5	579.5	571.1	544.5	549.3	516.6	523.8	533.1	521.5	512.1	465.8	-15.2%
OECD Europe ***	**3 638.3**	**3 757.4**	**4 139.7**	**3 928.7**	**3 950.5**	**3 875.6**	**3 955.3**	**4 109.7**	**4 113.0**	**4 041.9**	**3 765.2**	**-4.7%**
European Union - 27	*..*	*..*	*..*	*..*	*4 051.9*	*3 847.5*	*3 831.2*	*3 978.9*	*3 941.9*	*3 868.2*	*3 576.8*	*-11.7%*

* 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	2007	2008	2009	% change 90-09
Non-OECD Total *	**4 204.1**	**5 379.0**	**6 795.9**	**7 667.5**	**9 194.8**	**9 414.1**	**10 033.8**	**13 168.7**	**14 850.7**	**15 607.5**	**15 939.0**	**73.3%**
Algeria	8.7	14.0	28.4	43.2	51.7	55.6	62.4	78.5	85.7	88.1	92.5	79.1%
Angola	1.7	2.0	2.7	2.9	4.0	4.0	5.1	7.0	10.4	12.2	12.9	222.1%
Benin	0.3	0.5	0.4	0.5	0.3	0.2	1.4	2.7	3.7	3.8	4.2	+
Botswana	..	..	..	1.6	2.9	3.3	4.2	4.4	4.4	4.5	4.2	42.5%
Cameroon	0.7	1.0	1.7	2.4	2.7	2.5	2.8	2.9	4.1	4.3	4.8	79.2%
Congo	0.6	0.7	0.8	0.8	0.7	0.5	0.6	0.9	1.2	1.5	1.7	138.1%
Dem. Rep. of Congo	2.5	2.6	3.1	3.2	3.0	2.1	1.7	2.3	2.6	2.8	2.9	-3.1%
Côte d'Ivoire	2.4	3.0	3.4	3.0	2.6	3.2	6.1	5.8	5.7	6.5	6.1	131.4%
Egypt	20.4	25.9	42.3	65.5	79.2	84.0	110.2	151.9	168.7	174.0	175.4	121.4%
Eritrea	..	..	..	..	..	0.8	0.6	0.6	0.5	0.5	0.5	..
Ethiopia	1.3	1.2	1.4	1.4	2.2	2.3	3.2	4.8	6.0	6.8	7.4	235.7%
Gabon	0.5	0.7	1.3	1.7	0.9	1.3	1.4	2.1	2.4	2.3	1.7	88.0%
Ghana	1.9	2.3	2.3	2.2	2.7	3.3	5.1	6.4	8.2	7.3	9.0	233.0%
Kenya	3.2	3.5	4.5	4.6	5.5	5.6	6.8	7.2	8.3	8.6	10.0	82.0%
Libyan Arab Jamahiriya	3.7	9.2	18.6	22.5	27.4	35.1	39.7	42.5	43.1	47.0	50.0	83.0%
Morocco	6.8	9.9	14.0	16.5	19.6	25.3	28.3	38.6	40.5	42.1	41.3	110.3%
Mozambique	2.9	2.3	2.3	1.5	1.1	1.1	1.3	1.5	2.1	2.0	2.2	106.8%
Namibia	..	..	..	..	..	1.8	1.9	2.9	3.3	4.2	3.7	..
Nigeria	5.9	11.7	26.7	32.4	29.2	31.1	39.4	50.4	44.1	49.6	41.2	41.3%
Senegal	1.2	1.6	2.0	2.1	2.0	2.5	3.6	4.6	5.0	5.1	5.3	161.4%
South Africa	173.8	209.2	214.5	229.1	254.7	276.9	298.2	330.3	356.5	388.4	369.4	45.0%
Sudan	3.3	3.3	3.7	4.2	5.5	4.6	5.5	10.0	12.0	12.1	13.3	140.9%
United Rep. of Tanzania	1.5	1.5	1.6	1.5	1.7	2.5	2.6	5.1	5.5	5.8	6.3	267.0%
Togo	0.3	0.3	0.4	0.3	0.6	0.6	1.0	1.0	0.9	1.1	1.1	97.5%
Tunisia	3.7	4.8	7.8	9.6	12.1	14.2	18.0	19.5	20.6	20.9	20.8	72.0%
Zambia	3.4	4.4	3.4	2.8	2.6	2.0	1.7	2.1	1.4	1.6	1.7	-34.9%
Zimbabwe	7.2	7.2	8.0	9.6	16.0	14.8	12.7	10.4	9.3	8.8	8.7	-45.9%
Other Africa	7.6	9.2	13.3	11.8	14.7	16.9	19.3	25.0	27.9	29.5	29.4	100.6%
Africa	**265.7**	**332.1**	**408.3**	**476.9**	**545.4**	**598.4**	**684.6**	**821.7**	**884.2**	**941.2**	**927.5**	**70.1%**
Bangladesh	3.2	4.7	7.2	8.8	13.6	20.5	25.3	36.5	42.0	46.4	50.7	273.5%
Brunei Darussalam	0.4	1.4	2.6	2.9	3.4	4.7	4.6	5.1	7.1	7.5	8.1	141.5%
Cambodia	..	..	..	..	..	1.4	2.4	3.7	4.4	4.6	4.3	..
Chinese Taipei	31.0	42.5	72.2	71.7	114.3	156.5	217.3	258.9	272.3	261.3	250.1	118.8%
India	200.2	241.2	283.3	411.0	582.3	776.6	972.5	1 160.4	1 357.2	1 431.3	1 585.8	172.3%
Indonesia	25.1	38.0	68.8	88.0	142.2	202.1	264.0	336.4	365.5	343.5	376.3	164.7%
DPR of Korea	67.5	76.7	105.6	126.4	114.0	74.9	68.8	74.3	62.4	69.4	66.2	-41.9%
Malaysia	12.7	16.1	24.2	33.4	48.9	78.5	111.1	152.8	171.3	181.7	164.2	235.6%
Mongolia	..	..	..	11.6	12.7	10.1	8.8	9.5	11.1	11.2	12.0	-5.3%
Myanmar	4.5	3.9	5.1	5.8	4.0	6.7	8.1	13.4	12.5	11.9	10.1	154.7%
Nepal	0.2	0.3	0.5	0.5	0.9	1.7	3.1	3.0	2.5	2.8	3.4	284.9%
Pakistan	16.6	20.9	26.1	39.1	58.6	79.5	97.3	117.2	138.6	133.0	136.9	133.7%
Philippines	23.1	29.1	33.3	28.6	38.1	57.0	67.9	71.3	68.9	71.0	70.5	85.1%
Singapore	6.0	8.4	12.7	16.3	28.8	37.5	40.2	44.1	45.6	46.1	44.8	55.7%
Sri Lanka	2.8	2.7	3.7	3.6	3.7	5.5	10.6	13.4	13.0	12.2	12.7	238.1%
Thailand	15.9	20.7	33.2	41.4	80.1	140.3	161.8	219.1	231.9	237.8	227.8	184.5%
Vietnam	16.1	16.7	14.8	17.1	17.2	27.8	44.0	80.8	93.1	102.1	114.1	563.2%
Other Asia	8.4	10.2	16.5	10.1	10.2	9.3	11.3	15.6	14.6	14.5	15.2	48.9%
Asia	**433.6**	**533.5**	**709.7**	**916.3**	**1 273.0**	**1 690.7**	**2 119.2**	**2 615.5**	**2 914.0**	**2 988.3**	**3 153.2**	**147.7%**
People's Rep. of China	800.4	1 051.2	1 405.3	1 704.9	2 211.3	2 986.1	3 037.3	5 062.4	6 028.4	6 506.8	6 831.6	208.9%
Hong Kong, China	9.2	10.8	14.5	22.0	32.8	36.0	39.8	40.7	43.4	42.2	45.6	38.9%
China	**809.6**	**1 062.0**	**1 419.8**	**1 726.9**	**2 244.1**	**3 022.1**	**3 077.2**	**5 103.1**	**6 071.8**	**6 549.0**	**6 877.2**	**206.5%**

* Includes Estonia and Slovenia prior to 1990.

CO_2 emissions: Sectoral Approach

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	3.0	5.3	7.4	10.4	11.7	11.6	14.1	18.1	21.2	22.3	22.8	95.1%
Islamic Republic of Iran	43.7	76.3	92.7	147.2	179.6	252.3	316.7	426.8	500.8	522.7	533.2	197.0%
Iraq	12.3	15.6	32.3	43.8	52.8	71.8	81.8	83.3	90.0	92.9	98.8	86.9%
Jordan	1.3	2.1	4.2	7.4	9.2	12.1	14.3	17.9	19.2	18.4	19.2	108.7%
Kuwait	14.0	15.1	26.6	37.1	28.7	36.1	49.1	70.1	70.1	73.9	80.7	181.1%
Lebanon	4.5	5.6	6.6	6.5	5.5	12.8	14.1	14.5	12.0	15.8	19.3	254.3%
Oman	0.3	0.7	2.2	5.5	9.9	14.4	19.8	27.8	32.5	36.3	38.9	292.4%
Qatar	2.2	4.9	7.7	12.1	14.1	18.8	24.0	37.6	49.3	53.8	56.5	300.6%
Saudi Arabia	12.7	22.5	99.1	122.6	158.9	207.4	252.4	332.7	361.5	386.6	410.5	158.4%
Syrian Arab Republic	6.0	9.0	13.1	21.1	28.2	32.8	39.9	55.2	66.5	67.6	59.8	112.4%
United Arab Emirates	2.4	4.9	19.1	35.6	51.8	69.6	85.8	108.1	128.3	144.4	147.0	183.6%
Yemen	1.2	1.7	3.4	4.8	6.4	9.3	13.2	18.8	20.6	21.4	22.2	244.9%
Middle East	**103.8**	**163.7**	**314.4**	**453.9**	**556.8**	**749.1**	**925.3**	**1 211.1**	**1 372.0**	**1 456.3**	**1 509.0**	**171.0%**
Albania	3.9	4.5	7.6	7.2	6.2	1.9	3.2	4.6	4.0	3.9	2.7	-56.8%
Armenia *	..	..	..	..	20.5	3.4	3.4	4.1	4.8	5.3	4.3	-79.2%
Azerbaijan *	..	..	..	..	64.2	31.6	29.1	32.5	27.0	29.4	25.2	-60.7%
Belarus *	..	..	..	..	124.6	61.4	58.7	62.1	64.0	64.2	60.8	-51.2%
Bosnia and Herzegovina *	..	..	..	..	23.7	3.3	13.7	15.7	18.0	19.5	19.1	-19.3%
Bulgaria	62.8	72.2	83.8	81.1	74.9	53.3	42.0	46.0	50.5	49.1	42.2	-43.7%
Croatia *	..	..	..	..	21.6	15.8	17.7	20.7	22.0	21.0	19.8	-8.4%
Cyprus	1.8	1.7	2.6	2.8	3.8	5.2	6.3	7.0	7.3	7.6	7.5	94.4%
Georgia *	..	..	..	..	33.3	8.1	4.6	4.3	5.5	4.8	5.7	-83.0%
Gibraltar	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	181.5%
Kazakhstan *	..	..	..	..	236.4	167.0	112.5	156.6	187.3	207.9	189.5	-19.8%
Kyrgyzstan *	..	..	..	..	22.5	4.4	4.5	5.0	6.1	5.9	7.1	-68.6%
Latvia *	..	..	..	..	18.6	8.8	6.8	7.6	8.3	7.9	6.8	-63.8%
Lithuania *	..	..	..	..	33.1	14.2	11.2	13.5	14.4	14.2	12.4	-62.6%
FYR of Macedonia *	..	..	..	..	8.5	8.2	8.4	8.8	9.2	9.0	8.3	-2.1%
Malta	0.6	0.6	1.0	1.1	2.3	2.4	2.1	2.7	2.7	2.6	2.4	7.0%
Republic of Moldova *	..	..	..	..	30.2	10.9	6.5	7.9	7.5	7.1	5.7	-81.0%
Romania	114.9	140.6	176.1	173.3	167.1	117.1	86.3	91.9	93.3	92.1	78.4	-53.1%
Russian Federation *	..	..	..	..	2 178.8	1 574.5	1 505.5	1 516.2	1 578.5	1 593.4	1 532.6	-29.7%
Serbia *	..	..	..	..	61.4	44.0	42.5	49.1	49.8	49.9	46.3	-24.7%
Tajikistan *	..	..	..	..	10.9	2.4	2.2	2.4	3.2	3.0	2.8	-74.6%
Turkmenistan *	..	..	..	..	46.6	34.4	36.2	46.0	54.2	55.8	48.8	4.6%
Ukraine *	..	..	..	..	687.9	392.8	292.0	305.6	313.9	309.3	256.4	-62.7%
Uzbekistan *	..	..	..	..	119.8	101.6	117.6	108.4	112.3	114.9	112.4	-6.2%
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**	**3 997.1**	**2 667.1**	**2 413.2**	**2 519.1**	**2 644.5**	**2 678.1**	**2 497.4**	**-37.5%**
Argentina	83.1	85.9	95.9	88.6	100.4	118.2	139.0	151.0	166.8	173.8	166.6	66.0%
Bolivia	2.2	3.2	4.2	4.3	5.1	6.9	7.3	9.6	11.4	12.3	12.9	150.0%
Brazil	91.1	137.2	180.3	168.0	194.3	240.4	302.8	322.2	341.9	361.5	337.8	73.9%
Colombia	26.2	28.3	33.8	38.3	45.0	58.0	58.7	56.9	57.2	58.3	60.6	34.7%
Costa Rica	1.3	1.7	2.2	2.0	2.6	4.4	4.5	5.4	6.6	6.6	6.3	140.5%
Cuba	20.8	23.7	29.4	31.3	33.7	22.6	26.5	24.6	25.9	25.2	26.8	-20.4%
Dominican Republic	3.4	5.2	6.3	6.2	7.7	11.4	17.4	17.4	18.9	19.2	18.1	135.8%
Ecuador	3.7	6.2	10.6	12.1	13.2	16.3	18.5	23.6	25.8	26.5	28.5	115.8%
El Salvador	1.4	2.0	1.7	1.8	2.2	4.6	5.2	6.4	6.9	6.2	6.8	204.2%
Guatemala	2.3	3.0	4.2	3.3	3.3	6.0	8.8	11.4	12.5	11.3	14.5	339.5%
Haiti	0.4	0.4	0.6	0.8	0.9	0.9	1.4	2.0	2.3	2.3	2.4	150.9%
Honduras	1.1	1.3	1.7	1.7	2.1	3.5	4.4	6.9	7.8	7.6	7.1	234.6%
Jamaica	5.5	7.4	6.5	4.6	7.2	8.4	9.7	10.4	13.2	11.9	8.3	15.1%
Netherlands Antilles	14.4	10.2	8.7	4.6	2.7	2.8	4.1	4.2	4.5	4.3	5.0	81.1%
Nicaragua	1.5	1.8	1.8	1.8	1.8	2.5	3.5	4.0	4.4	4.2	4.2	130.4%
Panama	2.5	3.2	2.8	2.5	2.4	4.0	4.5	5.5	6.2	6.2	7.3	207.6%
Paraguay	0.6	0.7	1.4	1.4	1.9	3.4	3.3	3.4	3.7	3.7	4.1	112.1%
Peru	15.6	18.4	20.5	18.2	19.2	23.7	26.5	28.9	30.9	35.6	38.6	100.7%
Trinidad and Tobago	6.1	5.8	7.9	9.6	11.4	12.3	21.1	33.9	40.6	39.2	40.2	253.3%
Uruguay	5.2	5.5	5.6	3.1	3.7	4.5	5.3	5.3	5.8	7.7	7.7	106.5%
Venezuela	52.1	62.8	92.4	95.2	105.1	118.3	126.7	148.2	153.3	153.4	154.6	47.1%
Other Latin America	7.8	10.8	10.2	9.2	12.4	13.4	15.1	17.0	17.7	17.8	16.4	32.1%
Latin America	**348.3**	**424.9**	**528.9**	**508.6**	**578.4**	**686.7**	**814.4**	**898.2**	**964.2**	**994.7**	**974.6**	**68.5%**

* 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	2007	2008	2009	% change 90-09
World *	**5 198.9**	**5 605.7**	**6 556.3**	**7 368.5**	**8 303.9**	**8 538.9**	**8 817.8**	**11 003.3**	**12 228.2**	**12 591.6**	**12 493.1**	**50.4%**
Annex I Parties	*..*	*..*	*..*	*..*	*5 111.1*	*4 596.9*	*4 712.0*	*4 762.6*	*4 876.2*	*4 710.9*	*4 231.4*	*-17.2%*
Annex II Parties	*2 645.9*	*2 604.8*	*2 962.8*	*3 318.4*	*3 486.5*	*3 401.9*	*3 657.4*	*3 749.5*	*3 778.7*	*3 628.9*	*3 224.5*	*-7.5%*
North America	*1 140.5*	*1 253.0*	*1 481.2*	*1 725.0*	*1 896.2*	*1 999.7*	*2 252.2*	*2 239.5*	*2 234.4*	*2 191.9*	*1 918.9*	*1.2%*
Europe	*1 234.0*	*1 059.0*	*1 182.9*	*1 224.1*	*1 155.4*	*925.7*	*842.6*	*849.7*	*870.3*	*795.8*	*686.2*	*-40.6%*
Asia Oceania	*271.5*	*292.9*	*298.7*	*369.4*	*434.9*	*476.5*	*562.6*	*660.3*	*674.0*	*641.2*	*619.4*	*42.4%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 566.0*	*1 134.1*	*965.7*	*926.8*	*982.1*	*966.6*	*894.6*	*-42.9%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*3 192.8*	*3 942.0*	*4 105.9*	*6 240.7*	*7 352.0*	*7 880.7*	*8 261.7*	*158.8%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*3 245.9*	*2 634.5*	*2 494.4*	*2 550.3*	*2 640.7*	*2 507.9*	*2 285.1*	*-29.6%*
Intl. marine bunkers	**0.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Intl. aviation bunkers	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Non-OECD Total **	**2 065.4**	**2 471.5**	**2 957.8**	**3 337.4**	**4 149.4**	**4 513.5**	**4 487.4**	**6 567.0**	**7 701.0**	**8 211.1**	**8 521.8**	**105.4%**
OECD Total ***	**3 133.4**	**3 134.1**	**3 598.6**	**4 031.1**	**4 154.5**	**4 025.4**	**4 330.4**	**4 436.3**	**4 527.2**	**4 380.5**	**3 971.3**	**-4.4%**
Canada	61.7	56.6	80.5	99.4	98.8	103.3	127.0	115.8	116.3	106.2	86.7	-12.2%
Chile	5.0	3.5	4.7	4.8	9.8	9.0	11.9	10.0	14.5	16.5	14.9	51.6%
Mexico	5.2	6.6	7.2	11.6	14.2	25.4	26.6	37.8	36.1	27.1	33.7	137.0%
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	2 118.1	2 085.7	1 832.1	1.9%
OECD Americas	**1 150.6**	**1 263.1**	**1 493.2**	**1 741.4**	**1 920.3**	**2 034.1**	**2 290.6**	**2 287.4**	**2 284.9**	**2 235.5**	**1 967.5**	**2.5%**
Australia	73.2	90.3	104.0	116.7	137.1	152.4	189.3	222.1	218.0	219.0	220.9	61.1%
Israel	0.0	0.0	0.0	7.2	8.9	15.7	24.4	30.1	31.3	29.6	28.8	224.7%
Japan	194.1	197.7	190.8	248.8	293.4	319.9	369.1	429.8	449.9	414.5	392.4	33.7%
Korea	21.2	30.6	48.1	80.2	86.3	101.6	173.5	193.8	211.3	236.5	252.5	192.5%
New Zealand	4.2	4.8	3.8	3.9	4.3	4.2	4.2	8.4	6.2	7.7	6.1	41.3%
OECD Asia Oceania	**292.7**	**323.5**	**346.8**	**456.7**	**530.1**	**593.9**	**760.5**	**884.2**	**916.6**	**907.3**	**900.8**	**69.9%**
Austria	15.9	13.5	13.7	16.9	16.1	13.8	14.4	15.9	15.8	15.6	11.4	-28.9%
Belgium	42.2	37.0	40.2	37.8	39.0	33.4	29.0	19.1	16.4	16.7	10.6	-72.8%
Czech Republic	129.2	121.7	129.5	136.1	120.7	88.5	83.9	76.2	79.9	75.2	70.0	-42.0%
Denmark	6.0	8.0	23.8	28.4	23.7	25.3	15.4	14.4	18.1	15.9	15.7	-33.9%
Estonia	..	..	..	..	24.1	11.3	10.5	12.0	14.2	12.9	10.6	-55.9%
Finland	8.4	9.3	19.6	19.8	21.1	23.2	20.9	20.0	29.1	22.3	21.6	2.4%
France	135.3	104.2	121.2	91.3	73.6	57.5	57.5	53.8	53.4	51.1	44.2	-39.9%
Germany	554.1	494.5	552.2	580.7	504.6	370.1	337.2	332.3	348.7	328.3	290.1	-42.5%
Greece	6.8	11.0	13.4	24.9	33.4	36.4	37.6	37.8	36.6	35.4	35.1	5.1%
Hungary	34.9	32.9	36.3	34.5	24.2	17.0	15.2	12.2	11.9	11.6	9.9	-58.9%
Iceland	0.0	-	0.1	0.3	0.3	0.2	0.4	0.4	0.5	0.3	0.3	20.5%
Ireland	8.8	7.1	8.0	10.5	13.7	11.6	10.3	10.5	8.9	9.2	8.2	-40.1%
Italy	31.7	30.2	43.0	58.1	55.1	44.9	43.3	62.8	61.0	58.9	46.8	-14.9%
Luxembourg	11.3	7.5	7.9	6.3	5.0	2.1	0.5	0.3	0.3	0.3	0.3	-94.0%
Netherlands	14.4	11.5	13.8	23.1	31.8	33.1	29.1	30.3	31.4	29.8	27.6	-13.3%
Norway	3.7	3.9	3.9	4.4	3.4	4.1	4.2	3.0	2.9	3.0	2.2	-36.9%
Poland	252.5	289.7	350.9	359.8	285.6	268.1	216.8	206.6	211.7	205.3	193.9	-32.1%
Portugal	2.4	1.6	1.6	2.9	10.6	13.9	14.7	13.1	11.2	9.8	11.1	4.7%
Slovak Republic	23.5	23.7	32.0	33.3	30.7	21.1	16.0	15.6	15.8	15.1	14.4	-53.1%
Slovenia	..	..	..	..	5.7	4.9	5.5	6.3	6.5	6.2	5.8	1.9%
Spain	36.9	37.5	47.9	69.4	74.1	71.8	81.5	80.2	78.7	53.4	40.9	-44.8%
Sweden	5.4	6.9	5.4	10.6	10.4	9.4	8.1	9.8	8.9	8.9	6.1	-41.5%
Switzerland	2.0	1.0	1.4	2.0	1.4	0.8	0.6	0.6	0.7	0.6	0.6	-57.7%
Turkey	16.0	20.7	26.8	45.1	57.9	60.7	88.9	86.3	115.4	115.4	112.3	94.0%
United Kingdom	348.4	274.2	266.1	236.8	238.2	174.1	138.1	145.1	147.7	136.2	113.4	-52.4%
OECD Europe ***	**1 690.1**	**1 547.6**	**1 758.6**	**1 833.0**	**1 704.2**	**1 397.4**	**1 279.3**	**1 264.8**	**1 325.7**	**1 237.7**	**1 103.0**	**-35.3%**
European Union - 27	*..*	*..*	*..*	*..*	*1 734.5*	*1 404.1*	*1 240.4*	*1 236.9*	*1 276.8*	*1 187.4*	*1 045.2*	*-39.7%*

* 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	2007	2008	2009	% change 90-09
Non-OECD Total *	**2 065.4**	**2 471.5**	**2 957.8**	**3 337.4**	**4 149.4**	**4 513.5**	**4 487.4**	**6 567.0**	**7 701.0**	**8 211.1**	**8 521.8**	**105.4%**
Algeria	0.4	0.3	0.2	1.0	1.3	1.4	0.7	1.0	1.2	1.2	0.7	-42.9%
Angola	-	-	-	-	-	-	-	-	-	-	-	-
Benin	-	-	-	-	-	-	-	-	-	-	-	-
Botswana	..	..	..	1.1	1.9	2.2	2.5	2.4	2.1	1.9	1.7	-14.6%
Cameroon	-	-	-	-	-	-	-	-	-	-	-	-
Congo	-	-	-	-	-	-	-	-	-	-	-	-
Dem. Rep. of Congo	1.0	0.8	0.8	0.8	0.9	1.0	0.8	1.0	1.1	1.1	1.2	34.9%
Côte d'Ivoire	-	-	-	-	-	-	-	-	-	-	-	-
Egypt	1.3	2.1	2.1	2.7	2.7	2.8	3.3	3.2	3.1	3.0	2.9	8.4%
Eritrea	..	..	..	..	..	-	-	-	-	-	-	..
Ethiopia	-	-	-	-	-	-	-	-	-	-	-	-
Gabon	-	-	-	-	-	-	-	-	-	-	-	-
Ghana	-	-	-	-	-	-	-	-	-	-	-	-
Kenya	0.2	0.1	0.0	0.2	0.4	0.2	0.2	0.2	0.3	0.3	0.2	-37.1%
Libyan Arab Jamahiriya	-	-	-	-	-	-	-	-	-	-	-	-
Morocco	1.2	1.7	1.6	2.7	4.1	6.1	9.2	11.3	11.5	10.2	9.4	127.3%
Mozambique	1.5	1.2	0.7	0.2	0.1	0.1	-	-	0.0	0.0	0.0	-82.8%
Namibia	..	..	..	..	..	0.0	0.0	0.0	0.2	0.9	0.4	..
Nigeria	0.5	0.6	0.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	-89.5%
Senegal	-	-	-	-	-	-	-	0.4	0.5	0.5	0.6	x
South Africa	146.3	175.1	179.4	189.5	208.3	227.3	248.1	271.1	285.9	313.4	295.4	41.9%
Sudan	-	-	0.0	-	-	-	-	-	-	-	-	-
United Rep. of Tanzania	-	-	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	+
Togo	-	-	-	-	-	-	-	-	-	-	-	-
Tunisia	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-	-	-	-	..
Zambia	2.0	1.9	1.4	1.1	0.9	0.3	0.3	0.3	0.0	0.0	0.0	-99.5%
Zimbabwe	5.6	5.0	6.1	7.5	13.4	11.2	9.7	8.3	7.4	6.9	6.8	-48.8%
Other Africa	0.5	0.7	0.6	0.7	1.0	0.7	1.6	1.8	2.3	2.5	2.5	154.9%
Africa	**160.7**	**190.0**	**193.6**	**208.2**	**235.4**	**253.8**	**276.8**	**301.3**	**315.7**	**342.2**	**322.2**	**36.9%**
Bangladesh	0.4	0.5	0.5	0.2	1.1	1.2	1.3	1.4	1.7	2.4	2.4	123.3%
Brunei Darussalam	-	-	-	-	-	-	-	-	-	-	-	-
Cambodia	..	..	..	..	..	-	-	-	-	-	-	..
Chinese Taipei	10.0	8.4	14.7	26.4	42.3	63.2	108.9	143.7	156.7	150.0	144.2	240.8%
India	142.6	176.1	195.4	283.7	395.9	517.3	623.6	782.1	925.6	977.7	1 080.4	172.9%
Indonesia	0.5	0.5	0.5	4.5	17.6	26.0	47.3	85.8	127.7	103.6	110.6	529.7%
DPR of Korea	64.9	72.5	97.5	119.0	106.1	70.9	65.7	71.4	59.8	66.7	64.2	-39.5%
Malaysia	0.0	0.0	0.2	1.1	4.0	4.8	6.9	26.7	34.3	38.0	41.2	923.7%
Mongolia	..	..	..	9.4	10.2	9.0	7.5	7.8	8.8	8.7	9.7	-5.6%
Myanmar	0.6	0.6	0.6	0.6	0.3	0.1	0.2	0.4	0.5	0.5	0.6	113.6%
Nepal	0.0	0.1	0.2	0.0	0.2	0.3	1.0	1.0	0.8	0.7	0.7	360.0%
Pakistan	2.5	2.2	2.6	4.8	7.1	7.8	6.7	13.7	21.1	16.8	16.5	133.4%
Philippines	0.1	0.2	1.5	5.4	5.2	7.0	19.7	22.5	22.9	26.9	25.7	392.5%
Singapore	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	78.1%
Sri Lanka	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.2	0.2	980.5%
Thailand	0.5	0.6	1.9	6.5	16.1	29.4	31.4	46.9	55.4	60.4	58.5	264.5%
Vietnam	5.6	10.0	9.2	11.3	9.0	13.4	17.6	32.8	39.9	47.5	50.8	466.6%
Other Asia	4.1	4.3	7.7	0.9	0.8	0.5	1.4	1.9	1.8	2.2	2.3	179.4%
Asia	**231.9**	**276.1**	**332.5**	**474.1**	**615.9**	**751.2**	**939.4**	**1 238.6**	**1 457.4**	**1 502.5**	**1 608.2**	**161.1%**
People's Rep. of China	677.9	837.9	1 125.0	1 435.4	1 889.3	2 538.9	2 433.1	4 169.6	5 002.0	5 431.9	5 720.0	202.8%
Hong Kong, China	0.1	0.1	0.2	12.8	24.4	24.4	17.7	27.2	30.7	28.5	30.8	26.5%
China	**678.0**	**838.1**	**1 125.2**	**1 448.1**	**1 913.7**	**2 563.2**	**2 450.9**	**4 196.8**	**5 032.7**	**5 460.4**	**5 750.8**	**200.5%**

* Includes 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	2007	2008	2009	% change 90-09
Bahrain	-	-	-	-	-	-	-	-	-	-	-	-
Islamic Republic of Iran	0.5	2.5	2.3	1.9	1.5	2.2	3.4	4.7	4.9	3.6	3.2	119.7%
Iraq	-	-	-	-	-	-	-	-	-	-	-	-
Jordan	-	-	-	-	-	-	-	-	-	-	-	-
Kuwait	-	-	-	-	-	-	-	-	-	-	-	-
Lebanon	0.0	0.0	0.0	-	-	0.5	0.5	0.5	0.5	0.5	0.5	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	-	-	-	-	-	-	-	-	-	-	-	-
Yemen	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	**0.5**	**2.6**	**2.4**	**1.9**	**1.5**	**2.7**	**3.9**	**5.2**	**5.4**	**4.2**	**3.7**	**155.7%**
Albania	1.2	1.6	2.5	3.7	2.4	0.1	0.1	0.1	0.1	0.1	0.3	-87.5%
Armenia *	..	..	..	..	1.0	0.0	-	-	0.0	-	-	..
Azerbaijan *	..	..	..	..	0.3	0.0	-	-	-	-	-	..
Belarus *	..	..	..	..	9.2	5.2	3.5	2.3	2.1	1.9	1.9	-79.8%
Bosnia and Herzegovina *	..	..	..	..	17.3	1.4	9.9	11.7	13.6	15.0	15.0	-13.8%
Bulgaria	33.2	35.0	37.8	42.2	36.8	29.6	25.3	27.7	31.5	30.8	26.1	-29.1%
Croatia *	..	..	..	..	3.4	0.7	1.7	2.7	2.7	2.8	2.0	-41.0%
Cyprus	-	-	-	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	-75.6%
Georgia *	..	..	..	..	3.4	0.1	0.0	0.0	0.1	0.3	0.8	-77.2%
Gibraltar	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan *	..	..	..	..	153.3	111.1	75.1	102.4	115.4	124.4	116.6	-24.0%
Kyrgyzstan *	..	..	..	..	10.0	1.3	1.9	2.2	2.2	2.2	2.4	-76.0%
Latvia *	..	..	..	..	2.7	1.1	0.5	0.3	0.4	0.4	0.3	-87.9%
Lithuania *	..	..	..	..	3.1	1.0	0.4	0.8	1.0	0.9	0.6	-79.7%
FYR of Macedonia *	..	..	..	..	5.5	5.9	5.5	6.0	6.0	6.2	5.5	1.0%
Malta	-	-	-	0.5	0.7	0.1	-	-	-	-	-	..
Republic of Moldova *	..	..	..	..	7.8	2.3	0.4	0.3	0.2	0.3	0.3	-95.9%
Romania	31.2	38.0	48.9	57.6	49.7	40.5	28.7	33.5	37.6	37.0	30.4	-38.9%
Russian Federation *	..	..	..	..	687.1	483.9	441.4	407.3	418.8	421.7	404.9	-41.1%
Serbia *	..	..	..	..	41.3	36.2	35.0	33.3	33.2	34.6	32.7	-20.9%
Tajikistan *	..	..	..	..	2.5	0.1	0.0	0.2	0.3	0.4	0.4	-85.6%
Turkmenistan *	..	..	..	..	1.2	-	-	-	-	-	-	..
Ukraine *	..	..	..	..	283.0	161.2	116.3	123.4	148.1	144.7	123.9	-56.2%
Uzbekistan *	..	..	..	..	13.7	4.4	5.1	4.6	5.2	5.1	5.5	-59.8%
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**	**1 335.7**	**886.3**	**751.1**	**758.9**	**818.6**	**828.9**	**769.5**	**-42.4%**
Argentina	3.5	3.7	3.3	3.7	3.9	4.9	4.5	5.2	6.5	7.7	7.8	97.8%
Bolivia	-	-	-	0.2	-	-	-	-	-	-	-	-
Brazil	7.0	8.7	17.8	30.1	29.1	36.7	44.9	44.2	46.4	46.9	38.2	31.1%
Colombia	5.6	6.6	7.5	8.8	10.7	12.4	11.4	9.7	9.5	9.7	11.3	6.1%
Costa Rica	0.0	0.0	0.0	0.0	0.0	-	-	0.1	0.3	0.3	0.3	+
Cuba	0.3	0.2	0.5	0.6	0.7	0.4	0.3	0.3	0.3	0.3	0.3	-62.4%
Dominican Republic	-	-	-	0.5	0.0	0.2	0.2	1.1	2.1	2.2	2.2	+
Ecuador	-	-	-	-	-	-	-	-	-	-	-	-
El Salvador	-	-	0.0	-	-	0.0	0.0	0.0	-	-	-	-
Guatemala	-	-	0.1	-	-	-	0.5	1.4	1.6	1.6	3.4	x
Haiti	-	-	-	0.1	0.0	-	-	-	-	-	-	..
Honduras	-	-	-	-	0.0	0.0	0.3	0.4	0.2	0.2	0.2	+
Jamaica	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-1.9%
Netherlands Antilles	-	-	-	-	-	-	-	-	-	-	-	-
Nicaragua	-	-	-	-	-	-	-	-	-	-	-	-
Panama	0.0	0.0	-	0.1	0.1	0.1	0.1	-	-	-	-	..
Paraguay	-	-	-	-	-	-	-	-	-	-	-	-
Peru	0.5	0.6	0.6	0.7	0.6	1.4	2.4	3.5	4.1	3.7	3.3	469.1%
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	-70.5%
Venezuela	0.6	1.0	0.6	0.7	1.8	0.0	0.5	0.1	0.2	0.2	0.2	-88.9%
Other Latin America	0.1	0.1	0.1	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	299.9%
Latin America	**17.7**	**20.9**	**30.5**	**45.6**	**47.1**	**56.2**	**65.3**	**66.2**	**71.2**	**73.0**	**67.3**	**42.7%**

* 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	2007	2008	2009	% change 90-09
World *	**6 826.5**	**7 787.0**	**8 722.7**	**8 089.4**	**8 818.2**	**9 080.7**	**9 880.1**	**10 715.9**	**10 965.5**	**10 867.2**	**10 630.8**	**20.6%**
Annex I Parties	*..*	*..*	*..*	*..*	*5 687.3*	*5 334.4*	*5 489.5*	*5 656.3*	*5 503.4*	*5 302.7*	*5 035.3*	*-11.5%*
Annex II Parties	*4 522.9*	*4 773.7*	*4 914.7*	*4 232.8*	*4 486.1*	*4 626.4*	*4 852.6*	*5 024.1*	*4 842.4*	*4 635.1*	*4 387.7*	*-2.2%*
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*	*2 630.5*	*2 479.9*	*2 354.9*	*4.6%*
Europe	*1 657.7*	*1 700.3*	*1 750.2*	*1 431.1*	*1 478.2*	*1 562.3*	*1 567.1*	*1 577.3*	*1 503.9*	*1 493.7*	*1 410.0*	*-4.6%*
Asia Oceania	*632.3*	*731.8*	*736.6*	*636.9*	*756.7*	*798.4*	*767.6*	*741.7*	*708.0*	*661.5*	*622.7*	*-17.7%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 137.2*	*626.8*	*552.1*	*552.4*	*579.7*	*587.2*	*568.7*	*-50.0%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*2 517.1*	*3 047.8*	*3 565.4*	*4 095.6*	*4 406.5*	*4 516.7*	*4 579.8*	*81.9%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*3 493.7*	*3 169.1*	*3 101.6*	*3 122.7*	*3 037.6*	*2 985.7*	*2 830.7*	*-19.0%*
Intl. marine bunkers	**342.7**	**328.6**	**345.1**	**293.9**	**357.9**	**413.7**	**480.0**	**556.1**	**624.5**	**608.1**	**592.2**	**65.5%**
Intl. aviation bunkers	**167.7**	**172.0**	**200.0**	**222.8**	**255.9**	**284.7**	**345.2**	**407.8**	**431.2**	**439.7**	**423.4**	**65.5%**
Non-OECD Total **	**1 563.5**	**2 188.3**	**2 825.2**	**2 892.2**	**3 169.7**	**3 071.1**	**3 477.9**	**4 007.0**	**4 324.3**	**4 457.1**	**4 517.9**	**42.5%**
OECD Total ***	**4 752.7**	**5 098.0**	**5 352.4**	**4 680.4**	**5 034.8**	**5 311.1**	**5 577.1**	**5 744.8**	**5 585.6**	**5 362.3**	**5 097.2**	**1.2%**
Canada	209.8	233.2	246.7	188.8	209.4	212.2	237.1	272.2	267.8	264.2	253.9	21.2%
Chile	14.5	12.4	15.1	13.0	19.1	27.8	30.4	34.4	45.4	47.5	45.5	137.5%
Mexico	71.7	106.5	161.6	186.5	198.6	215.3	256.1	259.3	265.8	264.2	254.3	28.1%
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	2 362.7	2 215.6	2 101.0	2.9%
OECD Americas	**2 319.1**	**2 460.5**	**2 604.6**	**2 364.3**	**2 468.9**	**2 508.9**	**2 804.4**	**2 998.8**	**2 941.7**	**2 791.6**	**2 654.7**	**7.5%**
Australia	66.8	80.8	87.3	79.9	89.3	94.6	104.7	110.8	111.2	114.3	113.1	26.7%
Israel	14.2	17.0	19.4	17.3	24.2	30.1	30.4	26.9	30.2	29.9	27.4	13.0%
Japan	556.2	639.4	638.6	547.4	655.4	689.5	647.1	613.0	578.6	528.7	492.0	-24.9%
Korea	30.9	46.2	76.2	73.1	135.3	234.1	219.6	203.8	197.5	181.1	182.1	34.5%
New Zealand	9.3	11.6	10.7	9.6	12.0	14.3	15.8	17.9	18.2	18.4	17.5	46.5%
OECD Asia Oceania	**677.4**	**795.0**	**832.3**	**727.2**	**916.3**	**1 062.5**	**1 017.7**	**972.5**	**935.7**	**872.4**	**832.1**	**-9.2%**
Austria	27.2	29.2	33.0	26.9	27.7	29.8	31.2	38.1	35.8	34.5	32.9	18.6%
Belgium	63.3	60.4	65.0	46.7	48.7	55.4	56.9	57.9	51.9	57.0	52.2	7.2%
Czech Republic	19.9	27.9	30.6	27.9	23.0	20.5	20.2	24.9	25.1	24.5	23.8	3.6%
Denmark	49.0	44.2	38.5	30.2	22.0	24.4	23.5	21.7	22.0	21.1	20.2	-8.3%
Estonia	..	..	..	..	9.3	3.5	2.7	3.1	3.2	3.1	2.8	-69.6%
Finland	31.4	33.6	33.9	26.9	28.2	26.2	24.3	26.4	26.6	25.6	24.8	-11.9%
France	277.3	293.5	292.8	214.5	220.1	227.3	234.0	237.0	227.9	223.8	217.0	-1.4%
Germany	385.7	392.4	385.9	326.6	323.1	345.8	324.0	295.7	261.9	283.3	271.0	-16.1%
Greece	18.4	23.5	32.0	29.6	36.5	39.1	45.7	51.7	53.5	50.7	48.5	32.9%
Hungary	18.6	27.2	29.8	27.0	22.7	19.8	17.3	16.8	17.7	17.2	17.2	-24.4%
Iceland	1.4	1.6	1.7	1.4	1.6	1.7	1.7	1.8	1.9	1.9	1.7	3.8%
Ireland	12.9	14.0	16.2	11.4	12.1	15.7	22.9	24.9	25.0	24.3	21.1	73.7%
Italy	237.3	248.6	267.5	229.6	252.3	261.1	248.0	231.8	221.9	211.6	191.1	-24.3%
Luxembourg	4.1	3.8	3.0	2.9	4.4	4.7	5.9	8.2	7.5	7.5	7.0	57.5%
Netherlands	68.1	56.8	83.5	55.6	52.7	57.8	60.7	68.5	70.1	69.9	64.7	22.7%
Norway	19.8	19.8	22.0	19.8	20.0	20.4	21.0	22.8	24.0	22.9	23.0	15.0%
Poland	21.9	33.5	42.8	39.2	34.5	40.9	51.5	57.9	62.9	63.9	63.8	84.9%
Portugal	12.0	16.5	22.2	21.8	28.7	34.4	39.8	40.4	35.3	33.3	31.8	11.0%
Slovak Republic	12.6	15.2	18.1	14.3	14.4	7.1	6.8	9.1	9.5	9.7	8.8	-38.5%
Slovenia	..	..	..	..	5.0	6.7	6.7	7.2	7.3	8.4	7.4	47.2%
Spain	82.4	117.3	136.9	101.6	120.9	143.1	166.8	191.4	190.2	181.8	168.5	39.3%
Sweden	77.1	72.5	67.6	47.3	40.1	45.4	41.5	36.6	33.7	31.9	31.0	-22.8%
Switzerland	36.9	34.8	36.0	35.8	34.2	33.5	33.3	34.2	31.9	33.1	32.1	-6.1%
Turkey	25.4	38.5	44.1	49.4	62.5	78.9	82.7	77.1	78.6	77.8	76.5	22.4%
United Kingdom	253.5	238.0	212.7	202.5	204.7	196.4	185.8	188.1	182.8	179.6	171.6	-16.2%
OECD Europe ***	**1 756.2**	**1 842.6**	**1 915.6**	**1 588.9**	**1 649.6**	**1 739.7**	**1 755.0**	**1 773.6**	**1 708.2**	**1 698.3**	**1 610.4**	**-2.4%**
European Union - 27	*..*	*..*	*..*	*..*	*1 642.6*	*1 672.5*	*1 671.7*	*1 698.6*	*1 633.9*	*1 623.9*	*1 533.4*	*-6.6%*

* 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 - Oil

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Non-OECD Total *	**1 563.5**	**2 188.3**	**2 825.2**	**2 892.2**	**3 169.7**	**3 071.1**	**3 477.9**	**4 007.0**	**4 324.3**	**4 457.1**	**4 517.9**	**42.5%**
Algeria	5.9	9.1	14.8	20.5	23.0	21.8	24.1	30.6	34.3	36.1	38.5	67.7%
Angola	1.6	1.9	2.5	2.7	3.0	2.9	4.0	5.8	8.8	10.9	11.6	289.3%
Benin	0.3	0.5	0.4	0.5	0.3	0.2	1.4	2.7	3.7	3.8	4.2	+
Botswana	..	..	..	0.5	1.0	1.2	1.7	2.0	2.3	2.6	2.5	155.4%
Cameroon	0.7	1.0	1.7	2.4	2.7	2.5	2.8	2.9	3.5	3.7	4.3	61.2%
Congo	0.6	0.7	0.8	0.8	0.7	0.5	0.6	0.9	1.1	1.4	1.6	122.8%
Dem. Rep. of Congo	1.5	1.8	2.3	2.4	2.1	1.1	0.8	1.3	1.5	1.7	1.7	-19.6%
Côte d'Ivoire	2.4	3.0	3.4	3.0	2.6	3.1	3.2	2.9	2.7	3.4	3.0	14.1%
Egypt	18.9	23.6	36.9	54.8	61.6	58.2	66.9	83.0	92.0	92.0	90.9	47.6%
Eritrea	..	..	..	..	..	0.8	0.6	0.6	0.5	0.5	0.5	..
Ethiopia	1.3	1.2	1.4	1.4	2.2	2.3	3.2	4.8	6.0	6.8	7.4	235.7%
Gabon	0.5	0.7	1.3	1.6	0.7	1.1	1.1	1.9	2.1	2.0	1.3	93.7%
Ghana	1.9	2.3	2.3	2.2	2.7	3.3	5.1	6.4	8.2	7.3	9.0	233.0%
Kenya	3.0	3.4	4.4	4.4	5.1	5.4	6.6	7.0	8.1	8.3	9.8	90.3%
Libyan Arab Jamahiriya	1.6	6.7	13.1	15.5	18.3	26.6	30.9	32.1	31.8	35.2	38.2	108.4%
Morocco	5.6	8.1	12.3	13.6	15.4	19.2	19.0	26.4	27.7	30.8	30.7	99.1%
Mozambique	1.4	1.1	1.6	1.2	0.9	1.0	1.3	1.5	1.9	1.8	2.0	113.2%
Namibia	..	..	..	..	..	1.8	1.9	2.9	3.2	3.3	3.3	..
Nigeria	5.0	10.1	23.4	25.2	22.1	21.9	27.4	33.7	25.7	31.4	28.6	29.7%
Senegal	1.2	1.6	2.0	2.1	2.0	2.4	3.6	4.2	4.4	4.5	4.6	130.9%
South Africa	27.5	34.1	35.1	39.6	46.4	49.6	50.1	59.2	70.6	75.0	73.9	59.3%
Sudan	3.3	3.3	3.7	4.2	5.5	4.6	5.5	10.0	12.0	12.1	13.3	140.9%
United Rep. of Tanzania	1.5	1.5	1.6	1.5	1.7	2.4	2.4	4.2	4.2	4.5	4.8	181.0%
Togo	0.3	0.3	0.4	0.3	0.6	0.6	1.0	1.0	0.9	1.1	1.1	97.5%
Tunisia	3.4	4.0	6.7	7.1	9.0	9.4	11.3	12.1	11.9	11.3	10.7	19.9%
Zambia	1.5	2.5	1.9	1.7	1.7	1.7	1.4	1.7	1.4	1.6	1.7	-3.1%
Zimbabwe	1.6	2.1	1.8	2.0	2.6	3.6	3.0	2.1	1.9	1.8	1.8	-30.8%
Other Africa	7.1	8.5	12.6	11.1	13.7	16.2	17.7	21.6	23.8	25.0	24.9	82.2%
Africa	**99.7**	**133.2**	**188.4**	**222.5**	**247.6**	**265.4**	**298.6**	**365.6**	**396.4**	**419.9**	**426.0**	**72.0%**
Bangladesh	2.2	3.3	4.6	4.6	5.2	8.4	9.4	12.8	12.6	13.4	14.3	177.2%
Brunei Darussalam	0.2	0.2	0.5	0.6	0.9	1.3	1.4	1.6	1.9	2.0	2.0	136.4%
Cambodia	..	..	..	..	..	1.4	2.4	3.7	4.4	4.6	4.3	..
Chinese Taipei	19.0	31.3	54.2	43.5	68.7	85.5	94.5	92.4	90.1	83.9	79.7	16.0%
India	56.3	63.3	85.3	119.3	165.8	223.9	301.8	309.9	355.7	377.3	400.8	141.7%
Indonesia	24.4	36.4	61.0	70.0	96.1	130.2	158.0	186.2	178.0	176.6	186.5	94.1%
DPR of Korea	2.6	4.2	8.0	7.4	7.9	3.9	3.1	2.8	2.6	2.7	2.0	-74.2%
Malaysia	12.6	16.0	23.9	27.9	38.0	50.6	58.7	66.6	69.6	68.6	63.2	66.4%
Mongolia	..	..	..	2.2	2.4	1.0	1.3	1.7	2.3	2.5	2.3	-4.0%
Myanmar	3.8	3.0	3.8	3.4	2.0	3.9	5.2	5.8	5.7	4.8	4.0	97.5%
Nepal	0.2	0.2	0.3	0.5	0.7	1.5	2.1	2.1	1.8	2.1	2.7	267.9%
Pakistan	8.8	11.0	13.2	20.9	30.6	43.7	56.1	47.4	58.7	57.7	61.8	101.8%
Philippines	23.0	28.9	31.8	23.1	32.9	50.0	48.2	42.1	38.8	36.9	37.4	13.6%
Singapore	5.9	8.3	12.6	16.1	28.7	34.4	37.3	30.1	29.6	29.3	27.9	-2.5%
Sri Lanka	2.8	2.7	3.7	3.6	3.7	5.5	10.6	13.2	12.8	12.0	12.5	234.3%
Thailand	15.5	20.2	31.3	28.0	52.4	90.6	89.8	111.6	110.3	107.5	107.0	104.4%
Vietnam	10.6	6.7	5.6	5.8	8.2	13.9	23.8	36.5	40.4	40.0	46.7	467.4%
Other Asia	3.8	5.4	8.6	8.0	8.8	8.3	9.4	13.2	12.4	11.7	12.2	38.4%
Asia	**191.6**	**241.1**	**348.5**	**384.7**	**553.0**	**758.0**	**913.1**	**979.9**	**1 028.0**	**1 033.7**	**1 067.3**	**93.0%**
People's Rep. of China	115.2	195.9	252.4	247.6	296.1	415.5	560.7	809.9	897.5	926.5	947.9	220.1%
Hong Kong, China	9.0	10.7	14.3	9.2	8.4	11.6	16.4	8.4	8.1	8.3	9.7	14.7%
China	**124.2**	**206.6**	**266.8**	**256.9**	**304.6**	**427.1**	**577.1**	**818.3**	**905.5**	**934.9**	**957.6**	**214.4%**

* Includes 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	2007	2008	2009	% change 90-09
Bahrain	1.2	1.2	1.7	1.8	2.1	2.4	2.5	3.6	4.2	4.1	4.4	110.5%
Islamic Republic of Iran	37.7	65.7	81.8	128.4	141.1	170.1	192.1	228.7	255.9	266.0	264.5	87.5%
Iraq	10.5	12.4	29.8	42.1	49.1	65.7	75.8	80.6	87.2	89.3	96.6	96.8%
Jordan	1.3	2.1	4.2	7.4	9.0	11.6	13.8	14.7	13.6	12.0	12.0	33.8%
Kuwait	4.1	5.2	13.4	27.4	17.2	18.4	30.8	46.7	47.1	49.6	57.1	231.7%
Lebanon	4.5	5.6	6.6	6.5	5.5	12.4	13.6	14.0	11.5	15.3	18.7	243.1%
Oman	0.3	0.7	1.5	3.3	5.0	7.7	8.4	11.8	14.0	17.2	18.1	262.1%
Qatar	0.3	0.7	1.4	1.6	1.9	2.5	3.1	7.8	11.2	13.9	11.6	496.0%
Saudi Arabia	10.0	17.1	77.9	88.5	111.3	143.0	174.7	208.5	234.8	254.3	277.5	149.4%
Syrian Arab Republic	6.0	9.0	13.0	20.8	25.0	28.0	29.5	44.4	55.6	57.0	46.8	87.6%
United Arab Emirates	0.4	1.6	9.5	15.7	18.7	21.1	21.7	28.2	30.7	31.9	32.2	72.1%
Yemen	1.2	1.7	3.4	4.8	6.4	9.3	13.2	18.8	20.6	21.4	22.0	241.7%
Middle East	**77.7**	**123.1**	**244.3**	**348.4**	**392.2**	**492.3**	**579.2**	**707.7**	**786.5**	**832.1**	**861.5**	**119.7%**
Albania	2.4	2.3	4.4	2.8	3.4	1.7	3.1	4.5	3.9	3.7	2.4	-29.9%
Armenia *	..	..	..	..	11.2	0.7	0.8	1.0	0.9	1.0	1.0	-91.3%
Azerbaijan *	..	..	..	..	32.4	18.9	18.4	14.9	10.3	9.8	8.5	-73.8%
Belarus *	..	..	..	..	87.8	30.6	22.3	20.9	21.8	21.0	24.6	-72.0%
Bosnia and Herzegovina *	..	..	..	..	5.4	1.6	3.3	3.2	3.6	3.7	3.7	-31.2%
Bulgaria	29.1	34.9	38.6	28.0	26.1	13.7	10.4	12.0	12.4	11.8	11.3	-56.7%
Croatia *	..	..	..	..	13.4	11.0	11.3	12.9	13.5	12.6	12.5	-7.2%
Cyprus	1.8	1.7	2.6	2.6	3.6	5.0	6.1	6.8	7.2	7.4	7.4	104.5%
Georgia *	..	..	..	..	19.2	5.8	2.3	2.1	2.5	2.2	2.5	-86.8%
Gibraltar	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	181.5%
Kazakhstan *	..	..	..	..	58.3	32.5	22.1	25.8	32.7	35.5	28.4	-51.4%
Kyrgyzstan *	..	..	..	..	8.9	1.4	1.2	1.4	2.3	2.2	3.4	-62.0%
Latvia *	..	..	..	..	10.3	5.5	3.8	4.1	4.7	4.4	3.6	-65.4%
Lithuania *	..	..	..	..	19.7	9.0	6.5	7.5	7.5	8.1	7.1	-63.8%
FYR of Macedonia *	..	..	..	..	3.0	2.3	2.7	2.6	3.0	2.6	2.6	-12.6%
Malta	0.6	0.6	1.0	0.7	1.6	2.2	2.1	2.7	2.7	2.6	2.4	56.0%
Republic of Moldova *	..	..	..	..	14.8	3.1	1.2	1.9	1.9	2.2	2.0	-86.4%
Romania	31.5	40.0	51.6	41.1	50.0	32.0	26.5	27.8	27.5	26.9	24.5	-51.0%
Russian Federation *	..	..	..	..	625.4	351.2	332.4	309.9	325.8	336.2	327.2	-47.7%
Serbia *	..	..	..	..	14.1	4.8	4.1	11.5	12.0	10.7	10.4	-26.3%
Tajikistan *	..	..	..	..	5.2	1.2	0.7	0.9	1.6	1.6	1.6	-69.8%
Turkmenistan *	..	..	..	..	16.9	8.2	10.7	12.7	13.5	14.9	13.6	-19.6%
Ukraine *	..	..	..	..	195.5	75.4	33.7	38.2	40.8	39.5	34.1	-82.5%
Uzbekistan *	..	..	..	..	30.6	19.8	19.1	14.3	12.5	11.9	12.0	-60.9%
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**	**1 256.9**	**637.9**	**545.3**	**540.1**	**565.2**	**573.1**	**547.1**	**-56.5%**
Argentina	67.3	65.1	70.9	54.4	53.1	62.1	66.0	67.4	73.2	77.8	72.8	37.1%
Bolivia	2.0	2.9	3.6	3.3	3.7	4.6	4.9	5.9	7.0	7.4	7.5	102.1%
Brazil	83.9	127.8	160.9	133.6	158.8	195.3	240.6	240.0	254.8	265.6	260.6	64.1%
Colombia	18.0	18.5	20.6	22.2	26.8	37.4	34.6	32.9	33.5	33.4	31.8	19.0%
Costa Rica	1.3	1.7	2.2	2.0	2.6	4.4	4.5	5.3	6.2	6.3	6.0	130.2%
Cuba	20.6	23.4	28.8	30.7	32.9	22.2	25.3	23.1	23.4	22.9	24.6	-25.4%
Dominican Republic	3.4	5.2	6.3	5.6	7.6	11.2	17.2	15.8	15.7	16.1	14.9	95.0%
Ecuador	3.5	5.9	10.5	11.7	12.7	15.6	17.9	22.7	24.3	25.5	27.5	116.7%
El Salvador	1.4	2.0	1.7	1.8	2.2	4.6	5.2	6.4	6.9	6.2	6.8	204.2%
Guatemala	2.3	3.0	4.2	3.3	3.3	6.0	8.3	10.0	10.9	9.7	11.1	235.8%
Haiti	0.4	0.4	0.6	0.6	0.9	0.9	1.4	2.0	2.3	2.3	2.4	158.8%
Honduras	1.1	1.3	1.7	1.7	2.1	3.5	4.1	6.5	7.7	7.3	6.9	223.5%
Jamaica	5.5	7.4	6.5	4.6	7.1	8.2	9.6	10.3	13.2	11.7	8.1	15.4%
Netherlands Antilles	14.4	10.2	8.7	4.6	2.7	2.8	4.1	4.2	4.5	4.3	5.0	81.1%
Nicaragua	1.5	1.8	1.8	1.8	1.8	2.5	3.5	4.0	4.4	4.2	4.2	130.4%
Panama	2.5	3.2	2.8	2.5	2.3	3.8	4.4	5.5	6.2	6.2	7.3	217.9%
Paraguay	0.6	0.7	1.4	1.4	1.9	3.4	3.3	3.4	3.7	3.7	4.1	112.1%
Peru	14.4	17.0	18.9	16.2	17.6	21.8	23.0	21.5	20.7	24.4	25.7	46.1%
Trinidad and Tobago	2.7	3.0	2.8	2.5	2.1	2.2	2.6	4.0	4.2	4.2	4.2	102.5%
Uruguay	5.1	5.4	5.5	3.1	3.7	4.5	5.2	5.1	5.6	7.5	7.6	104.2%
Venezuela	30.7	37.5	59.1	56.0	57.0	59.9	64.6	84.1	98.1	100.5	104.6	83.6%
Other Latin America	7.7	10.7	10.1	9.2	12.4	13.3	14.4	15.6	16.2	16.2	14.9	20.5%
Latin America	**290.3**	**354.2**	**429.8**	**372.6**	**415.3**	**490.4**	**564.5**	**595.6**	**642.7**	**663.4**	**658.4**	**58.5%**

* 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	2007	2008	2009	% change 90-09
World *	**2 058.3**	**2 281.2**	**2 767.2**	**3 162.6**	**3 803.5**	**4 098.6**	**4 700.2**	**5 376.9**	**5 747.8**	**5 890.2**	**5 762.3**	**51.5%**
Annex I Parties	*..*	*..*	*..*	*..*	*3 070.3*	*3 178.1*	*3 471.2*	*3 647.6*	*3 780.5*	*3 805.9*	*3 643.2*	*18.7%*
Annex II Parties	*1 438.5*	*1 503.1*	*1 663.5*	*1 616.2*	*1 794.6*	*2 123.0*	*2 426.2*	*2 491.3*	*2 593.3*	*2 619.1*	*2 543.9*	*41.8%*
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*	*1 436.3*	*1 439.8*	*1 413.9*	*24.6%*
Europe	*168.1*	*331.0*	*414.3*	*446.1*	*505.1*	*631.3*	*783.8*	*894.8*	*879.6*	*907.5*	*858.0*	*69.9%*
Asia Oceania	*12.9*	*28.7*	*69.8*	*112.0*	*154.4*	*182.3*	*219.3*	*236.7*	*277.3*	*271.8*	*272.1*	*76.2%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 269.1*	*1 042.1*	*1 016.2*	*1 103.5*	*1 116.3*	*1 116.6*	*1 031.8*	*-18.7%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*733.2*	*920.5*	*1 228.9*	*1 729.2*	*1 967.3*	*2 084.3*	*2 119.2*	*189.0%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*2 024.9*	*1 979.3*	*2 155.2*	*2 366.8*	*2 417.4*	*2 435.8*	*2 308.1*	*14.0%*
Intl. marine bunkers	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Intl. aviation bunkers	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Non-OECD Total **	**575.2**	**719.2**	**1 012.9**	**1 437.9**	**1 875.8**	**1 817.3**	**2 052.7**	**2 575.4**	**2 808.3**	**2 921.1**	**2 879.6**	**53.5%**
OECD Total ***	**1 483.1**	**1 562.1**	**1 754.3**	**1 724.7**	**1 927.7**	**2 281.3**	**2 647.5**	**2 801.5**	**2 939.5**	**2 969.1**	**2 882.7**	**49.5%**
Canada	67.9	87.3	99.7	113.9	123.8	149.1	168.1	170.2	183.4	180.0	179.4	45.0%
Chile	1.3	1.1	1.4	1.6	2.1	2.1	10.3	14.0	6.6	3.7	4.6	117.5%
Mexico	20.2	25.6	43.2	53.6	52.1	55.9	66.6	88.3	108.0	112.5	111.7	114.5%
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	1 253.0	1 259.8	1 234.5	22.1%
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**	**1 550.9**	**1 555.9**	**1 530.2**	**28.7%**
Australia	4.1	8.9	16.7	24.4	32.8	37.7	43.9	55.7	59.8	59.4	60.4	84.1%
Israel	0.2	0.1	0.2	0.1	0.0	0.0	0.0	3.1	5.4	6.9	8.4	+
Japan	8.5	19.2	51.2	81.5	114.6	137.1	164.8	173.7	209.4	204.9	204.0	78.0%
Korea	-	-	-	-	6.4	19.4	39.9	63.8	73.3	74.9	72.0	+
New Zealand	0.2	0.6	1.8	6.1	7.1	7.5	10.6	7.3	8.1	7.5	7.7	9.2%
OECD Asia Oceania	**13.1**	**28.8**	**70.0**	**112.0**	**160.9**	**201.7**	**259.2**	**303.6**	**356.0**	**353.6**	**352.5**	**119.2%**
Austria	5.6	7.5	9.0	10.1	11.8	14.7	15.0	18.9	16.1	17.2	16.6	40.0%
Belgium	11.3	18.2	20.5	16.9	18.9	24.5	30.7	33.3	34.5	34.3	34.6	83.3%
Czech Republic	1.9	3.1	5.6	9.1	11.5	14.5	17.0	17.8	16.3	16.3	15.2	32.9%
Denmark	-	0.0	0.0	1.5	4.2	7.3	10.3	10.4	9.5	9.6	9.2	121.2%
Estonia	..	..	..	..	2.7	1.3	1.5	1.8	1.8	1.7	1.2	-55.1%
Finland	-	1.5	1.7	1.9	5.1	6.6	7.9	8.4	8.5	8.8	7.9	56.3%
France	19.2	33.0	47.4	54.5	56.1	65.8	81.1	92.5	87.1	90.4	87.6	56.3%
Germany	38.8	86.4	114.9	105.3	118.1	147.0	158.4	179.9	176.9	181.0	173.0	46.4%
Greece	-	-	-	0.1	0.2	0.1	3.9	5.4	7.7	8.1	6.6	+
Hungary	6.8	10.7	17.6	19.2	19.8	20.3	21.6	27.0	24.2	23.9	20.7	4.5%
Iceland	-	-	-	-	-	-	-	-	-	-	-	-
Ireland	-	-	1.7	4.5	4.0	5.0	7.7	8.2	10.0	10.4	10.1	155.0%
Italy	23.9	40.8	49.3	59.8	89.2	102.8	134.0	163.2	160.6	161.1	148.0	65.8%
Luxembourg	0.0	0.8	1.0	0.7	1.0	1.3	1.6	2.7	2.7	2.6	2.6	159.0%
Netherlands	47.0	72.5	69.4	75.3	70.2	78.6	79.7	80.7	76.2	79.7	80.5	14.5%
Norway	-	0.4	2.0	2.8	4.6	8.1	8.0	10.0	10.5	11.1	11.6	150.3%
Poland	11.4	13.5	17.6	18.2	18.5	18.3	20.6	26.2	26.5	26.8	25.8	39.8%
Portugal	-	-	-	-	-	-	4.6	8.6	8.8	9.5	9.6	x
Slovak Republic	2.9	4.9	5.1	6.7	11.7	11.7	13.1	13.2	11.3	11.2	9.8	-16.4%
Slovenia	..	..	..	..	1.8	1.7	1.8	2.1	2.0	2.0	1.9	4.5%
Spain	0.7	1.8	3.1	4.5	10.5	17.4	34.7	67.2	73.8	80.9	72.6	588.7%
Sweden	-	-	-	0.2	1.2	1.6	1.6	1.7	1.9	1.9	2.6	108.8%
Switzerland	0.0	1.0	1.9	2.9	3.8	5.1	5.6	6.5	6.1	6.5	6.3	66.2%
Turkey	-	-	-	0.1	6.5	13.0	28.9	52.8	70.9	70.2	67.4	931.7%
United Kingdom	21.6	67.2	92.3	105.2	106.0	145.4	199.0	197.2	188.7	194.3	178.7	68.5%
OECD Europe ***	**191.1**	**363.2**	**460.3**	**499.4**	**577.5**	**712.2**	**888.3**	**1 035.7**	**1 032.6**	**1 059.6**	**1 000.0**	**73.2%**
European Union - 27	*..*	*..*	*..*	*..*	*657.9*	*745.6*	*889.5*	*1 011.0*	*988.5*	*1 014.2*	*950.3*	*44.5%*

* 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 - Natural gas

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Non-OECD Total *	**575.2**	**719.2**	**1 012.9**	**1 437.9**	**1 875.8**	**1 817.3**	**2 052.7**	**2 575.4**	**2 808.3**	**2 921.1**	**2 879.6**	**53.5%**
Algeria	2.4	4.6	13.4	21.7	27.4	32.4	37.6	46.9	50.2	50.8	53.3	94.2%
Angola	0.1	0.1	0.2	0.2	1.0	1.1	1.1	1.2	1.6	1.3	1.3	27.8%
Benin	-	-	-	-	-	-	-	-	-	-	-	-
Botswana	..	..	..	-	-	-	-	-	-	-	-	-
Cameroon	-	-	-	-	-	-	-	-	0.6	0.6	0.5	x
Congo	0.0	0.0	-	0.0	-	-	-	0.0	0.0	0.0	0.1	x
Dem. Rep. of Congo	-	-	-	-	-	-	-	-	0.0	0.0	0.0	x
Côte d'Ivoire	-	-	-	-	-	0.1	3.0	2.9	2.9	3.1	3.1	x
Egypt	0.2	0.1	3.4	7.9	14.9	22.9	40.1	65.7	73.6	79.1	81.6	446.4%
Eritrea	..	..	..	..	..	-	-	-	-	-	-	..
Ethiopia	-	-	-	-	-	-	-	-	-	-	-	-
Gabon	-	-	0.0	0.1	0.2	0.3	0.2	0.3	0.3	0.4	0.4	69.0%
Ghana	-	-	-	-	-	-	-	-	-	-	-	-
Kenya	-	-	-	-	-	-	-	-	-	-	-	-
Libyan Arab Jamahiriya	2.1	2.5	5.5	7.0	9.0	8.5	8.8	10.4	11.4	11.8	11.8	31.2%
Morocco	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.9	1.3	1.1	1.2	+
Mozambique	-	-	-	-	-	0.0	0.0	0.0	0.2	0.2	0.2	x
Namibia	..	..	..	..	..	-	-	-	-	-	-	..
Nigeria	0.4	1.0	2.9	6.9	6.9	9.2	12.0	16.7	18.3	18.2	12.5	82.0%
Senegal	-	-	-	-	0.0	0.1	0.0	0.0	0.0	0.0	0.0	161.4%
South Africa	-	-	-	-	-	-	-	-	-	-	-	-
Sudan	-	-	-	-	-	-	-	-	-	-	-	-
United Rep. of Tanzania	-	-	-	-	-	-	-	0.8	1.0	1.1	1.3	x
Togo	-	-	-	-	-	-	-	-	-	-	-	-
Tunisia	0.0	0.5	0.8	2.2	2.8	4.6	6.4	7.5	8.7	9.6	10.0	258.5%
Zambia	-	-	-	-	-	-	-	-	-	-	-	-
Zimbabwe	-	-	-	-	-	-	-	-	-	-	-	-
Other Africa	-	-	-	-	-	-	0.0	1.5	1.8	1.9	2.0	x
Africa	**5.2**	**9.0**	**26.3**	**46.2**	**62.4**	**79.2**	**109.3**	**154.8**	**172.0**	**179.1**	**179.3**	**187.4%**
Bangladesh	0.6	0.9	2.1	4.0	7.3	10.9	14.6	22.2	27.7	30.6	33.9	364.4%
Brunei Darussalam	0.2	1.2	2.1	2.3	2.5	3.4	3.2	3.5	5.3	5.5	6.1	143.2%
Cambodia	..	..	..	..	..	-	-	-	-	-	-	..
Chinese Taipei	1.9	2.7	3.3	1.9	3.3	7.8	12.9	20.7	23.1	25.1	23.9	630.8%
India	1.3	1.9	2.5	8.0	20.6	35.3	47.1	68.5	75.8	76.3	104.6	407.5%
Indonesia	0.3	1.0	7.3	13.5	28.5	45.9	58.8	64.4	59.8	63.2	79.1	177.6%
DPR of Korea	-	-	-	-	-	-	-	-	-	-	-	-
Malaysia	0.0	0.1	0.1	4.4	6.9	23.1	45.5	59.4	67.3	75.1	59.7	763.9%
Mongolia	..	..	..	-	-	-	-	-	-	-	-	-
Myanmar	0.1	0.3	0.6	1.8	1.7	2.8	2.7	7.1	6.3	6.6	5.6	228.4%
Nepal	-	-	-	-	-	-	-	-	-	-	-	-
Pakistan	5.3	7.7	10.3	13.4	20.9	28.0	34.5	56.1	58.7	58.4	58.7	180.6%
Philippines	-	-	-	-	-	0.0	0.0	6.7	7.2	7.2	7.5	x
Singapore	-	-	-	-	-	3.0	2.6	13.6	15.7	16.4	16.6	x
Sri Lanka	-	-	-	-	-	-	-	-	-	-	-	-
Thailand	-	-	-	6.8	11.7	20.4	40.6	60.6	66.1	70.0	62.2	433.4%
Vietnam	-	-	-	0.1	0.0	0.4	2.6	11.5	12.8	14.6	16.6	+
Other Asia	0.5	0.5	0.2	1.2	0.6	0.5	0.5	0.5	0.5	0.7	0.7	23.0%
Asia	**10.2**	**16.3**	**28.7**	**57.5**	**104.0**	**181.5**	**265.6**	**394.7**	**426.3**	**449.7**	**475.3**	**357.1%**
People's Rep. of China	7.3	17.3	27.8	21.9	25.8	31.7	43.4	82.9	128.9	148.3	163.7	534.1%
Hong Kong, China	-	-	-	-	-	0.1	5.7	5.1	4.7	5.4	5.1	x
China	**7.3**	**17.3**	**27.8**	**21.9**	**25.8**	**31.8**	**49.2**	**88.0**	**133.6**	**153.8**	**168.8**	**553.8%**

* Includes 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	2007	2008	2009	% change 90-09
Bahrain	1.8	4.1	5.7	8.6	9.6	9.3	11.6	14.6	17.0	18.2	18.4	91.8%
Islamic Republic of Iran	5.5	8.1	8.5	16.8	37.0	80.0	121.1	193.5	239.9	253.1	265.5	617.7%
Iraq	1.8	3.1	2.4	1.6	3.8	6.0	6.0	2.8	2.8	3.6	2.2	-42.0%
Jordan	-	-	-	-	0.2	0.5	0.5	3.2	5.6	6.4	7.2	+
Kuwait	9.9	9.9	13.2	9.7	11.5	17.7	18.3	23.5	23.0	24.2	23.6	105.3%
Lebanon	-	-	-	-	-	-	-	-	-	-	0.1	x
Oman	-	-	0.7	2.1	4.9	6.7	11.4	16.0	18.4	19.1	20.8	323.2%
Qatar	1.9	4.2	6.3	10.5	12.2	16.2	20.9	29.7	38.1	39.9	44.9	269.3%
Saudi Arabia	2.7	5.4	21.2	34.1	47.6	64.4	77.7	124.3	126.7	132.3	133.0	179.3%
Syrian Arab Republic	-	-	0.1	0.3	3.2	4.8	10.4	10.8	10.8	10.7	13.0	305.5%
United Arab Emirates	2.0	3.3	9.6	19.8	33.1	48.5	64.2	79.9	97.7	112.5	114.8	246.6%
Yemen	-	-	-	-	-	-	-	-	-	-	0.2	x
Middle East	**25.6**	**38.0**	**67.7**	**103.6**	**163.1**	**254.2**	**342.1**	**498.2**	**580.2**	**620.0**	**643.8**	**294.6%**
Albania	0.2	0.6	0.8	0.8	0.5	0.1	0.0	0.0	0.0	0.0	0.0	-96.8%
Armenia *	..	..	..	..	8.3	2.7	2.6	3.1	3.8	4.2	3.3	-60.5%
Azerbaijan *	..	..	..	..	31.5	12.7	10.8	17.7	16.8	19.6	16.7	-46.9%
Belarus *	..	..	..	..	27.5	25.6	32.2	38.3	39.3	40.2	33.1	20.4%
Bosnia and Herzegovina *	..	..	..	..	0.9	0.3	0.5	0.7	0.8	0.8	0.4	-53.6%
Bulgaria	0.6	2.3	7.4	10.8	12.0	10.0	6.2	5.9	6.3	6.1	4.7	-60.5%
Croatia *	..	..	..	..	4.7	4.1	4.7	5.1	5.8	5.6	5.2	10.9%
Cyprus	-	-	-	-	-	-	-	-	-	-	-	-
Georgia *	..	..	..	..	10.6	2.2	2.2	2.2	2.9	2.3	2.3	-78.0%
Gibraltar	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan *	..	..	..	..	24.8	23.5	15.2	28.5	39.3	48.0	44.6	79.9%
Kyrgyzstan *	..	..	..	..	3.6	1.7	1.3	1.4	1.6	1.5	1.3	-63.8%
Latvia *	..	..	..	..	5.6	2.3	2.5	3.2	3.2	3.1	2.8	-49.0%
Lithuania *	..	..	..	..	10.3	4.3	4.3	5.3	5.9	5.3	4.6	-55.1%
FYR of Macedonia *	..	..	..	..	-	-	0.1	0.1	0.2	0.2	0.1	x
Malta	-	-	-	-	-	-	-	-	-	-	-	-
Republic of Moldova *	..	..	..	..	7.6	5.5	4.8	5.6	5.3	4.5	3.4	-55.7%
Romania	52.1	62.6	75.7	74.6	67.4	43.1	30.6	30.2	28.0	27.9	23.4	-65.3%
Russian Federation *	..	..	..	..	866.3	728.8	718.1	783.4	820.7	821.5	784.8	-9.4%
Serbia *	..	..	..	..	6.0	3.0	3.4	4.3	4.5	4.5	3.2	-47.3%
Tajikistan *	..	..	..	..	3.2	1.2	1.5	1.3	1.3	1.0	0.8	-73.8%
Turkmenistan *	..	..	..	..	28.6	26.2	25.5	33.3	40.7	40.9	35.2	23.0%
Ukraine *	..	..	..	..	209.4	156.1	141.9	144.0	125.1	125.1	98.4	-53.0%
Uzbekistan *	..	..	..	..	75.5	77.4	93.4	89.4	94.6	97.9	94.9	25.6%
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**	**1 404.5**	**1 130.7**	**1 101.9**	**1 203.2**	**1 245.9**	**1 260.2**	**1 163.6**	**-17.2%**
Argentina	12.3	17.1	21.7	30.5	43.4	51.2	68.5	78.4	87.1	88.3	86.1	98.5%
Bolivia	0.1	0.3	0.6	0.8	1.4	2.3	2.4	3.7	4.4	4.9	5.4	273.0%
Brazil	0.2	0.7	1.7	4.3	6.4	8.5	17.3	38.0	40.7	49.0	39.1	512.0%
Colombia	2.6	3.2	5.7	7.3	7.5	8.3	12.8	14.3	14.2	15.2	17.4	131.3%
Costa Rica	-	-	-	-	-	-	-	-	-	-	-	-
Cuba	0.0	0.1	0.0	0.0	0.1	0.0	0.9	1.3	2.2	2.1	2.0	+
Dominican Republic	-	-	-	-	-	-	-	0.5	1.1	0.9	1.0	x
Ecuador	0.1	0.3	0.1	0.4	0.5	0.6	0.7	0.9	1.5	1.0	1.0	94.1%
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	6.1	7.6	9.6	818.9%
Trinidad and Tobago	3.4	2.8	5.1	7.1	9.3	10.0	18.4	29.9	36.4	35.0	35.9	287.4%
Uruguay	-	-	-	-	-	-	0.1	0.2	0.2	0.2	0.1	x
Venezuela	20.8	24.3	32.6	38.5	46.3	58.4	61.7	64.0	55.0	52.7	49.8	7.5%
Other Latin America	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.4	1.5	1.6	1.5	+
Latin America	**40.3**	**49.8**	**68.6**	**90.3**	**116.0**	**140.0**	**184.6**	**236.5**	**250.3**	**258.4**	**248.9**	**114.6%**

* 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	2007	2008	2009	% change 90-09
World *	**14 613.6**	**16 155.1**	**18 639.6**	**19 298.6**	**21 536.2**	**22 110.9**	**23 763.5**	**27 708.5**	**29 354.8**	**29 967.1**	**29 549.3**	**37.2%**
Annex I Parties	*..*	*..*	*..*	*..*	*14 168.2*	*13 311.7*	*13 867.5*	*14 334.3*	*14 386.8*	*14 149.2*	*13 159.8*	*-7.1%*
Annex II Parties	*8 638.1*	*8 951.2*	*9 721.8*	*9 303.2*	*9 843.9*	*10 214.8*	*11 022.2*	*11 395.9*	*11 357.9*	*11 083.8*	*10 358.0*	*5.2%*
North America	*4 612.3*	*4 775.0*	*5 191.6*	*5 009.7*	*5 283.9*	*5 571.2*	*6 195.0*	*6 389.3*	*6 397.3*	*6 199.8*	*5 791.3*	*9.6%*
Europe	*3 098.9*	*3 118.9*	*3 387.8*	*3 152.0*	*3 201.6*	*3 172.2*	*3 257.2*	*3 376.0*	*3 305.5*	*3 261.1*	*3 043.6*	*-4.9%*
Asia Oceania	*927.0*	*1 057.4*	*1 142.4*	*1 141.5*	*1 358.4*	*1 471.3*	*1 570.0*	*1 630.7*	*1 655.2*	*1 622.9*	*1 523.1*	*12.1%*
Annex I EIT	*..*	*..*	*..*	*..*	*4 183.7*	*2 937.4*	*2 639.7*	*2 716.1*	*2 760.3*	*2 799.9*	*2 543.2*	*-39.2%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*6 754.2*	*8 100.7*	*9 070.8*	*12 410.2*	*13 912.4*	*14 770.1*	*15 373.8*	*127.6%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*9 039.9*	*7 970.7*	*7 925.8*	*8 204.1*	*8 199.7*	*8 148.9*	*7 547.2*	*-16.5%*
Intl. marine bunkers	**342.8**	**328.6**	**345.1**	**293.9**	**357.9**	**413.7**	**480.0**	**556.1**	**624.5**	**608.1**	**592.2**	**65.5%**
Intl. aviation bunkers	**167.7**	**172.0**	**200.0**	**222.8**	**255.9**	**284.7**	**345.2**	**407.8**	**431.2**	**439.7**	**423.4**	**65.5%**
**Non-OECD Total ** **	**4 641.7**	**5 730.5**	**7 124.7**	**8 154.3**	**9 647.6**	**9 697.9**	**10 275.9**	**13 573.2**	**15 054.3**	**15 931.3**	**16 330.1**	**69.3%**
OECD Total * **	**9 461.5**	**9 923.9**	**10 969.8**	**10 627.5**	**11 274.8**	**11 714.5**	**12 662.4**	**13 171.3**	**13 245.0**	**12 988.0**	**12 203.6**	**8.2%**
Canada	337.2	392.3	428.6	399.9	423.6	452.7	518.8	545.4	544.9	531.2	501.3	18.4%
Chile	21.5	17.5	21.7	19.8	31.2	39.3	53.7	59.2	64.9	69.1	65.8	110.9%
Mexico	100.8	145.1	242.2	265.7	289.8	298.8	344.4	414.5	426.0	435.8	422.5	45.8%
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	5 852.4	5 668.6	5 290.0	8.8%
OECD Americas	**4 734.6**	**4 937.6**	**5 455.5**	**5 295.3**	**5 604.9**	**5 909.4**	**6 593.0**	**6 863.0**	**6 888.1**	**6 704.8**	**6 279.7**	**12.0%**
Australia	156.9	182.7	212.1	220.0	260.9	278.5	330.4	368.5	381.7	393.2	399.0	52.9%
Israel	17.2	21.0	23.1	23.5	34.9	48.1	55.5	61.7	66.1	67.0	64.0	83.5%
Japan	755.6	857.1	913.0	899.8	1 074.1	1 165.5	1 208.4	1 229.3	1 241.1	1 197.0	1 092.9	1.7%
Korea	54.8	77.9	125.7	157.7	238.6	355.3	440.6	464.3	498.9	512.8	518.1	117.2%
New Zealand	14.4	17.7	17.3	21.7	23.4	27.3	31.2	32.9	32.3	32.7	31.2	33.5%
OECD Asia Oceania	**999.0**	**1 156.3**	**1 291.2**	**1 322.6**	**1 631.9**	**1 874.7**	**2 066.2**	**2 156.7**	**2 220.1**	**2 202.8**	**2 105.2**	**29.0%**
Austria	51.2	52.3	58.3	55.9	57.1	60.1	62.6	75.6	70.6	70.1	63.8	11.7%
Belgium	120.0	119.5	129.8	103.9	109.4	116.3	121.4	114.8	108.2	111.3	108.2	-1.2%
Czech Republic	168.5	158.9	170.1	174.5	160.7	126.8	125.2	124.8	128.0	120.5	111.2	-30.8%
Denmark	56.2	52.6	61.0	61.0	50.8	58.0	51.2	48.4	51.6	48.8	47.3	-6.8%
Estonia	..	..	..	..	38.5	18.3	16.3	17.8	20.1	18.6	15.8	-59.0%
Finland	39.9	45.5	57.4	50.5	52.1	54.0	54.6	56.7	65.7	58.1	55.5	6.5%
France	434.6	431.8	473.0	374.3	367.3	348.7	360.6	389.9	373.4	374.4	362.2	-1.4%
Germany	993.1	976.5	1 076.4	1 022.5	971.7	877.5	843.9	820.1	804.1	802.5	755.1	-22.3%
Greece	25.3	35.4	45.4	55.9	69.2	72.6	85.3	93.1	91.3	91.2	88.2	27.5%
Hungary	58.2	67.4	80.7	78.8	67.7	59.3	55.0	57.3	54.9	53.5	48.0	-29.1%
Iceland	1.4	1.6	1.8	1.6	2.0	1.9	2.1	2.2	2.3	2.2	2.0	1.5%
Ireland	22.5	21.8	26.3	27.2	31.4	32.7	40.5	41.8	43.1	42.0	40.2	28.0%
Italy	280.3	311.2	349.0	339.6	384.0	413.0	433.6	458.8	444.9	432.7	390.3	1.6%
Luxembourg	15.2	13.1	12.0	10.0	10.4	8.3	8.0	11.4	10.6	10.5	10.0	-4.0%
Netherlands	130.4	138.0	155.7	147.2	158.5	172.3	174.5	182.6	180.7	182.9	178.9	12.9%
Norway	23.4	24.0	28.6	27.1	28.5	31.8	37.1	37.6	39.0	44.8	42.1	47.6%
Poland	310.3	367.5	450.4	445.3	363.3	340.0	294.6	301.6	310.3	310.1	294.9	-18.8%
Portugal	14.9	18.9	24.6	25.5	38.5	49.4	59.9	63.4	56.3	54.0	53.7	39.3%
Slovak Republic	48.3	55.0	60.9	59.4	54.5	42.3	37.4	38.9	36.3	36.9	33.7	-38.1%
Slovenia	..	..	..	..	13.5	14.2	13.9	15.7	15.9	16.8	15.2	12.9%
Spain	121.5	162.1	192.0	187.6	212.1	239.2	286.7	341.9	345.8	321.2	282.5	33.2%
Sweden	84.5	80.9	72.0	61.8	51.8	54.7	49.5	51.3	46.8	48.4	43.0	-16.8%
Switzerland	39.7	37.4	39.8	39.5	42.7	40.1	40.9	43.6	40.5	42.9	43.8	2.7%
Turkey	43.7	62.4	73.3	99.7	138.2	157.3	203.5	219.7	265.8	262.9	256.2	85.4%
United Kingdom	644.9	596.3	584.7	560.8	564.0	541.7	544.8	542.9	530.4	522.9	476.7	-15.5%
OECD Europe * **	**3 727.9**	**3 830.0**	**4 223.1**	**4 009.6**	**4 038.0**	**3 930.4**	**4 003.2**	**4 151.6**	**4 136.7**	**4 080.5**	**3 818.7**	**-5.4%**
European Union - 27	*..*	*..*	*..*	*..*	*4 133.3*	*3 915.0*	*3 876.4*	*4 018.0*	*3 969.5*	*3 900.8*	*3 623.4*	*-12.3%*

* 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	2007	2008	2009	% change 90-09
Non-OECD Total *	**4 641.7**	**5 730.5**	**7 124.7**	**8 154.3**	**9 647.6**	**9 697.9**	**10 275.9**	**13 573.2**	**15 054.3**	**15 931.3**	**16 330.1**	**69.3%**
Algeria	9.8	15.0	29.0	46.4	55.3	60.0	66.8	79.9	91.9	93.1	98.9	78.9%
Angola	1.7	2.1	2.7	2.9	4.1	3.9	5.1	7.0	10.2	12.0	12.7	209.1%
Benin	0.3	0.5	0.4	0.5	0.2	0.2	1.5	2.3	3.8	3.8	4.2	+
Botswana	..	..	..	1.6	2.9	3.3	4.2	4.4	4.5	4.8	4.3	46.9%
Cameroon	0.7	1.0	1.7	2.5	2.7	2.6	3.0	3.2	5.3	5.1	6.2	128.1%
Congo	0.6	0.7	0.8	1.0	0.8	0.6	0.6	1.4	1.4	1.5	1.8	124.0%
Dem. Rep. of Congo	2.7	2.9	2.9	3.4	4.1	3.0	1.7	2.3	2.6	2.9	2.8	-33.1%
Côte d'Ivoire	2.4	3.1	3.4	2.5	2.9	3.7	6.6	6.5	6.6	6.7	6.3	120.6%
Egypt	20.6	26.3	39.6	67.1	82.0	87.6	109.8	147.7	163.1	172.2	175.4	114.0%
Eritrea	..	..	..	..	..	0.8	0.6	0.8	0.6	0.4	0.5	..
Ethiopia	1.4	1.2	1.4	1.4	2.4	2.6	3.2	4.9	5.9	6.4	7.0	191.0%
Gabon	1.7	2.1	2.2	1.9	1.1	1.2	1.3	2.1	2.4	2.3	1.7	60.3%
Ghana	1.9	2.5	2.2	2.5	2.8	3.6	5.4	6.2	8.9	7.8	6.6	130.7%
Kenya	3.2	3.4	4.3	4.6	5.7	5.9	6.7	7.1	8.0	8.0	9.3	62.7%
Libyan Arab Jamahiriya	3.8	9.9	17.2	24.7	28.0	40.6	42.6	45.1	45.7	49.8	53.3	90.7%
Morocco	6.8	9.9	13.9	16.4	20.2	25.2	30.0	39.5	42.2	43.8	43.1	114.0%
Mozambique	3.0	2.4	2.4	1.5	1.0	1.1	1.5	1.5	2.1	2.0	2.2	123.6%
Namibia	..	..	..	..	..	1.8	1.9	2.9	3.3	4.2	3.7	..
Nigeria	5.9	11.8	26.9	33.2	38.2	41.6	40.9	53.2	46.0	54.4	42.9	12.2%
Senegal	1.2	1.6	2.0	1.9	2.2	2.5	3.7	4.7	5.0	5.0	5.3	141.5%
South Africa	148.8	175.6	215.1	295.1	300.3	349.9	364.1	416.4	446.9	486.3	461.5	53.7%
Sudan	4.1	3.9	3.9	4.3	5.6	4.7	7.1	11.2	13.6	12.5	14.5	160.0%
United Rep. of Tanzania	2.1	1.9	2.2	2.0	2.0	3.0	2.3	5.1	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	0.9	1.1	1.1	95.8%
Tunisia	3.7	5.0	8.0	10.1	12.3	14.0	17.4	19.2	20.4	21.0	20.7	68.1%
Zambia	3.4	3.3	3.4	2.9	2.7	2.1	1.7	2.1	1.5	1.7	1.8	-33.9%
Zimbabwe	7.9	7.7	8.0	9.6	15.4	15.3	12.8	10.6	9.5	9.0	8.8	-42.8%
Other Africa	7.3	8.7	11.4	12.2	14.8	17.5	19.4	25.1	28.5	29.5	29.4	98.6%
Africa	**245.5**	**303.0**	**405.5**	**552.4**	**610.5**	**698.9**	**762.6**	**913.5**	**986.4**	**1 053.0**	**1 032.4**	**69.1%**
Bangladesh	3.4	4.7	7.2	9.3	14.1	21.3	26.7	38.1	43.6	47.4	51.2	262.4%
Brunei Darussalam	0.4	1.7	3.2	4.3	4.1	5.5	6.0	6.2	8.1	8.9	7.7	85.6%
Cambodia	..	..	..	..	..	1.4	2.3	3.8	4.4	4.6	4.3	..
Chinese Taipei	31.2	43.2	75.1	74.8	115.9	162.7	226.9	270.0	284.0	268.7	250.2	115.9%
India	198.5	238.4	283.5	419.2	590.8	791.0	973.6	1 198.4	1 372.9	1 450.2	1 630.0	175.9%
Indonesia	25.5	39.3	73.2	90.1	150.4	229.4	277.7	346.7	368.6	364.9	390.3	159.4%
DPR of Korea	69.4	79.6	108.6	129.8	117.6	75.8	68.9	74.4	62.5	69.5	66.3	-43.6%
Malaysia	13.8	16.9	29.5	38.3	55.4	93.3	118.5	164.8	181.9	190.7	173.5	213.3%
Mongolia	..	..	..	11.6	12.7	10.1	8.8	9.5	11.2	11.3	12.0	-5.1%
Myanmar	4.6	4.1	5.2	6.0	4.1	6.7	8.8	14.3	12.8	12.4	10.7	162.1%
Nepal	0.2	0.3	0.5	0.5	0.9	1.8	3.1	3.0	2.5	2.9	3.4	272.6%
Pakistan	17.1	21.2	26.8	40.0	61.0	82.3	102.1	121.3	142.9	137.8	142.5	133.7%
Philippines	24.2	29.3	34.3	26.9	39.4	59.0	69.1	71.8	68.1	71.7	69.5	76.5%
Singapore	7.0	9.7	14.1	16.2	29.3	50.4	52.4	35.0	25.2	28.3	34.1	16.6%
Sri Lanka	2.9	2.9	3.9	3.7	4.0	5.8	10.6	12.4	12.7	11.9	12.8	220.8%
Thailand	17.3	21.8	34.3	40.7	81.2	140.2	159.2	220.6	231.6	239.7	230.6	184.0%
Vietnam	16.1	16.7	14.8	17.1	17.2	27.8	44.0	80.6	92.9	101.9	114.0	562.5%
Other Asia	8.3	10.1	16.4	10.0	10.1	9.3	11.3	14.9	13.8	13.5	14.3	41.2%
Asia	**440.0**	**540.1**	**730.8**	**938.8**	**1 308.1**	**1 773.7**	**2 170.1**	**2 685.9**	**2 939.7**	**3 036.4**	**3 217.4**	**146.0%**
People's Rep. of China	867.6	1 133.9	1 489.2	1 794.7	2 371.1	2 957.8	3 052.2	5 125.0	6 037.2	6 558.4	7 037.9	196.8%
Hong Kong, China	9.1	11.1	14.3	22.8	30.9	34.9	39.2	40.1	45.8	44.3	47.1	52.5%
China	**876.7**	**1 145.0**	**1 503.5**	**1 817.5**	**2 402.0**	**2 992.7**	**3 091.4**	**5 165.1**	**6 082.9**	**6 602.7**	**7 085.0**	**195.0%**

* Includes Estonia and Slovenia prior to 1990.

CO_2 emissions: Reference Approach

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	3.1	4.8	6.3	9.8	10.2	11.6	13.8	17.7	20.8	22.0	22.4	120.0%
Islamic Republic of Iran	45.1	73.9	106.8	150.7	183.3	243.7	340.5	453.0	492.7	528.7	549.1	199.5%
Iraq	12.4	15.0	29.9	45.2	50.8	74.6	72.1	97.5	96.1	99.6	92.8	82.9%
Jordan	1.4	2.1	4.3	7.5	9.4	12.4	14.1	18.4	19.4	18.7	19.5	108.9%
Kuwait	14.0	15.1	26.0	37.5	24.1	38.3	50.6	72.4	72.1	76.6	83.9	248.7%
Lebanon	5.0	6.0	6.9	6.6	5.5	12.8	14.1	14.5	12.0	15.8	19.3	251.0%
Oman	0.7	0.7	3.1	5.5	10.8	16.8	20.6	26.4	38.0	40.9	37.0	244.2%
Qatar	2.2	5.0	7.7	12.2	13.8	17.5	22.9	36.4	50.9	51.5	52.0	277.4%
Saudi Arabia	17.8	22.8	86.3	119.6	144.6	219.2	247.9	349.1	341.3	361.9	370.4	156.2%
Syrian Arab Republic	7.2	9.0	12.3	21.9	29.6	33.8	40.8	56.3	67.3	68.5	60.7	104.8%
United Arab Emirates	2.4	4.9	18.8	34.7	50.3	67.4	80.1	100.0	120.4	136.4	139.4	176.9%
Yemen	1.9	1.8	3.4	4.8	7.1	9.9	13.9	19.3	20.9	21.2	22.1	208.6%
Middle East	**113.3**	**161.4**	**311.9**	**456.1**	**539.5**	**758.1**	**931.3**	**1 260.9**	**1 351.8**	**1 441.8**	**1 468.7**	**172.3%**
Albania	4.1	4.7	7.9	7.4	6.5	1.9	3.1	4.5	4.1	3.9	2.7	-58.2%
Armenia *	..	..	..	..	20.5	3.4	3.4	4.1	4.8	5.3	4.3	-79.2%
Azerbaijan *	..	..	..	..	68.1	33.9	30.5	34.6	29.1	31.0	27.7	-59.3%
Belarus *	..	..	..	..	127.4	63.0	60.0	63.9	66.2	66.2	64.0	-49.8%
Bosnia and Herzegovina *	..	..	..	..	24.0	3.5	13.7	15.8	18.2	19.7	19.6	-18.4%
Bulgaria	63.8	73.0	84.2	85.1	76.2	57.5	43.4	47.8	52.1	49.8	43.0	-43.6%
Croatia *	..	..	..	..	21.6	16.0	17.9	21.0	22.2	21.2	20.0	-7.4%
Cyprus	1.8	1.7	2.6	2.8	4.1	5.2	6.3	6.6	7.3	7.7	7.4	79.8%
Georgia *	..	..	..	..	30.4	7.2	4.4	4.4	5.8	5.0	5.8	-80.8%
Gibraltar	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	181.5%
Kazakhstan *	..	..	..	..	237.0	169.3	116.0	165.4	210.6	220.3	209.1	-11.8%
Kyrgyzstan *	..	..	..	..	22.5	4.4	4.5	5.0	5.6	5.4	6.5	-70.9%
Latvia *	..	..	..	..	18.7	9.1	6.4	6.9	7.9	7.6	6.6	-64.6%
Lithuania *	..	..	..	..	33.7	14.5	10.9	13.6	14.4	14.3	12.3	-63.6%
FYR of Macedonia *	..	..	..	..	8.6	8.2	8.6	9.1	9.5	9.2	8.5	-1.6%
Malta	0.6	0.6	1.0	1.1	2.3	2.2	2.1	2.7	2.7	2.6	2.5	9.2%
Republic of Moldova *	..	..	..	..	30.2	11.4	6.5	8.0	7.5	7.1	5.8	-80.9%
Romania	111.6	138.9	177.8	178.9	171.8	127.2	87.7	91.7	96.1	91.3	77.1	-55.1%
Russian Federation *	..	..	..	..	2 337.2	1 620.4	1 545.2	1 579.8	1 611.3	1 669.5	1 528.6	-34.6%
Serbia *	..	..	..	..	61.6	44.4	41.9	50.8	52.9	52.9	47.3	-23.2%
Tajikistan *	..	..	..	..	11.2	2.4	2.2	2.4	3.2	3.0	2.8	-75.2%
Turkmenistan *	..	..	..	..	52.4	34.7	36.3	46.2	54.4	55.9	48.9	-6.7%
Ukraine *	..	..	..	..	699.1	428.8	325.7	335.4	324.7	323.6	272.8	-61.0%
Uzbekistan *	..	..	..	..	120.6	103.8	122.4	112.7	117.1	120.2	116.7	-3.2%
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**	**3 138.7**	**3 617.6**	**3 851.1**	**4 185.6**	**2 772.9**	**2 499.4**	**2 632.8**	**2 727.9**	**2 793.1**	**2 540.4**	**-39.3%**
Argentina	86.0	89.8	101.2	92.7	106.8	117.6	134.1	147.7	164.1	172.9	165.7	55.2%
Bolivia	2.2	3.4	4.6	4.3	4.8	7.6	7.8	11.4	11.9	12.6	13.2	175.6%
Brazil	93.9	143.9	189.8	180.5	205.0	253.4	311.3	330.0	349.8	368.3	345.1	68.4%
Colombia	27.0	31.9	38.3	42.7	48.9	57.9	57.6	60.2	61.6	65.2	69.4	42.0%
Costa Rica	1.4	1.8	2.3	2.0	2.9	4.0	5.1	5.1	6.5	6.7	6.4	119.0%
Cuba	20.2	23.7	31.3	32.4	32.5	23.3	26.8	25.3	24.9	26.1	28.5	-12.2%
Dominican Republic	3.4	5.6	6.5	7.1	9.3	13.5	19.2	18.1	19.4	19.0	18.7	101.2%
Ecuador	3.4	6.5	10.9	12.3	13.0	16.9	19.0	27.3	27.9	26.5	27.5	111.4%
El Salvador	1.5	2.1	1.8	1.9	2.3	4.8	5.3	6.0	6.4	6.0	5.7	145.0%
Guatemala	2.4	2.7	4.3	3.4	3.7	6.0	9.3	11.5	12.5	11.3	14.5	295.6%
Haiti	0.4	0.4	0.6	0.8	0.9	0.9	1.4	2.0	2.3	2.4	2.2	131.3%
Honduras	1.1	1.3	1.7	1.6	2.2	3.5	4.5	6.9	7.8	7.7	6.9	217.2%
Jamaica	5.2	7.4	6.4	4.5	7.1	8.4	10.0	10.4	13.3	11.6	8.3	16.5%
Netherlands Antilles	13.6	9.6	10.0	4.9	4.0	3.3	3.9	3.7	4.3	3.9	5.2	30.1%
Nicaragua	1.5	1.9	1.9	1.9	1.7	2.6	3.4	4.2	4.3	4.1	4.2	138.6%
Panama	3.7	3.7	2.5	2.7	2.5	3.9	5.2	5.5	6.1	6.3	7.4	198.9%
Paraguay	0.6	0.7	1.4	1.4	1.9	3.5	3.2	3.4	3.7	3.7	4.1	108.9%
Peru	16.1	19.4	21.8	18.4	18.2	22.8	26.1	29.0	29.2	32.9	32.3	77.2%
Trinidad and Tobago	5.0	4.8	8.3	11.0	12.7	12.8	21.4	33.1	40.5	38.9	40.6	219.6%
Uruguay	5.8	5.9	6.0	3.4	4.0	4.7	6.1	5.6	5.9	8.1	7.5	86.3%
Venezuela	43.6	60.3	88.8	99.2	104.9	116.6	125.7	152.5	146.4	153.0	157.0	49.6%
Other Latin America	11.6	15.5	15.1	9.3	12.5	13.4	14.6	16.0	16.8	17.0	15.9	27.2%
Latin America	**349.8**	**442.3**	**555.4**	**538.4**	**601.9**	**701.5**	**821.0**	**915.0**	**965.6**	**1 004.3**	**986.2**	**63.8%**

* 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	2007	2008	2009	% change 90-09
World	**342.76**	**328.65**	**345.10**	**293.95**	**357.89**	**413.73**	**479.95**	**556.14**	**624.45**	**608.09**	**592.22**	**65.5%**
Annex I Parties	*..*	*..*	*..*	*..*	*233.63*	*231.01*	*250.90*	*272.05*	*294.47*	*277.23*	*251.96*	*7.8%*
Annex II Parties	*202.63*	*216.81*	*234.71*	*171.25*	*223.39*	*227.72*	*245.78*	*263.51*	*286.18*	*268.82*	*243.97*	*9.2%*
North America	*26.41*	*36.12*	*93.91*	*56.43*	*93.55*	*93.68*	*92.24*	*83.63*	*97.98*	*83.62*	*78.05*	*-16.6%*
Europe	*120.20*	*110.37*	*97.05*	*87.88*	*109.00*	*112.20*	*132.89*	*156.28*	*166.00*	*164.07*	*147.12*	*35.0%*
Asia Oceania	*56.02*	*70.31*	*43.75*	*26.94*	*20.84*	*21.84*	*20.65*	*23.60*	*22.20*	*21.13*	*18.80*	*-9.8%*
Annex I EIT	*..*	*..*	*..*	*..*	*9.78*	*2.58*	*1.80*	*3.14*	*2.98*	*3.46*	*3.56*	*-63.6%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*124.26*	*182.71*	*229.05*	*284.09*	*329.98*	*330.86*	*340.26*	*173.8%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*142.49*	*139.78*	*158.68*	*184.90*	*193.21*	*190.33*	*170.99*	*20.0%*
Non-OECD Total *	**135.85**	**108.43**	**106.59**	**117.35**	**126.10**	**159.05**	**194.87**	**247.75**	**295.52**	**298.15**	**312.88**	**148.1%**
OECD Total **	**206.91**	**220.22**	**238.51**	**176.59**	**231.79**	**254.68**	**285.08**	**308.38**	**328.93**	**309.93**	**279.33**	**20.5%**
Canada	3.07	2.58	4.71	1.18	2.87	3.17	3.34	1.88	2.02	1.67	1.51	-47.4%
Chile	0.60	0.37	0.27	0.09	0.57	1.12	1.94	3.30	3.76	3.64	2.61	357.2%
Mexico	0.26	0.38	1.00	1.33	..	2.55	3.83	2.70	2.69	3.18	2.39	..
United States	23.34	33.54	89.20	55.26	90.68	90.51	88.90	81.76	95.96	81.94	76.54	-15.6%
OECD Americas	**27.27**	**36.88**	**95.18**	**57.85**	**94.12**	**97.35**	**98.02**	**89.63**	**104.43**	**90.44**	**83.06**	**-11.8%**
Australia	5.10	5.03	3.68	2.28	2.14	2.79	2.96	2.81	2.67	3.05	2.64	23.5%
Israel	..	..	..	0.35	0.38	0.65	0.58	0.87	1.07	1.20	1.10	190.4%
Japan	49.88	64.20	38.90	23.92	17.66	17.92	16.93	19.80	18.54	16.97	15.08	-14.6%
Korea	1.53	0.17	0.31	1.69	5.27	21.35	30.46	33.24	30.90	29.16	26.81	408.9%
New Zealand	1.04	1.08	1.18	0.74	1.04	1.13	0.76	0.99	0.99	1.11	1.09	4.4%
OECD Asia Oceania	**57.55**	**70.48**	**44.06**	**28.98**	**26.49**	**43.84**	**51.69**	**57.72**	**54.16**	**51.50**	**46.72**	**76.4%**
Austria	-	-	-	-	-	-	-	-	-	-	-	-
Belgium	8.06	8.64	7.52	7.30	12.91	12.31	17.02	24.40	29.54	30.49	22.34	73.1%
Czech Republic	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	2.09	1.67	1.32	1.34	3.02	4.96	4.03	2.41	3.33	2.87	1.60	-46.9%
Estonia	..	..	..	..	0.57	0.28	0.33	0.38	0.78	0.79	0.71	24.0%
Finland	0.24	0.30	1.84	1.45	1.78	1.04	2.10	1.59	1.44	1.26	0.78	-56.1%
France	12.71	14.53	12.52	7.52	7.96	7.94	9.42	8.65	9.20	8.04	8.02	0.7%
Germany	12.93	10.52	11.00	10.85	7.79	6.43	6.85	7.83	9.66	9.36	8.57	9.9%
Greece	1.78	2.70	2.63	3.51	7.97	11.17	11.28	9.02	10.05	9.72	8.25	3.5%
Hungary	-	-	-	-	-	-	-	-	-	-	-	-
Iceland	..	..	..	0.02	0.10	0.14	0.21	0.20	0.20	0.19	0.20	106.0%
Ireland	0.24	0.20	0.23	0.09	0.06	0.36	0.47	0.32	0.34	0.27	0.35	523.9%
Italy	22.80	17.97	13.08	10.75	8.37	7.59	5.16	7.06	7.60	7.98	7.43	-11.2%
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	28.26	32.86	29.39	27.45	34.29	35.59	41.98	53.31	50.40	48.58	44.61	30.1%
Norway	1.90	1.49	0.87	1.03	1.39	2.19	2.56	2.16	2.05	1.49	1.54	10.3%
Poland	1.63	2.21	2.22	1.63	1.24	0.44	0.90	1.01	0.78	0.87	0.78	-36.9%
Portugal	2.32	2.00	1.34	1.48	1.91	1.52	2.08	1.82	1.57	1.68	1.51	-20.8%
Slovak Republic	-	-	-	-	-	-	-	-	-	-	-	-
Slovenia	..	..	..	..	..	..	..	0.07	0.15	0.21	0.10	..
Spain	5.94	3.44	5.07	6.76	11.46	10.00	18.97	25.00	26.71	27.69	27.52	140.2%
Sweden	3.58	3.45	2.66	1.76	2.09	3.30	4.28	6.12	6.54	6.43	6.70	220.0%
Switzerland	..	..	..	..	0.06	0.05	0.03	0.04	0.03	0.03	0.02	-55.6%
Turkey	0.26	0.29	..	0.25	0.37	0.58	1.25	3.31	2.63	2.06	0.85	129.8%
United Kingdom	17.37	10.60	7.57	6.56	7.84	7.62	6.44	6.34	7.32	7.99	7.67	-2.2%
OECD Europe **	**122.10**	**112.87**	**99.26**	**89.76**	**111.18**	**113.49**	**135.37**	**161.04**	**170.34**	**168.00**	**149.56**	**34.5%**
European Union - 27	*..*	*..*	*..*	*..*	*111.49*	*112.64*	*134.49*	*159.93*	*170.14*	*169.42*	*153.14*	*37.4%*

* 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	2007	2008	2009	% change 90-09
Non-OECD Total *	**135.85**	**108.43**	**106.59**	**117.35**	**126.10**	**159.05**	**194.87**	**247.75**	**295.52**	**298.15**	**312.88**	**148.1%**
Algeria	0.61	0.77	1.29	1.16	1.36	1.17	0.77	1.17	1.09	1.01	0.91	-33.0%
Angola	0.77	0.48	0.83	0.10	0.02	0.03	..	0.34	0.04	0.04	0.59	+
Benin	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	..	..	..	..	..	..	..	..	..	..	..	..
Cameroon	..	..	0.12	0.03	0.04	0.09	0.06	0.04	0.16	0.16	0.16	275.8%
Congo	..	..	..	..	..	..	..	..	0.09	0.13	..	..
Dem. Rep. of Congo	0.40	0.22	0.08	0.09	0.10	0.01	..	..	..	..	..	..
Côte d'Ivoire	0.06	0.01	1.35	0.73	0.12	0.27	0.29	0.35	0.34	0.21	0.20	64.3%
Egypt	0.06	1.08	3.19	4.71	5.25	7.73	8.58	4.51	3.08	1.51	0.96	-81.8%
Eritrea	..	..	..	..	..	0.42	..	..	..	..	..	..
Ethiopia	0.07	0.01	0.01	0.03	0.04	0.52	..	..	..	..	..	..
Gabon	0.20	0.14	0.19	0.22	0.08	0.44	0.60	0.71	0.83	0.84	0.57	620.4%
Ghana	0.16	0.14	0.10	..	..	..	0.16	0.12	0.14	0.18	0.23	..
Kenya	1.47	1.05	0.56	0.45	0.55	0.17	0.26	0.06	0.07	0.07	0.09	-84.4%
Libyan Arab Jamahiriya	0.01	0.01	0.02	0.04	0.25	0.28	0.28	0.28	0.28	0.28	0.28	12.5%
Morocco	0.24	0.18	0.21	0.04	0.06	0.04	0.04	0.04	0.04	0.04	0.04	-34.9%
Mozambique	0.76	0.35	0.27	0.10	0.09	0.01	0.00	0.01	..	..	..	..
Namibia	..	..	..	..	..	..	..	..	..	..	..	..
Nigeria	0.02	0.11	0.25	0.34	0.58	1.42	1.15	1.55	1.75	1.86	1.96	237.9%
Senegal	2.99	2.09	0.84	0.33	0.11	0.09	0.30	0.36	0.27	0.23	0.19	69.7%
South Africa	10.81	7.15	5.25	3.41	5.95	10.30	8.51	8.52	8.30	8.61	8.46	42.1%
Sudan	..	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	14.3%
United Rep. of Tanzania	0.05	0.05	0.12	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	-15.5%
Togo	..	..	..	..	..	..	0.01	0.01	0.01	0.01	0.01	..
Tunisia	0.06	0.02	0.02	0.01	0.07	0.06	0.03	0.03	0.03	0.08	0.09	25.5%
Zambia	-	-	-	-	-	-	-	-	-	-	-	-
Zimbabwe	..	..	..	..	..	..	..	..	..	..	..	..
Other Africa	3.02	2.08	1.77	1.82	1.71	1.68	1.99	1.74	1.71	1.83	1.83	6.9%
Africa	**21.76**	**15.95**	**16.48**	**13.70**	**16.49**	**24.81**	**23.13**	**19.94**	**18.33**	**17.19**	**16.65**	**0.9%**
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	..	..	..	..	..	..	..	..	..	..	..	..
Cambodia	..	..	..	..	..	..	..	..	..	..	..	..
Chinese Taipei	0.39	0.33	0.66	1.62	4.86	7.57	11.02	7.72	6.62	5.71	5.05	4.0%
India	0.71	0.57	0.72	0.34	0.47	0.39	0.27	0.08	0.15	0.45	0.51	7.7%
Indonesia	0.70	1.09	0.79	0.68	1.68	1.28	0.36	0.42	0.47	0.50	0.52	-68.8%
DPR of Korea	..	..	..	..	..	..	..	..	..	..	..	..
Malaysia	0.11	0.22	0.18	0.31	0.28	0.52	0.67	0.26	0.21	0.19	0.14	-52.2%
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	0.41	0.54	0.73	583.9%
Philippines	1.27	0.44	0.59	0.49	0.21	0.35	0.68	0.37	0.75	0.83	0.62	201.6%
Singapore	8.89	10.43	14.96	15.14	33.87	35.28	57.58	78.60	97.28	107.72	112.19	231.3%
Sri Lanka	1.19	1.29	1.10	1.01	1.21	1.09	0.50	0.53	0.54	0.63	0.62	-48.4%
Thailand	0.21	0.25	0.50	0.65	1.70	3.02	2.46	5.18	5.15	5.18	4.75	179.1%
Vietnam	..	..	..	0.07	0.09	0.22	0.46	0.79	0.88	0.91	0.92	974.1%
Other Asia	0.57	0.53	0.46	0.20	0.21	0.33	0.32	0.47	0.47	0.46	0.48	132.7%
Asia	**14.39**	**15.42**	**20.61**	**20.65**	**44.74**	**50.21**	**74.52**	**94.81**	**113.05**	**123.23**	**126.66**	**183.1%**
People's Rep. of China	0.30	0.69	1.87	2.47	4.59	6.62	13.02	26.51	36.04	26.22	30.88	572.5%
Hong Kong, China	1.96	1.69	2.83	3.11	4.52	7.16	10.61	17.79	25.99	21.49	32.35	615.2%
China	**2.26**	**2.37**	**4.70**	**5.58**	**9.11**	**13.78**	**23.63**	**44.30**	**62.04**	**47.71**	**63.22**	**593.7%**

* Includes 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	2007	2008	2009	% change 90-09
Bahrain	0.56	0.55	0.60	0.47	0.25	0.25	0.25	0.24	0.25	0.22	0.20	-20.0%
Islamic Republic of Iran	1.29	1.57	1.55	1.15	1.56	2.34	1.98	1.69	2.80	2.61	9.96	538.3%
Iraq	0.26	0.29	0.37	0.46	0.40	..	..	..	..	..	..	..
Jordan	..	..	..	..	..	0.03	0.13	0.25	0.12	0.10	0.12	..
Kuwait	6.29	6.32	5.60	2.38	0.55	1.82	1.43	2.15	3.00	3.13	1.20	116.3%
Lebanon	0.71	0.03	..	..	..	0.04	0.05	0.06	0.06	0.07	0.07	..
Oman	3.85	2.54	0.71	0.35	0.06	0.08	0.19	0.12	0.06	0.41	0.38	510.0%
Qatar	..	..	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	40.05	25.86	13.62	28.01	5.74	5.96	6.60	7.09	8.66	8.85	8.00	39.5%
Syrian Arab Republic	0.77	1.26	1.97	2.53	2.82	3.43	3.68	3.17	3.27	3.18	3.39	20.4%
United Arab Emirates	..	..	5.53	9.69	18.99	33.16	29.30	37.44	44.22	46.24	38.88	104.7%
Yemen	1.13	0.91	2.13	1.24	1.24	0.31	0.30	0.39	0.39	0.39	0.39	-68.2%
Middle East	**54.91**	**39.34**	**32.09**	**46.28**	**31.61**	**47.43**	**43.91**	**52.59**	**62.82**	**65.21**	**62.59**	**98.0%**
Albania	..	..	..	..	..	..	..	..	..	..	..	..
Armenia *	..	..	..	..	-	-	-	-	-	-	-	-
Azerbaijan *	..	..	..	..	..	..	..	..	..	..	..	..
Belarus *	..	..	..	..	-	-	-	-	-	-	-	-
Bosnia and Herzegovina *	..	..	..	..	..	..	..	..	..	..	..	..
Bulgaria	..	..	..	0.71	0.18	0.85	0.20	0.34	0.16	0.38	0.64	255.8%
Croatia *	..	..	..	..	0.15	0.10	0.06	0.08	0.07	0.07	0.02	-85.2%
Cyprus	0.01	0.06	0.05	0.11	0.18	0.21	0.60	0.90	0.85	0.78	0.68	277.0%
Georgia *	..	..	..	..	..	0.16	..	..	..	..	..	..
Gibraltar	0.55	0.58	0.41	0.88	1.38	2.69	3.22	3.63	3.84	3.92	4.04	193.5%
Kazakhstan *	..	..	..	..	..	..	..	..	..	..	..	..
Kyrgyzstan *	..	..	..	..	-	-	-	-	-	-	-	-
Latvia *	..	..	..	..	1.48	0.47	0.02	0.81	0.56	0.65	0.86	-42.0%
Lithuania *	..	..	..	..	0.30	0.44	0.29	0.45	0.37	0.28	0.40	34.3%
FYR of Macedonia *	-	-	-	-	-	-	-	-	-	-	-	-
Malta	0.19	0.08	0.09	0.06	0.09	0.14	2.07	2.09	2.67	2.89	3.57	+
Republic of Moldova *	..	..	..	..	..	..	..	..	..	..	..	..
Romania	..	..	..	..	..	..	..	..	0.11	0.22	0.05	..
Russian Federation *	..	..	..	..	5.87	..	..	..	..	..	..	..
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**	**8.30**	**8.64**	**9.19**	**10.26**	**6.6%**
Argentina	0.66	0.28	1.32	2.00	2.22	1.71	1.48	2.19	2.82	3.02	2.99	34.7%
Bolivia	-	-	-	-	-	-	-	-	-	-	-	-
Brazil	1.00	1.17	1.42	1.71	1.72	3.64	9.16	10.92	11.29	14.17	11.75	584.6%
Colombia	0.95	0.49	0.31	0.22	0.33	0.58	0.72	1.05	1.22	1.28	1.32	301.9%
Costa Rica	..	..	..	..	..	..	..	..	..	..	..	..
Cuba	..	..	..	0.13	0.05	0.05	0.06	0.09	0.10	0.10	0.10	76.5%
Dominican Republic	..	..	..	..	..	..	..	..	..	..	..	..
Ecuador	0.28	..	0.34	0.11	0.57	1.05	0.87	0.69	1.94	3.26	3.95	591.5%
El Salvador	..	..	..	..	..	..	..	..	..	..	..	..
Guatemala	0.18	0.27	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	-
Haiti	..	..	..	..	..	..	..	..	..	..	..	..
Honduras	..	..	..	..	..	..	..	..	..	..	..	..
Jamaica	0.16	0.26	0.10	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	-
Netherlands Antilles	7.71	7.34	7.27	6.13	5.18	5.32	5.20	5.46	5.65	5.76	5.54	6.9%
Nicaragua	..	..	..	..	..	..	..	..	..	..	..	..
Panama	0.03	0.07	0.06	0.08	0.10	0.16	0.17	0.22	0.31	0.31	0.34	234.4%
Paraguay	-	-	-	-	-	-	-	-	-	-	-	-
Peru	0.04	0.05	0.38	0.53	0.03	0.41	0.13	0.71	0.47	0.47	0.23	563.7%
Trinidad and Tobago	5.12	3.54	1.42	0.31	0.11	0.16	1.19	1.47	1.46	1.37	1.38	+
Uruguay	0.27	0.20	0.24	0.33	0.37	1.21	0.92	1.14	1.07	1.43	1.63	342.5%
Venezuela	9.13	4.82	1.99	1.76	2.50	2.30	2.06	2.33	2.75	2.88	2.81	12.5%
Other Latin America	3.08	2.04	2.79	1.87	0.86	0.71	0.79	1.06	1.08	1.08	1.00	15.5%
Latin America	**28.60**	**20.53**	**18.07**	**15.60**	**14.52**	**17.75**	**23.22**	**27.81**	**30.64**	**35.62**	**33.51**	**130.8%**

* 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	2007	2008	2009	% change 90-09
World	**167.66**	**172.04**	**199.96**	**222.84**	**255.93**	**284.71**	**345.24**	**407.83**	**431.17**	**439.72**	**423.44**	**65.5%**
Annex I Parties	*..*	*..*	*..*	*..*	*167.76*	*177.63*	*221.39*	*250.91*	*259.50*	*263.40*	*245.27*	*46.2%*
Annex II Parties	*58.57*	*61.75*	*70.77*	*81.47*	*130.39*	*158.14*	*202.37*	*226.72*	*233.56*	*235.63*	*217.90*	*67.1%*
North America	*16.61*	*17.53*	*21.18*	*21.83*	*41.50*	*48.54*	*60.20*	*70.76*	*71.96*	*72.19*	*65.95*	*58.9%*
Europe	*35.96*	*37.67*	*42.70*	*48.59*	*69.97*	*85.65*	*113.65*	*124.29*	*131.80*	*134.56*	*125.09*	*78.8%*
Asia Oceania	*6.01*	*6.55*	*6.90*	*11.05*	*18.92*	*23.96*	*28.52*	*31.68*	*29.79*	*28.88*	*26.85*	*41.9%*
Annex I EIT	*..*	*..*	*..*	*..*	*36.63*	*18.50*	*17.12*	*20.71*	*22.25*	*23.53*	*22.89*	*-37.5%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*88.16*	*107.08*	*123.85*	*156.92*	*171.67*	*176.32*	*178.18*	*102.1%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*128.22*	*130.68*	*162.37*	*179.22*	*185.40*	*188.58*	*176.85*	*37.9%*
Non-OECD Total *	**104.02**	**103.87**	**119.38**	**130.73**	**114.81**	**112.11**	**125.98**	**155.88**	**167.66**	**171.67**	**175.29**	**52.7%**
OECD Total **	**63.64**	**68.18**	**80.58**	**92.11**	**141.11**	**172.60**	**219.26**	**251.96**	**263.51**	**268.05**	**248.16**	**75.9%**
Canada	1.25	1.93	1.35	1.22	2.71	2.58	3.08	2.55	1.55	1.61	2.02	-25.3%
Chile	0.43	0.35	0.54	0.49	0.57	0.64	1.04	1.05	1.37	1.59	1.30	130.2%
Mexico	1.39	2.40	4.23	4.53	5.23	6.75	8.05	8.52	9.84	9.42	7.96	52.1%
United States	15.35	15.60	19.83	20.61	38.79	45.96	57.11	68.21	70.41	70.58	63.93	64.8%
OECD Americas	**18.43**	**20.27**	**25.95**	**26.85**	**47.29**	**55.93**	**69.29**	**80.33**	**83.18**	**83.20**	**75.21**	**59.0%**
Australia	1.57	1.89	2.40	2.76	4.29	5.75	7.15	8.10	9.13	9.05	9.24	115.3%
Israel	1.79	1.88	2.21	1.99	1.56	2.10	2.35	2.19	2.46	2.50	2.40	53.6%
Japan	3.80	4.32	3.92	7.63	13.31	16.61	19.57	21.37	18.39	17.55	15.43	15.9%
Korea	-	0.36	0.83	1.69	0.84	2.05	1.70	7.25	9.39	11.28	10.93	+
New Zealand	0.64	0.34	0.57	0.66	1.32	1.60	1.79	2.20	2.28	2.29	2.18	65.4%
OECD Asia Oceania	**7.80**	**8.79**	**9.93**	**14.74**	**21.33**	**28.10**	**32.56**	**41.11**	**41.64**	**42.66**	**40.19**	**88.4%**
Austria	0.28	0.24	0.38	0.65	0.82	1.29	1.63	1.67	1.68	1.78	1.57	92.2%
Belgium	1.21	1.05	1.22	1.62	2.82	2.61	4.37	3.80	3.00	6.05	5.72	103.0%
Czech Republic	0.69	0.58	0.85	0.63	0.65	0.56	0.48	0.94	1.02	0.99	1.00	54.0%
Denmark	1.92	1.56	1.59	1.56	1.70	1.84	2.32	2.55	2.63	2.61	2.30	34.8%
Estonia	..	..	..	..	0.09	0.05	0.06	0.14	0.15	0.08	0.10	3.2%
Finland	0.18	0.40	0.46	0.48	0.97	0.86	1.02	1.24	1.59	1.72	1.51	54.7%
France	4.57	5.71	5.62	6.43	9.32	11.44	15.07	16.10	17.47	17.58	16.19	73.6%
Germany	7.57	8.16	8.22	9.46	12.58	14.13	17.39	19.69	21.45	21.73	21.14	68.1%
Greece	1.29	1.31	2.23	2.33	2.34	2.52	2.41	2.30	2.82	2.94	2.53	7.9%
Hungary	0.15	0.20	0.36	0.44	0.49	0.54	0.69	0.79	0.74	0.82	0.70	43.8%
Iceland	0.22	0.13	0.09	0.18	0.22	0.20	0.39	0.40	0.49	0.35	0.22	-
Ireland	0.96	0.73	0.60	0.57	1.03	1.11	1.73	2.35	2.87	2.69	1.64	59.3%
Italy	3.47	2.44	4.15	4.33	4.50	5.80	8.38	8.88	10.11	9.76	8.88	97.6%
Luxembourg	0.11	0.15	0.19	0.22	0.39	0.56	0.95	1.28	1.29	1.30	1.24	218.0%
Netherlands	2.01	2.26	2.72	3.47	4.29	7.38	9.65	10.67	10.87	11.02	10.25	138.6%
Norway	0.70	0.51	0.67	0.92	1.24	1.09	1.05	1.04	1.12	1.13	1.06	-15.2%
Poland	0.52	0.53	0.67	0.67	0.68	0.82	0.82	0.96	1.33	1.59	1.44	112.6%
Portugal	0.70	0.80	0.88	1.27	1.49	1.49	1.69	2.13	2.50	2.59	2.43	63.0%
Slovak Republic	-	-	-	-	-	0.12	0.08	0.12	0.15	0.19	0.13	x
Slovenia	..	..	..	..	0.08	0.06	0.07	0.07	0.09	0.10	0.08	-
Spain	1.74	2.77	2.58	2.67	3.32	6.01	8.03	9.18	10.07	10.11	9.40	183.0%
Sweden	0.33	0.33	0.49	0.51	1.07	1.76	2.06	1.87	1.93	2.32	2.11	96.6%
Switzerland	1.63	1.80	2.02	2.41	3.00	3.63	4.57	3.48	3.87	4.14	3.98	32.7%
Turkey	0.09	0.14	0.12	0.18	0.53	0.78	1.54	3.21	3.42	3.86	4.22	691.4%
United Kingdom	7.08	7.32	8.59	9.53	18.86	21.92	30.93	35.65	36.04	34.74	32.94	74.7%
OECD Europe **	**37.41**	**39.12**	**44.70**	**50.51**	**72.49**	**88.57**	**117.40**	**130.51**	**138.69**	**142.18**	**132.76**	**83.1%**
European Union - 27	*..*	*..*	*..*	*..*	*70.44*	*85.61*	*111.80*	*124.72*	*132.24*	*135.45*	*125.61*	*78.3%*

* 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	2007	2008	2009	% change 90-09
Non-OECD Total *	**104.02**	**103.87**	**119.38**	**130.73**	**114.81**	**112.11**	**125.98**	**155.88**	**167.66**	**171.67**	**175.29**	**52.7%**
Algeria	0.29	0.66	0.93	1.31	1.09	0.96	1.17	1.16	1.12	1.25	1.40	28.4%
Angola	0.23	0.31	0.25	0.99	1.03	1.17	1.42	0.56	0.35	0.42	0.61	-40.8%
Benin	0.02	0.01	0.03	0.06	0.05	0.07	0.07	0.03	0.08	0.13	0.27	437.5%
Botswana	..	..	..	0.01	0.03	0.02	0.02	0.03	0.03	0.05	0.05	36.4%
Cameroon	0.17	0.10	0.15	0.15	0.15	0.17	0.18	0.20	0.20	0.21	0.21	36.8%
Congo	-	-	-	-	-	-	-	-	-	-	-	-
Dem. Rep. of Congo	0.28	0.24	0.37	0.40	0.32	0.35	0.24	0.50	0.53	0.05	0.05	-85.3%
Côte d'Ivoire	0.13	0.21	0.27	0.29	0.27	0.26	0.37	0.28	0.15	0.17	0.16	-41.2%
Egypt	0.21	0.27	0.51	0.12	0.44	0.79	1.71	2.23	3.05	2.75	3.00	578.6%
Eritrea	..	..	..	..	..	0.02	0.03	0.03	0.02	0.01	0.00	..
Ethiopia	0.14	0.16	0.20	0.34	0.53	0.20	0.24	0.46	0.69	0.68	0.74	38.8%
Gabon	0.03	0.04	0.07	0.08	0.20	0.19	0.24	0.21	0.16	0.17	0.13	-35.8%
Ghana	0.13	0.15	0.12	0.10	0.14	0.18	0.32	0.39	0.40	0.39	0.41	195.9%
Kenya	0.57	0.89	1.10	0.82	0.83	1.37	1.36	1.76	2.02	1.76	1.80	117.1%
Libyan Arab Jamahiriya	0.27	0.53	0.89	1.05	0.63	0.91	1.33	0.58	0.57	0.59	0.73	15.5%
Morocco	0.35	0.44	0.78	0.70	0.79	0.73	0.90	1.16	1.53	1.53	1.54	96.0%
Mozambique	0.12	0.05	0.08	0.09	0.13	0.06	0.13	0.14	0.20	0.18	0.21	63.4%
Namibia	..	..	..	..	..	-	-	-	-	-	-	..
Nigeria	0.24	0.70	1.14	1.33	0.95	1.25	0.58	0.70	0.73	2.63	2.00	109.3%
Senegal	0.30	0.37	0.58	0.43	0.45	0.45	0.75	0.74	0.98	1.00	0.63	37.6%
South Africa	0.53	0.73	0.87	0.93	1.09	1.58	2.79	2.21	2.57	2.60	2.68	145.3%
Sudan	0.34	0.14	0.20	0.21	0.09	0.10	0.33	0.87	1.01	1.03	1.14	+
United Rep. of Tanzania	0.08	0.20	0.17	0.13	0.22	0.19	0.18	0.26	0.30	0.32	0.34	53.1%
Togo	-	-	-	-	0.10	0.12	0.03	0.15	0.09	0.19	0.19	81.8%
Tunisia	0.39	0.38	0.56	0.30	0.57	0.74	0.85	0.65	0.68	0.70	0.61	8.0%
Zambia	0.04	0.14	0.23	0.12	0.19	0.10	0.13	0.16	0.10	0.12	0.13	-34.9%
Zimbabwe	0.07	0.17	0.19	0.32	0.23	0.33	0.35	0.02	0.02	0.02	0.02	-90.3%
Other Africa	-	-	0.91	0.91	0.84	0.94	1.53	1.77	1.82	1.88	1.88	123.9%
Africa	**4.91**	**6.88**	**10.60**	**11.21**	**11.38**	**13.23**	**17.24**	**17.28**	**19.40**	**20.82**	**20.91**	**83.8%**
Bangladesh	0.06	0.08	0.15	0.22	0.27	0.30	0.38	0.87	0.75	0.65	0.57	109.3%
Brunei Darussalam	0.00	0.06	0.07	0.05	0.11	0.21	0.21	0.25	0.24	0.28	0.27	136.1%
Cambodia	..	..	..	..	..	0.03	0.06	0.06	0.09	0.09	0.09	..
Chinese Taipei	1.48	1.62	1.66	0.92	1.79	4.09	5.38	6.46	6.64	5.72	5.54	209.0%
India	1.68	1.98	2.49	3.21	3.71	4.60	4.97	7.28	10.04	9.85	10.23	175.9%
Indonesia	0.16	0.32	0.73	0.65	0.96	1.17	1.21	1.52	1.71	1.82	1.90	97.0%
DPR of Korea	-	-	-	-	-	-	-	-	-	-	-	-
Malaysia	0.42	0.74	0.80	0.89	1.94	3.44	4.67	5.96	6.39	6.26	6.28	224.1%
Mongolia	..	..	..	-	0.01	0.06	0.06	0.06	0.12	0.10	0.05	275.0%
Myanmar	0.09	0.08	0.13	0.13	0.09	0.14	0.20	0.15	0.20	0.19	0.21	139.3%
Nepal	0.01	0.02	0.04	0.06	0.05	0.11	0.17	0.19	0.18	0.18	0.21	326.7%
Pakistan	1.13	1.08	1.69	1.41	1.39	1.70	2.28	2.84	2.27	2.38	2.54	82.2%
Philippines	0.75	0.88	0.69	1.08	1.08	1.24	1.52	2.26	3.20	3.02	3.09	187.4%
Singapore	0.70	1.32	2.71	3.19	5.63	7.81	9.89	12.44	12.41	12.44	12.43	120.8%
Sri Lanka	-	0.00	0.00	-	-	-	0.32	0.93	0.32	0.30	0.31	x
Thailand	1.26	2.17	2.39	3.12	5.58	7.51	8.27	10.17	11.67	10.97	10.49	87.8%
Vietnam	6.88	2.60	-	-	-	0.12	0.30	0.79	0.81	0.87	1.15	x
Other Asia	0.66	0.52	0.33	0.47	0.51	0.33	0.61	0.96	1.15	0.99	1.03	101.1%
Asia	**15.28**	**13.48**	**13.86**	**15.39**	**23.14**	**32.88**	**40.46**	**53.20**	**58.20**	**56.12**	**56.39**	**143.7%**
People's Rep. of China	-	-	-	0.22	0.50	0.99	2.13	6.19	6.59	6.04	8.00	+
Hong Kong, China	1.41	1.83	2.24	2.55	5.62	9.22	8.31	14.71	14.56	14.15	14.06	150.1%
China	**1.41**	**1.83**	**2.24**	**2.77**	**6.12**	**10.20**	**10.43**	**20.90**	**21.15**	**20.19**	**22.07**	**260.7%**

* Includes 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	2007	2008	2009	% change 90-09
Bahrain	0.43	0.84	1.53	1.21	1.43	1.15	1.12	1.72	1.85	1.84	1.82	27.2%
Islamic Republic of Iran	7.02	7.01	2.15	1.64	1.48	1.97	2.71	2.69	3.18	3.23	3.70	149.4%
Iraq	0.24	0.81	1.05	1.12	2.89	1.34	1.80	2.19	1.90	1.99	2.11	-27.0%
Jordan	0.14	0.22	0.62	0.68	0.71	0.77	0.77	0.98	0.92	0.93	1.00	41.7%
Kuwait	0.34	0.34	1.04	0.97	0.51	1.12	1.15	1.82	1.92	2.15	2.41	370.4%
Lebanon	0.28	0.23	0.15	0.32	0.16	0.66	0.40	0.46	0.41	0.53	0.55	250.0%
Oman	0.01	0.15	0.38	0.57	0.93	0.46	0.65	1.24	1.30	1.36	1.41	51.0%
Qatar	-	0.16	0.23	0.24	0.34	0.43	0.57	1.43	2.34	2.71	3.14	811.9%
Saudi Arabia	0.47	1.40	3.45	4.57	4.79	5.69	5.85	5.44	5.73	6.18	6.11	27.5%
Syrian Arab Republic	0.24	0.65	0.72	0.87	0.87	0.62	0.41	0.33	0.28	0.31	0.29	-66.5%
United Arab Emirates	0.02	0.34	0.80	1.80	9.79	10.08	9.87	7.67	9.87	10.29	11.48	17.2%
Yemen	0.09	0.18	0.21	0.46	0.17	0.28	0.38	0.36	0.40	0.36	0.43	147.3%
Middle East	**9.29**	**12.35**	**12.35**	**14.44**	**24.09**	**24.58**	**25.67**	**26.34**	**30.11**	**31.86**	**34.45**	**43.0%**
Albania	-	-	-	-	-	-	0.12	0.15	0.03	0.05	0.05	x
Armenia *	..	..	..	..	0.59	0.10	0.19	0.13	0.17	0.17	0.09	-85.1%
Azerbaijan *	..	..	..	..	0.94	0.24	0.36	1.42	1.16	1.31	0.92	-1.9%
Belarus *	..	..	..	..	-	-	-	-	-	-	-	-
Bosnia and Herzegovina *	..	..	..	..	0.08	-	-	-	-	-	-	..
Bulgaria	0.61	0.61	0.91	1.11	0.71	0.98	0.24	0.56	0.54	0.63	0.45	-36.2%
Croatia *	..	..	..	..	0.15	0.17	0.10	0.12	0.13	0.15	0.13	-10.4%
Cyprus	0.15	0.02	0.23	0.44	0.72	0.79	0.82	0.89	0.87	0.87	0.81	12.3%
Georgia *	..	..	..	..	0.60	0.01	0.05	0.11	0.14	0.12	0.12	-79.7%
Gibraltar	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	-42.9%
Kazakhstan *	..	..	..	..	2.68	0.78	0.23	0.49	0.70	0.65	0.53	-80.3%
Kyrgyzstan *	..	..	..	..	0.26	0.19	0.12	0.38	0.97	1.20	1.48	466.3%
Latvia *	..	..	..	..	0.22	0.08	0.08	0.17	0.24	0.29	0.30	39.4%
Lithuania *	..	..	..	..	0.40	0.12	0.08	0.14	0.21	0.23	0.11	-73.3%
FYR of Macedonia *	..	..	..	..	0.02	0.09	0.09	0.02	0.02	0.02	0.01	-40.0%
Malta	0.17	0.18	0.23	0.14	0.21	0.22	0.37	0.26	0.27	0.38	0.27	27.1%
Republic of Moldova *	..	..	..	..	0.22	0.03	0.06	0.04	0.04	0.04	0.04	-80.6%
Romania	0.06	0.05	-	-	0.69	0.54	0.37	0.33	0.32	0.36	0.38	-44.5%
Russian Federation *	..	..	..	..	26.37	13.99	13.27	15.27	16.28	17.34	17.36	-34.1%
Serbia *	..	..	..	..	0.43	0.11	0.09	0.15	0.14	-	-	..
Tajikistan *	..	..	..	..	0.05	0.02	0.01	0.01	0.01	0.01	0.01	-73.3%
Turkmenistan *	..	..	..	..	-	-	-	-	-	-	-	-
Ukraine *	..	..	..	..	6.11	0.47	0.78	1.11	1.06	0.77	0.70	-88.6%
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**	**41.44**	**18.96**	**17.41**	**21.76**	**23.33**	**24.60**	**23.78**	**-42.6%**
Argentina	-	-	-	-	-	1.58	2.83	2.14	2.25	2.41	2.50	x
Bolivia	-	-	-	-	-	-	-	-	-	-	-	-
Brazil	-	-	0.61	0.74	1.41	2.06	2.00	3.30	4.14	4.72	4.90	246.8%
Colombia	0.77	1.03	1.42	1.39	1.56	2.14	1.89	1.83	1.53	1.72	1.79	14.8%
Costa Rica	-	-	-	-	-	0.31	0.36	0.57	0.54	0.56	0.50	x
Cuba	0.28	0.45	0.68	0.93	1.02	0.56	0.65	0.54	0.55	0.45	0.43	-57.9%
Dominican Republic	0.08	0.10	0.17	0.16	0.11	0.17	0.22	0.30	0.29	0.29	0.29	158.3%
Ecuador	0.27	0.14	0.45	0.45	0.39	0.55	0.66	0.96	1.04	1.05	1.03	164.2%
El Salvador	0.03	0.05	0.05	0.10	0.11	0.15	0.22	0.24	0.36	0.35	0.33	205.9%
Guatemala	0.15	0.11	0.13	0.12	0.13	0.14	0.15	0.23	0.09	0.08	0.07	-43.9%
Haiti	0.02	0.03	0.05	0.04	0.07	0.07	0.09	0.07	0.06	0.07	0.05	-26.1%
Honduras	0.02	0.03	0.06	0.12	0.09	0.07	0.11	0.07	0.08	0.14	0.15	69.0%
Jamaica	0.42	0.33	0.30	0.39	0.46	0.52	0.53	0.60	0.76	0.98	0.52	11.6%
Netherlands Antilles	0.15	0.13	0.16	0.13	0.12	0.20	0.20	0.21	0.21	0.22	0.21	78.4%
Nicaragua	0.05	0.06	0.06	0.04	0.08	0.06	0.08	0.05	0.08	0.08	0.06	-26.8%
Panama	0.43	1.11	0.41	0.26	0.20	0.31	0.54	0.57	0.81	0.94	0.94	367.2%
Paraguay	0.03	0.04	0.06	0.06	0.03	0.03	0.04	0.05	0.07	0.06	0.06	105.6%
Peru	0.51	0.74	0.92	0.71	0.64	1.10	1.06	0.96	0.52	1.78	1.74	170.1%
Trinidad and Tobago	0.21	0.12	0.17	0.22	0.20	0.17	0.39	0.38	0.18	0.19	0.20	3.2%
Uruguay	-	-	-	-	-	-	0.12	0.12	0.22	0.21	0.21	x
Venezuela	0.29	0.37	0.73	0.81	1.02	1.00	0.94	2.03	0.43	0.45	0.48	-53.2%
Other Latin America	1.10	0.63	0.90	0.86	1.01	1.07	1.70	1.18	1.27	1.33	1.23	21.8%
Latin America	**4.82**	**5.47**	**7.32**	**7.53**	**8.66**	**12.27**	**14.78**	**16.40**	**15.48**	**18.08**	**17.69**	**104.4%**

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

CO_2 emissions by sector in 2009 *

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 * **	**28 999.4**	**11 827.1**	**1 464.1**	**5 870.9**	**6 543.8**	**4 876.6**	**3 293.4**	**1 875.0**
Annex I Parties	*13 011.7*	*5 323.2*	*654.9*	*1 849.2*	*3 339.1*	*2 897.4*	*1 845.3*	*1 078.9*
Annex II Parties	*10 236.0*	*3 942.0*	*541.8*	*1 363.4*	*2 911.9*	*2 578.5*	*1 476.9*	*816.6*
North America	*5 715.8*	*2 292.5*	*322.9*	*636.1*	*1 771.9*	*1 529.9*	*692.4*	*362.8*
Europe	*3 001.2*	*985.3*	*154.2*	*432.6*	*824.0*	*768.3*	*605.1*	*387.9*
Asia Oceania	*1 519.0*	*664.3*	*64.7*	*294.7*	*316.0*	*280.4*	*179.4*	*65.9*
Annex I EIT	*2 517.0*	*1 279.9*	*101.9*	*444.9*	*382.0*	*279.4*	*308.3*	*224.0*
Non-Annex I Parties	*14 972.0*	*6 503.9*	*809.2*	*4 021.7*	*2 189.0*	*1 979.2*	*1 448.1*	*796.2*
Annex I Kyoto Parties	*7 497.2*	*3 000.7*	*384.0*	*1 252.3*	*1 673.9*	*1 451.0*	*1 186.3*	*709.2*
Non-OECD Total	**15 939.0**	**7 102.6**	**807.5**	**4 244.1**	**2 213.5**	**1 916.0**	**1 571.2**	**913.0**
OECD Total	**12 044.7**	**4 724.5**	**656.6**	**1 626.8**	**3 314.7**	**2 960.5**	**1 722.2**	**962.1**
Canada	520.7	102.2	65.7	91.7	157.6	127.1	103.6	38.5
Chile	64.9	22.6	3.3	13.3	20.5	17.9	5.2	3.4
Mexico	399.7	118.8	50.5	51.8	147.3	143.5	31.3	18.5
United States	5 195.0	2 190.2	257.2	544.4	1 614.3	1 402.8	588.8	324.3
OECD Americas	**6 180.4**	**2 433.8**	**376.7**	**701.2**	**1 939.6**	**1 691.4**	**729.0**	**384.7**
Australia	394.9	222.5	21.7	49.8	82.4	70.1	18.4	8.0
Israel	64.6	38.2	2.2	1.2	17.0	17.0	6.0	2.7
Japan	1 092.9	434.4	41.3	238.8	220.1	198.2	158.2	57.4
Korea	515.5	251.1	31.8	88.7	85.2	79.9	58.7	31.4
New Zealand	31.3	7.3	1.7	6.1	13.5	12.1	2.8	0.6
OECD Asia Oceania	**2 099.1**	**953.6**	**98.8**	**384.5**	**418.2**	**377.3**	**244.0**	**100.0**
Austria	63.4	13.8	6.0	12.1	21.7	20.7	9.7	7.2
Belgium	100.7	21.5	4.9	21.8	26.4	25.8	26.1	17.1
Czech Republic	109.8	59.4	2.5	18.9	17.7	16.9	11.4	6.9
Denmark	46.8	22.0	2.4	3.8	13.1	12.0	5.5	2.9
Estonia	14.7	11.0	0.1	0.9	2.1	2.0	0.6	0.2
Finland	55.0	25.3	3.5	9.0	12.2	11.2	5.0	2.1
France	354.3	52.3	16.0	57.6	123.9	118.0	104.5	58.9
Germany	750.2	308.7	25.2	101.9	148.7	141.0	165.7	113.8
Greece	90.2	44.5	3.3	7.3	24.6	20.8	10.5	7.3
Hungary	48.2	15.3	1.6	5.6	12.8	12.5	13.0	8.3
Iceland	2.0	0.0	-	0.6	0.9	0.8	0.5	0.0
Ireland	39.5	13.0	0.5	3.9	12.1	11.8	10.0	6.9
Italy	389.3	130.8	16.4	50.2	110.8	104.5	81.2	50.3
Luxembourg	10.0	1.2	-	0.9	6.1	6.1	1.8	1.2
Netherlands	176.1	57.2	10.4	39.0	32.8	32.0	36.6	17.6
Norway	37.3	2.4	11.4	6.6	13.5	9.9	3.4	0.5
Poland	286.8	152.3	7.0	32.7	44.5	43.2	50.2	31.7
Portugal	53.1	19.9	2.4	7.2	18.9	17.7	4.8	2.0
Slovak Republic	33.2	8.3	4.5	7.6	6.0	5.0	6.7	3.1
Slovenia	15.2	6.0	0.0	2.1	5.1	5.0	2.1	1.1
Spain	283.4	87.0	17.5	47.3	100.5	88.5	31.2	17.9
Sweden	41.7	8.1	2.7	6.8	21.1	20.2	3.0	0.4
Switzerland	42.4	2.9	1.0	5.8	17.1	16.8	15.6	10.4
Turkey	256.3	99.4	11.2	40.8	44.8	39.0	60.1	38.3
United Kingdom	465.8	174.7	30.6	50.8	119.7	110.5	90.0	71.2
OECD Europe	**3 765.2**	**1 337.0**	**181.1**	**541.0**	**956.9**	**891.9**	**749.2**	**477.4**
European Union - 27	*3 576.8*	*1 305.8*	*165.5*	*509.2*	*912.9*	*855.6*	*683.5*	*436.1*

* 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 70-72.

** 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 2009

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	**15 939.0**	**7 102.6**	**807.5**	**4 244.1**	**2 213.5**	**1 916.0**	**1 571.2**	**913.0**
Algeria	92.5	24.6	10.7	11.7	29.8	27.8	15.6	15.6
Angola	12.9	1.0	0.3	3.0	5.4	4.7	3.3	1.2
Benin	4.2	0.1	-	0.1	2.8	2.8	1.1	1.1
Botswana	4.2	0.9	-	1.2	1.9	1.9	0.2	0.1
Cameroon	4.8	1.4	0.2	0.4	2.5	2.4	0.4	0.3
Congo	1.7	0.1	-	0.1	1.4	1.2	0.1	0.1
Dem. Rep. of Congo	2.9	0.0	-	1.0	0.7	0.7	1.2	0.3
Côte d'Ivoire	6.1	2.5	0.2	0.5	1.4	1.2	1.5	0.5
Egypt	175.4	64.7	12.4	35.6	40.8	37.6	21.9	15.1
Eritrea	0.5	0.2	-	0.0	0.1	0.1	0.1	0.1
Ethiopia	7.4	0.5	-	1.8	4.2	4.2	0.9	0.9
Gabon	1.7	0.5	0.0	0.6	0.3	0.3	0.2	0.1
Ghana	9.0	1.7	0.0	1.5	4.8	4.4	1.0	0.7
Kenya	10.0	2.7	0.5	1.3	3.9	3.7	1.6	1.1
Libyan Arab Jamahiriya	50.0	26.5	3.0	6.4	12.0	12.0	2.1	2.1
Morocco	41.3	13.7	0.5	6.9	11.4	11.4	8.8	4.0
Mozambique	2.2	0.0	0.0	0.5	1.5	1.4	0.2	0.1
Namibia	3.7	0.4	-	0.3	2.1	1.8	0.9	-
Nigeria	41.2	8.2	4.5	3.1	23.5	23.5	1.8	1.8
Senegal	5.3	1.8	0.0	0.9	1.9	1.8	0.5	0.4
South Africa	369.4	228.5	4.0	51.2	49.9	46.7	35.8	20.2
Sudan	13.3	2.4	0.5	2.0	7.5	7.4	0.9	0.7
United Rep. of Tanzania	6.3	1.3	-	0.8	3.5	3.5	0.7	0.6
Togo	1.1	0.0	-	0.1	0.9	0.9	0.1	0.1
Tunisia	20.8	8.4	0.1	3.5	4.6	4.6	4.1	1.7
Zambia	1.7	0.0	0.0	0.8	0.5	0.4	0.2	-
Zimbabwe	8.7	4.9	0.0	1.4	1.1	1.0	1.3	0.1
Other Africa	29.4	7.9	0.1	5.6	12.0	10.4	3.9	1.7
Africa	**927.5**	**405.1**	**37.2**	**142.2**	**232.5**	**219.7**	**110.5**	**70.8**
Bangladesh	50.7	22.2	0.2	11.8	7.5	5.7	9.0	5.3
Brunei Darussalam	8.1	2.7	1.9	2.2	1.1	1.1	0.2	0.1
Cambodia	4.3	1.4	-	0.2	1.1	1.1	1.6	1.2
Chinese Taipei	250.1	143.7	11.7	50.6	34.3	33.2	9.9	4.7
India	1 585.8	855.7	49.7	346.2	150.1	134.1	184.1	76.7
Indonesia	376.3	115.9	27.4	109.1	92.6	82.6	31.3	18.5
DPR of Korea	66.2	10.5	0.0	41.9	0.9	0.9	12.8	0.1
Malaysia	164.2	68.2	16.3	32.9	41.3	40.5	5.5	2.0
Mongolia	12.0	7.4	0.0	1.2	1.4	1.1	1.9	0.9
Myanmar	10.1	1.1	0.5	2.7	2.7	2.6	3.0	0.2
Nepal	3.4	0.0	-	0.8	1.7	1.7	0.9	0.4
Pakistan	136.9	43.7	1.7	43.3	32.0	31.2	16.3	13.1
Philippines	70.5	29.6	0.4	11.1	23.6	21.0	5.8	2.6
Singapore	44.8	21.7	8.4	5.8	8.4	8.2	0.5	0.4
Sri Lanka	12.7	4.5	0.2	1.4	5.6	4.9	0.9	0.3
Thailand	227.8	76.2	6.7	73.0	54.6	54.1	17.3	4.6
Vietnam	114.1	32.0	1.5	40.1	29.0	27.7	11.6	6.6
Other Asia	15.2	5.8	-	3.4	3.7	2.5	2.4	0.5
Asia	**3 153.2**	**1 442.3**	**126.5**	**777.8**	**491.6**	**454.2**	**314.9**	**138.2**
People's Rep. of China	6 831.6	3 294.7	264.2	2 275.8	470.2	360.5	526.6	288.3
Hong Kong, China	45.6	29.6	-	7.5	6.0	6.0	2.5	0.8
China	**6 877.2**	**3 324.3**	**264.2**	**2 283.3**	**476.3**	**366.5**	**529.2**	**289.1**

CO_2 emissions by sector in 2009

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*
Bahrain	22.8	8.0	4.4	6.9	3.3	3.3	0.2	0.2
Islamic Rep. of Iran	533.2	128.0	31.9	122.0	113.9	113.2	137.4	105.0
Iraq	98.8	31.5	4.6	22.2	31.0	31.0	9.4	9.4
Jordan	19.2	8.3	0.7	2.6	5.1	5.1	2.5	1.6
Kuwait	80.7	46.3	10.5	11.9	11.6	11.6	0.5	0.5
Lebanon	19.3	9.9	-	1.3	5.0	5.0	3.1	3.1
Oman	38.9	15.0	7.4	8.0	5.6	5.6	2.9	1.6
Qatar	56.5	12.2	19.1	18.6	6.3	6.3	0.2	0.2
Saudi Arabia	410.5	164.4	64.1	77.3	100.6	98.5	4.1	4.1
Syrian Arab Republic	59.8	27.8	2.0	10.4	15.6	14.9	4.1	2.5
United Arab Emirates	147.0	57.2	1.9	62.1	25.4	25.4	0.5	0.5
Yemen	22.2	4.3	4.0	2.5	5.1	5.1	6.3	2.2
Middle East	**1 509.0**	**512.8**	**150.6**	**345.8**	**328.6**	**325.1**	**171.3**	**130.9**
Albania	2.7	0.1	0.1	0.7	1.3	1.2	0.5	0.1
Armenia	4.3	0.6	-	1.0	1.5	1.5	1.1	1.0
Azerbaijan	25.2	10.3	2.4	1.3	4.5	4.0	6.7	5.7
Belarus	60.8	31.1	2.5	11.6	5.7	4.2	10.0	7.1
Bosnia and Herzegovina	19.1	13.4	1.1	0.7	2.7	2.6	1.2	0.4
Bulgaria	42.2	27.6	1.0	4.1	7.9	7.5	1.6	0.7
Croatia	19.8	4.5	2.0	3.6	6.2	5.7	3.4	2.1
Cyprus	7.5	3.9	-	0.8	2.2	2.2	0.6	0.3
Georgia	5.7	1.2	0.2	0.8	2.2	2.0	1.3	0.8
Gibraltar	0.5	0.1	-	0.1	0.3	0.3	-	-
Kazakhstan	189.5	89.9	30.1	28.7	12.2	10.9	28.6	7.3
Kyrgyzstan	7.1	1.1	-	1.9	2.5	2.5	1.5	-
Latvia	6.8	2.0	-	0.9	2.7	2.5	1.2	0.4
Lithuania	12.4	3.1	1.9	2.1	4.1	3.8	1.1	0.6
FYR of Macedonia	8.3	5.9	0.0	0.8	1.3	1.2	0.4	0.1
Malta	2.4	1.8	-	0.1	0.5	0.5	0.1	0.0
Republic of Moldova	5.7	2.6	0.0	0.2	0.9	0.8	2.0	1.7
Romania	78.4	35.1	5.1	14.0	14.8	13.9	9.4	5.9
Russian Federation	1 532.6	812.7	66.0	274.3	226.3	136.8	153.2	117.2
Serbia	46.3	32.0	0.6	4.5	6.4	5.7	2.8	1.4
Tajikistan	2.8	0.5	-	-	0.3	0.3	2.0	-
Turkmenistan	48.8	14.3	7.4	1.5	3.9	2.5	21.7	-
Ukraine	256.4	111.6	7.6	66.6	26.2	20.5	44.4	38.8
Uzbekistan	112.4	35.8	3.9	20.2	9.2	5.4	43.3	32.5
Non-OECD Europe and Eurasia	**2 497.4**	**1 241.1**	**131.9**	**440.5**	**345.8**	**238.4**	**338.1**	**224.1**
Argentina	166.6	43.3	16.9	36.3	37.9	35.1	32.2	19.1
Bolivia	12.9	2.4	1.3	1.5	6.2	5.8	1.5	1.1
Brazil	337.8	30.0	28.1	96.0	147.0	132.2	36.7	16.5
Colombia	60.6	10.0	6.9	16.2	20.0	18.8	7.4	4.0
Costa Rica	6.3	0.4	0.1	1.0	4.4	4.4	0.5	0.1
Cuba	26.8	13.3	0.1	9.5	1.5	1.3	2.4	0.9
Dominican Republic	18.1	8.8	0.0	1.6	5.2	4.2	2.4	2.2
Ecuador	28.5	5.0	1.1	4.7	14.4	12.9	3.3	2.9
El Salvador	6.8	1.8	0.0	1.8	2.6	2.6	0.5	0.5
Guatemala	14.5	3.2	0.1	4.7	6.0	6.0	0.6	0.5
Haiti	2.4	0.4	-	0.5	1.3	0.7	0.2	0.2
Honduras	7.1	2.3	-	1.1	3.0	3.0	0.8	0.2
Jamaica	8.3	3.0	-	0.3	3.0	1.5	2.0	0.1
Netherlands Antilles	5.0	0.9	2.0	0.7	1.2	1.2	0.2	0.2
Nicaragua	4.2	1.7	0.0	0.6	1.5	1.5	0.3	0.1
Panama	7.3	2.1	-	1.6	3.0	1.6	0.5	0.3
Paraguay	4.1	-	-	0.1	3.8	3.7	0.2	0.2
Peru	38.6	8.4	2.8	9.5	14.6	14.0	3.4	1.8
Trinidad and Tobago	40.2	5.6	7.0	24.1	2.8	2.8	0.7	0.7
Uruguay	7.7	2.2	0.6	0.9	2.8	2.8	1.2	0.4
Venezuela	154.6	24.5	29.9	41.1	51.7	51.6	7.5	6.6
Other Latin America	16.4	7.7	0.0	1.2	4.8	4.3	2.8	1.1
Latin America	**974.6**	**177.0**	**97.1**	**254.6**	**338.6**	**312.0**	**107.2**	**59.9**

CO_2 emissions with electricity and heat allocated to consuming sectors * in 2009

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 * **	**28 999.4**	**2 009.7**	**10 461.4**	**6 699.5**	**4 876.6**	**9 828.7**	**5 231.4**
Annex I Parties	*13 011.7*	*922.4*	*3 427.3*	*3 417.6*	*2 897.4*	*5 244.4*	*2 811.0*
Annex II Parties	*10 236.0*	*659.2*	*2 460.3*	*2 949.9*	*2 578.5*	*4 166.6*	*2 109.0*
North America	*5 715.8*	*386.4*	*1 163.0*	*1 777.1*	*1 529.9*	*2 389.3*	*1 175.3*
Europe	*3 001.2*	*190.5*	*784.2*	*845.1*	*768.3*	*1 181.4*	*676.3*
Asia Oceania	*1 519.0*	*82.3*	*513.0*	*327.7*	*280.4*	*596.0*	*257.4*
Annex I EIT	*2 517.0*	*250.8*	*878.2*	*422.1*	*279.4*	*965.9*	*640.0*
Non-Annex I Parties	*14 972.0*	*1 087.3*	*7 034.1*	*2 266.2*	*1 979.2*	*4 584.3*	*2 420.4*
Annex I Kyoto Parties	*7 497.2*	*589.8*	*2 278.7*	*1 747.0*	*1 451.0*	*2 881.8*	*1 626.7*
Non-OECD Total	**15 939.0**	**1 174.8**	**7 735.9**	**2 304.4**	**1 916.0**	**4 723.9**	**2 613.8**
OECD Total	**12 044.7**	**806.2**	**3 053.0**	**3 359.5**	**2 960.5**	**4 826.1**	**2 452.8**
Canada	520.7	70.9	125.0	158.3	127.1	166.6	70.6
Chile	64.9	3.5	28.5	20.7	17.9	12.3	7.1
Mexico	399.7	54.7	113.3	147.9	143.5	83.7	46.5
United States	5 195.0	315.5	1 038.0	1 618.8	1 402.8	2 222.7	1 104.8
OECD Americas	**6 180.4**	**444.6**	**1 304.8**	**1 945.6**	**1 691.4**	**2 485.3**	**1 229.0**
Australia	394.9	32.6	142.7	85.3	70.1	134.3	66.7
Israel	64.6	2.2	10.1	17.0	17.0	35.4	15.4
Japan	1 092.9	48.0	361.7	228.9	198.2	454.3	187.6
Korea	515.5	36.7	213.0	86.3	79.9	179.5	72.1
New Zealand	31.3	1.8	8.6	13.5	12.1	7.4	3.0
OECD Asia Oceania	**2 099.1**	**121.2**	**736.1**	**431.0**	**377.3**	**810.8**	**344.8**
Austria	63.4	6.3	17.1	22.3	20.7	17.7	11.3
Belgium	100.7	5.9	31.1	26.9	25.8	36.8	22.0
Czech Republic	109.8	7.2	38.3	19.1	16.9	45.3	26.0
Denmark	46.8	2.8	7.5	13.2	12.0	23.3	13.0
Estonia	14.7	0.6	2.9	2.2	2.0	9.0	5.0
Finland	55.0	3.8	19.8	12.4	11.2	19.0	10.2
France	354.3	19.0	69.8	125.2	118.0	140.2	76.8
Germany	750.2	33.9	221.1	156.4	141.0	338.7	205.7
Greece	90.2	4.9	18.2	24.8	20.8	42.3	21.9
Hungary	48.2	2.5	9.4	13.1	12.5	23.1	13.7
Iceland	2.0	0.0	0.6	0.9	0.8	0.5	0.0
Ireland	39.5	0.5	8.2	12.1	11.8	18.6	11.0
Italy	389.3	25.4	108.0	114.7	104.5	141.2	76.3
Luxembourg	10.0	-	1.5	6.1	6.1	2.4	1.4
Netherlands	176.1	14.9	58.9	33.5	32.0	68.7	28.9
Norway	37.3	11.5	7.5	13.5	9.9	4.7	1.3
Poland	286.8	22.1	74.0	46.9	43.2	143.8	88.1
Portugal	53.1	3.1	14.5	19.0	17.7	16.5	7.3
Slovak Republic	33.2	5.0	10.5	6.1	5.0	11.6	5.5
Slovenia	15.2	0.1	4.6	5.1	5.0	5.4	3.0
Spain	283.4	19.4	78.7	101.5	88.5	83.7	41.0
Sweden	41.7	2.8	9.4	21.2	20.2	8.3	3.7
Switzerland	42.4	1.0	6.7	17.2	16.8	17.4	11.3
Turkey	256.3	12.4	88.2	45.2	39.0	110.5	61.3
United Kingdom	465.8	35.2	105.5	124.1	110.5	201.1	133.1
OECD Europe	**3 765.2**	**240.4**	**1 012.1**	**982.8**	**891.9**	**1 529.9**	**879.0**
European Union - 27	*3 576.8*	*229.6*	*953.7*	*939.4*	*855.6*	*1 454.0*	*840.9*

* 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 67-69.

** 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 2009

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	**15 939.0**	**1 174.8**	**7 735.9**	**2 304.4**	**1 916.0**	**4 723.9**	**2 613.8**
Algeria	92.5	11.1	19.9	30.3	27.8	31.2	31.2
Angola	12.9	0.3	3.3	5.4	4.7	4.0	1.8
Benin	4.2	-	0.2	2.8	2.8	1.2	1.2
Botswana	4.2	-	1.6	1.9	1.9	0.7	0.3
Cameroon	4.8	0.2	1.2	2.5	2.4	0.9	0.6
Congo	1.7	-	0.1	1.4	1.2	0.2	0.2
Dem. Rep. of Congo	2.9	-	1.0	0.7	0.7	1.2	0.4
Côte d'Ivoire	6.1	0.2	1.2	1.4	1.2	3.3	1.4
Egypt	175.4	12.4	56.8	40.8	37.6	65.4	40.9
Eritrea	0.5	-	0.1	0.1	0.1	0.3	0.1
Ethiopia	7.4	-	2.0	4.2	4.2	1.2	1.1
Gabon	1.7	0.0	0.8	0.4	0.3	0.6	0.4
Ghana	9.0	0.0	2.2	4.8	4.4	1.9	1.3
Kenya	10.0	0.5	2.9	3.9	3.7	2.7	1.8
Libyan Arab Jamahiriya	50.0	3.0	10.8	12.0	12.0	24.2	9.3
Morocco	41.3	0.9	11.9	12.1	11.4	16.3	8.4
Mozambique	2.2	0.0	0.5	1.5	1.4	0.2	0.1
Namibia	3.7	-	0.4	2.1	1.8	1.3	-
Nigeria	41.2	4.5	4.6	23.5	23.5	8.6	6.5
Senegal	5.3	0.0	1.4	1.9	1.8	1.9	1.1
South Africa	369.4	17.5	178.9	53.8	46.7	119.2	63.8
Sudan	13.3	0.5	2.2	7.5	7.4	3.1	2.0
United Rep. of Tanzania	6.3	0.0	1.4	3.5	3.5	1.4	1.2
Togo	1.1	-	0.1	0.9	0.9	0.2	0.2
Tunisia	20.8	0.1	6.9	4.7	4.6	9.0	4.0
Zambia	1.7	0.0	0.8	0.5	0.4	0.3	0.0
Zimbabwe	8.7	0.0	3.5	1.1	1.0	4.0	1.5
Other Africa	29.4	0.2	7.5	12.0	10.4	9.7	4.7
Africa	**927.5**	**51.7**	**324.0**	**237.7**	**219.7**	**314.1**	**185.4**
Bangladesh	50.7	0.2	24.3	7.5	5.7	18.7	12.5
Brunei Darussalam	8.1	1.9	2.7	1.1	1.1	2.5	1.2
Cambodia	4.3	-	0.4	1.1	1.1	2.7	1.9
Chinese Taipei	250.1	14.4	127.3	35.1	33.2	73.4	34.9
India	1 585.8	49.7	743.8	165.2	134.1	627.1	254.7
Indonesia	376.3	27.4	148.9	92.6	82.6	107.4	65.9
DPR of Korea	66.2	0.0	47.2	0.9	0.9	18.1	0.1
Malaysia	164.2	16.3	63.5	41.4	40.5	43.0	16.7
Mongolia	12.0	0.0	3.8	1.5	1.1	6.7	3.9
Myanmar	10.1	0.5	3.1	2.7	2.6	3.7	0.7
Nepal	3.4	-	0.8	1.7	1.7	0.9	0.4
Pakistan	136.9	1.7	55.0	32.0	31.2	48.3	33.2
Philippines	70.5	0.4	21.1	23.6	21.0	25.4	12.8
Singapore	44.8	9.5	12.5	8.7	8.2	14.1	4.5
Sri Lanka	12.7	0.2	3.0	5.6	4.9	3.9	2.1
Thailand	227.8	6.7	104.9	54.6	54.1	61.5	21.7
Vietnam	114.1	1.5	56.6	29.2	27.7	26.7	18.7
Other Asia	15.2	0.3	5.9	3.7	2.5	5.3	1.8
Asia	**3 153.2**	**130.7**	**1 424.8**	**508.3**	**454.2**	**1 089.3**	**487.5**
People's Rep. of China	6 831.6	463.5	4 327.0	497.5	360.5	1 543.6	851.6
Hong Kong, China	45.6	-	9.7	6.0	6.0	29.9	8.5
China	**6 877.2**	**463.5**	**4 336.7**	**503.6**	**366.5**	**1 573.5**	**860.2**

CO_2 emissions with electricity and heat allocated to consuming sectors in 2009

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*
Bahrain	22.8	4.4	7.9	3.3	3.3	7.3	4.5
Islamic Rep. of Iran	533.2	33.2	164.5	114.1	113.2	221.4	146.1
Iraq	98.8	4.6	27.4	31.0	31.0	35.7	22.2
Jordan	19.2	0.7	4.6	5.1	5.1	8.8	4.9
Kuwait	80.7	16.9	11.9	11.6	11.6	40.3	26.4
Lebanon	19.3	-	3.9	5.0	5.0	10.4	6.9
Oman	38.9	7.4	9.8	5.6	5.6	16.2	9.5
Qatar	56.5	19.1	21.9	6.3	6.3	9.2	3.2
Saudi Arabia	410.5	72.7	97.9	100.6	98.5	139.3	89.7
Syrian Arab Republic	59.8	2.0	20.9	15.6	14.9	21.4	16.7
United Arab Emirates	147.0	1.9	68.9	25.4	25.4	50.8	24.9
Yemen	22.2	4.0	2.5	5.1	5.1	10.5	4.9
Middle East	**1 509.0**	**166.9**	**442.0**	**328.9**	**325.1**	**571.3**	**359.9**
Albania	2.7	0.1	0.7	1.3	1.2	0.5	0.2
Armenia	4.3	-	1.1	1.5	1.5	1.6	1.3
Azerbaijan	25.2	3.5	3.9	4.8	4.0	12.9	9.3
Belarus	60.8	4.7	21.8	6.2	4.2	28.1	17.6
Bosnia and Herzegovina	19.1	1.5	4.4	2.8	2.6	10.3	7.1
Bulgaria	42.2	3.5	13.2	8.2	7.5	17.2	10.4
Croatia	19.8	2.1	4.6	6.2	5.7	6.8	4.1
Cyprus	7.5	0.0	1.3	2.2	2.2	4.0	1.7
Georgia	5.7	0.3	1.1	2.3	2.0	2.0	1.3
Gibraltar	0.5	-	0.1	0.3	0.3	0.1	-
Kazakhstan	189.5	30.1	79.8	15.4	10.9	64.1	24.6
Kyrgyzstan	7.1	0.0	2.3	2.6	2.5	2.1	0.2
Latvia	6.8	-	1.1	2.8	2.5	2.9	1.4
Lithuania	12.4	2.1	2.8	4.1	3.8	3.4	2.0
FYR of Macedonia	8.3	0.3	2.4	1.3	1.2	4.4	2.9
Malta	2.4	-	0.6	0.5	0.5	1.3	0.7
Republic of Moldova	5.7	0.1	0.7	0.9	0.8	4.0	3.0
Romania	78.4	8.7	25.7	15.6	13.9	28.5	19.7
Russian Federation	1 532.6	178.7	548.1	255.5	136.8	550.2	369.8
Serbia	46.3	1.2	13.3	6.9	5.7	25.0	18.1
Tajikistan	2.8	0.0	0.2	0.3	0.3	2.3	0.1
Turkmenistan	48.8	9.2	5.1	4.2	2.5	30.3	2.1
Ukraine	256.4	13.5	121.1	30.9	20.5	90.9	73.8
Uzbekistan	112.4	4.6	28.3	9.9	5.4	69.6	36.3
Non-OECD Europe and Eurasia	**2 497.4**	**264.3**	**883.9**	**386.6**	**238.4**	**962.7**	**607.4**
Argentina	166.6	16.9	54.8	38.1	35.1	56.7	32.3
Bolivia	12.9	1.3	2.3	6.2	5.8	3.1	2.0
Brazil	337.8	28.1	109.7	147.1	132.2	52.9	24.0
Colombia	60.6	6.9	19.3	20.0	18.8	14.4	8.2
Costa Rica	6.3	0.1	1.1	4.4	4.4	0.8	0.3
Cuba	26.8	0.1	12.9	1.7	1.3	12.1	6.9
Dominican Republic	18.1	0.0	5.2	5.2	4.2	7.6	5.1
Ecuador	28.5	1.1	6.1	14.4	12.9	6.8	4.7
El Salvador	6.8	0.0	2.6	2.6	2.6	1.6	1.1
Guatemala	14.5	0.1	5.9	6.0	6.0	2.4	1.6
Haiti	2.4	-	0.6	1.3	0.7	0.5	0.4
Honduras	7.1	-	1.7	3.0	3.0	2.5	1.1
Jamaica	8.3	-	1.8	3.0	1.5	3.5	0.8
Netherlands Antilles	5.0	2.0	1.2	1.2	1.2	0.6	0.2
Nicaragua	4.2	0.0	0.9	1.5	1.5	1.7	0.6
Panama	7.3	-	1.8	3.0	1.6	2.4	1.0
Paraguay	4.1	-	0.1	3.8	3.7	0.2	0.2
Peru	38.6	2.8	13.8	14.6	14.0	7.3	3.9
Trinidad and Tobago	40.2	7.0	27.4	2.8	2.8	3.0	2.4
Uruguay	7.7	0.6	1.5	2.8	2.8	2.8	1.3
Venezuela	154.6	30.5	51.6	51.7	51.6	20.7	13.4
Other Latin America	16.4	0.0	2.2	4.8	4.3	9.4	2.1
Latin America	**974.6**	**97.7**	**324.5**	**339.3**	**312.0**	**213.0**	**113.4**

Total primary energy supply

petajoules

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
World *	**231 633**	**259 289**	**302 344**	**324 509**	**367 696**	**386 906**	**420 014**	**480 084**	**504 633**	**513 874**	**508 690**	**38.3%**
Annex I Parties	*..*	*..*	*..*	*..*	*233 728*	*229 473*	*241 490*	*251 035*	*252 309*	*249 390*	*236 417*	*1.2%*
Annex II Parties	*130 359*	*138 423*	*153 296*	*154 085*	*167 910*	*180 364*	*194 924*	*201 508*	*201 160*	*197 708*	*188 265*	*12.1%*
North America	*72 382*	*76 178*	*83 622*	*82 358*	*88 909*	*96 212*	*105 708*	*108 483*	*109 234*	*106 494*	*101 196*	*13.8%*
Europe	*44 325*	*46 579*	*51 959*	*53 015*	*56 461*	*58 875*	*62 259*	*65 532*	*64 418*	*64 326*	*61 091*	*8.2%*
Asia Oceania	*13 651*	*15 666*	*17 715*	*18 712*	*22 540*	*25 277*	*26 958*	*27 493*	*27 508*	*26 888*	*25 978*	*15.2%*
Annex I EIT	*..*	*..*	*..*	*..*	*63 579*	*46 502*	*43 341*	*45 957*	*46 925*	*47 523*	*44 029*	*-30.7%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*125 630*	*147 957*	*167 322*	*215 972*	*238 026*	*250 287*	*258 508*	*105.8%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*149 406*	*139 280*	*142 052*	*149 255*	*149 064*	*148 718*	*140 617*	*-5.9%*
Intl. marine bunkers	**4 506**	**4 322**	**4 540**	**3 871**	**4 723**	**5 454**	**6 324**	**7 315**	**8 206**	**7 984**	**7 790**	**64.9%**
Intl. aviation bunkers	**2 370**	**2 431**	**2 825**	**3 149**	**3 616**	**4 023**	**4 878**	**5 762**	**6 092**	**6 213**	**5 983**	**65.5%**
Non-OECD Total **	**83 565**	**101 074**	**124 648**	**144 856**	**170 026**	**173 402**	**187 241**	**235 825**	**257 853**	**270 208**	**275 632**	**62.1%**
OECD Total ***	**141 192**	**151 462**	**170 330**	**172 633**	**189 331**	**204 028**	**221 572**	**231 181**	**232 481**	**229 469**	**219 293**	**15.8%**
Canada	5 918	6 948	8 064	8 080	8 732	9 662	10 528	11 397	11 388	11 160	10 639	21.8%
Chile	364	320	397	401	567	749	1 034	1 160	1 195	1 226	1 205	112.4%
Mexico	1 800	2 477	3 982	4 547	5 129	5 435	6 076	7 124	7 366	7 582	7 312	42.6%
United States	66 464	69 231	75 558	74 278	80 177	86 550	95 180	97 086	97 846	95 335	90 557	12.9%
OECD Americas	**74 546**	**78 975**	**88 001**	**87 306**	**94 605**	**102 396**	**112 818**	**116 767**	**117 795**	**115 302**	**109 713**	**16.0%**
Australia	2 161	2 528	2 914	3 049	3 610	3 875	4 526	5 007	5 231	5 418	5 488	52.0%
Israel	240	294	328	317	480	650	764	847	899	934	902	87.8%
Japan	11 201	12 772	14 424	15 194	18 393	20 777	21 727	21 793	21 569	20 748	19 761	7.4%
Korea	711	1 024	1 725	2 241	3 897	6 061	7 874	8 797	9 301	9 502	9 595	146.2%
New Zealand	289	366	376	469	537	625	704	693	708	723	729	35.7%
OECD Asia Oceania	**14 602**	**16 984**	**19 768**	**21 270**	**26 918**	**31 988**	**35 596**	**37 137**	**37 708**	**37 324**	**36 475**	**35.5%**
Austria	788	842	969	967	1 038	1 118	1 196	1 421	1 393	1 402	1 325	27.7%
Belgium	1 660	1 772	1 958	1 846	2 022	2 251	2 450	2 457	2 388	2 453	2 396	18.5%
Czech Republic	1 900	1 828	1 966	2 061	2 075	1 736	1 716	1 880	1 917	1 869	1 758	-15.3%
Denmark	775	732	801	808	727	812	780	791	827	805	779	7.2%
Estonia	..	..	..	..	415	211	197	216	235	228	199	-52.1%
Finland	761	825	1 030	1 082	1 188	1 211	1 350	1 433	1 540	1 477	1 389	16.9%
France	6 639	6 907	8 029	8 533	9 374	9 909	10 545	11 331	11 069	11 187	10 727	14.4%
Germany	12 772	13 126	14 954	14 956	14 713	14 112	14 122	14 181	13 892	14 013	13 336	-9.4%
Greece	364	492	627	735	898	949	1 134	1 266	1 265	1 274	1 233	37.3%
Hungary	797	959	1 187	1 246	1 200	1 083	1 047	1 155	1 119	1 108	1 041	-13.3%
Iceland	38	46	63	74	87	94	130	146	205	220	219	150.2%
Ireland	281	278	345	361	418	445	574	604	630	624	600	43.6%
Italy	4 413	4 889	5 478	5 414	6 136	6 662	7 181	7 698	7 498	7 371	6 893	12.3%
Luxembourg	170	158	149	128	143	132	137	183	175	175	165	15.8%
Netherlands	2 130	2 471	2 695	2 539	2 750	2 962	3 066	3 300	3 322	3 331	3 273	19.0%
Norway	557	611	767	836	879	981	1 083	1 120	1 153	1 248	1 183	34.5%
Poland	3 606	4 314	5 301	5 221	4 317	4 165	3 731	3 868	4 049	4 098	3 935	-8.8%
Portugal	263	322	418	459	701	846	1 033	1 108	1 059	1 023	1 009	43.9%
Slovak Republic	597	702	831	868	893	744	743	788	747	766	700	-21.6%
Slovenia	..	..	..	..	239	254	269	305	306	324	292	22.0%
Spain	1 784	2 408	2 834	2 970	3 772	4 221	5 106	5 938	6 024	5 812	5 297	40.4%
Sweden	1 509	1 634	1 695	1 977	1 976	2 107	1 991	2 159	2 096	2 077	1 901	-3.8%
Switzerland	686	719	839	924	1 018	1 007	1 047	1 085	1 079	1 121	1 128	10.8%
Turkey	818	1 120	1 317	1 646	2 209	2 577	3 197	3 533	4 187	4 124	4 089	85.1%
United Kingdom	8 737	8 347	8 308	8 406	8 621	9 055	9 334	9 310	8 803	8 715	8 238	-4.4%
OECD Europe ***	**52 043**	**55 503**	**62 561**	**64 057**	**67 808**	**69 645**	**73 158**	**77 278**	**76 979**	**76 843**	**73 105**	**7.8%**
European Union - 27	*..*	*..*	*..*	*..*	*68 507*	*68 552*	*70 569*	*74 502*	*73 569*	*73 323*	*69 325*	*1.2%*

* 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	2007	2008	2009	% change 90-09
Non-OECD Total *	**83 565**	**101 074**	**124 648**	**144 856**	**170 026**	**173 402**	**187 241**	**235 825**	**257 853**	**270 208**	**275 632**	**62.1%**
Algeria	145	231	469	743	929	1 009	1 131	1 351	1 541	1 562	1 665	79.2%
Angola	161	173	191	209	246	268	311	381	445	476	498	102.2%
Benin	46	52	57	65	70	77	83	105	134	137	145	109.2%
Botswana	..	..	..	37	53	63	77	81	86	91	86	62.4%
Cameroon	113	127	153	187	208	230	264	293	265	268	290	38.9%
Congo	21	24	27	33	33	33	36	51	52	54	59	76.0%
Dem. Rep. of Congo	280	313	354	417	494	548	698	836	898	931	960	94.3%
Côte d'Ivoire	103	124	150	155	181	213	282	403	428	430	433	139.5%
Egypt	325	411	635	1 077	1 332	1 478	1 891	2 547	2 816	2 960	3 015	126.3%
Eritrea	..	..	..	..	..	42	30	32	30	28	30	..
Ethiopia	360	395	454	518	622	687	780	899	1 285	1 327	1 368	119.8%
Gabon	45	54	58	57	49	57	61	78	83	83	75	51.9%
Ghana	125	153	168	182	222	271	324	357	398	396	387	74.6%
Kenya	227	259	316	372	458	522	585	684	727	746	784	71.1%
Libyan Arab Jamahiriya	66	153	288	418	474	661	694	735	746	805	854	80.1%
Morocco	102	143	204	234	291	360	429	547	601	627	632	117.3%
Mozambique	289	280	281	267	248	263	300	355	387	393	409	64.9%
Namibia	..	..	..	..	..	38	43	60	67	77	72	..
Nigeria	1 510	1 747	2 196	2 572	2 955	3 350	3 760	4 363	4 434	4 642	4 532	53.4%
Senegal	52	58	65	65	71	78	100	117	118	120	123	74.3%
South Africa	1 890	2 251	2 734	3 710	3 930	4 560	4 789	5 458	5 813	6 281	6 031	53.4%
Sudan	294	313	350	396	445	502	566	633	635	617	662	48.8%
United Rep. of Tanzania	317	321	336	367	407	461	561	718	768	794	821	101.5%
Togo	30	33	37	41	53	66	88	99	103	107	110	107.9%
Tunisia	69	91	137	174	207	243	306	345	370	385	385	86.0%
Zambia	147	163	188	206	226	244	262	302	309	319	329	45.5%
Zimbabwe	228	248	272	310	389	412	414	406	401	398	398	2.3%
Other Africa	1 102	1 201	1 375	1 537	1 754	1 972	2 307	2 686	2 869	2 973	3 045	73.6%
Africa	**8 048**	**9 318**	**11 496**	**14 349**	**16 349**	**18 706**	**21 174**	**24 921**	**26 809**	**28 028**	**28 198**	**72.5%**
Bangladesh	238	282	352	417	533	666	779	1 000	1 109	1 170	1 239	132.4%
Brunei Darussalam	7	31	57	75	74	97	103	106	139	152	131	77.2%
Cambodia	..	..	..	..	..	141	167	199	214	217	217	..
Chinese Taipei	422	602	1 171	1 432	2 020	2 672	3 563	4 295	4 600	4 417	4 232	109.5%
India	6 551	7 441	8 589	10 667	13 261	16 089	19 143	22 521	24 977	25 917	28 296	113.4%
Indonesia	1 468	1 722	2 355	2 789	4 242	5 651	6 518	7 594	7 884	8 030	8 457	99.4%
DPR of Korea	813	932	1 271	1 507	1 391	920	828	898	770	848	807	-42.0%
Malaysia	247	300	498	650	921	1 554	1 979	2 619	2 911	3 057	2 798	203.9%
Mongolia	..	..	..	131	143	113	99	107	127	130	136	-5.2%
Myanmar	330	350	393	459	446	493	523	669	652	655	631	41.3%
Nepal	153	169	191	213	242	281	339	382	389	402	417	72.0%
Pakistan	713	851	1 039	1 351	1 793	2 243	2 660	3 189	3 525	3 466	3 581	99.7%
Philippines	652	773	952	1 005	1 210	1 423	1 692	1 640	1 597	1 658	1 626	34.4%
Singapore	114	155	215	283	480	780	806	779	655	699	774	61.3%
Sri Lanka	159	172	190	209	231	249	349	377	388	376	389	68.3%
Thailand	573	726	921	1 036	1 756	2 592	3 030	4 020	4 279	4 451	4 326	146.3%
Vietnam	730	776	820	906	1 017	1 255	1 546	2 133	2 345	2 476	2 682	163.6%
Other Asia	151	181	265	213	236	235	290	344	340	341	357	51.4%
Asia	**13 322**	**15 463**	**19 279**	**23 344**	**29 996**	**37 455**	**44 413**	**52 873**	**56 901**	**58 463**	**61 093**	**103.7%**
People's Rep. of China	16 400	20 266	25 057	28 973	36 130	43 846	45 840	71 024	82 228	88 655	94 500	161.6%
Hong Kong, China	126	152	194	275	362	446	561	530	600	592	625	72.5%
China	**16 526**	**20 418**	**25 251**	**29 248**	**36 493**	**44 292**	**46 401**	**71 555**	**82 829**	**89 247**	**95 126**	**160.7%**

* Includes Estonia and Slovenia prior to 1990.

Total primary energy supply

petajoules

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	59	89	117	174	182	206	246	314	367	387	396	117.7%
Islamic Republic of Iran	692	1 111	1 589	2 249	2 841	3 914	5 412	7 371	8 186	8 664	9 037	218.1%
Iraq	185	237	441	661	757	1 087	1 063	1 406	1 384	1 439	1 347	77.9%
Jordan	20	31	63	109	136	180	203	279	302	296	312	128.6%
Kuwait	256	271	438	587	381	623	787	1 105	1 105	1 167	1 263	231.2%
Lebanon	77	91	104	98	82	185	205	210	176	226	278	239.5%
Oman	9	10	48	88	177	270	346	456	618	688	631	257.1%
Qatar	39	87	139	228	260	335	446	706	949	965	997	284.0%
Saudi Arabia	308	367	1 302	1 926	2 502	3 665	4 242	6 093	6 034	6 451	6 609	164.2%
Syrian Arab Republic	100	128	187	328	438	509	668	896	1 034	1 062	942	115.0%
United Arab Emirates	42	81	302	573	853	1 156	1 439	1 810	2 164	2 445	2 495	192.7%
Yemen	31	29	53	73	105	143	198	276	299	303	317	200.8%
Middle East	**1 819**	**2 533**	**4 784**	**7 093**	**8 715**	**12 272**	**15 255**	**20 923**	**22 616**	**24 094**	**24 624**	**182.6%**
Albania	71	82	128	113	111	55	74	95	89	87	72	-35.5%
Armenia *	..	..	..	..	322	68	84	105	119	125	109	-66.2%
Azerbaijan *	..	..	..	..	1 098	534	479	581	509	558	501	-54.4%
Belarus *	..	..	..	..	1 907	1 036	1 033	1 125	1 175	1 178	1 120	-41.2%
Bosnia and Herzegovina *	..	..	..	..	294	64	182	211	234	250	249	-15.2%
Bulgaria	797	973	1 189	1 283	1 196	967	781	833	842	828	732	-38.8%
Croatia *	..	..	..	..	377	295	326	373	391	380	364	-3.4%
Cyprus	25	24	36	39	57	73	89	93	102	108	105	84.1%
Georgia *	..	..	..	..	520	156	120	119	140	126	134	-74.3%
Gibraltar	1	1	2	2	2	4	5	6	6	7	7	179.9%
Kazakhstan *	..	..	..	..	3 046	2 176	1 490	2 124	2 767	2 899	2 756	-9.5%
Kyrgyzstan *	..	..	..	..	313	100	101	111	124	115	126	-59.8%
Latvia *	..	..	..	..	329	192	156	185	196	188	177	-46.3%
Lithuania *	..	..	..	..	675	366	299	360	387	384	351	-47.9%
FYR of Macedonia *	..	..	..	..	104	105	112	121	127	126	116	12.2%
Malta	9	9	13	14	29	30	28	36	36	34	33	15.1%
Republic of Moldova *	..	..	..	..	413	184	119	148	140	132	103	-75.2%
Romania	1 764	2 169	2 731	2 719	2 606	1 938	1 515	1 601	1 651	1 650	1 441	-44.7%
Russian Federation *	..	..	..	..	36 810	26 655	25 927	27 286	28 160	28 825	27 085	-26.4%
Serbia *	..	..	..	..	810	569	557	672	694	708	605	-25.3%
Tajikistan *	..	..	..	..	222	93	90	98	109	104	97	-56.3%
Turkmenistan *	..	..	..	..	822	582	607	775	918	941	820	-0.2%
Ukraine *	..	..	..	..	10 541	6 859	5 602	5 982	5 750	5 696	4 835	-54.1%
Uzbekistan *	..	..	..	..	1 941	1 782	2 124	1 966	2 039	2 114	2 044	5.3%
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**	**58 140**	**64 547**	**44 885**	**41 902**	**45 007**	**46 706**	**47 565**	**43 981**	**-31.9%**
Argentina	1 409	1 505	1 751	1 731	1 929	2 258	2 552	2 804	3 078	3 197	3 109	61.2%
Bolivia	43	62	102	106	109	156	158	219	227	250	261	138.7%
Brazil	2 921	3 815	4 767	5 416	5 872	6 746	7 920	9 020	9 855	10 409	10 055	71.2%
Colombia	577	645	776	876	1 014	1 192	1 121	1 172	1 233	1 288	1 333	31.4%
Costa Rica	47	55	64	70	85	98	126	170	209	205	205	141.9%
Cuba	495	549	686	717	807	509	565	467	431	442	482	-40.3%
Dominican Republic	98	129	144	153	172	247	327	330	348	341	339	97.4%
Ecuador	96	137	211	242	251	299	336	451	477	462	475	89.3%
El Salvador	73	95	105	110	103	141	166	189	211	214	214	106.7%
Guatemala	115	140	159	158	186	224	297	341	359	343	412	121.9%
Haiti	63	72	87	79	65	71	84	108	116	116	109	66.3%
Honduras	58	64	78	84	100	118	125	167	195	193	185	85.2%
Jamaica	84	112	95	72	117	135	161	158	197	179	136	16.8%
Netherlands Antilles	229	161	164	75	61	55	83	81	90	86	89	45.0%
Nicaragua	52	62	64	81	88	98	114	139	128	128	129	47.4%
Panama	70	70	58	64	61	81	106	107	113	117	130	112.7%
Paraguay	57	62	87	95	129	164	161	172	181	188	199	54.7%
Peru	382	434	471	443	408	459	512	571	600	630	663	62.6%
Trinidad and Tobago	110	96	160	212	250	257	446	702	844	809	848	239.3%
Uruguay	101	102	111	84	94	108	129	123	132	174	171	81.8%
Venezuela	818	1 045	1 482	1 651	1 823	2 159	2 362	2 785	2 686	2 757	2 801	53.6%
Other Latin America	198	251	251	163	204	218	244	269	281	284	266	30.5%
Latin America	**8 097**	**9 664**	**11 875**	**12 681**	**13 927**	**15 792**	**18 096**	**20 547**	**21 993**	**22 811**	**22 609**	**62.3%**

* 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	2007	2008	2009	% change 90-09
World *	**5 532.5**	**6 193.0**	**7 221.4**	**7 750.8**	**8 782.3**	**9 241.1**	**10 031.9**	**11 466.6**	**12 053.0**	**12 273.7**	**12 149.8**	**38.3%**
Annex I Parties	*..*	*..*	*..*	*..*	*5 582.5*	*5 480.9*	*5 767.9*	*5 995.9*	*6 026.3*	*5 956.6*	*5 646.7*	*1.2%*
Annex II Parties	*3 113.6*	*3 306.2*	*3 661.4*	*3 680.2*	*4 010.5*	*4 307.9*	*4 655.7*	*4 812.9*	*4 804.6*	*4 722.2*	*4 496.6*	*12.1%*
North America	*1 728.8*	*1 819.5*	*1 997.3*	*1 967.1*	*2 123.6*	*2 298.0*	*2 524.8*	*2 591.1*	*2 609.0*	*2 543.6*	*2 417.0*	*13.8%*
Europe	*1 058.7*	*1 112.5*	*1 241.0*	*1 266.2*	*1 348.5*	*1 406.2*	*1 487.0*	*1 565.2*	*1 538.6*	*1 536.4*	*1 459.1*	*8.2%*
Asia Oceania	*326.1*	*374.2*	*423.1*	*446.9*	*538.4*	*603.7*	*643.9*	*656.7*	*657.0*	*642.2*	*620.5*	*15.2%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 518.6*	*1 110.7*	*1 035.2*	*1 097.7*	*1 120.8*	*1 135.1*	*1 051.6*	*-30.7%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*3 000.6*	*3 533.9*	*3 996.4*	*5 158.4*	*5 685.2*	*5 978.0*	*6 174.4*	*105.8%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*3 568.5*	*3 326.6*	*3 392.9*	*3 564.9*	*3 560.3*	*3 552.1*	*3 358.6*	*-5.9%*
Intl. marine bunkers	**107.6**	**103.2**	**108.4**	**92.5**	**112.8**	**130.3**	**151.0**	**174.7**	**196.0**	**190.7**	**186.1**	**64.9%**
Intl. aviation bunkers	**56.6**	**58.1**	**67.5**	**75.2**	**86.4**	**96.1**	**116.5**	**137.6**	**145.5**	**148.4**	**142.9**	**65.5%**
Non-OECD Total **	**1 995.9**	**2 414.1**	**2 977.2**	**3 459.8**	**4 061.0**	**4 141.6**	**4 472.2**	**5 632.6**	**6 158.7**	**6 453.8**	**6 583.4**	**62.1%**
OECD Total ***	**3 372.3**	**3 617.6**	**4 068.3**	**4 123.3**	**4 522.1**	**4 873.1**	**5 292.1**	**5 521.7**	**5 552.7**	**5 480.8**	**5 237.7**	**15.8%**
Canada	141.3	165.9	192.6	193.0	208.6	230.8	251.4	272.2	272.0	266.5	254.1	21.8%
Chile	8.7	7.6	9.5	9.6	13.6	17.9	24.7	27.7	28.5	29.3	28.8	112.4%
Mexico	43.0	59.2	95.1	108.6	122.5	129.8	145.1	170.2	175.9	181.1	174.6	42.6%
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	2 337.0	2 277.0	2 162.9	12.9%
OECD Americas	**1 780.5**	**1 886.3**	**2 101.9**	**2 085.3**	**2 259.6**	**2 445.7**	**2 694.6**	**2 788.9**	**2 813.5**	**2 754.0**	**2 620.5**	**16.0%**
Australia	51.6	60.4	69.6	72.8	86.2	92.6	108.1	119.6	124.9	129.4	131.1	52.0%
Israel	5.7	7.0	7.8	7.6	11.5	15.5	18.2	20.2	21.5	22.3	21.5	87.8%
Japan	267.5	305.1	344.5	362.9	439.3	496.2	518.9	520.5	515.2	495.5	472.0	7.4%
Korea	17.0	24.5	41.2	53.5	93.1	144.8	188.1	210.1	222.1	226.9	229.2	146.2%
New Zealand	6.9	8.8	9.0	11.2	12.8	14.9	16.8	16.6	16.9	17.3	17.4	35.7%
OECD Asia Oceania	**348.8**	**405.7**	**472.1**	**508.0**	**642.9**	**764.0**	**850.2**	**887.0**	**900.6**	**891.5**	**871.2**	**35.5%**
Austria	18.8	20.1	23.2	23.1	24.8	26.7	28.6	34.0	33.3	33.5	31.7	27.7%
Belgium	39.7	42.3	46.8	44.1	48.3	53.8	58.5	58.7	57.0	58.6	57.2	18.5%
Czech Republic	45.4	43.7	46.9	49.2	49.6	41.5	41.0	44.9	45.8	44.6	42.0	-15.3%
Denmark	18.5	17.5	19.1	19.3	17.4	19.4	18.6	18.9	19.8	19.2	18.6	7.2%
Estonia	..	..	..	..	9.9	5.0	4.7	5.2	5.6	5.4	4.7	-52.1%
Finland	18.2	19.7	24.6	25.8	28.4	28.9	32.3	34.2	36.8	35.3	33.2	16.9%
France	158.6	165.0	191.8	203.8	223.9	236.7	251.9	270.6	264.4	267.2	256.2	14.4%
Germany	305.0	313.5	357.2	357.2	351.4	337.1	337.3	338.7	331.8	334.7	318.5	-9.4%
Greece	8.7	11.7	15.0	17.6	21.4	22.7	27.1	30.2	30.2	30.4	29.4	37.3%
Hungary	19.0	22.9	28.4	29.8	28.7	25.9	25.0	27.6	26.7	26.5	24.9	-13.3%
Iceland	0.9	1.1	1.5	1.8	2.1	2.3	3.1	3.5	4.9	5.3	5.2	150.2%
Ireland	6.7	6.6	8.2	8.6	10.0	10.6	13.7	14.4	15.0	14.9	14.3	43.6%
Italy	105.4	116.8	130.8	129.3	146.6	159.1	171.5	183.9	179.1	176.1	164.6	12.3%
Luxembourg	4.1	3.8	3.6	3.1	3.4	3.2	3.3	4.4	4.2	4.2	3.9	15.8%
Netherlands	50.9	59.0	64.4	60.6	65.7	70.7	73.2	78.8	79.3	79.6	78.2	19.0%
Norway	13.3	14.6	18.3	20.0	21.0	23.4	25.9	26.8	27.5	29.8	28.2	34.5%
Poland	86.1	103.0	126.6	124.7	103.1	99.5	89.1	92.4	96.7	97.9	94.0	-8.8%
Portugal	6.3	7.7	10.0	11.0	16.7	20.2	24.7	26.5	25.3	24.4	24.1	43.9%
Slovak Republic	14.3	16.8	19.8	20.7	21.3	17.8	17.7	18.8	17.8	18.3	16.7	-21.6%
Slovenia	..	..	..	..	5.7	6.1	6.4	7.3	7.3	7.7	7.0	22.0%
Spain	42.6	57.5	67.7	70.9	90.1	100.8	121.9	141.8	143.9	138.8	126.5	40.4%
Sweden	36.0	39.0	40.5	47.2	47.2	50.3	47.6	51.6	50.1	49.6	45.4	-3.8%
Switzerland	16.4	17.2	20.0	22.1	24.3	24.1	25.0	25.9	25.8	26.8	27.0	10.8%
Turkey	19.5	26.8	31.4	39.3	52.8	61.5	76.3	84.4	100.0	98.5	97.7	85.1%
United Kingdom	208.7	199.4	198.4	200.8	205.9	216.3	222.9	222.4	210.3	208.1	196.8	-4.4%
OECD Europe ***	**1 243.0**	**1 325.7**	**1 494.2**	**1 530.0**	**1 619.6**	**1 663.4**	**1 747.3**	**1 845.7**	**1 838.6**	**1 835.4**	**1 746.1**	**7.8%**
European Union - 27	*..*	*..*	*..*	*..*	*1 636.3*	*1 637.3*	*1 685.5*	*1 779.4*	*1 757.2*	*1 751.3*	*1 655.8*	*1.2%*

* 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	2007	2008	2009	% change 90-09
Non-OECD Total *	**1 995.9**	**2 414.1**	**2 977.2**	**3 459.8**	**4 061.0**	**4 141.6**	**4 472.2**	**5 632.6**	**6 158.7**	**6 453.8**	**6 583.4**	**62.1%**
Algeria	3.5	5.5	11.2	17.7	22.2	24.1	27.0	32.3	36.8	37.3	39.8	79.2%
Angola	3.9	4.1	4.6	5.0	5.9	6.4	7.4	9.1	10.6	11.4	11.9	102.2%
Benin	1.1	1.2	1.4	1.5	1.7	1.8	2.0	2.5	3.2	3.3	3.5	109.2%
Botswana	..	..	..	0.9	1.3	1.5	1.8	1.9	2.0	2.2	2.0	62.4%
Cameroon	2.7	3.0	3.7	4.5	5.0	5.5	6.3	7.0	6.3	6.4	6.9	38.9%
Congo	0.5	0.6	0.7	0.8	0.8	0.8	0.8	1.2	1.2	1.3	1.4	75.9%
Dem. Rep. of Congo	6.7	7.5	8.5	10.0	11.8	13.1	16.7	20.0	21.5	22.2	22.9	94.3%
Côte d'Ivoire	2.5	3.0	3.6	3.7	4.3	5.1	6.7	9.6	10.2	10.3	10.4	139.5%
Egypt	7.8	9.8	15.2	25.7	31.8	35.3	45.2	60.8	67.3	70.7	72.0	126.3%
Eritrea	..	..	..	..	..	1.0	0.7	0.8	0.7	0.7	0.7	..
Ethiopia	8.6	9.4	10.8	12.4	14.9	16.4	18.6	21.5	30.7	31.7	32.7	119.8%
Gabon	1.1	1.3	1.4	1.4	1.2	1.4	1.5	1.9	2.0	2.0	1.8	51.9%
Ghana	3.0	3.7	4.0	4.4	5.3	6.5	7.7	8.5	9.5	9.5	9.2	74.6%
Kenya	5.4	6.2	7.5	8.9	10.9	12.5	14.0	16.3	17.4	17.8	18.7	71.1%
Libyan Arab Jamahiriya	1.6	3.7	6.9	10.0	11.3	15.8	16.6	17.6	17.8	19.2	20.4	80.1%
Morocco	2.4	3.4	4.9	5.6	6.9	8.6	10.2	13.1	14.4	15.0	15.1	117.3%
Mozambique	6.9	6.7	6.7	6.4	5.9	6.3	7.2	8.5	9.2	9.4	9.8	64.9%
Namibia	..	..	..	..	..	0.9	1.0	1.4	1.6	1.8	1.7	..
Nigeria	36.1	41.7	52.5	61.4	70.6	80.0	89.8	104.2	105.9	110.9	108.3	53.4%
Senegal	1.2	1.4	1.6	1.6	1.7	1.9	2.4	2.8	2.8	2.9	2.9	74.3%
South Africa	45.1	53.8	65.3	88.6	93.9	108.9	114.4	130.4	138.8	150.0	144.0	53.4%
Sudan	7.0	7.5	8.4	9.5	10.6	12.0	13.5	15.1	15.2	14.7	15.8	48.8%
United Rep. of Tanzania	7.6	7.7	8.0	8.8	9.7	11.0	13.4	17.2	18.3	19.0	19.6	101.5%
Togo	0.7	0.8	0.9	1.0	1.3	1.6	2.1	2.4	2.5	2.6	2.6	107.9%
Tunisia	1.7	2.2	3.3	4.2	4.9	5.8	7.3	8.2	8.8	9.2	9.2	86.0%
Zambia	3.5	3.9	4.5	4.9	5.4	5.8	6.2	7.2	7.4	7.6	7.9	45.5%
Zimbabwe	5.4	5.9	6.5	7.4	9.3	9.8	9.9	9.7	9.6	9.5	9.5	2.3%
Other Africa	26.3	28.7	32.8	36.7	41.9	47.1	55.1	64.1	68.5	71.0	72.7	73.6%
Africa	**192.2**	**222.6**	**274.6**	**342.7**	**390.5**	**446.8**	**505.7**	**595.2**	**640.3**	**669.4**	**673.5**	**72.5%**
Bangladesh	5.7	6.7	8.4	9.9	12.7	15.9	18.6	23.9	26.5	27.9	29.6	132.4%
Brunei Darussalam	0.2	0.7	1.4	1.8	1.8	2.3	2.5	2.5	3.3	3.6	3.1	77.2%
Cambodia	..	..	..	..	..	3.4	4.0	4.8	5.1	5.2	5.2	..
Chinese Taipei	10.1	14.4	28.0	34.2	48.2	63.8	85.1	102.6	109.9	105.5	101.1	109.5%
India	156.5	177.7	205.2	254.8	316.7	384.3	457.2	537.9	596.6	619.0	675.8	113.4%
Indonesia	35.1	41.1	56.3	66.6	101.3	135.0	155.7	181.4	188.3	191.8	202.0	99.4%
DPR of Korea	19.4	22.3	30.4	36.0	33.2	22.0	19.8	21.4	18.4	20.3	19.3	-42.0%
Malaysia	5.9	7.2	11.9	15.5	22.0	37.1	47.3	62.6	69.5	73.0	66.8	203.9%
Mongolia	..	..	..	3.1	3.4	2.7	2.4	2.6	3.0	3.1	3.2	-5.2%
Myanmar	7.9	8.4	9.4	11.0	10.7	11.8	12.5	16.0	15.6	15.6	15.1	41.3%
Nepal	3.7	4.0	4.6	5.1	5.8	6.7	8.1	9.1	9.3	9.6	10.0	72.0%
Pakistan	17.0	20.3	24.8	32.3	42.8	53.6	63.5	76.2	84.2	82.8	85.5	99.7%
Philippines	15.6	18.5	22.7	24.0	28.9	34.0	40.4	39.2	38.1	39.6	38.8	34.4%
Singapore	2.7	3.7	5.1	6.8	11.5	18.6	19.2	18.6	15.7	16.7	18.5	61.3%
Sri Lanka	3.8	4.1	4.5	5.0	5.5	5.9	8.3	9.0	9.3	9.0	9.3	68.3%
Thailand	13.7	17.3	22.0	24.7	41.9	61.9	72.4	96.0	102.2	106.3	103.3	146.3%
Vietnam	17.4	18.5	19.6	21.6	24.3	30.0	36.9	51.0	56.0	59.1	64.0	163.6%
Other Asia	3.6	4.3	6.3	5.1	5.6	5.6	6.9	8.2	8.1	8.2	8.5	51.4%
Asia	**318.2**	**369.3**	**460.5**	**557.6**	**716.4**	**894.6**	**1 060.8**	**1 262.9**	**1 359.1**	**1 396.4**	**1 459.2**	**103.7%**
People's Rep. of China	391.7	484.0	598.5	692.0	863.0	1 047.2	1 094.9	1 696.4	1 964.0	2 117.5	2 257.1	161.6%
Hong Kong, China	3.0	3.6	4.6	6.6	8.7	10.6	13.4	12.7	14.3	14.1	14.9	72.5%
China	**394.7**	**487.7**	**603.1**	**698.6**	**871.6**	**1 057.9**	**1 108.3**	**1 709.1**	**1 978.3**	**2 131.6**	**2 272.0**	**160.7%**

* Includes Estonia and Slovenia prior to 1990.

Total primary energy supply

million tonnes of oil equivalent

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	1.4	2.1	2.8	4.2	4.4	4.9	5.9	7.5	8.8	9.2	9.5	117.7%
Islamic Republic of Iran	16.5	26.5	38.0	53.7	67.9	93.5	129.3	176.1	195.5	206.9	215.9	218.1%
Iraq	4.4	5.7	10.5	15.8	18.1	26.0	25.4	33.6	33.1	34.4	32.2	77.9%
Jordan	0.5	0.7	1.5	2.6	3.3	4.3	4.9	6.7	7.2	7.1	7.5	128.6%
Kuwait	6.1	6.5	10.5	14.0	9.1	14.9	18.8	26.4	26.4	27.9	30.2	231.2%
Lebanon	1.8	2.2	2.5	2.3	2.0	4.4	4.9	5.0	4.2	5.4	6.6	239.5%
Oman	0.2	0.2	1.1	2.1	4.2	6.5	8.3	10.9	14.8	16.4	15.1	257.1%
Qatar	0.9	2.1	3.3	5.5	6.2	8.0	10.7	16.9	22.7	23.1	23.8	284.0%
Saudi Arabia	7.4	8.8	31.1	46.0	59.8	87.5	101.3	145.5	144.1	154.1	157.9	164.2%
Syrian Arab Republic	2.4	3.1	4.5	7.8	10.5	12.1	15.9	21.4	24.7	25.4	22.5	115.0%
United Arab Emirates	1.0	1.9	7.2	13.7	20.4	27.6	34.4	43.2	51.7	58.4	59.6	192.7%
Yemen	0.7	0.7	1.3	1.7	2.5	3.4	4.7	6.6	7.1	7.2	7.6	200.8%
Middle East	**43.4**	**60.5**	**114.3**	**169.4**	**208.1**	**293.1**	**364.4**	**499.7**	**540.2**	**575.5**	**588.1**	**182.6%**
Albania	1.7	2.0	3.1	2.7	2.7	1.3	1.8	2.3	2.1	2.1	1.7	-35.5%
Armenia *	..	..	..	..	7.7	1.6	2.0	2.5	2.8	3.0	2.6	-66.2%
Azerbaijan *	..	..	..	..	26.2	12.8	11.4	13.9	12.2	13.3	12.0	-54.4%
Belarus *	..	..	..	..	45.5	24.7	24.7	26.9	28.1	28.1	26.8	-41.2%
Bosnia and Herzegovina *	..	..	..	..	7.0	1.5	4.4	5.0	5.6	6.0	6.0	-15.2%
Bulgaria	19.0	23.2	28.4	30.6	28.6	23.1	18.7	19.9	20.1	19.8	17.5	-38.8%
Croatia *	..	..	..	..	9.0	7.0	7.8	8.9	9.3	9.1	8.7	-3.4%
Cyprus	0.6	0.6	0.9	0.9	1.4	1.7	2.1	2.2	2.4	2.6	2.5	84.1%
Georgia *	..	..	..	..	12.4	3.7	2.9	2.8	3.3	3.0	3.2	-74.3%
Gibraltar	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	179.8%
Kazakhstan *	..	..	..	..	72.7	52.0	35.6	50.7	66.1	69.2	65.8	-9.5%
Kyrgyzstan *	..	..	..	..	7.5	2.4	2.4	2.7	3.0	2.7	3.0	-59.8%
Latvia *	..	..	..	..	7.9	4.6	3.7	4.4	4.7	4.5	4.2	-46.3%
Lithuania *	..	..	..	..	16.1	8.7	7.1	8.6	9.3	9.2	8.4	-47.9%
FYR of Macedonia *	..	..	..	..	2.5	2.5	2.7	2.9	3.0	3.0	2.8	12.2%
Malta	0.2	0.2	0.3	0.3	0.7	0.7	0.7	0.9	0.9	0.8	0.8	15.1%
Republic of Moldova *	..	..	..	..	9.9	4.4	2.8	3.5	3.3	3.1	2.4	-75.2%
Romania	42.1	51.8	65.2	64.9	62.3	46.3	36.2	38.2	39.4	39.4	34.4	-44.7%
Russian Federation *	..	..	..	..	879.2	636.6	619.3	651.7	672.6	688.5	646.9	-26.4%
Serbia *	..	..	..	..	19.3	13.6	13.3	16.0	16.6	16.9	14.4	-25.3%
Tajikistan *	..	..	..	..	5.3	2.2	2.1	2.3	2.6	2.5	2.3	-56.3%
Turkmenistan *	..	..	..	..	19.6	13.9	14.5	18.5	21.9	22.5	19.6	-0.2%
Ukraine *	..	..	..	..	251.8	163.8	133.8	142.9	137.3	136.1	115.5	-54.1%
Uzbekistan *	..	..	..	..	46.4	42.6	50.7	47.0	48.7	50.5	48.8	5.3%
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**	**1 541.7**	**1 072.1**	**1 000.8**	**1 075.0**	**1 115.5**	**1 136.1**	**1 050.5**	**-31.9%**
Argentina	33.7	35.9	41.8	41.3	46.1	53.9	61.0	67.0	73.5	76.4	74.2	61.2%
Bolivia	1.0	1.5	2.4	2.5	2.6	3.7	3.8	5.2	5.4	6.0	6.2	138.7%
Brazil	69.8	91.1	113.9	129.3	140.2	161.1	189.2	215.4	235.4	248.6	240.2	71.2%
Colombia	13.8	15.4	18.5	20.9	24.2	28.5	26.8	28.0	29.5	30.8	31.8	31.4%
Costa Rica	1.1	1.3	1.5	1.7	2.0	2.3	3.0	4.1	5.0	4.9	4.9	141.9%
Cuba	11.8	13.1	16.4	17.1	19.3	12.1	13.5	11.1	10.3	10.5	11.5	-40.3%
Dominican Republic	2.3	3.1	3.4	3.6	4.1	5.9	7.8	7.9	8.3	8.2	8.1	97.4%
Ecuador	2.3	3.3	5.0	5.8	6.0	7.1	8.0	10.8	11.4	11.0	11.4	89.3%
El Salvador	1.8	2.3	2.5	2.6	2.5	3.4	4.0	4.5	5.0	5.1	5.1	106.7%
Guatemala	2.7	3.3	3.8	3.8	4.4	5.4	7.1	8.1	8.6	8.2	9.8	121.9%
Haiti	1.5	1.7	2.1	1.9	1.6	1.7	2.0	2.6	2.8	2.8	2.6	66.3%
Honduras	1.4	1.5	1.9	2.0	2.4	2.8	3.0	4.0	4.6	4.6	4.4	85.2%
Jamaica	2.0	2.7	2.3	1.7	2.8	3.2	3.8	3.8	4.7	4.3	3.3	16.8%
Netherlands Antilles	5.5	3.8	3.9	1.8	1.5	1.3	2.0	1.9	2.2	2.1	2.1	45.0%
Nicaragua	1.2	1.5	1.5	1.9	2.1	2.3	2.7	3.3	3.1	3.0	3.1	47.4%
Panama	1.7	1.7	1.4	1.5	1.5	1.9	2.5	2.5	2.7	2.8	3.1	112.7%
Paraguay	1.4	1.5	2.1	2.3	3.1	3.9	3.9	4.1	4.3	4.5	4.8	54.7%
Peru	9.1	10.4	11.3	10.6	9.7	11.0	12.2	13.6	14.3	15.0	15.8	62.6%
Trinidad and Tobago	2.6	2.3	3.8	5.1	6.0	6.1	10.7	16.8	20.2	19.3	20.3	239.3%
Uruguay	2.4	2.4	2.6	2.0	2.3	2.6	3.1	2.9	3.2	4.1	4.1	81.8%
Venezuela	19.5	25.0	35.4	39.4	43.5	51.6	56.4	66.5	64.2	65.8	66.9	53.6%
Other Latin America	4.7	6.0	6.0	3.9	4.9	5.2	5.8	6.4	6.7	6.8	6.4	30.5%
Latin America	**193.4**	**230.8**	**283.6**	**302.9**	**332.6**	**377.2**	**432.2**	**490.7**	**525.3**	**544.8**	**540.0**	**62.3%**

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

GDP using exchange rates

billion 2000 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
World	**12 815.6**	**14 845.1**	**17 967.3**	**20 529.0**	**24 257.5**	**27 196.0**	**32 174.3**	**36 896.6**	**39 885.3**	**40 470.4**	**39 674.4**	**63.6%**
Annex I Parties	*..*	*..*	*..*	*..*	*19 919.7*	*21 657.4*	*25 250.8*	*28 008.2*	*29 555.0*	*29 583.0*	*28 494.8*	*43.0%*
Annex II Parties	*10 228.8*	*11 582.9*	*13 786.0*	*15 839.5*	*18 889.8*	*20 806.0*	*24 265.0*	*26 754.9*	*28 124.0*	*28 101.0*	*27 094.8*	*43.4%*
North America	*4 155.4*	*4 634.3*	*5 554.1*	*6 500.3*	*7 607.6*	*8 594.0*	*10 623.7*	*11 972.3*	*12 534.6*	*12 536.7*	*12 203.9*	*60.4%*
Europe	*4 091.4*	*4 599.1*	*5 344.4*	*5 797.0*	*6 802.9*	*7 375.7*	*8 509.4*	*9 252.8*	*9 797.5*	*9 828.3*	*9 415.9*	*38.4%*
Asia Oceania	*1 982.0*	*2 349.5*	*2 887.5*	*3 542.3*	*4 479.3*	*4 836.3*	*5 131.8*	*5 529.9*	*5 791.9*	*5 736.1*	*5 474.9*	*22.2%*
Annex I EIT	*..*	*..*	*..*	*..*	*841.5*	*630.5*	*715.3*	*916.2*	*1 054.0*	*1 102.5*	*1 038.7*	*23.4%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*4 337.8*	*5 538.6*	*6 923.5*	*8 888.4*	*10 330.3*	*10 887.4*	*11 179.6*	*157.7%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*12 653.0*	*13 425.1*	*15 068.8*	*16 502.8*	*17 485.3*	*17 510.7*	*16 751.7*	*32.4%*
Non-OECD Total *	**2 025.2**	**2 545.4**	**3 278.5**	**3 640.1**	**4 075.5**	**4 849.5**	**5 951.2**	**7 831.0**	**9 208.2**	**9 758.8**	**10 041.1**	**146.4%**
OECD Total **	**10 790.4**	**12 299.7**	**14 688.8**	**16 888.8**	**20 182.0**	**22 346.5**	**26 223.1**	**29 065.7**	**30 677.1**	**30 711.6**	**29 633.4**	**46.8%**
Canada	288.3	343.3	412.0	471.7	543.6	592.1	724.9	821.9	863.7	868.2	846.8	55.8%
Chile	23.0	19.7	28.0	29.3	40.6	61.5	75.4	92.6	101.3	105.1	103.3	154.6%
Mexico	208.0	274.1	378.4	416.5	452.6	488.2	636.7	699.0	759.0	770.6	724.4	60.1%
United States	3 867.1	4 291.0	5 142.1	6 028.6	7 064.0	8 002.0	9 898.8	11 150.4	11 670.8	11 668.5	11 357.1	60.8%
OECD Americas	**4 386.5**	**4 928.2**	**5 960.5**	**6 946.1**	**8 100.7**	**9 143.8**	**11 335.8**	**12 763.9**	**13 395.0**	**13 412.4**	**13 031.5**	**60.9%**
Australia	168.7	187.2	216.9	251.7	289.3	339.8	411.0	485.9	523.1	528.7	535.2	85.0%
Israel	32.4	42.1	48.7	56.8	70.4	97.5	124.7	138.7	154.4	160.9	162.2	130.3%
Japan	1 785.0	2 128.9	2 638.2	3 252.6	4 150.3	4 450.4	4 667.5	4 979.6	5 201.2	5 140.4	4 872.2	17.4%
Korea	52.5	75.3	112.0	172.6	283.3	414.2	533.4	664.4	734.5	751.4	752.8	165.7%
New Zealand	28.3	33.4	32.5	38.0	39.7	46.2	53.4	64.4	67.7	67.0	67.5	69.9%
OECD Asia Oceania	**2 066.8**	**2 466.9**	**3 048.2**	**3 771.6**	**4 833.0**	**5 348.0**	**5 789.9**	**6 332.9**	**6 680.8**	**6 648.3**	**6 389.9**	**32.2%**
Austria	88.6	102.2	120.3	129.3	149.0	165.0	191.2	206.9	222.3	227.2	218.4	46.5%
Belgium	113.8	130.8	152.9	160.2	186.5	201.9	232.4	251.2	265.5	268.2	260.8	39.8%
Czech Republic	38.3	43.7	48.7	51.1	55.3	52.7	56.7	68.1	77.2	79.1	75.9	37.2%
Denmark	83.2	88.1	100.9	115.3	123.9	139.1	160.1	170.4	179.0	177.0	167.7	35.4%
Estonia	..	..	..	..	5.8	4.1	5.7	8.3	9.8	9.3	8.0	37.5%
Finland	51.9	62.9	73.5	84.1	99.3	96.3	121.7	138.5	152.4	153.8	141.2	42.2%
France	630.8	727.7	861.1	929.8	1 091.8	1 156.3	1 328.0	1 442.3	1 509.3	1 512.5	1 472.8	34.9%
Germany	950.5	1 038.9	1 225.9	1 311.9	1 543.2	1 720.5	1 900.2	1 957.4	2 077.1	2 097.7	1 998.7	29.5%
Greece	64.8	76.8	94.2	94.8	100.8	107.3	127.1	154.9	169.9	171.6	168.1	66.7%
Hungary	26.1	33.4	39.8	43.5	44.6	39.6	47.4	57.4	60.0	60.5	56.4	26.4%
Iceland	3.2	3.8	5.2	5.8	6.8	6.9	8.7	10.7	11.9	12.1	11.2	65.9%
Ireland	22.1	27.2	34.0	38.5	48.5	60.8	96.8	126.2	140.4	135.4	125.1	157.9%
Italy	518.2	594.6	739.1	803.5	937.6	998.7	1 097.3	1 146.8	1 187.5	1 171.8	1 110.7	18.5%
Luxembourg	6.1	6.8	7.6	8.6	12.4	15.1	20.3	24.2	27.1	27.5	26.5	113.3%
Netherlands	173.6	196.5	226.2	239.1	282.0	315.8	385.1	411.2	441.8	450.1	432.5	53.4%
Norway	61.0	73.1	91.2	107.5	117.0	140.5	168.3	187.8	197.3	198.8	196.0	67.5%
Poland	89.2	114.1	119.0	120.0	118.2	131.6	171.3	199.4	226.1	237.7	241.7	104.5%
Portugal	42.6	49.5	63.5	66.4	87.5	95.2	117.0	121.8	126.5	126.5	123.4	41.0%
Slovak Republic	12.9	14.7	16.3	17.6	18.9	17.3	20.4	25.9	31.1	32.9	31.3	65.6%
Slovenia	..	..	..	..	16.5	16.1	19.9	23.8	27.0	28.0	25.7	55.3%
Spain	241.9	299.4	330.0	353.6	440.6	474.9	580.7	681.9	734.6	740.9	713.4	61.9%
Sweden	134.1	151.1	161.5	177.0	201.0	208.0	247.3	282.4	304.3	302.4	286.3	42.4%
Switzerland	165.9	166.0	180.4	194.5	224.8	225.9	249.9	266.7	286.4	291.9	286.3	27.4%
Turkey	79.3	99.6	111.9	141.9	186.0	217.8	266.6	333.0	372.6	375.1	357.0	92.0%
United Kingdom	739.1	803.8	876.9	976.9	1 150.3	1 247.8	1 477.5	1 671.5	1 764.2	1 763.0	1 677.1	45.8%
OECD Europe **	**4 337.1**	**4 904.6**	**5 680.1**	**6 171.1**	**7 248.3**	**7 854.8**	**9 097.3**	**9 968.8**	**10 601.3**	**10 650.9**	**10 211.9**	**40.9%**
European Union - 27	*..*	*..*	*..*	*..*	*6 807.2*	*7 342.1*	*8 486.3*	*9 279.5*	*9 858.4*	*9 905.3*	*9 481.6*	*39.3%*

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

GDP using exchange rates

billion 2000 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Non-OECD Total *	**2 025.2**	**2 545.4**	**3 278.5**	**3 640.1**	**4 075.5**	**4 849.5**	**5 951.2**	**7 831.0**	**9 208.2**	**9 758.8**	**10 041.1**	**146.4%**
Algeria	17.5	26.1	35.3	44.6	46.4	47.0	54.8	69.6	73.1	74.8	76.4	64.8%
Angola	6.7	6.7	6.7	7.2	8.5	6.7	9.1	14.9	21.3	24.1	24.3	187.0%
Benin	0.8	0.9	1.1	1.4	1.4	1.7	2.3	2.7	3.0	3.1	3.2	129.5%
Botswana	..	..	..	1.9	3.4	4.1	5.6	7.3	8.0	8.3	8.0	134.4%
Cameroon	3.5	4.7	6.3	9.9	8.8	8.0	10.1	12.1	12.9	13.3	13.6	54.1%
Congo	1.0	1.4	1.7	2.8	2.8	2.9	3.2	3.9	4.1	4.3	4.7	66.8%
Dem. Rep. of Congo	7.1	7.6	7.0	7.7	7.7	5.3	4.3	5.2	5.8	6.2	6.4	-16.7%
Côte d'Ivoire	5.1	6.3	7.7	7.8	8.3	8.9	10.4	10.4	10.7	10.9	11.3	36.1%
Egypt	21.0	24.1	38.5	53.3	65.6	77.5	99.8	118.7	135.9	145.6	152.4	132.3%
Eritrea	..	..	..	..	..	0.6	0.6	0.7	0.7	0.6	0.8	..
Ethiopia	4.2	4.6	5.1	4.9	6.2	6.6	8.2	11.2	13.8	15.3	16.6	166.7%
Gabon	1.9	3.9	3.6	4.1	4.3	5.0	5.1	5.5	5.9	6.0	6.0	39.1%
Ghana	2.7	2.5	2.6	2.6	3.3	4.0	5.0	6.4	7.2	7.8	8.2	150.4%
Kenya	4.0	5.2	7.1	8.0	10.5	11.4	12.7	15.2	17.3	17.5	18.0	70.6%
Libyan Arab Jamahiriya	34.4	27.8	43.8	37.7	29.8	31.8	34.5	44.0	49.3	51.1	52.0	74.6%
Morocco	12.8	15.4	20.1	23.6	29.3	30.7	37.0	47.2	52.2	55.2	57.9	97.5%
Mozambique	2.8	2.4	2.5	1.9	2.5	3.0	4.2	6.4	7.5	8.0	8.5	239.7%
Namibia	..	..	..	..	..	3.3	3.9	5.0	5.6	5.9	5.8	..
Nigeria	22.6	26.0	31.5	27.0	35.0	39.5	46.0	61.9	70.0	74.2	78.3	123.9%
Senegal	2.3	2.5	2.7	3.1	3.5	3.8	4.7	5.9	6.3	6.5	6.7	93.2%
South Africa	71.5	82.0	95.5	102.2	110.9	115.8	132.9	160.4	178.6	185.2	181.9	64.0%
Sudan	4.0	4.9	5.5	5.7	7.1	9.1	12.4	16.6	20.3	21.7	22.7	221.1%
United Rep. of Tanzania	3.6	4.3	4.9	5.2	6.8	7.4	9.1	12.5	14.3	15.4	16.2	138.8%
Togo	0.6	0.8	1.0	0.9	1.1	1.1	1.3	1.5	1.6	1.6	1.6	52.6%
Tunisia	4.7	6.3	8.6	10.6	12.2	14.8	19.4	24.1	27.1	28.4	29.3	139.2%
Zambia	2.4	2.7	2.7	2.8	3.0	2.8	3.2	4.1	4.6	4.9	5.2	71.3%
Zimbabwe	3.5	4.1	4.4	5.4	6.7	7.1	7.4	5.7	5.2	4.5	4.7	-30.9%
Other Africa	24.0	26.0	30.9	32.6	37.8	38.5	48.8	63.5	71.6	75.7	75.4	99.3%
Africa	**264.7**	**299.1**	**376.9**	**414.8**	**462.9**	**498.4**	**596.1**	**742.6**	**833.9**	**876.2**	**896.0**	**93.6%**
Bangladesh	17.8	16.7	20.5	24.6	29.5	36.6	47.1	61.4	69.7	74.0	78.2	165.3%
Brunei Darussalam	2.9	3.6	5.8	4.8	4.8	5.6	6.0	6.6	7.0	6.9	6.8	41.8%
Cambodia	..	..	..	..	..	2.6	3.7	5.9	7.1	7.6	7.5	..
Chinese Taipei	35.1	47.7	79.4	109.9	170.9	242.4	321.2	376.0	417.1	420.2	412.1	141.1%
India	119.1	135.2	157.6	202.6	270.5	346.6	460.2	644.4	773.1	812.7	874.9	223.5%
Indonesia	29.5	40.2	58.8	77.4	109.2	159.4	165.0	207.9	233.2	247.3	258.5	136.8%
DPR of Korea	3.0	4.7	8.2	13.1	15.6	12.2	10.9	11.3	11.4	11.1	11.5	-25.9%
Malaysia	13.1	17.5	26.4	33.9	47.2	74.2	93.8	118.2	133.2	139.5	137.1	190.5%
Mongolia	..	..	..	0.9	1.1	1.0	1.1	1.5	1.8	1.9	1.9	74.0%
Myanmar	2.6	2.9	4.0	5.0	4.5	5.9	8.9	16.2	18.3	19.0	19.9	343.1%
Nepal	1.7	1.9	2.1	2.7	3.4	4.3	5.5	6.5	6.9	7.3	7.6	126.5%
Pakistan	17.4	20.2	27.3	37.9	50.2	63.0	74.0	94.4	105.9	107.6	111.5	121.8%
Philippines	28.2	35.4	47.6	44.6	56.2	62.6	75.9	94.5	106.6	110.6	111.7	98.7%
Singapore	10.5	14.5	21.8	29.7	44.7	68.2	92.7	121.1	142.8	145.3	143.5	221.2%
Sri Lanka	4.3	5.0	6.5	8.3	9.8	12.8	16.3	19.8	22.8	24.2	25.0	154.8%
Thailand	20.1	25.4	37.3	48.6	79.4	120.0	122.7	157.4	173.6	177.9	173.9	119.2%
Vietnam	8.1	8.2	8.6	11.9	15.0	22.3	31.2	44.8	52.6	55.9	58.8	291.8%
Other Asia	10.6	11.9	13.9	15.8	18.2	22.6	24.3	33.0	40.6	43.6	45.7	150.4%
Asia	**324.2**	**391.0**	**525.6**	**671.6**	**930.2**	**1 262.3**	**1 560.5**	**2 020.9**	**2 323.8**	**2 412.5**	**2 486.4**	**167.3%**
People's Rep. of China	107.1	133.4	182.9	304.5	444.6	792.8	1 198.5	1 908.8	2 456.7	2 692.5	2 937.5	560.7%
Hong Kong, China	25.9	34.6	60.2	79.4	115.2	148.5	169.1	207.1	235.8	241.3	231.3	100.9%
China	**133.0**	**168.0**	**243.1**	**383.8**	**559.8**	**941.3**	**1 367.6**	**2 115.9**	**2 692.4**	**2 933.9**	**3 168.9**	**466.1%**

* Includes Estonia and Slovenia prior to 1990.

GDP using exchange rates

billion 2000 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	1.3	2.4	4.0	3.7	4.6	6.5	8.0	10.7	12.5	13.3	13.7	194.1%
Islamic Republic of Iran	46.6	66.1	57.3	69.4	70.3	83.1	101.3	133.0	151.8	155.3	158.1	124.9%
Iraq	50.5	64.2	96.6	61.8	33.0	12.6	25.9	19.8	20.2	22.1	23.0	-30.2%
Jordan	2.1	2.0	4.2	5.4	5.1	7.2	8.5	11.5	13.5	14.5	14.9	189.7%
Kuwait	31.9	26.4	27.9	22.0	25.3	34.3	37.7	56.0	61.4	65.4	63.6	151.1%
Lebanon	13.7	13.4	11.4	15.9	9.0	16.1	17.3	20.8	22.5	24.6	26.8	196.2%
Oman	3.2	4.1	5.4	10.9	12.7	16.8	19.9	23.6	27.4	29.4	31.6	150.0%
Qatar	9.0	9.1	10.6	9.0	8.8	10.2	17.8	26.1	32.2	37.3	40.7	361.5%
Saudi Arabia	52.9	110.0	153.7	121.8	144.1	166.0	188.4	226.9	238.8	249.2	249.5	73.1%
Syrian Arab Republic	4.0	6.9	9.5	10.9	11.8	17.3	19.3	23.8	26.0	27.4	28.5	141.8%
United Arab Emirates	8.8	22.7	47.3	41.3	46.4	54.8	70.6	97.8	113.0	118.9	118.1	154.5%
Yemen	1.3	1.9	3.3	4.7	5.5	7.2	9.4	11.6	12.4	12.8	13.3	141.7%
Middle East	**225.2**	**329.3**	**431.1**	**376.7**	**376.7**	**432.1**	**524.0**	**661.5**	**731.8**	**770.1**	**781.8**	**107.5%**
Albania	1.7	2.1	2.8	3.1	3.2	2.8	3.7	4.8	5.3	5.7	5.9	82.8%
Armenia *	..	..	..	..	2.8	1.5	1.9	3.4	4.4	4.7	4.0	42.0%
Azerbaijan *	..	..	..	..	9.0	3.7	5.3	9.9	16.7	18.5	20.2	125.8%
Belarus *	..	..	..	..	14.4	9.4	12.7	18.0	21.9	24.3	24.7	71.9%
Bosnia and Herzegovina *	..	..	..	..	1.5	1.6	5.5	7.0	8.0	8.4	8.1	442.2%
Bulgaria	6.2	8.5	11.5	13.5	14.6	12.8	12.9	16.8	19.1	20.3	19.3	32.4%
Croatia *	..	..	..	..	25.1	18.2	21.3	26.6	29.4	30.1	28.3	12.9%
Cyprus	2.1	1.9	3.4	4.4	6.2	7.7	9.3	10.9	11.9	12.3	12.1	95.1%
Georgia *	..	..	..	..	8.2	2.3	3.1	4.4	5.4	5.5	5.3	-35.5%
Gibraltar	0.4	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.9	0.9	0.8	45.3%
Kazakhstan *	..	..	..	..	26.3	16.2	18.3	30.0	36.1	37.3	37.8	43.3%
Kyrgyzstan *	..	..	..	..	2.1	1.0	1.4	1.6	1.8	2.0	2.0	-0.4%
Latvia *	..	..	..	..	10.4	5.9	7.8	11.6	14.3	13.7	11.2	7.6%
Lithuania *	..	..	..	..	15.9	9.2	11.4	16.6	19.7	20.3	17.2	8.5%
FYR of Macedonia *	..	..	..	..	3.9	3.1	3.6	3.8	4.2	4.4	4.4	12.1%
Malta	0.6	0.9	1.6	1.8	2.4	3.1	3.9	4.1	4.3	4.4	4.4	82.2%
Republic of Moldova *	..	..	..	..	3.6	1.5	1.3	1.8	2.0	2.1	2.0	-45.4%
Romania	18.8	28.4	40.9	48.2	44.0	39.5	37.1	48.9	55.9	61.2	56.0	27.3%
Russian Federation *	..	..	..	..	385.8	239.7	259.4	349.4	410.1	431.6	397.5	3.0%
Serbia *	..	..	..	..	9.2	9.0	9.0	11.6	13.1	13.9	9.0	-1.9%
Tajikistan *	..	..	..	..	2.3	0.9	0.9	1.3	1.6	1.7	1.7	-23.4%
Turkmenistan *	..	..	..	..	3.8	2.4	2.9	6.3	7.8	8.6	9.3	144.4%
Ukraine *	..	..	..	..	72.0	34.5	31.3	45.2	52.4	53.5	45.4	-36.9%
Uzbekistan *	..	..	..	..	14.0	11.4	13.8	17.9	21.0	22.9	24.8	76.5%
Former Soviet Union *	404.4	505.6	616.9	685.7	..	..	..	..	..	..	..	..
Former Yugoslavia *	33.7	41.3	55.6	56.6	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**467.9**	**589.3**	**733.2**	**813.8**	**681.1**	**438.0**	**478.4**	**652.9**	**767.3**	**808.3**	**751.5**	**10.3%**
Argentina	167.5	184.7	212.1	186.6	182.2	250.3	284.2	313.6	369.6	394.6	398.0	118.4%
Bolivia	4.1	5.2	5.7	5.2	5.8	7.1	8.4	10.2	10.7	11.4	11.8	102.6%
Brazil	212.7	311.6	430.4	454.2	501.8	583.6	644.7	739.6	815.7	857.6	856.0	70.6%
Colombia	33.6	41.8	54.3	60.7	77.2	94.5	100.4	119.9	136.8	140.5	141.7	83.5%
Costa Rica	4.6	5.8	7.5	7.5	9.6	12.5	15.9	19.5	22.8	23.4	23.1	141.1%
Cuba	15.5	18.5	21.8	32.8	32.5	22.5	28.2	35.5	42.7	45.8	47.8	47.0%
Dominican Republic	5.9	8.2	10.5	11.6	13.3	17.2	24.0	28.5	34.3	36.1	37.3	180.2%
Ecuador	5.9	8.4	10.9	11.7	13.3	15.2	15.9	20.8	22.4	24.0	24.1	81.0%
El Salvador	7.2	8.7	8.7	7.6	8.4	11.3	13.1	14.7	16.0	16.4	15.8	88.8%
Guatemala	7.2	8.9	11.8	11.2	12.9	15.9	19.3	22.4	25.1	25.9	26.1	102.2%
Haiti	3.2	3.4	4.5	4.3	4.3	3.2	3.7	3.6	3.8	3.8	3.9	-9.1%
Honduras	2.5	2.9	4.0	4.4	5.1	6.1	7.1	8.9	10.1	10.5	10.3	100.4%
Jamaica	6.4	6.8	5.8	5.9	7.6	9.2	9.0	9.9	10.3	10.3	10.0	32.0%
Netherlands Antilles	..	..	1.0	1.0	1.0	1.2	1.2	1.3	1.3	1.3	1.3	22.2%
Nicaragua	3.2	4.0	3.2	3.3	2.8	3.1	3.9	4.6	4.9	5.3	5.0	77.2%
Panama	4.5	5.2	6.2	7.3	7.1	9.3	11.6	14.3	17.5	19.3	19.8	179.1%
Paraguay	2.0	2.7	4.5	4.9	5.9	7.1	7.1	8.0	8.9	9.5	9.1	53.4%
Peru	28.5	34.9	39.1	39.7	36.1	47.1	53.3	65.4	76.8	84.2	85.0	135.4%
Trinidad and Tobago	4.5	5.1	7.5	6.7	6.0	6.4	8.2	12.0	14.2	14.5	14.1	136.3%
Uruguay	12.6	13.6	17.0	14.0	16.9	20.6	22.8	23.9	26.8	29.1	29.9	76.5%
Venezuela	68.3	77.8	87.8	83.8	95.3	112.9	117.1	132.9	157.9	165.5	160.0	68.0%
Other Latin America	10.1	10.4	14.0	15.0	19.7	21.0	25.4	27.6	30.3	28.9	26.6	35.4%
Latin America	**610.2**	**768.7**	**968.5**	**979.4**	**1 064.8**	**1 277.4**	**1 424.6**	**1 637.1**	**1 858.9**	**1 957.9**	**1 956.5**	**83.7%**

* 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 2000 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
World	**17 449.8**	**20 540.8**	**24 976.2**	**28 661.7**	**33 340.6**	**37 834.2**	**45 799.1**	**55 547.2**	**62 111.5**	**64 095.3**	**64 244.4**	**92.7%**
Annex I Parties	*..*	*..*	*..*	*..*	*22 395.0*	*23 530.8*	*27 503.5*	*30 927.2*	*32 898.7*	*33 070.0*	*31 792.0*	*42.0%*
Annex II Parties	*10 473.5*	*11 847.4*	*14 059.6*	*16 017.8*	*19 003.1*	*20 951.4*	*24 593.1*	*27 169.7*	*28 586.1*	*28 588.2*	*27 593.7*	*45.2%*
North America	*4 214.7*	*4 705.0*	*5 638.9*	*6 597.4*	*7 719.5*	*8 715.8*	*10 772.9*	*12 141.4*	*12 712.3*	*12 715.3*	*12 378.2*	*60.3%*
Europe	*4 750.7*	*5 362.8*	*6 248.9*	*6 766.6*	*7 952.5*	*8 619.3*	*9 948.1*	*10 823.5*	*11 460.8*	*11 495.9*	*11 016.0*	*38.5%*
Asia Oceania	*1 508.0*	*1 779.6*	*2 171.8*	*2 653.9*	*3 331.1*	*3 616.3*	*3 872.1*	*4 204.7*	*4 412.9*	*4 376.9*	*4 199.5*	*26.1%*
Annex I EIT	*..*	*..*	*..*	*..*	*2 976.7*	*2 092.4*	*2 314.2*	*3 014.1*	*3 481.3*	*3 644.8*	*3 401.5*	*14.3%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*10 945.6*	*14 303.4*	*18 295.6*	*24 620.0*	*29 212.8*	*31 025.3*	*32 452.4*	*196.5%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*14 861.6*	*15 006.5*	*16 960.5*	*18 965.5*	*20 313.9*	*20 472.7*	*19 545.0*	*31.5%*
Non-OECD Total *	**5 896.7**	**7 328.8**	**9 237.3**	**10 713.0**	**11 991.5**	**14 139.1**	**17 740.7**	**24 268.1**	**28 975.4**	**30 853.6**	**32 130.5**	**167.9%**
OECD Total **	**11 553.0**	**13 212.0**	**15 738.9**	**17 948.7**	**21 349.1**	**23 695.0**	**28 058.4**	**31 279.1**	**33 136.1**	**33 241.7**	**32 113.9**	**50.4%**
Canada	347.7	414.0	496.7	568.8	655.5	713.9	874.1	991.1	1 041.5	1 046.9	1 021.1	55.8%
Chile	43.7	37.5	53.2	55.6	77.0	116.8	143.1	175.8	192.4	199.4	196.0	154.6%
Mexico	322.5	425.0	586.6	645.7	701.6	756.9	987.1	1 083.6	1 176.7	1 194.7	1 122.9	60.1%
United States	3 867.1	4 291.0	5 142.1	6 028.6	7 064.0	8 002.0	9 898.8	11 150.4	11 670.8	11 668.5	11 357.1	60.8%
OECD Americas	**4 580.9**	**5 167.4**	**6 278.6**	**7 298.7**	**8 498.1**	**9 589.5**	**11 903.1**	**13 400.9**	**14 081.4**	**14 109.4**	**13 697.2**	**61.2%**
Australia	221.8	246.2	285.2	331.0	380.4	446.8	540.4	639.0	687.8	695.2	703.8	85.0%
Israel	38.3	49.9	57.7	67.3	83.4	115.5	147.8	164.3	182.9	190.7	192.2	130.3%
Japan	1 243.0	1 482.5	1 837.1	2 265.0	2 890.1	3 099.1	3 250.3	3 467.6	3 621.9	3 579.6	3 392.9	17.4%
Korea	79.5	114.1	169.8	261.6	429.4	627.8	808.4	1 007.0	1 113.2	1 138.8	1 141.0	165.7%
New Zealand	43.2	51.0	49.5	58.0	60.5	70.4	81.4	98.1	103.2	102.1	102.9	69.9%
OECD Asia Oceania	**1 625.9**	**1 943.6**	**2 399.3**	**2 982.8**	**3 843.9**	**4 359.5**	**4 828.3**	**5 376.0**	**5 709.0**	**5 706.4**	**5 532.7**	**43.9%**
Austria	106.8	123.2	145.0	155.8	179.6	199.0	230.5	249.4	268.0	273.9	263.2	46.5%
Belgium	138.7	159.3	186.2	195.1	227.2	245.9	283.0	306.0	323.4	326.7	317.7	39.8%
Czech Republic	104.1	118.7	132.2	138.8	150.2	143.1	154.0	185.0	209.8	214.9	206.0	37.2%
Denmark	80.0	84.7	97.0	110.9	119.1	133.7	153.9	163.8	172.0	170.1	161.2	35.4%
Estonia	..	..	..	..	13.9	9.8	13.5	19.8	23.4	22.2	19.2	37.5%
Finland	56.6	68.6	80.1	91.8	108.3	105.0	132.8	151.1	166.2	167.7	154.0	42.2%
France	729.0	841.0	995.1	1 074.6	1 261.8	1 336.3	1 534.7	1 666.8	1 744.2	1 748.0	1 702.0	34.9%
Germany	1 066.8	1 166.0	1 375.9	1 472.4	1 732.0	1 930.9	2 132.7	2 196.9	2 331.3	2 354.3	2 243.2	29.5%
Greece	102.4	121.4	148.9	149.9	159.5	169.6	201.0	245.0	268.7	271.4	265.9	66.7%
Hungary	68.2	87.4	104.2	113.7	116.7	103.5	123.9	150.1	156.8	158.1	147.5	26.4%
Iceland	2.9	3.6	4.8	5.4	6.3	6.4	8.1	10.0	11.1	11.2	10.5	65.9%
Ireland	25.0	30.7	38.3	43.5	54.7	68.7	109.2	142.3	158.4	152.7	141.2	157.9%
Italy	688.2	789.7	981.6	1 067.1	1 245.2	1 326.4	1 457.4	1 523.1	1 577.2	1 556.3	1 475.1	18.5%
Luxembourg	7.0	7.9	8.8	10.0	14.3	17.4	23.4	27.9	31.3	31.7	30.6	113.3%
Netherlands	211.0	238.9	275.0	290.8	342.8	384.0	468.2	499.9	537.2	547.3	525.8	53.4%
Norway	58.8	70.5	88.0	103.6	112.8	135.4	162.2	181.0	190.2	191.7	188.9	67.5%
Poland	210.5	269.3	280.8	283.3	278.9	310.6	404.3	470.5	533.8	561.1	570.4	104.5%
Portugal	66.1	76.8	98.5	103.0	135.7	147.6	181.5	188.9	196.2	196.2	191.3	41.0%
Slovak Republic	37.4	42.6	47.5	51.3	55.0	50.2	59.3	75.3	90.3	95.6	91.0	65.6%
Slovenia	..	..	..	..	28.9	28.1	34.8	41.6	47.1	48.9	44.9	55.3%
Spain	357.5	442.6	487.8	522.8	651.4	702.0	858.4	1 008.0	1 086.0	1 095.4	1 054.6	61.9%
Sweden	134.5	151.5	162.0	177.5	201.6	208.6	248.0	283.2	305.1	303.2	287.1	42.4%
Switzerland	151.3	151.4	164.6	177.4	205.0	206.0	227.9	243.2	261.3	266.2	261.1	27.4%
Turkey	175.3	220.1	247.4	313.7	411.1	481.4	589.2	736.2	823.7	829.1	789.1	92.0%
United Kingdom	768.0	835.2	911.2	1 015.0	1 195.2	1 296.6	1 535.2	1 736.8	1 833.1	1 831.9	1 742.6	45.8%
OECD Europe **	**5 346.2**	**6 101.0**	**7 060.9**	**7 667.3**	**9 007.1**	**9 746.0**	**11 327.1**	**12 502.2**	**13 345.7**	**13 425.9**	**12 884.0**	**43.0%**
European Union - 27	*..*	*..*	*..*	*..*	*8 566.4*	*9 163.0*	*10 591.8*	*11 667.3*	*12 445.5*	*12 537.9*	*12 007.6*	*40.2%*

* Includes Estonia and Slovenia prior to 1990.

** Excludes Estonia and Slovenia prior to 1990.

GDP using purchasing power parities

billion 2000 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Non-OECD Total *	**5 896.7**	**7 328.8**	**9 237.3**	**10 713.0**	**11 991.5**	**14 139.1**	**17 740.7**	**24 268.1**	**28 975.4**	**30 853.6**	**32 130.5**	**167.9%**
Algeria	51.8	77.4	104.5	132.2	137.3	139.1	162.3	206.0	216.5	221.7	226.3	64.8%
Angola	14.8	14.9	15.0	16.0	18.8	14.9	20.2	33.1	47.2	53.5	53.9	187.0%
Benin	2.5	2.8	3.4	4.2	4.4	5.4	7.0	8.5	9.2	9.7	10.1	129.5%
Botswana	..	..	..	4.6	8.1	9.8	13.4	17.2	19.0	19.6	18.9	134.4%
Cameroon	9.7	12.9	17.6	27.4	24.4	22.1	27.9	33.5	35.8	36.8	37.5	54.1%
Congo	1.1	1.6	2.0	3.2	3.1	3.2	3.6	4.4	4.6	4.9	5.2	66.8%
Dem. Rep. of Congo	49.9	52.9	49.1	53.8	53.6	36.8	30.1	36.6	40.9	43.4	44.6	-16.7%
Côte d'Ivoire	12.9	16.1	19.7	20.0	21.2	22.8	26.6	26.6	27.2	27.8	28.8	36.1%
Egypt	50.0	57.4	91.5	126.8	155.9	184.2	237.3	282.3	323.0	346.1	362.2	132.3%
Eritrea	..	..	..	..	..	3.5	3.6	4.1	4.1	3.7	4.7	..
Ethiopia	28.0	30.6	34.1	32.2	41.3	43.4	54.2	74.1	91.5	101.4	110.2	166.7%
Gabon	2.8	5.7	5.3	6.0	6.3	7.3	7.4	8.1	8.7	8.9	8.8	39.1%
Ghana	20.6	19.3	20.3	19.8	25.1	30.9	38.2	48.8	55.3	60.0	62.8	150.4%
Kenya	10.0	13.0	17.7	20.0	26.3	28.5	31.7	37.9	43.1	43.7	44.9	70.6%
Libyan Arab Jamahiriya	46.7	37.8	59.6	51.2	40.5	43.2	46.9	59.8	66.9	69.5	70.7	74.6%
Morocco	38.6	46.5	60.7	71.3	88.5	92.7	111.8	142.6	157.8	166.6	174.8	97.5%
Mozambique	10.8	9.1	9.3	7.3	9.5	11.2	16.1	24.3	28.3	30.2	32.2	239.7%
Namibia	..	..	..	..	..	10.7	12.7	16.1	18.2	19.0	18.8	..
Nigeria	51.9	59.6	72.2	61.9	80.3	90.8	105.6	142.2	160.7	170.4	179.9	124.0%
Senegal	7.6	8.6	9.1	10.4	11.7	13.0	15.8	19.9	21.4	22.1	22.6	93.2%
South Africa	207.5	238.0	277.2	296.5	322.0	336.1	385.6	465.4	518.5	537.5	528.0	64.0%
Sudan	16.0	19.7	22.1	22.9	28.3	36.3	49.6	66.4	81.4	87.0	90.9	221.1%
United Rep. of Tanzania	6.9	8.3	9.5	10.0	13.2	14.4	17.6	24.3	27.8	29.9	31.5	138.8%
Togo	3.5	4.2	5.3	5.2	5.9	5.9	7.3	8.1	8.6	8.7	9.0	52.6%
Tunisia	14.5	19.6	26.6	32.7	37.8	45.7	60.1	74.5	83.8	87.6	90.4	139.2%
Zambia	6.2	7.0	7.1	7.3	7.9	7.3	8.4	10.6	12.0	12.7	13.5	71.3%
Zimbabwe	14.9	17.3	18.6	22.9	28.6	30.4	31.5	24.2	22.2	19.0	19.8	-30.9%
Other Africa	95.9	102.4	117.5	124.3	140.8	141.9	176.3	219.7	244.6	259.0	264.3	87.8%
Africa	**775.2**	**882.6**	**1 074.8**	**1 190.0**	**1 340.6**	**1 431.5**	**1 708.9**	**2 119.4**	**2 378.3**	**2 500.3**	**2 565.3**	**91.3%**
Bangladesh	75.4	70.4	86.4	103.7	124.6	154.4	199.1	259.3	294.3	312.5	330.5	165.3%
Brunei Darussalam	3.5	4.2	6.9	5.7	5.7	6.7	7.2	7.9	8.3	8.2	8.1	41.7%
Cambodia	..	..	..	..	..	16.0	22.8	35.6	43.5	46.4	45.5	..
Chinese Taipei	53.6	73.0	121.4	168.1	261.4	370.8	491.4	575.1	638.0	642.7	630.4	141.1%
India	621.7	705.5	822.5	1 057.5	1 411.9	1 809.1	2 402.0	3 363.6	4 035.6	4 242.2	4 567.0	223.5%
Indonesia	107.2	145.9	213.6	280.9	396.4	578.8	599.3	754.9	847.0	897.9	938.7	136.8%
DPR of Korea	10.6	16.7	28.7	45.9	54.8	43.0	38.2	39.8	40.0	39.1	40.6	-25.9%
Malaysia	28.7	38.3	57.7	74.0	103.0	162.0	204.7	258.1	290.9	304.6	299.3	190.5%
Mongolia	..	..	..	3.5	4.3	3.7	4.2	5.8	6.9	7.5	7.4	73.9%
Myanmar	15.8	17.6	23.9	30.3	27.2	35.9	53.9	98.2	110.9	114.8	120.4	343.1%
Nepal	10.1	11.2	12.5	15.9	19.9	25.6	32.4	38.2	40.9	43.1	45.1	126.5%
Pakistan	61.5	71.7	96.8	134.3	178.0	223.2	262.0	334.2	375.1	381.1	394.9	121.8%
Philippines	113.6	142.6	191.5	179.6	226.3	251.9	305.5	380.4	428.9	445.0	449.7	98.7%
Singapore	10.8	14.8	22.3	30.4	45.7	69.8	94.8	123.8	146.0	148.6	146.7	221.2%
Sri Lanka	17.5	20.6	26.6	33.9	40.1	52.1	66.7	81.0	93.1	98.6	102.1	154.8%
Thailand	63.8	80.4	118.0	153.8	251.1	379.8	388.4	498.1	549.5	563.0	550.4	119.2%
Vietnam	41.0	41.4	43.8	60.4	76.3	113.2	158.4	227.5	267.0	283.8	298.9	291.8%
Other Asia	36.0	39.0	44.3	51.1	52.8	57.3	62.5	86.0	103.1	109.3	118.0	123.5%
Asia	**1 270.8**	**1 493.3**	**1 916.9**	**2 429.1**	**3 279.5**	**4 353.4**	**5 393.3**	**7 167.5**	**8 319.1**	**8 688.5**	**9 093.8**	**177.3%**
People's Rep. of China	444.5	553.6	759.4	1 263.9	1 845.6	3 291.0	4 975.2	7 923.8	10 198.2	11 177.3	12 194.4	560.7%
Hong Kong, China	26.8	35.9	62.3	82.2	119.2	153.8	175.1	214.4	244.1	249.9	239.5	100.9%
China	**471.3**	**589.5**	**821.7**	**1 346.1**	**1 964.9**	**3 444.8**	**5 150.2**	**8 138.2**	**10 442.3**	**11 427.1**	**12 433.9**	**532.8%**

* Includes Estonia and Slovenia prior to 1990.

GDP using purchasing power parities

billion 2000 US dollars

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	1.7	3.2	5.2	4.9	6.1	8.5	10.4	14.0	16.4	17.4	17.9	194.1%
Islamic Republic of Iran	170.0	241.3	209.1	253.3	256.5	303.2	369.7	485.2	554.0	566.8	577.0	124.9%
Iraq	69.0	87.8	132.0	84.5	45.1	17.2	35.4	27.1	27.6	30.2	31.5	-30.2%
Jordan	4.9	4.8	10.0	12.9	12.2	17.2	20.1	27.4	32.1	34.6	35.4	189.8%
Kuwait	36.3	30.0	31.7	25.0	28.8	39.1	42.9	63.7	69.9	74.4	72.4	151.1%
Lebanon	13.2	12.9	11.0	15.3	8.7	15.5	16.6	20.0	21.7	23.7	25.8	196.2%
Oman	4.9	6.4	8.3	16.8	19.6	26.1	30.8	36.6	42.4	45.6	49.0	150.0%
Qatar	8.1	8.2	9.5	8.0	7.9	9.1	15.9	23.3	28.9	33.4	36.5	361.5%
Saudi Arabia	78.8	164.0	229.1	181.5	214.8	247.4	280.8	338.2	356.0	371.4	371.9	73.1%
Syrian Arab Republic	11.1	18.9	26.1	30.1	32.4	47.5	53.2	65.4	71.6	75.3	78.3	141.8%
United Arab Emirates	8.7	22.4	46.7	40.8	45.8	54.2	69.7	96.7	111.7	117.4	116.6	154.5%
Yemen	2.1	2.9	5.1	7.3	8.6	11.3	14.7	18.1	19.3	20.0	20.8	141.7%
Middle East	**408.8**	**602.8**	**723.9**	**680.4**	**686.6**	**796.2**	**960.4**	**1 215.8**	**1 351.5**	**1 410.2**	**1 433.1**	**108.7%**
Albania	5.3	6.6	8.8	9.7	9.9	8.7	11.4	14.8	16.5	17.7	18.2	82.8%
Armenia *	..	..	..	..	11.0	5.8	7.5	13.3	17.1	18.3	15.6	42.0%
Azerbaijan *	..	..	..	..	33.8	14.2	19.9	37.5	63.1	69.9	76.4	125.8%
Belarus *	..	..	..	..	54.2	35.4	48.1	68.0	82.5	91.9	93.2	71.9%
Bosnia and Herzegovina *	..	..	..	..	6.1	6.6	22.4	28.5	32.4	34.1	33.1	442.3%
Bulgaria	24.2	33.0	44.5	52.4	56.5	49.5	50.1	65.4	74.1	78.7	74.8	32.4%
Croatia *	..	..	..	..	55.9	40.5	47.5	59.3	65.5	67.0	63.1	12.9%
Cyprus	3.1	2.8	4.9	6.4	9.0	11.2	13.6	15.9	17.3	17.9	17.6	95.1%
Georgia *	..	..	..	..	25.1	7.1	9.4	13.4	16.5	16.9	16.2	-35.5%
Gibraltar	0.4	0.4	0.5	0.5	0.6	0.7	0.8	0.9	0.9	0.9	0.9	45.1%
Kazakhstan *	..	..	..	..	93.2	57.2	64.7	105.9	127.7	131.9	133.5	43.3%
Kyrgyzstan *	..	..	..	..	11.0	5.6	7.4	8.9	9.9	10.7	11.0	-0.4%
Latvia *	..	..	..	..	25.2	14.4	18.9	28.0	34.6	33.0	27.1	7.6%
Lithuania *	..	..	..	..	42.4	24.6	30.6	44.5	52.7	54.1	46.0	8.5%
FYR of Macedonia *	..	..	..	..	13.3	10.5	12.2	13.1	14.4	15.1	15.0	12.1%
Malta	1.1	1.7	2.9	3.2	4.2	5.5	6.9	7.2	7.7	7.9	7.7	82.1%
Republic of Moldova *	..	..	..	..	15.9	6.4	5.6	7.9	8.6	9.3	8.7	-45.4%
Romania	67.0	101.4	146.2	172.0	157.0	141.0	132.3	174.6	199.7	218.5	199.9	27.3%
Russian Federation *	..	..	..	..	1 485.0	922.4	998.6	1 344.7	1 578.4	1 661.2	1 530.2	3.0%
Serbia *	..	..	..	..	33.8	33.1	33.0	42.6	48.4	51.1	33.1	-1.9%
Tajikistan *	..	..	..	..	11.5	4.4	4.4	6.9	7.9	8.5	8.8	-23.4%
Turkmenistan *	..	..	..	..	20.6	12.9	15.7	33.9	42.2	46.6	50.4	144.4%
Ukraine *	..	..	..	..	456.9	219.3	198.5	287.2	332.5	339.5	288.2	-36.9%
Uzbekistan *	..	..	..	..	37.7	30.6	36.9	48.0	56.4	61.5	66.5	76.5%
Former Soviet Union *	1 665.5	2 082.2	2 540.8	2 823.8	..	..	..	..	..	..	..	..
Former Yugoslavia *	73.0	89.6	120.6	122.7	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**1 839.6**	**2 317.8**	**2 869.1**	**3 190.8**	**2 670.0**	**1 667.6**	**1 796.1**	**2 470.3**	**2 907.0**	**3 062.3**	**2 835.2**	**6.2%**
Argentina	263.1	290.0	333.1	292.9	286.1	392.9	446.3	492.4	580.4	619.6	624.9	118.4%
Bolivia	9.7	12.2	13.6	12.3	13.7	16.8	19.9	24.2	25.3	26.9	27.8	102.6%
Brazil	410.5	601.4	830.6	876.7	968.4	1 126.4	1 244.3	1 427.4	1 574.3	1 655.2	1 652.1	70.6%
Colombia	100.0	124.2	161.4	180.3	229.5	281.0	298.3	356.4	406.4	417.5	421.0	83.5%
Costa Rica	9.3	11.7	15.0	15.0	19.3	25.2	32.1	39.2	46.0	47.2	46.5	141.1%
Cuba	35.7	42.8	50.3	75.7	75.0	52.0	65.1	81.8	98.5	105.7	110.3	47.0%
Dominican Republic	16.6	23.1	29.8	32.8	37.7	48.6	67.9	80.7	96.9	102.0	105.5	180.2%
Ecuador	14.7	21.0	27.1	29.0	33.2	37.9	39.7	51.8	55.9	60.0	60.2	81.0%
El Salvador	15.9	19.2	19.1	16.6	18.4	24.8	28.9	32.3	35.2	36.0	34.8	88.9%
Guatemala	16.9	21.0	27.7	26.2	30.2	37.2	45.2	52.5	58.8	60.7	61.1	102.2%
Haiti	10.7	11.4	15.0	14.3	14.4	10.8	12.2	11.9	12.6	12.7	13.1	-9.1%
Honduras	7.7	8.9	12.5	13.7	15.9	19.0	22.0	27.6	31.3	32.5	31.9	100.4%
Jamaica	7.5	7.9	6.7	6.9	8.8	10.6	10.5	11.5	12.0	11.9	11.6	32.0%
Netherlands Antilles	..	..	2.3	2.2	2.4	2.7	2.7	2.8	2.9	3.0	2.9	22.3%
Nicaragua	12.6	15.7	12.7	13.1	11.0	12.1	15.4	18.0	19.3	20.7	19.6	77.2%
Panama	7.0	8.0	9.5	11.3	10.9	14.2	17.8	22.0	26.8	29.7	30.4	179.1%
Paraguay	6.4	8.4	14.2	15.4	18.7	22.5	22.3	25.3	28.1	29.8	28.6	53.4%
Peru	65.6	80.3	89.9	91.4	83.0	108.4	122.6	150.5	176.6	193.8	195.4	135.4%
Trinidad and Tobago	6.5	7.3	10.7	9.6	8.6	9.2	11.7	17.2	20.4	20.8	20.2	136.3%
Uruguay	17.8	19.3	24.1	19.8	24.0	29.1	32.3	33.8	37.9	41.2	42.4	76.5%
Venezuela	81.6	93.0	105.0	100.2	113.8	134.9	140.0	158.8	188.7	197.7	191.2	68.0%
Other Latin America	15.5	16.3	20.7	21.4	27.1	29.4	34.7	38.6	42.9	40.6	38.1	40.6%
Latin America	**1 131.0**	**1 442.9**	**1 830.9**	**1 876.7**	**2 050.0**	**2 445.7**	**2 731.7**	**3 156.9**	**3 577.1**	**3 765.2**	**3 769.3**	**83.9%**

* 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	2007	2008	2009	% change 90-09
World	**3 761.7**	**4 067.2**	**4 440.6**	**4 837.5**	**5 266.9**	**5 680.5**	**6 075.5**	**6 455.4**	**6 607.2**	**6 684.0**	**6 760.7**	**28.4%**
Annex I Parties	*..*	*..*	*..*	*..*	*1 175.3*	*1 207.7*	*1 232.1*	*1 258.1*	*1 269.6*	*1 275.8*	*1 281.4*	*9.0%*
Annex II Parties	*705.3*	*729.4*	*755.0*	*775.9*	*799.3*	*827.8*	*853.1*	*882.0*	*894.0*	*899.8*	*904.9*	*13.2%*
North America	*229.7*	*239.1*	*252.2*	*264.3*	*277.9*	*295.9*	*313.1*	*328.5*	*335.0*	*338.2*	*341.2*	*22.8%*
Europe	*354.6*	*361.4*	*367.8*	*371.3*	*377.3*	*384.4*	*389.9*	*401.1*	*405.8*	*408.2*	*410.0*	*8.7%*
Asia Oceania	*121.0*	*128.8*	*135.0*	*140.2*	*144.2*	*147.5*	*150.1*	*152.5*	*153.2*	*153.4*	*153.8*	*6.7%*
Annex I EIT	*..*	*..*	*..*	*..*	*320.5*	*319.8*	*314.4*	*307.1*	*305.0*	*304.5*	*304.2*	*-5.1%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*4 091.7*	*4 472.8*	*4 843.4*	*5 197.3*	*5 337.6*	*5 408.2*	*5 479.4*	*33.9%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*859.4*	*870.8*	*875.1*	*883.1*	*887.2*	*889.8*	*891.9*	*3.8%*
Non-OECD Total *	**2 867.0**	**3 132.5**	**3 460.7**	**3 817.3**	**4 202.9**	**4 569.1**	**4 923.7**	**5 262.5**	**5 397.8**	**5 466.5**	**5 535.9**	**31.7%**
OECD Total **	**894.7**	**934.7**	**980.0**	**1 020.2**	**1 064.1**	**1 111.4**	**1 151.8**	**1 193.0**	**1 209.4**	**1 217.5**	**1 224.9**	**15.1%**
Canada	22.0	23.1	24.5	25.8	27.7	29.3	30.7	32.2	32.9	33.3	33.7	21.8%
Chile	9.8	10.4	11.2	12.1	13.2	14.4	15.4	16.3	16.6	16.8	16.9	28.5%
Mexico	49.9	56.7	65.7	73.5	81.3	91.1	98.3	103.8	105.7	106.6	107.4	32.2%
United States	207.7	216.0	227.7	238.5	250.2	266.6	282.4	296.2	302.0	304.8	307.5	22.9%
OECD Americas	**289.3**	**306.3**	**329.1**	**350.0**	**372.3**	**401.4**	**426.8**	**448.6**	**457.2**	**461.5**	**465.6**	**25.1%**
Australia	13.2	14.0	14.8	15.9	17.2	18.2	19.3	20.5	21.2	21.6	22.1	28.7%
Israel	3.1	3.5	3.9	4.3	4.7	5.5	6.3	6.9	7.2	7.3	7.4	59.1%
Japan	105.0	111.8	117.1	121.0	123.6	125.6	126.9	127.8	127.8	127.5	127.3	3.0%
Korea	32.9	35.3	38.1	40.8	42.9	45.1	47.0	48.1	48.5	48.6	48.7	13.7%
New Zealand	2.9	3.1	3.1	3.3	3.4	3.7	3.9	4.1	4.2	4.3	4.3	28.4%
OECD Asia Oceania	**157.0**	**167.6**	**177.0**	**185.3**	**191.7**	**198.1**	**203.4**	**207.5**	**208.9**	**209.3**	**209.9**	**9.5%**
Austria	7.5	7.6	7.5	7.6	7.7	7.9	8.0	8.2	8.3	8.3	8.4	8.9%
Belgium	9.7	9.8	9.9	9.9	10.0	10.1	10.2	10.5	10.6	10.7	10.8	8.2%
Czech Republic	9.8	10.1	10.3	10.3	10.4	10.3	10.3	10.2	10.3	10.4	10.5	1.4%
Denmark	5.0	5.1	5.1	5.1	5.1	5.2	5.3	5.4	5.5	5.5	5.5	7.4%
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	5.3	5.3	7.1%
France	52.4	53.9	55.1	56.6	58.2	59.4	60.7	63.0	63.8	64.1	64.5	10.9%
Germany	78.3	78.7	78.3	77.7	79.4	81.7	82.2	82.5	82.3	82.1	81.9	3.2%
Greece	9.0	9.2	9.8	10.1	10.3	10.6	10.9	11.1	11.2	11.2	11.3	9.2%
Hungary	10.4	10.5	10.7	10.6	10.4	10.3	10.2	10.1	10.1	10.0	10.0	-3.3%
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	4.4	4.4	4.5	27.4%
Italy	54.1	55.4	56.4	56.6	56.7	56.8	56.9	58.6	59.4	59.8	60.2	6.1%
Luxembourg	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	30.1%
Netherlands	13.2	13.7	14.1	14.5	14.9	15.5	15.9	16.3	16.4	16.4	16.5	10.6%
Norway	3.9	4.0	4.1	4.2	4.2	4.4	4.5	4.6	4.7	4.8	4.8	13.8%
Poland	32.8	34.0	35.6	37.2	38.0	38.3	38.3	38.2	38.1	38.1	38.2	0.3%
Portugal	8.7	9.2	9.9	10.1	10.0	10.0	10.2	10.5	10.6	10.6	10.6	6.4%
Slovak Republic	4.6	4.7	5.0	5.2	5.3	5.4	5.4	5.4	5.4	5.4	5.4	2.2%
Slovenia	..	..	..	..	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3%
Spain	34.3	35.7	37.7	38.6	39.0	39.4	40.3	43.4	44.9	45.6	45.9	17.7%
Sweden	8.1	8.2	8.3	8.4	8.6	8.8	8.9	9.0	9.1	9.2	9.3	8.6%
Switzerland	6.3	6.4	6.4	6.5	6.8	7.1	7.2	7.5	7.6	7.7	7.8	14.8%
Turkey	36.2	40.1	44.4	50.3	55.1	59.8	64.3	68.6	70.3	71.1	71.9	30.4%
United Kingdom	55.9	56.2	56.3	56.6	57.2	58.0	58.9	60.2	61.0	61.4	61.8	8.0%
OECD Europe **	**448.4**	**460.9**	**473.8**	**484.9**	**500.1**	**511.9**	**521.7**	**536.9**	**543.3**	**546.6**	**549.3**	**9.9%**
European Union - 27	*..*	*..*	*..*	*..*	*472.9*	*478.7*	*482.9*	*492.1*	*496.4*	*498.7*	*500.4*	*5.8%*

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

Population

millions

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Non-OECD Total *	**2 867.0**	**3 132.5**	**3 460.7**	**3 817.3**	**4 202.9**	**4 569.1**	**4 923.7**	**5 262.5**	**5 397.8**	**5 466.5**	**5 535.9**	**31.7%**
Algeria	14.2	16.0	18.8	22.1	25.3	28.3	30.5	32.9	33.9	34.4	34.9	38.0%
Angola	6.2	6.8	7.9	9.3	10.7	12.5	14.3	16.6	17.6	18.0	18.5	73.5%
Benin	2.8	3.1	3.6	4.1	4.8	5.7	6.7	7.9	8.4	8.7	8.9	86.3%
Botswana	..	..	..	1.2	1.4	1.6	1.7	1.8	1.9	1.9	2.0	44.2%
Cameroon	7.0	7.8	9.1	10.5	12.2	14.1	15.9	17.8	18.7	19.1	19.5	59.6%
Congo	1.4	1.6	1.8	2.1	2.4	2.8	3.0	3.4	3.6	3.6	3.7	50.6%
Dem. Rep. of Congo	20.9	23.4	27.2	31.4	37.0	44.9	50.8	59.1	62.5	64.3	66.0	78.4%
Côte d'Ivoire	5.5	6.6	8.4	10.5	12.6	15.0	17.3	19.2	20.1	20.6	21.1	67.1%
Egypt	36.4	39.6	44.4	50.7	57.8	63.9	70.2	77.2	80.1	81.5	83.0	43.6%
Eritrea	..	..	..	..	..	3.2	3.7	4.5	4.8	4.9	5.1	..
Ethiopia	31.7	35.1	37.9	43.9	51.5	57.0	65.5	74.7	78.6	80.7	82.8	61.0%
Gabon	0.5	0.6	0.7	0.8	0.9	1.1	1.2	1.4	1.4	1.4	1.5	59.3%
Ghana	9.0	10.0	11.0	13.0	15.0	17.2	19.5	21.9	22.9	23.4	23.8	59.3%
Kenya	11.7	13.5	16.3	19.6	23.4	27.5	31.4	35.8	37.8	38.8	39.8	69.9%
Libyan Arab Jamahiriya	2.1	2.5	3.1	3.9	4.4	4.8	5.3	5.9	6.2	6.3	6.4	47.1%
Morocco	15.7	17.3	19.6	22.3	24.8	27.0	28.8	30.5	31.2	31.6	32.0	29.0%
Mozambique	9.7	10.6	12.1	13.3	13.5	15.9	18.2	20.8	21.9	22.4	22.9	69.0%
Namibia	..	..	..	..	..	1.6	1.8	2.0	2.1	2.1	2.2	..
Nigeria	57.8	63.9	74.5	85.2	97.3	110.4	124.8	140.9	147.7	151.2	154.7	59.0%
Senegal	4.3	4.9	5.6	6.5	7.5	8.7	9.9	11.3	11.9	12.2	12.5	66.3%
South Africa	22.6	24.7	27.6	31.3	35.2	39.1	44.0	47.2	48.3	48.8	49.3	40.1%
Sudan	15.5	17.5	20.5	24.1	27.1	30.8	34.9	38.7	40.4	41.3	42.3	56.0%
United Rep. of Tanzania	14.0	16.0	18.7	21.8	25.5	30.0	34.1	39.0	41.3	42.5	43.7	71.8%
Togo	2.2	2.4	2.8	3.3	3.9	4.4	5.2	6.0	6.3	6.5	6.6	68.6%
Tunisia	5.2	5.6	6.4	7.3	8.2	9.0	9.6	10.0	10.2	10.3	10.4	27.9%
Zambia	4.3	4.9	5.8	6.8	7.9	9.1	10.5	11.7	12.3	12.6	12.9	63.5%
Zimbabwe	5.4	6.2	7.3	8.8	10.5	11.7	12.5	12.5	12.4	12.5	12.5	19.7%
Other Africa	70.0	77.0	89.7	100.6	116.3	126.6	147.1	169.5	179.4	184.6	189.9	63.3%
Africa	**375.9**	**417.7**	**480.6**	**554.3**	**637.0**	**723.9**	**818.6**	**920.2**	**963.7**	**986.2**	**1 009.0**	**58.4%**
Bangladesh	71.0	79.0	90.4	103.0	115.6	128.1	140.8	153.1	157.8	160.0	162.2	40.3%
Brunei Darussalam	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	55.6%
Cambodia	..	..	..	..	..	11.4	12.8	13.9	14.3	14.6	14.8	..
Chinese Taipei	14.9	16.1	17.8	19.3	20.3	21.3	22.2	22.7	22.9	22.9	23.0	13.3%
India	560.3	613.5	687.3	765.1	849.5	932.2	1 015.9	1 094.6	1 124.8	1 140.0	1 155.3	36.0%
Indonesia	119.7	131.3	146.6	162.3	177.4	191.5	205.3	219.2	224.7	227.3	230.0	29.6%
DPR of Korea	14.6	16.1	17.2	18.7	20.1	21.7	22.9	23.5	23.7	23.8	23.9	18.7%
Malaysia	11.1	12.3	13.8	15.7	18.1	20.6	23.3	25.6	26.6	27.0	27.5	51.7%
Mongolia	..	..	..	1.9	2.2	2.3	2.4	2.6	2.6	2.6	2.7	20.5%
Myanmar	27.1	29.9	33.6	37.4	40.8	43.9	46.6	48.3	49.1	49.6	50.0	22.5%
Nepal	12.2	13.4	15.1	17.0	19.1	21.6	24.4	27.2	28.3	28.8	29.3	53.5%
Pakistan	62.5	71.0	82.7	94.8	108.0	122.4	138.1	155.8	162.6	166.1	169.7	57.2%
Philippines	37.6	42.0	48.1	55.0	62.4	70.0	77.7	85.5	88.7	90.3	92.0	47.3%
Singapore	2.1	2.3	2.4	2.7	3.0	3.5	4.0	4.3	4.6	4.8	5.0	63.7%
Sri Lanka	12.6	13.7	14.9	16.0	17.1	18.1	18.7	19.7	20.0	20.2	20.3	18.6%
Thailand	38.2	42.2	47.3	52.5	56.7	60.1	62.3	65.9	67.0	67.4	67.8	19.6%
Vietnam	43.7	48.0	53.7	58.9	66.2	73.0	77.6	83.1	85.2	86.2	87.3	31.8%
Other Asia	29.1	31.4	32.9	31.9	35.2	32.8	37.1	42.4	44.4	45.6	46.7	32.4%
Asia	**1 056.9**	**1 162.4**	**1 304.0**	**1 452.6**	**1 612.1**	**1 774.7**	**1 932.4**	**2 087.7**	**2 147.6**	**2 177.6**	**2 207.8**	**36.9%**
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	1 317.9	1 324.7	1 331.5	17.3%
Hong Kong, China	4.0	4.5	5.1	5.5	5.7	6.2	6.7	6.8	6.9	7.0	7.0	22.8%
China	**845.2**	**920.9**	**986.3**	**1 056.5**	**1 140.9**	**1 211.0**	**1 269.3**	**1 310.5**	**1 324.8**	**1 331.6**	**1 338.5**	**17.3%**

* Includes Estonia and Slovenia prior to 1990.

Population

millions

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.8	0.8	60.4%
Islamic Republic of Iran	29.4	33.2	39.1	47.1	54.4	59.0	63.9	69.1	71.0	72.0	72.9	34.0%
Iraq	9.7	11.1	13.2	15.7	18.1	19.6	22.7	26.1	27.5	28.2	28.9	59.6%
Jordan	1.6	1.8	2.2	2.6	3.2	4.2	4.8	5.4	5.7	5.8	6.0	87.7%
Kuwait	0.8	1.0	1.4	1.7	2.1	1.8	2.2	2.5	2.7	2.7	2.8	31.5%
Lebanon	2.5	2.7	2.8	2.9	3.0	3.5	3.8	4.1	4.2	4.2	4.2	42.0%
Oman	0.8	0.9	1.2	1.5	1.8	2.2	2.4	2.6	2.7	2.8	2.8	54.4%
Qatar	0.1	0.2	0.2	0.4	0.5	0.5	0.6	0.9	1.1	1.3	1.4	201.7%
Saudi Arabia	6.0	7.3	9.6	12.9	16.3	18.3	20.6	23.1	24.2	24.8	25.4	56.2%
Syrian Arab Republic	6.6	7.5	9.0	10.8	12.7	14.6	16.5	19.1	20.1	20.6	21.1	65.8%
United Arab Emirates	0.3	0.5	1.0	1.4	1.9	2.4	3.2	4.1	4.4	4.5	4.6	146.3%
Yemen	6.5	7.1	8.4	10.1	12.3	15.5	18.2	21.0	22.3	22.9	23.6	91.5%
Middle East	**64.4**	**73.6**	**88.4**	**107.6**	**126.8**	**142.1**	**159.6**	**178.8**	**186.6**	**190.5**	**194.5**	**53.4%**
Albania	2.2	2.4	2.7	3.0	3.3	3.1	3.1	3.1	3.1	3.1	3.2	-4.1%
Armenia *	..	..	..	..	3.5	3.2	3.1	3.1	3.1	3.1	3.1	-13.0%
Azerbaijan *	..	..	..	..	7.2	7.7	8.0	8.4	8.6	8.7	8.8	22.7%
Belarus *	..	..	..	..	10.2	10.2	10.0	9.8	9.7	9.7	9.7	-5.2%
Bosnia and Herzegovina *	..	..	..	..	4.3	3.3	3.7	3.8	3.8	3.8	3.8	-12.6%
Bulgaria	8.5	8.7	8.9	8.9	8.7	8.4	8.1	7.7	7.7	7.6	7.6	-13.0%
Croatia *	..	..	..	..	4.8	4.7	4.4	4.4	4.4	4.4	4.4	-7.3%
Cyprus	0.6	0.5	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.8	0.8	39.0%
Georgia *	..	..	..	..	5.5	5.1	4.7	4.5	4.4	4.3	4.3	-22.0%
Gibraltar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	..
Kazakhstan *	..	..	..	..	16.3	15.8	14.9	15.1	15.5	15.7	15.9	-2.8%
Kyrgyzstan *	..	..	..	..	4.4	4.6	4.9	5.1	5.2	5.3	5.3	20.3%
Latvia *	..	..	..	..	2.7	2.5	2.4	2.3	2.3	2.3	2.3	-15.6%
Lithuania *	..	..	..	..	3.7	3.6	3.5	3.4	3.4	3.4	3.3	-9.7%
FYR of Macedonia *	..	..	..	..	1.9	2.0	2.0	2.0	2.0	2.0	2.0	7.0%
Malta	0.3	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	15.3%
Republic of Moldova *	..	..	..	..	4.4	4.3	4.1	3.8	3.7	3.6	3.6	-17.4%
Romania	20.5	21.2	22.2	22.7	23.2	22.7	22.4	21.6	21.5	21.5	21.5	-7.4%
Russian Federation *	..	..	..	..	147.7	148.5	146.9	143.5	142.2	142.0	141.9	-3.9%
Serbia *	..	..	..	..	10.2	10.4	10.0	7.4	7.4	7.4	7.3	-28.5%
Tajikistan *	..	..	..	..	5.3	5.8	6.2	6.5	6.7	6.8	7.0	31.1%
Turkmenistan *	..	..	..	..	3.7	4.2	4.5	4.8	5.0	5.0	5.1	39.3%
Ukraine *	..	..	..	..	51.9	51.5	49.2	47.1	46.5	46.3	46.0	-11.3%
Uzbekistan *	..	..	..	..	20.5	22.8	24.7	26.2	26.9	27.3	27.8	35.4%
Former Soviet Union *	244.9	254.5	265.9	277.8	..	..	..	..	..	..	..	..
Former Yugoslavia *	20.3	21.0	21.8	22.5	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**297.4**	**308.7**	**322.3**	**335.8**	**344.3**	**345.4**	**341.9**	**335.0**	**334.3**	**334.5**	**335.0**	**-2.7%**
Argentina	24.4	26.0	28.2	30.2	32.5	34.8	36.9	38.7	39.5	39.9	40.3	23.9%
Bolivia	4.3	4.8	5.4	6.0	6.7	7.5	8.3	9.2	9.5	9.7	9.9	47.8%
Brazil	98.4	108.1	121.6	136.1	149.6	161.7	174.2	186.1	190.1	192.0	193.7	29.5%
Colombia	21.9	24.0	26.9	30.0	33.2	36.5	39.8	43.0	44.4	45.0	45.7	37.5%
Costa Rica	1.9	2.1	2.3	2.7	3.1	3.5	3.9	4.3	4.5	4.5	4.6	48.8%
Cuba	8.9	9.4	9.8	10.1	10.6	10.9	11.1	11.2	11.2	11.2	11.2	5.8%
Dominican Republic	4.7	5.3	5.9	6.6	7.4	8.1	8.8	9.5	9.8	10.0	10.1	36.8%
Ecuador	6.2	6.9	8.0	9.1	10.3	11.4	12.3	13.1	13.3	13.5	13.6	32.6%
El Salvador	3.8	4.2	4.7	5.0	5.3	5.7	5.9	6.1	6.1	6.1	6.2	15.6%
Guatemala	5.6	6.2	7.0	7.9	8.9	10.0	11.2	12.7	13.4	13.7	14.0	57.4%
Haiti	4.8	5.1	5.7	6.4	7.1	7.9	8.6	9.4	9.7	9.9	10.0	41.2%
Honduras	2.8	3.1	3.6	4.2	4.9	5.6	6.2	6.9	7.2	7.3	7.5	52.3%
Jamaica	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.7	2.7	2.7	13.0%
Netherlands Antilles	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.7%
Nicaragua	2.5	2.8	3.3	3.7	4.1	4.7	5.1	5.5	5.6	5.7	5.7	38.8%
Panama	1.6	1.7	2.0	2.2	2.4	2.7	3.0	3.2	3.3	3.4	3.5	43.1%
Paraguay	2.5	2.8	3.2	3.7	4.3	4.8	5.4	5.9	6.1	6.2	6.3	49.4%
Peru	13.6	15.2	17.3	19.5	21.8	23.9	26.0	27.8	28.5	28.8	29.2	33.9%
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	9.8%
Uruguay	2.8	2.8	2.9	3.0	3.1	3.2	3.3	3.3	3.3	3.3	3.3	7.7%
Venezuela	11.1	12.7	15.1	17.5	19.8	22.0	24.3	26.6	27.5	27.9	28.4	43.7%
Other Latin America	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.6	3.6	3.7	3.7	22.6%
Latin America	**227.2**	**249.1**	**279.0**	**310.6**	**341.7**	**372.0**	**401.8**	**430.3**	**440.9**	**446.0**	**451.1**	**32.0%**

* 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	2007	2008	2009	% change 90-09
World *	**60.8**	**60.5**	**59.7**	**57.4**	**57.0**	**56.3**	**55.9**	**56.6**	**57.6**	**57.3**	**57.0**	**-0.0%**
Annex I Parties	*..*	*..*	*..*	*..*	*59.5*	*57.4*	*57.0*	*56.4*	*56.5*	*55.8*	*55.0*	*-7.5%*
Annex II Parties	*66.0*	*64.2*	*62.3*	*59.5*	*58.4*	*56.6*	*56.5*	*56.2*	*56.1*	*55.4*	*54.4*	*-6.9%*
North America	*64.0*	*62.2*	*60.9*	*60.1*	*59.6*	*58.2*	*58.9*	*58.4*	*58.0*	*57.6*	*56.5*	*-5.3%*
Europe	*69.0*	*66.4*	*64.5*	*58.6*	*55.9*	*53.3*	*51.7*	*51.2*	*51.2*	*50.4*	*49.1*	*-12.1%*
Asia Oceania	*67.1*	*67.2*	*62.4*	*59.8*	*59.8*	*57.7*	*57.6*	*59.8*	*60.5*	*58.7*	*58.5*	*-2.2%*
Annex I EIT	*..*	*..*	*..*	*..*	*62.5*	*60.6*	*58.9*	*56.6*	*57.5*	*56.6*	*57.2*	*-8.6%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*51.3*	*53.5*	*53.2*	*55.9*	*57.7*	*57.9*	*57.9*	*12.9%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*58.8*	*56.2*	*54.9*	*54.2*	*54.8*	*53.8*	*53.3*	*-9.3%*
Non-OECD Total **	**50.3**	**53.2**	**54.5**	**52.9**	**54.1**	**54.3**	**53.6**	**55.8**	**57.6**	**57.8**	**57.8**	**6.9%**
OECD Total ***	**66.4**	**64.7**	**62.9**	**60.5**	**58.9**	**57.2**	**57.0**	**56.5**	**56.5**	**55.8**	**54.9**	**-6.8%**
Canada	57.4	54.3	52.9	49.8	49.5	48.2	50.6	49.0	49.9	49.4	48.9	-1.1%
Chile	57.2	53.1	53.5	48.5	54.8	52.1	50.8	50.4	55.7	55.2	53.9	-1.6%
Mexico	53.9	56.0	53.3	55.3	51.6	54.6	57.5	54.1	55.6	53.2	54.7	5.8%
United States	64.6	63.0	61.7	61.2	60.7	59.4	59.9	59.4	58.9	58.6	57.4	-5.5%
OECD Americas	**63.7**	**62.0**	**60.5**	**59.8**	**59.2**	**58.0**	**58.8**	**58.0**	**57.8**	**57.3**	**56.3**	**-4.8%**
Australia	66.7	71.2	71.4	72.5	72.0	73.7	74.9	77.7	74.5	72.6	72.0	-0.1%
Israel	60.0	58.0	59.9	77.3	69.0	70.5	71.7	71.0	74.4	71.0	71.6	3.9%
Japan	67.7	67.0	61.1	57.8	57.9	55.2	54.5	56.0	57.6	55.6	55.3	-4.4%
Korea	73.3	75.0	72.1	68.4	58.8	59.2	55.6	53.2	52.7	52.8	53.7	-8.7%
New Zealand	47.5	46.5	43.6	41.8	43.4	41.7	43.4	48.4	45.8	46.6	43.0	-1.0%
OECD Asia Oceania	**67.3**	**67.5**	**63.2**	**61.0**	**59.8**	**58.3**	**57.5**	**58.5**	**58.9**	**57.5**	**57.6**	**-3.8%**
Austria	61.8	59.5	57.4	56.2	54.4	53.1	51.6	52.7	50.2	50.1	47.8	-12.2%
Belgium	70.4	65.2	64.2	55.2	53.4	51.2	48.4	45.8	44.2	45.2	42.0	-21.3%
Czech Republic	79.4	83.5	84.4	84.0	74.8	71.2	71.0	63.6	63.7	62.5	62.5	-16.4%
Denmark	71.0	71.7	78.1	74.9	69.4	71.4	64.9	61.0	62.1	60.2	60.1	-13.4%
Estonia	..	..	..	..	87.0	76.3	74.1	78.0	81.8	77.8	73.8	-15.3%
Finland	52.3	53.8	53.6	44.9	45.8	46.3	40.1	38.6	42.0	38.7	39.6	-13.5%
France	65.1	62.3	57.5	42.2	37.6	35.7	35.7	34.3	33.8	33.1	33.0	-12.1%
Germany	76.6	74.3	70.6	67.8	64.6	61.6	58.6	57.2	57.6	57.4	56.3	-12.9%
Greece	69.2	70.3	72.3	74.3	78.1	79.9	77.1	75.0	77.3	74.0	73.2	-6.3%
Hungary	75.7	73.7	70.5	64.8	55.6	52.9	51.8	48.8	48.4	47.9	46.3	-16.8%
Iceland	37.0	34.7	27.7	21.8	21.5	20.7	16.5	15.0	11.4	10.0	9.1	-57.5%
Ireland	77.2	75.8	75.1	73.0	71.3	72.5	71.2	72.1	69.8	70.3	65.7	-7.8%
Italy	66.4	65.4	65.7	64.2	64.8	61.4	59.3	59.9	59.6	59.0	56.5	-12.8%
Luxembourg	90.7	76.6	80.0	77.4	73.1	61.7	58.5	61.9	60.5	60.0	60.4	-17.4%
Netherlands	60.8	57.0	61.9	60.7	56.7	57.7	56.1	55.3	54.5	54.9	53.8	-5.1%
Norway	42.2	39.4	36.5	32.5	32.2	33.5	31.0	32.4	32.9	30.1	31.6	-1.9%
Poland	79.5	78.4	77.9	80.3	79.3	79.5	78.0	75.7	75.0	72.9	72.9	-8.0%
Portugal	55.0	56.3	56.9	53.7	56.0	57.0	57.5	56.7	52.8	52.1	52.7	-6.0%
Slovak Republic	65.4	62.4	66.6	62.7	63.5	54.9	50.3	48.3	49.2	47.3	47.4	-25.4%
Slovenia	..	..	..	..	52.3	52.4	52.5	51.1	51.7	51.6	51.9	-0.7%
Spain	67.3	65.0	66.3	59.1	54.6	55.3	55.6	57.2	57.1	54.6	53.5	-2.0%
Sweden	54.6	48.6	43.3	29.7	26.7	27.3	26.5	23.3	22.1	21.5	21.9	-17.8%
Switzerland	56.8	51.0	46.8	44.8	40.6	41.3	40.6	41.1	39.2	39.1	37.6	-7.5%
Turkey	50.6	52.9	53.9	57.5	57.5	59.2	62.7	61.2	63.3	63.9	62.7	9.1%
United Kingdom	71.4	69.4	68.7	64.8	63.7	57.1	56.1	57.3	59.2	58.8	56.5	-11.2%
OECD Europe ***	**69.9**	**67.7**	**66.2**	**61.3**	**58.3**	**55.6**	**54.1**	**53.2**	**53.4**	**52.6**	**51.5**	**-11.6%**
European Union - 27	*..*	*..*	*..*	*..*	*59.1*	*56.1*	*54.3*	*53.4*	*53.6*	*52.8*	*51.6*	*-12.8%*

* 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	2007	2008	2009	% change 90-09
Non-OECD Total *	**50.3**	**53.2**	**54.5**	**52.9**	**54.1**	**54.3**	**53.6**	**55.8**	**57.6**	**57.8**	**57.8**	**6.9%**
Algeria	59.6	60.7	60.6	58.1	55.6	55.1	55.2	58.2	55.6	56.4	55.6	-0.1%
Angola	10.3	11.6	14.0	13.8	16.3	14.8	16.3	18.5	23.4	25.7	25.9	59.3%
Benin	6.5	8.8	6.9	7.2	3.6	2.8	17.0	25.3	27.9	27.6	28.5	682.0%
Botswana	..	..	..	42.5	55.6	53.2	54.5	54.9	51.8	49.7	48.8	-12.3%
Cameroon	6.4	8.2	10.8	13.0	12.8	10.8	10.5	10.0	15.5	15.9	16.5	29.0%
Congo	27.1	27.6	29.2	25.4	20.9	16.0	16.6	18.4	22.7	27.3	28.3	35.3%
Dem. Rep. of Congo	9.0	8.2	8.8	7.7	6.0	3.8	2.4	2.7	2.9	3.0	3.0	-50.1%
Côte d'Ivoire	23.2	24.3	22.5	19.6	14.6	15.1	21.7	14.5	13.2	15.0	14.1	-3.4%
Egypt	62.8	63.0	66.7	60.8	59.4	56.8	58.3	59.6	59.9	58.8	58.2	-2.1%
Eritrea	..	..	..	..	..	18.5	20.4	18.8	16.8	16.0	15.5	..
Ethiopia	3.7	3.0	3.1	2.7	3.6	3.4	4.1	5.4	4.7	5.1	5.4	52.7%
Gabon	10.5	13.8	22.2	29.7	18.2	23.4	22.5	27.7	29.0	27.9	22.6	23.8%
Ghana	15.4	15.3	13.5	11.9	12.2	12.2	15.8	18.0	20.6	18.5	23.3	90.7%
Kenya	14.2	13.4	14.1	12.5	12.0	10.7	11.6	10.6	11.5	11.5	12.8	6.3%
Libyan Arab Jamahiriya	56.8	59.8	64.3	53.9	57.7	53.1	57.2	57.8	57.8	58.4	58.6	1.6%
Morocco	67.2	69.4	68.4	70.5	67.6	70.4	66.0	70.5	67.4	67.1	65.4	-3.2%
Mozambique	10.0	8.4	8.2	5.6	4.4	4.3	4.4	4.3	5.4	5.1	5.5	25.4%
Namibia	..	..	..	..	..	47.7	44.0	48.2	49.4	54.2	51.4	..
Nigeria	3.9	6.7	12.2	12.6	9.9	9.3	10.5	11.5	9.9	10.7	9.1	-7.9%
Senegal	23.3	27.6	30.5	32.3	28.5	31.7	35.8	39.7	42.0	42.4	42.8	50.0%
South Africa	92.0	92.9	78.5	61.7	64.8	60.7	62.3	60.5	61.3	61.8	61.2	-5.5%
Sudan	11.1	10.5	10.6	10.6	12.4	9.1	9.7	15.8	18.9	19.6	20.0	61.9%
United Rep. of Tanzania	4.8	4.7	4.7	4.2	4.2	5.5	4.6	7.2	7.1	7.3	7.6	82.1%
Togo	11.2	9.6	9.8	7.1	10.8	8.8	10.8	9.8	8.7	10.3	10.2	-5.0%
Tunisia	53.1	52.7	57.3	54.9	58.3	58.4	58.9	56.7	55.8	54.3	53.9	-7.6%
Zambia	23.4	26.9	17.8	13.6	11.5	8.4	6.5	6.9	4.6	5.0	5.2	-55.3%
Zimbabwe	31.8	29.0	29.3	30.9	41.1	36.0	30.7	25.5	23.2	22.1	21.7	-47.1%
Other Africa	6.9	7.7	9.6	7.7	8.4	8.6	8.4	9.3	9.7	9.9	9.7	15.5%
Africa	**33.0**	**35.6**	**35.5**	**33.2**	**33.4**	**32.0**	**32.3**	**33.0**	**33.0**	**33.6**	**32.9**	**-1.4%**
Bangladesh	13.4	16.5	20.5	21.2	25.4	30.8	32.5	36.5	37.9	39.7	40.9	60.7%
Brunei Darussalam	53.7	45.4	46.5	39.3	45.6	48.6	45.3	47.9	51.3	49.3	62.1	36.3%
Cambodia	..	..	..	..	..	9.9	14.5	18.8	20.7	21.2	19.6	..
Chinese Taipei	73.4	70.6	61.7	50.1	56.6	58.6	61.0	60.3	59.2	59.2	59.1	4.4%
India	30.6	32.4	33.0	38.5	43.9	48.3	50.8	51.5	54.3	55.2	56.0	27.6%
Indonesia	17.1	22.0	29.2	31.5	33.5	35.8	40.5	44.3	46.4	42.8	44.5	32.8%
DPR of Korea	83.1	82.3	83.0	83.8	82.0	81.3	83.1	82.7	81.0	81.8	82.1	0.1%
Malaysia	51.5	53.7	48.6	51.4	53.1	50.5	56.1	58.3	58.8	59.4	58.7	10.4%
Mongolia	..	..	..	88.5	88.5	88.8	89.0	88.4	87.1	86.4	88.4	-0.1%
Myanmar	13.6	11.3	12.9	12.6	8.9	13.7	15.5	20.0	19.2	18.2	16.1	80.2%
Nepal	1.2	1.9	2.7	2.6	3.6	6.2	9.0	7.9	6.5	7.1	8.2	123.7%
Pakistan	23.3	24.6	25.1	29.0	32.7	35.4	36.6	36.8	39.3	38.4	38.2	17.0%
Philippines	35.4	37.6	34.9	28.4	31.5	40.1	40.1	43.5	43.1	42.8	43.4	37.7%
Singapore	52.1	54.1	59.0	57.4	60.0	48.1	49.9	56.6	69.6	65.9	58.0	-3.5%
Sri Lanka	17.4	15.7	19.6	17.1	16.2	22.2	30.5	35.6	33.5	32.5	32.6	101.0%
Thailand	27.8	28.6	36.0	40.0	45.6	54.1	53.4	54.5	54.2	53.4	52.7	15.5%
Vietnam	22.1	21.5	18.0	18.9	16.9	22.1	28.5	37.9	39.7	41.2	42.5	151.6%
Other Asia	55.3	56.5	62.4	47.6	43.5	39.8	39.1	45.5	43.1	42.6	42.7	-1.7%
Asia	**32.6**	**34.5**	**36.8**	**39.3**	**42.4**	**45.1**	**47.7**	**49.5**	**51.2**	**51.1**	**51.6**	**21.6%**
People's Rep. of China	48.8	51.9	56.1	58.8	61.2	68.1	66.3	71.3	73.3	73.4	72.3	18.1%
Hong Kong, China	72.9	71.1	75.0	79.9	90.6	80.7	71.1	76.9	72.3	71.4	72.9	-19.5%
China	**49.0**	**52.0**	**56.2**	**59.0**	**61.5**	**68.2**	**66.3**	**71.3**	**73.3**	**73.4**	**72.3**	**17.6%**

* Includes Estonia and Slovenia prior to 1990.

CO_2 emissions / TPES

tonnes CO_2 / terajoule

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	51.1	59.5	63.0	59.7	64.2	56.3	57.5	57.8	57.8	57.7	57.6	-10.4%
Islamic Republic of Iran	63.2	68.6	58.3	65.4	63.2	64.5	58.5	57.9	61.2	60.3	59.0	-6.6%
Iraq	66.4	65.6	73.2	66.2	69.8	66.0	77.0	59.3	65.0	64.6	73.3	5.1%
Jordan	64.8	67.5	66.9	67.7	67.4	67.5	70.3	64.1	63.6	62.3	61.6	-8.7%
Kuwait	54.8	55.6	60.7	63.2	75.3	58.0	62.4	63.4	63.5	63.3	63.9	-15.1%
Lebanon	58.6	62.3	63.6	67.1	66.7	69.6	68.8	69.0	68.4	69.9	69.6	4.4%
Oman	26.7	71.5	46.3	61.7	56.2	53.3	57.2	61.0	52.5	52.7	61.8	9.9%
Qatar	57.5	56.2	55.2	53.2	54.3	56.1	53.8	53.2	51.9	55.7	56.7	4.3%
Saudi Arabia	41.3	61.3	76.1	63.7	63.5	56.6	59.5	54.6	59.9	59.9	62.1	-2.2%
Syrian Arab Republic	60.5	70.6	70.3	64.3	64.3	64.5	59.7	61.6	64.3	63.7	63.5	-1.2%
United Arab Emirates	57.8	60.2	63.2	62.1	60.8	60.2	59.7	59.7	59.3	59.0	58.9	-3.1%
Yemen	38.7	60.0	64.6	66.1	61.1	65.3	66.6	68.3	69.0	70.6	70.1	14.7%
Middle East	**57.1**	**64.6**	**65.7**	**64.0**	**63.9**	**61.0**	**60.7**	**57.9**	**60.7**	**60.4**	**61.3**	**-4.1%**
Albania	54.5	54.0	59.4	63.5	56.0	33.5	43.0	47.9	45.0	44.6	37.5	-33.1%
Armenia *	..	..	..	..	63.5	50.0	40.6	39.3	40.2	41.9	39.1	-38.4%
Azerbaijan *	..	..	..	..	58.4	59.1	60.8	56.0	53.1	52.7	50.3	-13.9%
Belarus *	..	..	..	..	65.3	59.3	56.8	55.2	54.5	54.5	54.3	-16.9%
Bosnia and Herzegovina *	..	..	..	..	80.5	52.2	74.9	74.1	76.7	78.0	76.6	-4.8%
Bulgaria	78.9	74.2	70.5	63.2	62.6	55.1	53.8	55.2	60.0	59.2	57.7	-7.9%
Croatia *	..	..	..	..	57.2	53.6	54.2	55.6	56.5	55.1	54.3	-5.2%
Cyprus	72.2	70.8	71.9	72.3	67.4	71.5	70.1	75.3	72.0	69.9	71.2	5.6%
Georgia *	..	..	..	..	64.0	51.7	38.4	36.5	39.3	38.0	42.5	-33.6%
Gibraltar	72.1	72.4	73.6	72.8	72.6	72.9	72.9	73.0	73.0	73.0	73.0	0.6%
Kazakhstan *	..	..	..	..	77.6	76.7	75.5	73.7	67.7	71.7	68.8	-11.4%
Kyrgyzstan *	..	..	..	..	71.6	44.3	44.3	45.3	49.6	51.8	56.0	-21.8%
Latvia *	..	..	..	..	56.7	46.0	43.9	40.9	42.6	42.2	38.2	-32.6%
Lithuania *	..	..	..	..	49.1	38.7	37.5	37.6	37.3	37.1	35.3	-28.1%
FYR of Macedonia *	..	..	..	..	82.1	78.1	75.0	72.3	72.0	71.2	71.6	-12.8%
Malta	73.5	73.6	73.9	79.6	78.6	79.2	74.5	74.8	74.9	74.7	73.0	-7.0%
Republic of Moldova *	..	..	..	..	73.1	59.4	54.4	53.1	53.7	53.6	56.0	-23.3%
Romania	65.1	64.8	64.5	63.7	64.1	60.4	56.9	57.4	56.5	55.8	54.4	-15.1%
Russian Federation *	..	..	..	..	59.2	59.1	58.1	55.6	56.1	55.3	56.6	-4.4%
Serbia *	..	..	..	..	75.8	77.4	76.3	73.1	71.8	70.5	76.5	0.8%
Tajikistan *	..	..	..	..	49.0	26.2	24.1	24.1	29.1	29.1	28.5	-41.9%
Turkmenistan *	..	..	..	..	56.7	59.2	59.6	59.4	59.1	59.3	59.5	4.8%
Ukraine *	..	..	..	..	65.3	57.3	52.1	51.1	54.6	54.3	53.0	-18.7%
Uzbekistan *	..	..	..	..	61.7	57.0	55.3	55.1	55.1	54.4	55.0	-10.9%
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**	**59.4**	**57.6**	**56.0**	**56.6**	**56.3**	**56.8**	**-8.3%**
Argentina	58.9	57.1	54.8	51.2	52.0	52.3	54.5	53.8	54.2	54.4	53.6	3.0%
Bolivia	50.9	51.9	41.0	40.6	47.1	44.5	46.3	44.0	50.4	49.1	49.3	4.7%
Brazil	31.2	36.0	37.8	31.0	33.1	35.6	38.2	35.7	34.7	34.7	33.6	1.5%
Colombia	45.3	43.9	43.6	43.7	44.3	48.7	52.3	48.6	46.4	45.2	45.4	2.5%
Costa Rica	26.5	31.7	34.1	28.6	30.8	44.7	35.6	31.7	31.6	32.0	30.6	-0.6%
Cuba	42.1	43.2	42.8	43.7	41.7	44.5	46.9	52.7	60.0	57.2	55.7	33.5%
Dominican Republic	35.2	39.9	43.5	40.4	44.6	46.3	53.4	52.8	54.2	56.2	53.3	19.5%
Ecuador	38.2	45.4	50.4	50.1	52.6	54.5	55.1	52.2	54.1	57.4	59.9	14.0%
El Salvador	19.4	21.3	16.6	16.0	21.6	32.9	31.4	33.7	32.9	29.0	31.8	47.2%
Guatemala	19.9	21.8	26.6	20.6	17.8	26.8	29.6	33.6	34.8	32.9	35.2	98.1%
Haiti	5.9	5.7	7.0	10.0	14.5	12.8	16.7	18.3	19.9	20.1	21.8	50.9%
Honduras	19.2	20.4	21.5	19.8	21.4	29.9	35.5	41.5	40.3	39.4	38.7	80.7%
Jamaica	65.5	66.0	68.2	64.3	61.5	62.2	60.6	66.2	67.3	66.2	60.7	-1.4%
Netherlands Antilles	63.0	63.1	53.2	60.9	44.9	51.3	48.9	51.6	49.5	49.7	56.1	24.9%
Nicaragua	28.4	29.4	27.9	22.2	20.9	25.5	30.9	28.9	34.0	32.5	32.7	56.3%
Panama	35.9	45.2	48.9	39.8	38.6	48.8	42.9	51.2	54.6	53.0	55.9	44.6%
Paraguay	9.9	11.2	15.5	14.8	14.9	21.0	20.2	20.0	20.4	19.6	20.4	37.1%
Peru	40.7	42.5	43.6	41.1	47.1	51.7	51.8	50.5	51.5	56.6	58.2	23.4%
Trinidad and Tobago	56.0	60.4	49.7	45.2	45.5	47.8	47.2	48.3	48.1	48.4	47.4	4.1%
Uruguay	51.6	53.3	50.2	37.3	39.8	42.0	40.7	42.9	43.8	44.4	45.2	13.6%
Venezuela	63.6	60.1	62.4	57.6	57.7	54.8	53.6	53.2	57.1	55.7	55.2	-4.3%
Other Latin America	39.5	43.1	40.8	56.4	61.0	61.4	62.0	63.2	62.8	62.7	61.7	1.2%
Latin America	**43.0**	**44.0**	**44.5**	**40.1**	**41.5**	**43.5**	**45.0**	**43.7**	**43.8**	**43.6**	**43.1**	**3.8%**

* 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 2000 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
World *	**1.10**	**1.06**	**1.00**	**0.91**	**0.86**	**0.80**	**0.73**	**0.74**	**0.73**	**0.73**	**0.73**	**-15.4%**
Annex I Parties	*..*	*..*	*..*	*..*	*0.70*	*0.61*	*0.55*	*0.51*	*0.48*	*0.47*	*0.46*	*-34.6%*
Annex II Parties	*0.84*	*0.77*	*0.69*	*0.58*	*0.52*	*0.49*	*0.45*	*0.42*	*0.40*	*0.39*	*0.38*	*-27.2%*
North America	*1.11*	*1.02*	*0.92*	*0.76*	*0.70*	*0.65*	*0.59*	*0.53*	*0.51*	*0.49*	*0.47*	*-32.8%*
Europe	*0.75*	*0.67*	*0.63*	*0.54*	*0.46*	*0.43*	*0.38*	*0.36*	*0.34*	*0.33*	*0.32*	*-31.3%*
Asia Oceania	*0.46*	*0.45*	*0.38*	*0.32*	*0.30*	*0.30*	*0.30*	*0.30*	*0.29*	*0.28*	*0.28*	*-7.8%*
Annex I EIT	*..*	*..*	*..*	*..*	*4.72*	*4.47*	*3.57*	*2.84*	*2.56*	*2.44*	*2.42*	*-48.7%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*1.49*	*1.43*	*1.29*	*1.36*	*1.33*	*1.33*	*1.34*	*-9.9%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*0.69*	*0.58*	*0.52*	*0.49*	*0.47*	*0.46*	*0.45*	*-35.6%*
Non-OECD Total **	**2.07**	**2.11**	**2.07**	**2.11**	**2.26**	**1.94**	**1.69**	**1.68**	**1.61**	**1.60**	**1.59**	**-29.6%**
OECD Total ***	**0.87**	**0.80**	**0.73**	**0.62**	**0.55**	**0.52**	**0.48**	**0.45**	**0.43**	**0.42**	**0.41**	**-26.5%**
Canada	1.18	1.10	1.04	0.85	0.80	0.79	0.74	0.68	0.66	0.63	0.61	-22.7%
Chile	0.90	0.86	0.76	0.66	0.77	0.63	0.70	0.63	0.66	0.64	0.63	-17.9%
Mexico	0.47	0.51	0.56	0.60	0.59	0.61	0.55	0.55	0.54	0.52	0.55	-5.7%
United States	1.11	1.02	0.91	0.75	0.69	0.64	0.58	0.52	0.49	0.48	0.46	-33.6%
OECD Americas	**1.08**	**0.99**	**0.89**	**0.75**	**0.69**	**0.65**	**0.59**	**0.53**	**0.51**	**0.49**	**0.47**	**-31.4%**
Australia	0.85	0.96	0.96	0.88	0.90	0.84	0.82	0.80	0.74	0.74	0.74	-17.9%
Israel	0.45	0.41	0.40	0.43	0.47	0.47	0.44	0.43	0.43	0.41	0.40	-15.4%
Japan	0.43	0.40	0.33	0.27	0.26	0.26	0.25	0.25	0.24	0.22	0.22	-12.6%
Korea	0.99	1.02	1.11	0.89	0.81	0.87	0.82	0.70	0.67	0.67	0.68	-15.4%
New Zealand	0.48	0.51	0.50	0.52	0.59	0.57	0.57	0.52	0.48	0.50	0.46	-21.0%
OECD Asia Oceania	**0.48**	**0.47**	**0.41**	**0.34**	**0.33**	**0.35**	**0.35**	**0.34**	**0.33**	**0.32**	**0.33**	**-1.4%**
Austria	0.55	0.49	0.46	0.42	0.38	0.36	0.32	0.36	0.31	0.31	0.29	-23.4%
Belgium	1.03	0.88	0.82	0.64	0.58	0.57	0.51	0.45	0.40	0.41	0.39	-33.3%
Czech Republic	3.94	3.49	3.41	3.39	2.81	2.35	2.15	1.75	1.58	1.48	1.45	-48.4%
Denmark	0.66	0.60	0.62	0.52	0.41	0.42	0.32	0.28	0.29	0.27	0.28	-31.5%
Estonia	..	..	..	..	6.18	3.92	2.57	2.03	1.96	1.90	1.82	-70.5%
Finland	0.77	0.71	0.75	0.58	0.55	0.58	0.45	0.40	0.42	0.37	0.39	-28.9%
France	0.68	0.59	0.54	0.39	0.32	0.31	0.28	0.27	0.25	0.25	0.24	-25.4%
Germany	1.03	0.94	0.86	0.77	0.62	0.51	0.44	0.41	0.39	0.38	0.38	-39.0%
Greece	0.39	0.45	0.48	0.58	0.70	0.71	0.69	0.61	0.58	0.55	0.54	-22.8%
Hungary	2.31	2.12	2.10	1.86	1.50	1.45	1.14	0.98	0.90	0.88	0.85	-42.9%
Iceland	0.44	0.42	0.34	0.28	0.28	0.28	0.25	0.20	0.20	0.18	0.18	-36.0%
Ireland	0.98	0.78	0.76	0.68	0.61	0.53	0.42	0.35	0.31	0.32	0.32	-48.7%
Italy	0.57	0.54	0.49	0.43	0.42	0.41	0.39	0.40	0.38	0.37	0.35	-17.3%
Luxembourg	2.54	1.77	1.56	1.15	0.84	0.54	0.40	0.47	0.39	0.38	0.38	-55.2%
Netherlands	0.75	0.72	0.74	0.64	0.55	0.54	0.45	0.44	0.41	0.41	0.41	-26.3%
Norway	0.39	0.33	0.31	0.25	0.24	0.23	0.20	0.19	0.19	0.19	0.19	-21.3%
Poland	3.21	2.96	3.47	3.50	2.90	2.52	1.70	1.47	1.34	1.26	1.19	-59.0%
Portugal	0.34	0.37	0.37	0.37	0.45	0.51	0.51	0.52	0.44	0.42	0.43	-4.1%
Slovak Republic	3.04	2.99	3.39	3.08	3.00	2.37	1.83	1.47	1.18	1.10	1.06	-64.7%
Slovenia	..	..	..	..	0.76	0.83	0.71	0.65	0.59	0.60	0.59	-22.0%
Spain	0.50	0.52	0.57	0.50	0.47	0.49	0.49	0.50	0.47	0.43	0.40	-15.0%
Sweden	0.61	0.53	0.45	0.33	0.26	0.28	0.21	0.18	0.15	0.15	0.15	-44.5%
Switzerland	0.23	0.22	0.22	0.21	0.18	0.18	0.17	0.17	0.15	0.15	0.15	-19.5%
Turkey	0.52	0.59	0.63	0.67	0.68	0.70	0.75	0.65	0.71	0.70	0.72	5.2%
United Kingdom	0.84	0.72	0.65	0.56	0.48	0.41	0.35	0.32	0.30	0.29	0.28	-41.8%
OECD Europe ***	**0.84**	**0.77**	**0.73**	**0.64**	**0.55**	**0.49**	**0.43**	**0.41**	**0.39**	**0.38**	**0.37**	**-32.3%**
European Union - 27	*..*	*..*	*..*	*..*	*0.60*	*0.52*	*0.45*	*0.43*	*0.40*	*0.39*	*0.38*	*-36.6%*

* 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 2000 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Non-OECD Total *	**2.07**	**2.11**	**2.07**	**2.11**	**2.26**	**1.94**	**1.69**	**1.68**	**1.61**	**1.60**	**1.59**	**-29.6%**
Algeria	0.49	0.54	0.81	0.97	1.11	1.18	1.14	1.13	1.17	1.18	1.21	8.7%
Angola	0.25	0.30	0.40	0.40	0.47	0.59	0.56	0.47	0.49	0.51	0.53	12.2%
Benin	0.37	0.52	0.36	0.35	0.18	0.13	0.63	0.97	1.26	1.22	1.28	612.9%
Botswana	..	..	..	0.81	0.86	0.81	0.74	0.61	0.55	0.55	0.53	-39.2%
Cameroon	0.21	0.22	0.26	0.25	0.30	0.31	0.28	0.24	0.32	0.32	0.35	16.3%
Congo	0.57	0.48	0.46	0.30	0.25	0.18	0.18	0.24	0.29	0.34	0.36	42.7%
Dem. Rep. of Congo	0.35	0.34	0.44	0.42	0.39	0.40	0.39	0.43	0.44	0.45	0.45	16.3%
Côte d'Ivoire	0.47	0.48	0.44	0.39	0.32	0.36	0.59	0.56	0.53	0.59	0.54	70.0%
Egypt	0.97	1.07	1.10	1.23	1.21	1.08	1.10	1.28	1.24	1.20	1.15	-4.7%
Eritrea	..	..	..	..	..	1.27	0.95	0.83	0.70	0.71	0.57	..
Ethiopia	0.31	0.26	0.27	0.29	0.35	0.36	0.39	0.43	0.43	0.45	0.45	25.9%
Gabon	0.25	0.19	0.36	0.42	0.21	0.27	0.27	0.39	0.41	0.39	0.28	35.2%
Ghana	0.72	0.93	0.86	0.84	0.83	0.82	1.03	1.01	1.14	0.94	1.10	33.0%
Kenya	0.80	0.67	0.63	0.58	0.52	0.49	0.53	0.48	0.48	0.49	0.56	6.7%
Libyan Arab Jamahiriya	0.11	0.33	0.42	0.60	0.92	1.11	1.15	0.97	0.88	0.92	0.96	4.8%
Morocco	0.54	0.65	0.69	0.70	0.67	0.83	0.76	0.82	0.77	0.76	0.71	6.5%
Mozambique	1.01	0.97	0.94	0.78	0.43	0.39	0.31	0.24	0.28	0.25	0.26	-39.1%
Namibia	..	..	..	..	..	0.55	0.48	0.58	0.59	0.71	0.64	..
Nigeria	0.26	0.45	0.85	1.20	0.83	0.79	0.86	0.81	0.63	0.67	0.53	-36.9%
Senegal	0.53	0.63	0.74	0.69	0.58	0.64	0.77	0.79	0.78	0.77	0.79	35.3%
South Africa	2.43	2.55	2.25	2.24	2.30	2.39	2.24	2.06	2.00	2.10	2.03	-11.6%
Sudan	0.82	0.67	0.67	0.74	0.78	0.50	0.44	0.60	0.59	0.56	0.58	-25.0%
United Rep. of Tanzania	0.43	0.35	0.32	0.30	0.25	0.34	0.28	0.41	0.38	0.38	0.39	53.7%
Togo	0.53	0.41	0.38	0.31	0.53	0.53	0.72	0.66	0.57	0.69	0.69	29.4%
Tunisia	0.79	0.76	0.91	0.90	0.99	0.96	0.93	0.81	0.76	0.74	0.71	-28.1%
Zambia	1.44	1.64	1.23	1.00	0.86	0.73	0.52	0.51	0.31	0.33	0.33	-62.0%
Zimbabwe	2.07	1.77	1.82	1.78	2.38	2.08	1.72	1.82	1.78	1.96	1.86	-21.6%
Other Africa	0.32	0.35	0.43	0.36	0.39	0.44	0.40	0.39	0.39	0.39	0.39	0.6%
Africa	**1.00**	**1.11**	**1.08**	**1.15**	**1.18**	**1.20**	**1.15**	**1.11**	**1.06**	**1.07**	**1.04**	**-12.2%**
Bangladesh	0.18	0.28	0.35	0.36	0.46	0.56	0.54	0.59	0.60	0.63	0.65	40.8%
Brunei Darussalam	0.14	0.40	0.46	0.61	0.70	0.84	0.77	0.77	1.02	1.09	1.19	70.4%
Cambodia	..	..	..	..	..	0.53	0.64	0.64	0.62	0.60	0.57	..
Chinese Taipei	0.88	0.89	0.91	0.65	0.67	0.65	0.68	0.69	0.65	0.62	0.61	-9.3%
India	1.68	1.78	1.80	2.03	2.15	2.24	2.11	1.80	1.76	1.76	1.81	-15.8%
Indonesia	0.85	0.94	1.17	1.14	1.30	1.27	1.60	1.62	1.57	1.39	1.46	11.8%
DPR of Korea	22.35	16.20	12.93	9.67	7.32	6.12	6.34	6.57	5.48	6.24	5.74	-21.6%
Malaysia	0.97	0.92	0.92	0.99	1.04	1.06	1.18	1.29	1.29	1.30	1.20	15.5%
Mongolia	..	..	..	12.75	11.52	10.55	8.09	6.36	6.22	5.77	6.27	-45.6%
Myanmar	1.72	1.35	1.28	1.15	0.89	1.13	0.91	0.82	0.68	0.63	0.51	-42.5%
Nepal	0.11	0.17	0.24	0.20	0.26	0.40	0.56	0.47	0.37	0.39	0.45	70.0%
Pakistan	0.96	1.03	0.96	1.03	1.17	1.26	1.32	1.24	1.31	1.24	1.23	5.3%
Philippines	0.82	0.82	0.70	0.64	0.68	0.91	0.89	0.75	0.65	0.64	0.63	-6.8%
Singapore	0.57	0.58	0.58	0.55	0.64	0.55	0.43	0.36	0.32	0.32	0.31	-51.5%
Sri Lanka	0.64	0.53	0.57	0.43	0.38	0.43	0.65	0.68	0.57	0.51	0.51	32.7%
Thailand	0.79	0.82	0.89	0.85	1.01	1.17	1.32	1.39	1.34	1.34	1.31	29.8%
Vietnam	2.00	2.05	1.72	1.44	1.15	1.25	1.41	1.80	1.77	1.83	1.94	69.3%
Other Asia	0.79	0.86	1.19	0.64	0.56	0.41	0.47	0.47	0.36	0.33	0.33	-40.6%
Asia	**1.34**	**1.36**	**1.35**	**1.36**	**1.37**	**1.34**	**1.36**	**1.29**	**1.25**	**1.24**	**1.27**	**-7.3%**
People's Rep. of China	7.47	7.88	7.68	5.60	4.97	3.77	2.53	2.65	2.45	2.42	2.33	-53.2%
Hong Kong, China	0.35	0.31	0.24	0.28	0.29	0.24	0.24	0.20	0.18	0.18	0.20	-30.8%
China	**6.09**	**6.32**	**5.84**	**4.50**	**4.01**	**3.21**	**2.25**	**2.41**	**2.26**	**2.23**	**2.17**	**-45.9%**

* Includes Estonia and Slovenia prior to 1990.

CO_2 emissions / GDP using exchange rates

kilogrammes CO_2 / US dollar using 2000 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	2.29	2.18	1.86	2.80	2.52	1.80	1.77	1.69	1.70	1.68	1.67	-33.7%
Islamic Republic of Iran	0.94	1.15	1.62	2.12	2.55	3.04	3.13	3.21	3.30	3.37	3.37	32.0%
Iraq	0.24	0.24	0.33	0.71	1.60	5.69	3.16	4.21	4.46	4.21	4.29	167.7%
Jordan	0.63	1.03	1.00	1.36	1.79	1.68	1.69	1.55	1.42	1.27	1.29	-28.0%
Kuwait	0.44	0.57	0.95	1.69	1.13	1.05	1.30	1.25	1.14	1.13	1.27	11.9%
Lebanon	0.33	0.42	0.58	0.41	0.60	0.80	0.82	0.70	0.53	0.64	0.72	19.6%
Oman	0.08	0.17	0.42	0.50	0.78	0.86	0.99	1.18	1.19	1.23	1.23	56.9%
Qatar	0.25	0.54	0.72	1.36	1.60	1.85	1.35	1.44	1.53	1.44	1.39	-13.2%
Saudi Arabia	0.24	0.20	0.64	1.01	1.10	1.25	1.34	1.47	1.51	1.55	1.64	49.2%
Syrian Arab Republic	1.49	1.32	1.39	1.93	2.39	1.90	2.06	2.32	2.56	2.47	2.10	-12.2%
United Arab Emirates	0.28	0.22	0.40	0.86	1.12	1.27	1.22	1.10	1.14	1.21	1.25	11.5%
Yemen	0.90	0.93	1.05	1.03	1.17	1.29	1.40	1.62	1.67	1.67	1.67	42.7%
Middle East	**0.46**	**0.50**	**0.73**	**1.21**	**1.48**	**1.73**	**1.77**	**1.83**	**1.88**	**1.89**	**1.93**	**30.6%**
Albania	2.27	2.07	2.68	2.29	1.94	0.66	0.86	0.95	0.75	0.67	0.46	-76.4%
Armenia *	..	..	..	..	7.26	2.30	1.78	1.21	1.09	1.12	1.06	-85.3%
Azerbaijan *	..	..	..	..	7.17	8.43	5.52	3.28	1.62	1.59	1.25	-82.6%
Belarus *	..	..	..	..	8.67	6.55	4.61	3.44	2.93	2.64	2.46	-71.6%
Bosnia and Herzegovina *	..	..	..	..	15.75	2.06	2.48	2.23	2.26	2.33	2.34	-85.1%
Bulgaria	10.08	8.48	7.31	6.00	5.15	4.18	3.26	2.73	2.64	2.42	2.19	-57.5%
Croatia *	..	..	..	..	0.86	0.87	0.83	0.78	0.75	0.70	0.70	-18.8%
Cyprus	0.83	0.87	0.77	0.63	0.62	0.68	0.67	0.64	0.62	0.62	0.62	-0.4%
Georgia *	..	..	..	..	4.09	3.51	1.51	1.00	1.03	0.87	1.08	-73.6%
Gibraltar	0.26	0.24	0.26	0.24	0.31	0.51	0.53	0.53	0.53	0.55	0.60	93.8%
Kazakhstan *	..	..	..	..	8.97	10.32	6.15	5.23	5.19	5.57	5.02	-44.0%
Kyrgyzstan *	..	..	..	..	10.92	4.24	3.25	3.06	3.32	2.96	3.45	-68.4%
Latvia *	..	..	..	..	1.79	1.49	0.87	0.65	0.58	0.58	0.60	-66.3%
Lithuania *	..	..	..	..	2.09	1.54	0.98	0.81	0.73	0.70	0.72	-65.5%
FYR of Macedonia *	..	..	..	..	2.17	2.64	2.34	2.28	2.17	2.02	1.89	-12.7%
Malta	1.05	0.68	0.60	0.65	0.96	0.75	0.54	0.67	0.63	0.58	0.56	-41.3%
Republic of Moldova *	..	..	..	..	8.34	7.52	5.03	4.33	3.83	3.35	2.91	-65.1%
Romania	6.12	4.95	4.30	3.60	3.80	2.96	2.33	1.88	1.67	1.51	1.40	-63.2%
Russian Federation *	..	..	..	..	5.65	6.57	5.80	4.34	3.85	3.69	3.86	-31.7%
Serbia *	..	..	..	..	6.70	4.90	4.75	4.24	3.79	3.59	5.14	-23.2%
Tajikistan *	..	..	..	..	4.82	2.84	2.52	1.76	2.04	1.82	1.60	-66.9%
Turkmenistan *	..	..	..	..	12.21	14.45	12.46	7.33	6.93	6.45	5.22	-57.2%
Ukraine *	..	..	..	..	9.56	11.37	9.34	6.76	5.99	5.78	5.65	-40.9%
Uzbekistan *	..	..	..	..	8.53	8.92	8.54	6.05	5.34	5.01	4.53	-46.9%
Former Soviet Union *	4.94	5.08	4.95	4.66	..	..	..	..	..	..	..	..
Former Yugoslavia *	1.88	1.82	1.58	2.15	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**4.79**	**4.86**	**4.66**	**4.41**	**5.87**	**6.09**	**5.04**	**3.86**	**3.45**	**3.31**	**3.32**	**-43.4%**
Argentina	0.50	0.47	0.45	0.47	0.55	0.47	0.49	0.48	0.45	0.44	0.42	-24.0%
Bolivia	0.53	0.62	0.73	0.82	0.89	0.98	0.87	0.94	1.07	1.08	1.10	23.4%
Brazil	0.43	0.44	0.42	0.37	0.39	0.41	0.47	0.44	0.42	0.42	0.39	1.9%
Colombia	0.78	0.68	0.62	0.63	0.58	0.61	0.58	0.47	0.42	0.41	0.43	-26.6%
Costa Rica	0.27	0.30	0.29	0.27	0.27	0.35	0.28	0.28	0.29	0.28	0.27	-0.3%
Cuba	1.35	1.28	1.35	0.95	1.04	1.00	0.94	0.69	0.61	0.55	0.56	-45.8%
Dominican Republic	0.59	0.63	0.59	0.53	0.58	0.66	0.73	0.61	0.55	0.53	0.48	-15.8%
Ecuador	0.62	0.74	0.98	1.04	0.99	1.07	1.16	1.14	1.15	1.10	1.18	19.2%
El Salvador	0.20	0.23	0.20	0.23	0.27	0.41	0.40	0.44	0.43	0.38	0.43	61.1%
Guatemala	0.32	0.34	0.36	0.29	0.26	0.38	0.46	0.51	0.50	0.44	0.56	117.3%
Haiti	0.12	0.12	0.14	0.18	0.22	0.28	0.38	0.56	0.61	0.62	0.61	176.0%
Honduras	0.45	0.46	0.42	0.38	0.42	0.58	0.62	0.78	0.78	0.72	0.69	67.0%
Jamaica	0.86	1.08	1.12	0.78	0.95	0.91	1.08	1.05	1.28	1.15	0.83	-12.8%
Netherlands Antilles	..	..	8.41	4.61	2.62	2.32	3.37	3.33	3.42	3.20	3.88	48.2%
Nicaragua	0.46	0.46	0.55	0.54	0.65	0.81	0.90	0.87	0.88	0.78	0.84	30.0%
Panama	0.55	0.61	0.46	0.35	0.33	0.43	0.39	0.38	0.35	0.32	0.37	10.2%
Paraguay	0.28	0.26	0.30	0.29	0.32	0.48	0.46	0.43	0.41	0.39	0.45	38.2%
Peru	0.55	0.53	0.53	0.46	0.53	0.50	0.50	0.44	0.40	0.42	0.45	-14.7%
Trinidad and Tobago	1.36	1.14	1.06	1.44	1.90	1.92	2.59	2.83	2.85	2.70	2.85	49.5%
Uruguay	0.41	0.40	0.33	0.22	0.22	0.22	0.23	0.22	0.22	0.26	0.26	17.0%
Venezuela	0.76	0.81	1.05	1.14	1.10	1.05	1.08	1.11	0.97	0.93	0.97	-12.4%
Other Latin America	0.77	1.04	0.73	0.61	0.63	0.64	0.60	0.62	0.58	0.62	0.62	-2.5%
Latin America	**0.55**	**0.54**	**0.55**	**0.52**	**0.54**	**0.54**	**0.57**	**0.55**	**0.52**	**0.51**	**0.50**	**-8.3%**

* 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 2000 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
World *	**0.81**	**0.76**	**0.72**	**0.65**	**0.63**	**0.58**	**0.51**	**0.49**	**0.47**	**0.46**	**0.45**	**-28.2%**
Annex I Parties	*..*	*..*	*..*	*..*	*0.62*	*0.56*	*0.50*	*0.46*	*0.43*	*0.42*	*0.41*	*-34.1%*
Annex II Parties	*0.82*	*0.75*	*0.68*	*0.57*	*0.52*	*0.49*	*0.45*	*0.42*	*0.40*	*0.38*	*0.37*	*-28.1%*
North America	*1.10*	*1.01*	*0.90*	*0.75*	*0.69*	*0.64*	*0.58*	*0.52*	*0.50*	*0.48*	*0.46*	*-32.8%*
Europe	*0.64*	*0.58*	*0.54*	*0.46*	*0.40*	*0.36*	*0.32*	*0.31*	*0.29*	*0.28*	*0.27*	*-31.3%*
Asia Oceania	*0.61*	*0.59*	*0.51*	*0.42*	*0.40*	*0.40*	*0.40*	*0.39*	*0.38*	*0.36*	*0.36*	*-10.6%*
Annex I EIT	*..*	*..*	*..*	*..*	*1.34*	*1.35*	*1.10*	*0.86*	*0.77*	*0.74*	*0.74*	*-44.6%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*0.59*	*0.55*	*0.49*	*0.49*	*0.47*	*0.47*	*0.46*	*-21.6%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*0.59*	*0.52*	*0.46*	*0.43*	*0.40*	*0.39*	*0.38*	*-35.1%*
Non-OECD Total **	**0.71**	**0.73**	**0.74**	**0.72**	**0.77**	**0.67**	**0.57**	**0.54**	**0.51**	**0.51**	**0.50**	**-35.3%**
OECD Total ***	**0.81**	**0.74**	**0.68**	**0.58**	**0.52**	**0.49**	**0.45**	**0.42**	**0.40**	**0.39**	**0.38**	**-28.2%**
Canada	0.98	0.91	0.86	0.71	0.66	0.65	0.61	0.56	0.55	0.53	0.51	-22.7%
Chile	0.48	0.45	0.40	0.35	0.40	0.33	0.37	0.33	0.35	0.34	0.33	-17.9%
Mexico	0.30	0.33	0.36	0.39	0.38	0.39	0.35	0.36	0.35	0.34	0.36	-5.7%
United States	1.11	1.02	0.91	0.75	0.69	0.64	0.58	0.52	0.49	0.48	0.46	-33.6%
OECD Americas	**1.04**	**0.95**	**0.85**	**0.72**	**0.66**	**0.62**	**0.56**	**0.51**	**0.48**	**0.47**	**0.45**	**-31.5%**
Australia	0.65	0.73	0.73	0.67	0.68	0.64	0.63	0.61	0.57	0.57	0.56	-17.9%
Israel	0.38	0.34	0.34	0.36	0.40	0.40	0.37	0.37	0.37	0.35	0.34	-15.3%
Japan	0.61	0.58	0.48	0.39	0.37	0.37	0.36	0.35	0.34	0.32	0.32	-12.5%
Korea	0.65	0.67	0.73	0.59	0.53	0.57	0.54	0.46	0.44	0.44	0.45	-15.4%
New Zealand	0.32	0.33	0.33	0.34	0.39	0.37	0.38	0.34	0.31	0.33	0.30	-21.0%
OECD Asia Oceania	**0.60**	**0.59**	**0.52**	**0.43**	**0.42**	**0.43**	**0.42**	**0.40**	**0.39**	**0.38**	**0.38**	**-9.4%**
Austria	0.46	0.41	0.38	0.35	0.31	0.30	0.27	0.30	0.26	0.26	0.24	-23.4%
Belgium	0.84	0.73	0.68	0.52	0.48	0.47	0.42	0.37	0.33	0.34	0.32	-33.3%
Czech Republic	1.45	1.29	1.25	1.25	1.03	0.86	0.79	0.65	0.58	0.54	0.53	-48.4%
Denmark	0.69	0.62	0.65	0.55	0.42	0.43	0.33	0.29	0.30	0.28	0.29	-31.5%
Estonia	..	..	..	..	2.59	1.64	1.08	0.85	0.82	0.80	0.77	-70.5%
Finland	0.70	0.65	0.69	0.53	0.50	0.53	0.41	0.37	0.39	0.34	0.36	-28.9%
France	0.59	0.51	0.46	0.34	0.28	0.26	0.25	0.23	0.21	0.21	0.21	-25.4%
Germany	0.92	0.84	0.77	0.69	0.55	0.45	0.39	0.37	0.34	0.34	0.33	-39.1%
Greece	0.25	0.28	0.30	0.36	0.44	0.45	0.44	0.39	0.36	0.35	0.34	-22.9%
Hungary	0.88	0.81	0.80	0.71	0.57	0.55	0.44	0.38	0.35	0.34	0.33	-42.9%
Iceland	0.48	0.45	0.36	0.30	0.30	0.30	0.26	0.22	0.21	0.20	0.19	-36.0%
Ireland	0.87	0.69	0.68	0.61	0.54	0.47	0.37	0.31	0.28	0.29	0.28	-48.7%
Italy	0.43	0.40	0.37	0.33	0.32	0.31	0.29	0.30	0.28	0.28	0.26	-17.3%
Luxembourg	2.20	1.53	1.35	0.99	0.73	0.47	0.34	0.41	0.34	0.33	0.33	-55.2%
Netherlands	0.61	0.59	0.61	0.53	0.45	0.45	0.37	0.37	0.34	0.33	0.33	-26.3%
Norway	0.40	0.34	0.32	0.26	0.25	0.24	0.21	0.20	0.20	0.20	0.20	-21.3%
Poland	1.36	1.26	1.47	1.48	1.23	1.07	0.72	0.62	0.57	0.53	0.50	-59.0%
Portugal	0.22	0.24	0.24	0.24	0.29	0.33	0.33	0.33	0.29	0.27	0.28	-4.1%
Slovak Republic	1.05	1.03	1.17	1.06	1.03	0.81	0.63	0.51	0.41	0.38	0.36	-64.7%
Slovenia	..	..	..	..	0.43	0.47	0.41	0.37	0.34	0.34	0.34	-21.9%
Spain	0.34	0.35	0.39	0.34	0.32	0.33	0.33	0.34	0.32	0.29	0.27	-14.9%
Sweden	0.61	0.52	0.45	0.33	0.26	0.28	0.21	0.18	0.15	0.15	0.15	-44.5%
Switzerland	0.26	0.24	0.24	0.23	0.20	0.20	0.19	0.18	0.16	0.16	0.16	-19.5%
Turkey	0.24	0.27	0.29	0.30	0.31	0.32	0.34	0.29	0.32	0.32	0.32	5.2%
United Kingdom	0.81	0.69	0.63	0.54	0.46	0.40	0.34	0.31	0.28	0.28	0.27	-41.8%
OECD Europe ***	**0.68**	**0.62**	**0.59**	**0.51**	**0.44**	**0.40**	**0.35**	**0.33**	**0.31**	**0.30**	**0.29**	**-33.4%**
European Union - 27	*..*	*..*	*..*	*..*	*0.47*	*0.42*	*0.36*	*0.34*	*0.32*	*0.31*	*0.30*	*-37.0%*

* 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 2000 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Non-OECD Total *	**0.71**	**0.73**	**0.74**	**0.72**	**0.77**	**0.67**	**0.57**	**0.54**	**0.51**	**0.51**	**0.50**	**-35.3%**
Algeria	0.17	0.18	0.27	0.33	0.38	0.40	0.38	0.38	0.40	0.40	0.41	8.6%
Angola	0.11	0.13	0.18	0.18	0.21	0.27	0.25	0.21	0.22	0.23	0.24	12.2%
Benin	0.12	0.17	0.12	0.11	0.06	0.04	0.20	0.31	0.41	0.39	0.41	612.6%
Botswana	..	..	..	0.34	0.36	0.34	0.31	0.26	0.23	0.23	0.22	-39.2%
Cameroon	0.08	0.08	0.09	0.09	0.11	0.11	0.10	0.09	0.11	0.12	0.13	16.2%
Congo	0.51	0.42	0.41	0.26	0.22	0.16	0.16	0.21	0.26	0.30	0.32	42.7%
Dem. Rep. of Congo	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	16.3%
Côte d'Ivoire	0.18	0.19	0.17	0.15	0.12	0.14	0.23	0.22	0.21	0.23	0.21	69.9%
Egypt	0.41	0.45	0.46	0.52	0.51	0.46	0.46	0.54	0.52	0.50	0.48	-4.7%
Eritrea	..	..	..	..	..	0.22	0.17	0.15	0.12	0.12	0.10	..
Ethiopia	0.05	0.04	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.07	0.07	25.8%
Gabon	0.17	0.13	0.24	0.28	0.14	0.18	0.19	0.26	0.28	0.26	0.19	35.2%
Ghana	0.09	0.12	0.11	0.11	0.11	0.11	0.13	0.13	0.15	0.12	0.14	32.9%
Kenya	0.32	0.27	0.25	0.23	0.21	0.20	0.21	0.19	0.19	0.20	0.22	6.7%
Libyan Arab Jamahiriya	0.08	0.24	0.31	0.44	0.68	0.81	0.85	0.71	0.64	0.68	0.71	4.8%
Morocco	0.18	0.21	0.23	0.23	0.22	0.27	0.25	0.27	0.26	0.25	0.24	6.5%
Mozambique	0.27	0.26	0.25	0.20	0.11	0.10	0.08	0.06	0.07	0.07	0.07	-39.2%
Namibia	..	..	..	..	..	0.17	0.15	0.18	0.18	0.22	0.20	..
Nigeria	0.11	0.20	0.37	0.52	0.36	0.34	0.37	0.35	0.27	0.29	0.23	-36.9%
Senegal	0.16	0.19	0.22	0.20	0.17	0.19	0.23	0.23	0.23	0.23	0.23	35.3%
South Africa	0.84	0.88	0.77	0.77	0.79	0.82	0.77	0.71	0.69	0.72	0.70	-11.5%
Sudan	0.20	0.17	0.17	0.18	0.19	0.13	0.11	0.15	0.15	0.14	0.15	-24.9%
United Rep. of Tanzania	0.22	0.18	0.17	0.15	0.13	0.17	0.15	0.21	0.20	0.19	0.20	53.6%
Togo	0.10	0.08	0.07	0.06	0.10	0.10	0.13	0.12	0.10	0.13	0.13	29.5%
Tunisia	0.25	0.24	0.29	0.29	0.32	0.31	0.30	0.26	0.25	0.24	0.23	-28.1%
Zambia	0.55	0.63	0.47	0.39	0.33	0.28	0.20	0.19	0.12	0.13	0.13	-62.0%
Zimbabwe	0.49	0.42	0.43	0.42	0.56	0.49	0.40	0.43	0.42	0.46	0.44	-21.6%
Other Africa	0.08	0.09	0.11	0.10	0.10	0.12	0.11	0.11	0.11	0.11	0.11	6.8%
Africa	**0.34**	**0.38**	**0.38**	**0.40**	**0.41**	**0.42**	**0.40**	**0.39**	**0.37**	**0.38**	**0.36**	**-11.1%**
Bangladesh	0.04	0.07	0.08	0.09	0.11	0.13	0.13	0.14	0.14	0.15	0.15	40.8%
Brunei Darussalam	0.11	0.33	0.38	0.51	0.59	0.70	0.65	0.64	0.86	0.92	1.00	70.4%
Cambodia	..	..	..	..	..	0.09	0.11	0.10	0.10	0.10	0.09	..
Chinese Taipei	0.58	0.58	0.59	0.43	0.44	0.42	0.44	0.45	0.43	0.41	0.40	-9.3%
India	0.32	0.34	0.34	0.39	0.41	0.43	0.40	0.35	0.34	0.34	0.35	-15.8%
Indonesia	0.23	0.26	0.32	0.31	0.36	0.35	0.44	0.45	0.43	0.38	0.40	11.7%
DPR of Korea	6.35	4.61	3.68	2.75	2.08	1.74	1.80	1.87	1.56	1.77	1.63	-21.6%
Malaysia	0.44	0.42	0.42	0.45	0.47	0.48	0.54	0.59	0.59	0.60	0.55	15.5%
Mongolia	..	..	..	3.29	2.97	2.72	2.09	1.64	1.60	1.49	1.62	-45.5%
Myanmar	0.28	0.22	0.21	0.19	0.15	0.19	0.15	0.14	0.11	0.10	0.08	-42.5%
Nepal	0.02	0.03	0.04	0.03	0.04	0.07	0.09	0.08	0.06	0.07	0.08	70.0%
Pakistan	0.27	0.29	0.27	0.29	0.33	0.36	0.37	0.35	0.37	0.35	0.35	5.3%
Philippines	0.20	0.20	0.17	0.16	0.17	0.23	0.22	0.19	0.16	0.16	0.16	-6.8%
Singapore	0.55	0.57	0.57	0.53	0.63	0.54	0.42	0.36	0.31	0.31	0.31	-51.5%
Sri Lanka	0.16	0.13	0.14	0.11	0.09	0.11	0.16	0.17	0.14	0.12	0.12	32.7%
Thailand	0.25	0.26	0.28	0.27	0.32	0.37	0.42	0.44	0.42	0.42	0.41	29.8%
Vietnam	0.39	0.40	0.34	0.28	0.23	0.25	0.28	0.36	0.35	0.36	0.38	69.3%
Other Asia	0.23	0.26	0.37	0.20	0.19	0.16	0.18	0.18	0.14	0.13	0.13	-33.4%
Asia	**0.34**	**0.36**	**0.37**	**0.38**	**0.39**	**0.39**	**0.39**	**0.36**	**0.35**	**0.34**	**0.35**	**-10.7%**
People's Rep. of China	1.80	1.90	1.85	1.35	1.20	0.91	0.61	0.64	0.59	0.58	0.56	-53.2%
Hong Kong, China	0.34	0.30	0.23	0.27	0.28	0.23	0.23	0.19	0.18	0.17	0.19	-30.8%
China	**1.72**	**1.80**	**1.73**	**1.28**	**1.14**	**0.88**	**0.60**	**0.63**	**0.58**	**0.57**	**0.55**	**-51.6%**

* Includes Estonia and Slovenia prior to 1990.

CO_2 emissions / GDP using purchasing power parities

kilogrammes CO_2 / US dollar using 2000 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	1.74	1.66	1.42	2.14	1.92	1.37	1.35	1.29	1.29	1.28	1.27	-33.7%
Islamic Republic of Iran	0.26	0.32	0.44	0.58	0.70	0.83	0.86	0.88	0.90	0.92	0.92	32.0%
Iraq	0.18	0.18	0.24	0.52	1.17	4.16	2.31	3.08	3.27	3.08	3.14	167.7%
Jordan	0.27	0.43	0.42	0.57	0.75	0.70	0.71	0.65	0.60	0.53	0.54	-28.0%
Kuwait	0.39	0.50	0.84	1.48	1.00	0.92	1.14	1.10	1.00	0.99	1.11	11.9%
Lebanon	0.34	0.44	0.60	0.43	0.63	0.83	0.85	0.72	0.55	0.67	0.75	19.6%
Oman	0.05	0.11	0.27	0.32	0.51	0.55	0.64	0.76	0.77	0.80	0.79	56.9%
Qatar	0.28	0.60	0.81	1.51	1.79	2.06	1.51	1.61	1.71	1.61	1.55	-13.2%
Saudi Arabia	0.16	0.14	0.43	0.68	0.74	0.84	0.90	0.98	1.02	1.04	1.10	49.2%
Syrian Arab Republic	0.54	0.48	0.50	0.70	0.87	0.69	0.75	0.84	0.93	0.90	0.76	-12.2%
United Arab Emirates	0.28	0.22	0.41	0.87	1.13	1.28	1.23	1.12	1.15	1.23	1.26	11.5%
Yemen	0.58	0.60	0.67	0.66	0.75	0.83	0.90	1.04	1.07	1.07	1.07	42.7%
Middle East	**0.25**	**0.27**	**0.43**	**0.67**	**0.81**	**0.94**	**0.96**	**1.00**	**1.02**	**1.03**	**1.05**	**29.8%**
Albania	0.73	0.67	0.87	0.74	0.63	0.21	0.28	0.31	0.24	0.22	0.15	-76.4%
Armenia *	..	..	..	..	1.86	0.59	0.46	0.31	0.28	0.29	0.27	-85.3%
Azerbaijan *	..	..	..	..	1.90	2.23	1.46	0.87	0.43	0.42	0.33	-82.6%
Belarus *	..	..	..	..	2.30	1.74	1.22	0.91	0.78	0.70	0.65	-71.6%
Bosnia and Herzegovina *	..	..	..	..	3.87	0.51	0.61	0.55	0.55	0.57	0.58	-85.1%
Bulgaria	2.60	2.19	1.88	1.55	1.33	1.08	0.84	0.70	0.68	0.62	0.56	-57.5%
Croatia *	..	..	..	..	0.39	0.39	0.37	0.35	0.34	0.31	0.31	-18.8%
Cyprus	0.57	0.60	0.53	0.43	0.43	0.47	0.46	0.44	0.43	0.42	0.42	-0.4%
Georgia *	..	..	..	..	1.32	1.14	0.49	0.32	0.33	0.28	0.35	-73.6%
Gibraltar	0.25	0.23	0.25	0.23	0.29	0.49	0.51	0.50	0.51	0.53	0.57	94.0%
Kazakhstan *	..	..	..	..	2.54	2.92	1.74	1.48	1.47	1.58	1.42	-44.0%
Kyrgyzstan *	..	..	..	..	2.03	0.79	0.61	0.57	0.62	0.55	0.64	-68.4%
Latvia *	..	..	..	..	0.74	0.62	0.36	0.27	0.24	0.24	0.25	-66.3%
Lithuania *	..	..	..	..	0.78	0.58	0.37	0.30	0.27	0.26	0.27	-65.5%
FYR of Macedonia *	..	..	..	..	0.64	0.78	0.69	0.67	0.64	0.60	0.56	-12.7%
Malta	0.59	0.38	0.34	0.36	0.54	0.42	0.30	0.37	0.35	0.32	0.32	-41.2%
Republic of Moldova *	..	..	..	..	1.90	1.72	1.15	0.99	0.87	0.76	0.66	-65.1%
Romania	1.71	1.39	1.20	1.01	1.06	0.83	0.65	0.53	0.47	0.42	0.39	-63.2%
Russian Federation *	..	..	..	..	1.47	1.71	1.51	1.13	1.00	0.96	1.00	-31.7%
Serbia *	..	..	..	..	1.82	1.33	1.29	1.15	1.03	0.98	1.40	-23.2%
Tajikistan *	..	..	..	..	0.95	0.56	0.49	0.35	0.40	0.36	0.31	-66.9%
Turkmenistan *	..	..	..	..	2.26	2.68	2.31	1.36	1.28	1.20	0.97	-57.2%
Ukraine *	..	..	..	..	1.51	1.79	1.47	1.06	0.94	0.91	0.89	-40.9%
Uzbekistan *	..	..	..	..	3.18	3.32	3.18	2.26	1.99	1.87	1.69	-46.9%
Former Soviet Union *	1.20	1.23	1.20	1.13	..	..	..	..	..	..	..	..
Former Yugoslavia *	0.87	0.84	0.73	0.99	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**1.22**	**1.24**	**1.19**	**1.12**	**1.50**	**1.60**	**1.34**	**1.02**	**0.91**	**0.87**	**0.88**	**-41.2%**
Argentina	0.32	0.30	0.29	0.30	0.35	0.30	0.31	0.31	0.29	0.28	0.27	-24.0%
Bolivia	0.22	0.26	0.31	0.35	0.38	0.41	0.37	0.40	0.45	0.46	0.46	23.4%
Brazil	0.22	0.23	0.22	0.19	0.20	0.21	0.24	0.23	0.22	0.22	0.20	1.9%
Colombia	0.26	0.23	0.21	0.21	0.20	0.21	0.20	0.16	0.14	0.14	0.14	-26.5%
Costa Rica	0.14	0.15	0.14	0.13	0.14	0.17	0.14	0.14	0.14	0.14	0.14	-0.2%
Cuba	0.58	0.55	0.58	0.41	0.45	0.43	0.41	0.30	0.26	0.24	0.24	-45.8%
Dominican Republic	0.21	0.22	0.21	0.19	0.20	0.24	0.26	0.22	0.19	0.19	0.17	-15.8%
Ecuador	0.25	0.30	0.39	0.42	0.40	0.43	0.47	0.46	0.46	0.44	0.47	19.2%
El Salvador	0.09	0.11	0.09	0.11	0.12	0.19	0.18	0.20	0.20	0.17	0.20	61.1%
Guatemala	0.14	0.15	0.15	0.12	0.11	0.16	0.19	0.22	0.21	0.19	0.24	117.3%
Haiti	0.04	0.04	0.04	0.06	0.07	0.08	0.12	0.17	0.18	0.18	0.18	176.0%
Honduras	0.14	0.15	0.13	0.12	0.13	0.19	0.20	0.25	0.25	0.23	0.22	67.0%
Jamaica	0.74	0.93	0.97	0.68	0.82	0.79	0.93	0.91	1.10	0.99	0.72	-12.8%
Netherlands Antilles	..	..	3.74	2.05	1.16	1.03	1.50	1.48	1.52	1.42	1.72	48.1%
Nicaragua	0.12	0.12	0.14	0.14	0.17	0.21	0.23	0.22	0.23	0.20	0.22	30.0%
Panama	0.36	0.40	0.30	0.23	0.22	0.28	0.25	0.25	0.23	0.21	0.24	10.2%
Paraguay	0.09	0.08	0.10	0.09	0.10	0.15	0.15	0.14	0.13	0.12	0.14	38.2%
Peru	0.24	0.23	0.23	0.20	0.23	0.22	0.22	0.19	0.18	0.18	0.20	-14.7%
Trinidad and Tobago	0.95	0.79	0.74	1.00	1.33	1.34	1.80	1.98	1.99	1.88	1.99	49.5%
Uruguay	0.29	0.28	0.23	0.16	0.16	0.16	0.16	0.16	0.15	0.19	0.18	17.0%
Venezuela	0.64	0.68	0.88	0.95	0.92	0.88	0.91	0.93	0.81	0.78	0.81	-12.4%
Other Latin America	0.50	0.67	0.50	0.43	0.46	0.46	0.44	0.44	0.41	0.44	0.43	-6.1%
Latin America	**0.30**	**0.29**	**0.29**	**0.27**	**0.28**	**0.28**	**0.30**	**0.28**	**0.27**	**0.26**	**0.26**	**-8.4%**

* 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	2007	2008	2009	% change 90-09
World *	**3.74**	**3.85**	**4.07**	**3.85**	**3.98**	**3.84**	**3.87**	**4.21**	**4.40**	**4.41**	**4.29**	**7.8%**
Annex I Parties	*..*	*..*	*..*	*..*	*11.83*	*10.91*	*11.17*	*11.25*	*11.23*	*10.91*	*10.15*	*-14.2%*
Annex II Parties	*12.20*	*12.18*	*12.64*	*11.82*	*12.26*	*12.33*	*12.90*	*12.84*	*12.63*	*12.18*	*11.31*	*-7.8%*
North America	*20.16*	*19.81*	*20.17*	*18.72*	*19.08*	*18.94*	*19.90*	*19.27*	*18.90*	*18.15*	*16.75*	*-12.2%*
Europe	*8.63*	*8.56*	*9.11*	*8.37*	*8.36*	*8.17*	*8.26*	*8.36*	*8.12*	*7.94*	*7.32*	*-12.4%*
Asia Oceania	*7.57*	*8.18*	*8.19*	*7.98*	*9.35*	*9.90*	*10.35*	*10.78*	*10.86*	*10.29*	*9.88*	*5.7%*
Annex I EIT	*..*	*..*	*..*	*..*	*12.41*	*8.82*	*8.12*	*8.48*	*8.84*	*8.84*	*8.28*	*-33.3%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*1.58*	*1.77*	*1.84*	*2.32*	*2.57*	*2.68*	*2.73*	*73.5%*
Annex I Kyoto Parties	*..*	*..*	*..*	*..*	*10.22*	*8.99*	*8.92*	*9.17*	*9.20*	*8.99*	*8.41*	*-17.8%*
Non-OECD Total **	**1.47**	**1.72**	**1.96**	**2.01**	**2.19**	**2.06**	**2.04**	**2.50**	**2.75**	**2.86**	**2.88**	**31.6%**
OECD Total ***	**10.47**	**10.48**	**10.93**	**10.24**	**10.49**	**10.51**	**10.97**	**10.94**	**10.87**	**10.51**	**9.83**	**-6.2%**
Canada	15.46	16.30	17.41	15.56	15.61	15.88	17.36	17.33	17.25	16.54	15.43	-1.1%
Chile	2.13	1.63	1.90	1.60	2.36	2.71	3.41	3.60	4.01	4.04	3.84	62.7%
Mexico	1.95	2.45	3.23	3.42	3.26	3.26	3.56	3.71	3.88	3.79	3.72	14.1%
United States	20.66	20.19	20.47	19.06	19.46	19.28	20.18	19.48	19.08	18.33	16.90	-13.2%
OECD Americas	**16.41**	**15.98**	**16.17**	**14.91**	**15.03**	**14.80**	**15.54**	**15.10**	**14.89**	**14.32**	**13.27**	**-11.7%**
Australia	10.92	12.89	14.05	13.90	15.15	15.69	17.58	18.94	18.34	18.17	17.87	18.0%
Israel	4.66	4.91	5.03	5.77	7.09	8.26	8.71	8.69	9.32	9.08	8.69	22.6%
Japan	7.23	7.66	7.52	7.25	8.61	9.14	9.33	9.55	9.72	9.04	8.58	-0.3%
Korea	1.58	2.18	3.26	3.76	5.35	7.95	9.31	9.72	10.12	10.32	10.57	97.7%
New Zealand	4.80	5.52	5.22	5.99	6.91	7.07	7.91	8.09	7.65	7.86	7.23	4.6%
OECD Asia Oceania	**6.26**	**6.85**	**7.06**	**7.00**	**8.40**	**9.41**	**10.06**	**10.46**	**10.64**	**10.26**	**10.00**	**19.0%**
Austria	6.49	6.62	7.37	7.18	7.36	7.47	7.71	9.11	8.43	8.42	7.58	3.0%
Belgium	12.09	11.82	12.75	10.34	10.83	11.37	11.58	10.75	9.95	10.36	9.33	-13.8%
Czech Republic	15.35	15.17	16.06	16.75	14.97	11.97	11.86	11.69	11.82	11.20	10.45	-30.2%
Denmark	11.09	10.37	12.21	11.83	9.81	11.09	9.49	8.91	9.41	8.82	8.47	-13.7%
Estonia	..	..	..	..	22.75	11.12	10.66	12.52	14.35	13.21	10.94	-51.9%
Finland	8.62	9.42	11.54	9.91	10.91	10.97	10.46	10.55	12.23	10.77	10.30	-5.6%
France	8.24	7.99	8.37	6.37	6.06	5.96	6.21	6.17	5.86	5.78	5.49	-9.3%
Germany	12.49	12.40	13.48	13.06	11.98	10.65	10.06	9.84	9.73	9.79	9.16	-23.5%
Greece	2.80	3.75	4.62	5.41	6.78	7.13	8.01	8.56	8.74	8.39	8.00	17.9%
Hungary	5.82	6.72	7.82	7.64	6.44	5.55	5.31	5.59	5.38	5.28	4.81	-25.4%
Iceland	6.79	7.37	7.62	6.71	7.37	7.30	7.60	7.36	7.53	6.89	6.26	-15.1%
Ireland	7.29	6.64	7.62	7.45	8.50	8.97	10.74	10.47	10.07	9.87	8.83	3.9%
Italy	5.42	5.76	6.38	6.14	7.01	7.20	7.48	7.86	7.53	7.27	6.47	-7.7%
Luxembourg	45.11	33.69	32.75	27.03	27.34	19.92	18.42	24.37	22.09	21.55	20.10	-26.5%
Netherlands	9.82	10.31	11.78	10.63	10.43	11.06	10.81	11.19	11.05	11.12	10.66	2.2%
Norway	6.02	6.01	6.85	6.54	6.67	7.53	7.47	7.86	8.07	7.87	7.73	15.9%
Poland	8.74	9.94	11.61	11.28	9.00	8.65	7.60	7.68	7.96	7.83	7.52	-16.4%
Portugal	1.66	1.97	2.41	2.44	3.93	4.81	5.81	5.95	5.27	5.01	5.00	27.2%
Slovak Republic	8.57	9.25	11.10	10.54	10.71	7.61	6.92	7.07	6.82	6.71	6.12	-42.8%
Slovenia	..	..	..	..	6.26	6.69	7.08	7.79	7.84	8.27	7.42	18.5%
Spain	3.49	4.39	4.99	4.55	5.28	5.92	7.05	7.83	7.67	6.97	6.17	17.0%
Sweden	10.18	9.69	8.84	7.04	6.16	6.52	5.95	5.58	5.07	4.84	4.48	-27.2%
Switzerland	6.14	5.73	6.14	6.34	6.09	5.88	5.90	5.95	5.56	5.69	5.44	-10.7%
Turkey	1.14	1.48	1.60	1.88	2.30	2.55	3.12	3.15	3.77	3.71	3.57	54.8%
United Kingdom	11.15	10.31	10.14	9.63	9.60	8.90	8.89	8.85	8.55	8.34	7.54	-21.4%
OECD Europe ***	**8.11**	**8.15**	**8.74**	**8.10**	**7.90**	**7.57**	**7.58**	**7.65**	**7.57**	**7.39**	**6.85**	**-13.2%**
European Union - 27	*..*	*..*	*..*	*..*	*8.57*	*8.04*	*7.93*	*8.09*	*7.94*	*7.76*	*7.15*	*-16.6%*

* 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	2007	2008	2009	% change 90-09
Non-OECD Total *	**1.47**	**1.72**	**1.96**	**2.01**	**2.19**	**2.06**	**2.04**	**2.50**	**2.75**	**2.86**	**2.88**	**31.6%**
Algeria	0.61	0.88	1.51	1.96	2.04	1.97	2.05	2.39	2.53	2.56	2.65	29.7%
Angola	0.27	0.29	0.34	0.31	0.38	0.32	0.36	0.42	0.59	0.68	0.70	85.6%
Benin	0.11	0.15	0.11	0.11	0.05	0.04	0.21	0.34	0.45	0.44	0.46	778.1%
Botswana	..	..	..	1.36	2.17	2.15	2.43	2.41	2.35	2.35	2.14	-1.2%
Cameroon	0.10	0.13	0.18	0.23	0.22	0.18	0.18	0.16	0.22	0.22	0.25	12.3%
Congo	0.42	0.43	0.44	0.40	0.29	0.19	0.19	0.27	0.33	0.41	0.45	58.2%
Dem. Rep. of Congo	0.12	0.11	0.11	0.10	0.08	0.05	0.03	0.04	0.04	0.04	0.04	-45.6%
Côte d'Ivoire	0.43	0.46	0.40	0.29	0.21	0.21	0.35	0.30	0.28	0.31	0.29	38.4%
Egypt	0.56	0.65	0.95	1.29	1.37	1.32	1.57	1.97	2.11	2.13	2.11	54.2%
Eritrea	..	..	..	..	..	0.24	0.17	0.13	0.11	0.09	0.09	..
Ethiopia	0.04	0.03	0.04	0.03	0.04	0.04	0.05	0.06	0.08	0.08	0.09	108.4%
Gabon	0.87	1.26	1.87	2.13	0.97	1.22	1.12	1.57	1.70	1.61	1.15	18.0%
Ghana	0.22	0.23	0.21	0.17	0.18	0.19	0.26	0.29	0.36	0.31	0.38	109.1%
Kenya	0.28	0.26	0.27	0.24	0.24	0.20	0.22	0.20	0.22	0.22	0.25	7.1%
Libyan Arab Jamahiriya	1.79	3.72	6.06	5.84	6.27	7.27	7.42	7.17	6.99	7.47	7.80	24.4%
Morocco	0.44	0.57	0.71	0.74	0.79	0.94	0.98	1.26	1.30	1.33	1.29	63.1%
Mozambique	0.30	0.22	0.19	0.11	0.08	0.07	0.07	0.07	0.10	0.09	0.10	22.3%
Namibia	..	..	..	..	..	1.12	1.03	1.45	1.59	1.96	1.70	..
Nigeria	0.10	0.18	0.36	0.38	0.30	0.28	0.32	0.36	0.30	0.33	0.27	-11.1%
Senegal	0.28	0.33	0.35	0.32	0.27	0.29	0.36	0.41	0.42	0.42	0.42	57.2%
South Africa	7.69	8.46	7.78	7.32	7.24	7.08	6.78	7.00	7.39	7.96	7.49	3.5%
Sudan	0.21	0.19	0.18	0.17	0.20	0.15	0.16	0.26	0.30	0.29	0.31	54.4%
United Rep. of Tanzania	0.11	0.09	0.09	0.07	0.07	0.08	0.08	0.13	0.13	0.14	0.14	113.7%
Togo	0.15	0.13	0.13	0.09	0.15	0.13	0.18	0.16	0.14	0.17	0.17	17.2%
Tunisia	0.71	0.85	1.23	1.32	1.48	1.59	1.88	1.95	2.02	2.02	1.99	34.4%
Zambia	0.80	0.90	0.58	0.41	0.33	0.22	0.16	0.18	0.11	0.13	0.13	-60.2%
Zimbabwe	1.34	1.17	1.09	1.08	1.53	1.27	1.02	0.83	0.75	0.70	0.69	-54.8%
Other Africa	0.11	0.12	0.15	0.12	0.13	0.13	0.13	0.15	0.16	0.16	0.16	22.8%
Africa	**0.71**	**0.80**	**0.85**	**0.86**	**0.86**	**0.83**	**0.84**	**0.89**	**0.92**	**0.95**	**0.92**	**7.4%**
Bangladesh	0.04	0.06	0.08	0.09	0.12	0.16	0.18	0.24	0.27	0.29	0.31	166.2%
Brunei Darussalam	2.93	8.74	13.64	13.16	13.08	15.94	13.96	13.76	18.53	19.11	20.30	55.2%
Cambodia	..	..	..	..	..	0.12	0.19	0.27	0.31	0.32	0.29	..
Chinese Taipei	2.08	2.63	4.04	3.71	5.64	7.35	9.80	11.41	11.91	11.40	10.89	93.1%
India	0.36	0.39	0.41	0.54	0.69	0.83	0.96	1.06	1.21	1.26	1.37	100.2%
Indonesia	0.21	0.29	0.47	0.54	0.80	1.06	1.29	1.53	1.63	1.51	1.64	104.1%
DPR of Korea	4.61	4.77	6.12	6.75	5.66	3.45	3.01	3.16	2.63	2.91	2.77	-51.1%
Malaysia	1.14	1.31	1.76	2.13	2.70	3.81	4.77	5.96	6.45	6.73	5.98	121.2%
Mongolia	..	..	..	6.08	5.71	4.43	3.69	3.72	4.25	4.24	4.49	-21.4%
Myanmar	0.17	0.13	0.15	0.15	0.10	0.15	0.17	0.28	0.25	0.24	0.20	108.0%
Nepal	0.02	0.02	0.03	0.03	0.05	0.08	0.13	0.11	0.09	0.10	0.12	150.5%
Pakistan	0.27	0.29	0.32	0.41	0.54	0.65	0.70	0.75	0.85	0.80	0.81	48.7%
Philippines	0.61	0.69	0.69	0.52	0.61	0.82	0.87	0.83	0.78	0.79	0.77	25.6%
Singapore	2.82	3.71	5.25	5.94	9.45	10.65	9.99	10.34	9.94	9.52	8.99	-4.9%
Sri Lanka	0.22	0.20	0.25	0.22	0.22	0.31	0.57	0.68	0.65	0.61	0.62	185.1%
Thailand	0.42	0.49	0.70	0.79	1.41	2.33	2.60	3.32	3.46	3.53	3.36	137.9%
Vietnam	0.37	0.35	0.28	0.29	0.26	0.38	0.57	0.97	1.09	1.18	1.31	403.0%
Other Asia	0.29	0.32	0.50	0.32	0.29	0.28	0.30	0.37	0.33	0.32	0.33	12.4%
Asia	**0.41**	**0.46**	**0.54**	**0.63**	**0.79**	**0.95**	**1.10**	**1.25**	**1.36**	**1.37**	**1.43**	**80.9%**
People's Rep. of China	0.95	1.15	1.43	1.62	1.95	2.48	2.41	3.88	4.57	4.91	5.13	163.4%
Hong Kong, China	2.27	2.42	2.87	4.03	5.75	5.84	5.98	5.98	6.27	6.05	6.51	13.2%
China	**0.96**	**1.15**	**1.44**	**1.63**	**1.97**	**2.50**	**2.42**	**3.89**	**4.58**	**4.92**	**5.14**	**161.2%**

* Includes Estonia and Slovenia prior to 1990.

CO_2 emissions / population

tonnes CO_2 / capita

	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
Bahrain	13.21	19.53	21.31	25.16	23.73	20.11	21.74	24.93	27.88	28.80	28.86	21.6%
Islamic Republic of Iran	1.49	2.30	2.37	3.12	3.30	4.28	4.95	6.18	7.05	7.26	7.31	121.6%
Iraq	1.26	1.40	2.44	2.79	2.91	3.67	3.61	3.20	3.27	3.29	3.41	17.1%
Jordan	0.83	1.15	1.93	2.78	2.90	2.89	2.98	3.31	3.38	3.17	3.23	11.2%
Kuwait	17.64	14.97	19.33	21.67	13.51	20.04	22.43	27.66	26.33	27.08	28.88	113.7%
Lebanon	1.81	2.06	2.36	2.26	1.84	3.68	3.74	3.55	2.89	3.77	4.58	149.4%
Oman	0.33	0.78	1.88	3.57	5.39	6.63	8.23	10.63	11.91	13.04	13.69	154.2%
Qatar	18.26	28.64	33.61	33.65	30.21	35.71	38.91	42.46	43.33	42.01	40.12	32.8%
Saudi Arabia	2.13	3.10	10.32	9.53	9.77	11.35	12.23	14.39	14.92	15.58	16.17	65.4%
Syrian Arab Republic	0.91	1.20	1.46	1.95	2.21	2.25	2.41	2.89	3.31	3.29	2.84	28.1%
United Arab Emirates	9.20	9.22	18.83	25.22	27.77	28.62	26.51	26.44	29.41	32.19	31.97	15.1%
Yemen	0.18	0.24	0.41	0.47	0.52	0.60	0.73	0.90	0.93	0.93	0.94	80.2%
Middle East	**1.61**	**2.22**	**3.56**	**4.22**	**4.39**	**5.27**	**5.80**	**6.77**	**7.35**	**7.64**	**7.76**	**76.6%**
Albania	1.78	1.85	2.84	2.43	1.90	0.59	1.04	1.47	1.28	1.23	0.85	-55.0%
Armenia *	..	..	..	..	5.77	1.06	1.11	1.34	1.56	1.71	1.38	-76.1%
Azerbaijan *	..	..	..	..	8.97	4.11	3.62	3.88	3.15	3.39	2.87	-68.0%
Belarus *	..	..	..	..	12.23	6.03	5.86	6.35	6.60	6.63	6.29	-48.5%
Bosnia and Herzegovina *	..	..	..	..	5.49	1.01	3.70	4.14	4.75	5.17	5.07	-7.7%
Bulgaria	7.36	8.28	9.46	9.07	8.60	6.34	5.21	5.94	6.59	6.43	5.56	-35.3%
Croatia *	..	..	..	..	4.51	3.39	3.99	4.67	4.97	4.73	4.46	-1.2%
Cyprus	2.86	3.39	5.07	5.13	6.62	8.03	9.04	9.23	9.34	9.49	9.26	39.9%
Georgia *	..	..	..	..	6.10	1.59	0.97	0.97	1.26	1.11	1.33	-78.2%
Gibraltar	3.51	3.37	3.99	4.03	6.13	11.97	14.46	15.59	16.21	16.74	17.26	181.5%
Kazakhstan *	..	..	..	..	14.46	10.56	7.56	10.34	12.10	13.26	11.93	-17.5%
Kyrgyzstan *	..	..	..	..	5.08	0.96	0.91	0.98	1.17	1.12	1.33	-73.9%
Latvia *	..	..	..	..	6.98	3.52	2.88	3.29	3.66	3.49	2.99	-57.1%
Lithuania *	..	..	..	..	8.95	3.90	3.20	3.96	4.28	4.24	3.71	-58.6%
FYR of Macedonia *	..	..	..	..	4.46	4.17	4.17	4.31	4.50	4.40	4.08	-8.5%
Malta	2.00	1.97	2.71	3.34	6.35	6.22	5.40	6.68	6.65	6.21	5.89	-7.2%
Republic of Moldova *	..	..	..	..	6.92	2.52	1.58	2.09	2.05	1.95	1.59	-76.9%
Romania	5.61	6.62	7.93	7.63	7.20	5.16	3.84	4.25	4.33	4.28	3.65	-49.3%
Russian Federation *	..	..	..	..	14.75	10.61	10.25	10.57	11.10	11.22	10.80	-26.8%
Serbia *	..	..	..	..	6.01	4.24	4.24	6.59	6.75	6.78	6.32	5.2%
Tajikistan *	..	..	..	..	2.06	0.42	0.35	0.36	0.47	0.45	0.40	-80.6%
Turkmenistan *	..	..	..	..	12.71	8.22	8.04	9.50	10.89	11.06	9.54	-24.9%
Ukraine *	..	..	..	..	13.26	7.63	5.94	6.49	6.75	6.69	5.57	-58.0%
Uzbekistan *	..	..	..	..	5.84	4.46	4.77	4.14	4.18	4.21	4.05	-30.7%
Former Soviet Union *	8.15	10.09	11.49	11.51	..	..	..	..	..	..	..	..
Former Yugoslavia *	3.11	3.58	4.03	5.42	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia *	**7.54**	**9.27**	**10.59**	**10.68**	**11.61**	**7.72**	**7.06**	**7.52**	**7.91**	**8.01**	**7.46**	**-35.8%**
Argentina	3.41	3.30	3.41	2.93	3.09	3.40	3.76	3.90	4.22	4.36	4.14	33.9%
Bolivia	0.50	0.68	0.78	0.72	0.77	0.93	0.88	1.05	1.20	1.27	1.31	69.1%
Brazil	0.93	1.27	1.48	1.23	1.30	1.49	1.74	1.73	1.80	1.88	1.74	34.2%
Colombia	1.20	1.18	1.26	1.28	1.35	1.59	1.48	1.32	1.29	1.29	1.33	-2.0%
Costa Rica	0.67	0.85	0.93	0.74	0.85	1.26	1.14	1.25	1.48	1.46	1.37	61.7%
Cuba	2.35	2.51	2.99	3.11	3.18	2.07	2.39	2.20	2.31	2.25	2.40	-24.7%
Dominican Republic	0.73	0.98	1.06	0.93	1.04	1.41	1.97	1.83	1.92	1.93	1.79	72.3%
Ecuador	0.60	0.90	1.33	1.33	1.28	1.43	1.51	1.80	1.93	1.97	2.09	62.8%
El Salvador	0.37	0.48	0.38	0.35	0.42	0.81	0.88	1.06	1.13	1.01	1.10	163.1%
Guatemala	0.41	0.49	0.60	0.41	0.37	0.60	0.78	0.90	0.94	0.82	1.03	179.2%
Haiti	0.08	0.08	0.11	0.12	0.13	0.12	0.16	0.21	0.24	0.24	0.24	77.7%
Honduras	0.40	0.42	0.46	0.39	0.44	0.63	0.71	1.01	1.09	1.04	0.96	119.7%
Jamaica	2.91	3.68	3.05	2.01	3.01	3.37	3.76	3.94	4.95	4.41	3.06	1.9%
Netherlands Antilles	89.64	61.14	50.26	25.01	14.37	14.77	22.38	22.60	23.33	21.90	25.10	74.7%
Nicaragua	0.60	0.66	0.55	0.49	0.44	0.54	0.69	0.74	0.78	0.73	0.73	66.0%
Panama	1.62	1.84	1.46	1.17	0.98	1.48	1.53	1.69	1.85	1.83	2.10	114.9%
Paraguay	0.22	0.25	0.42	0.38	0.45	0.72	0.61	0.58	0.60	0.59	0.64	42.0%
Peru	1.15	1.22	1.19	0.93	0.88	0.99	1.02	1.04	1.08	1.24	1.32	49.9%
Trinidad and Tobago	6.26	5.76	7.33	8.17	9.33	9.70	16.28	25.72	30.56	29.41	30.00	221.6%
Uruguay	1.85	1.93	1.91	1.04	1.21	1.41	1.59	1.60	1.75	2.31	2.31	91.7%
Venezuela	4.70	4.93	6.12	5.45	5.32	5.37	5.21	5.57	5.58	5.49	5.45	2.3%
Other Latin America	3.00	4.06	3.69	3.19	4.15	4.20	4.52	4.76	4.87	4.87	4.47	7.7%
Latin America	**1.53**	**1.71**	**1.90**	**1.64**	**1.69**	**1.85**	**2.03**	**2.09**	**2.19**	**2.23**	**2.16**	**27.6%**

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

Per capita emissions by sector in 2009 *

kg 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 * **	**4 289**	**1 749**	**217**	**868**	**968**	**721**	**487**	**277**
Annex I Parties	*10 154*	*4 154*	*511*	*1 443*	*2 606*	*2 261*	*1 440*	*842*
Annex II Parties	*11 311*	*4 356*	*599*	*1 507*	*3 218*	*2 849*	*1 632*	*902*
North America	*16 751*	*6 718*	*946*	*1 864*	*5 193*	*4 484*	*2 029*	*1 063*
Europe	*7 321*	*2 404*	*376*	*1 055*	*2 010*	*1 874*	*1 476*	*946*
Asia Oceania	*9 879*	*4 320*	*421*	*1 916*	*2 055*	*1 823*	*1 167*	*429*
Annex I EIT	*8 275*	*4 208*	*335*	*1 463*	*1 256*	*919*	*1 014*	*736*
Non-Annex I Parties	*2 732*	*1 187*	*148*	*734*	*400*	*361*	*264*	*145*
Annex I Kyoto Parties	*8 405*	*3 364*	*431*	*1 404*	*1 877*	*1 627*	*1 330*	*795*
Non-OECD Total	**2 879**	**1 283**	**146**	**767**	**400**	**346**	**284**	**165**
OECD Total	**9 833**	**3 857**	**536**	**1 328**	**2 706**	**2 417**	**1 406**	**785**
Canada	15 434	3 031	1 946	2 718	4 670	3 768	3 070	1 142
Chile	3 836	1 337	195	785	1 211	1 060	307	202
Mexico	3 720	1 105	470	482	1 371	1 336	292	172
United States	16 895	7 123	837	1 771	5 250	4 562	1 915	1 055
OECD Americas	**13 274**	**5 227**	**809**	**1 506**	**4 166**	**3 633**	**1 566**	**826**
Australia	17 867	10 069	983	2 252	3 730	3 172	834	360
Israel	8 687	5 137	295	162	2 286	2 286	806	364
Japan	8 583	3 412	325	1 875	1 729	1 557	1 242	450
Korea	10 574	5 152	653	1 819	1 747	1 640	1 203	643
New Zealand	7 228	1 687	387	1 404	3 112	2 785	637	135
OECD Asia Oceania	**9 998**	**4 542**	**470**	**1 832**	**1 992**	**1 797**	**1 162**	**476**
Austria	7 578	1 656	723	1 442	2 595	2 474	1 162	859
Belgium	9 333	1 993	453	2 019	2 450	2 389	2 418	1 581
Czech Republic	10 454	5 651	235	1 801	1 680	1 608	1 087	657
Denmark	8 472	3 984	428	696	2 373	2 167	991	525
Estonia	10 942	8 219	90	637	1 573	1 469	424	127
Finland	10 303	4 738	655	1 680	2 288	2 096	943	402
France	5 494	811	248	893	1 921	1 830	1 620	913
Germany	9 163	3 771	308	1 245	1 816	1 722	2 023	1 390
Greece	7 996	3 948	289	647	2 180	1 844	931	651
Hungary	4 805	1 527	155	554	1 273	1 245	1 296	825
Iceland	6 256	26	-	1 910	2 686	2 436	1 634	29
Ireland	8 831	2 904	102	868	2 711	2 635	2 247	1 546
Italy	6 467	2 173	272	833	1 840	1 736	1 348	836
Luxembourg	20 098	2 499	-	1 768	12 276	12 238	3 555	2 505
Netherlands	10 656	3 461	632	2 361	1 986	1 938	2 217	1 067
Norway	7 730	488	2 369	1 376	2 795	2 049	702	105
Poland	7 516	3 991	185	856	1 167	1 132	1 317	832
Portugal	4 998	1 868	227	677	1 773	1 663	453	189
Slovak Republic	6 124	1 541	838	1 397	1 103	923	1 245	564
Slovenia	7 421	2 929	4	1 005	2 478	2 458	1 005	558
Spain	6 170	1 893	381	1 029	2 188	1 928	678	390
Sweden	4 485	875	287	734	2 271	2 172	319	44
Switzerland	5 438	367	133	745	2 187	2 153	2 006	1 336
Turkey	3 565	1 382	156	568	623	543	836	532
United Kingdom	7 538	2 828	495	823	1 936	1 789	1 456	1 152
OECD Europe	**6 854**	**2 434**	**330**	**985**	**1 742**	**1 624**	**1 364**	**869**
European Union - 27	*7 148*	*2 610*	*331*	*1 018*	*1 824*	*1 710*	*1 366*	*872*

* 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 as in the table on pages 103-105.

** 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 2009

kg 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	**2 879**	**1 283**	**146**	**767**	**400**	**346**	**284**	**165**
Algeria	2 651	706	307	337	854	796	448	448
Angola	698	54	15	160	293	254	177	63
Benin	465	10	-	17	312	311	126	126
Botswana	2 145	470	-	599	974	954	102	38
Cameroon	245	71	8	20	128	122	18	18
Congo	451	29	-	15	380	315	27	27
Dem. Rep. of Congo	43	-	-	15	10	10	18	5
Côte d'Ivoire	289	119	8	24	69	57	70	24
Egypt	2 113	780	150	429	491	453	264	182
Eritrea	93	39	-	5	22	22	26	10
Ethiopia	90	6	-	22	51	51	11	11
Gabon	1 149	364	21	412	237	237	116	55
Ghana	379	70	2	61	202	186	44	28
Kenya	252	68	13	33	98	94	40	28
Libyan Arab Jamahiriya	7 796	4 132	463	999	1 876	1 875	326	326
Morocco	1 291	427	17	215	358	358	274	125
Mozambique	98	-	1	20	66	60	11	5
Namibia	1 698	190	-	132	949	851	427	-
Nigeria	266	53	29	20	152	152	12	12
Senegal	420	147	2	73	154	147	43	29
South Africa	7 489	4 634	81	1 038	1 011	947	725	409
Sudan	314	57	12	47	177	176	21	16
United Rep. of Tanzania	143	30	-	18	79	79	16	15
Togo	170	4	-	12	132	132	21	21
Tunisia	1 991	809	13	338	436	436	394	166
Zambia	131	3	3	64	42	29	19	-
Zimbabwe	692	389	4	111	86	80	101	7
Other Africa	155	42	-	29	63	55	21	9
Africa	**919**	**402**	**37**	**141**	**230**	**218**	**110**	**70**
Bangladesh	312	137	1	73	46	35	55	33
Brunei Darussalam	20 302	6 820	4 650	5 517	2 776	2 776	538	270
Cambodia	288	94	-	11	75	74	108	84
Chinese Taipei	10 886	6 255	507	2 202	1 493	1 446	429	206
India	1 373	741	43	300	130	116	159	66
Indonesia	1 636	504	119	475	403	359	136	81
DPR of Korea	2 769	440	1	1 754	39	39	535	3
Malaysia	5 976	2 481	593	1 199	1 503	1 475	200	72
Mongolia	4 487	2 777	9	456	529	397	716	337
Myanmar	203	23	11	54	54	52	61	4
Nepal	116	-	-	27	59	59	30	12
Pakistan	807	257	10	255	189	184	96	77
Philippines	767	322	4	121	256	228	63	29
Singapore	8 988	4 348	1 685	1 172	1 688	1 637	94	84
Sri Lanka	623	224	8	70	275	242	46	16
Thailand	3 362	1 124	99	1 077	806	799	255	68
Vietnam	1 307	366	17	459	332	317	133	75
Other Asia	327	124	-	72	80	53	52	11
Asia	**1 428**	**653**	**57**	**352**	**223**	**206**	**143**	**63**
People's Rep. of China	5 131	2 475	198	1 709	353	271	396	217
Hong Kong, China	6 510	4 219	-	1 065	863	863	363	116
China	**5 138**	**2 484**	**197**	**1 706**	**356**	**274**	**395**	**216**

Per capita emissions by sector in 2009

kg 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*
Bahrain	28 856	10 134	5 518	8 701	4 214	4 166	289	289
Islamic Rep. of Iran	7 314	1 756	438	1 673	1 563	1 552	1 885	1 440
Iraq	3 412	1 089	160	766	1 072	1 072	325	325
Jordan	3 227	1 392	112	443	853	849	426	262
Kuwait	28 881	16 557	3 742	4 250	4 153	4 153	179	179
Lebanon	4 577	2 336	-	306	1 194	1 194	741	741
Oman	13 690	5 278	2 592	2 824	1 985	1 985	1 011	546
Qatar	40 117	8 694	13 566	13 193	4 491	4 491	174	174
Saudi Arabia	16 166	6 474	2 526	3 044	3 961	3 881	160	160
Syrian Arab Republic	2 835	1 316	94	492	738	708	196	118
United Arab Emirates	31 973	12 432	422	13 500	5 514	5 514	105	105
Yemen	941	180	169	108	218	218	266	93
Middle East	**7 758**	**2 636**	**774**	**1 777**	**1 689**	**1 671**	**880**	**673**
Albania	855	19	40	222	428	379	147	39
Armenia	1 381	208	-	316	487	487	370	340
Azerbaijan	2 872	1 174	268	145	517	461	767	648
Belarus	6 291	3 217	255	1 198	587	431	1 034	731
Bosnia and Herzegovina	5 067	3 545	301	177	713	701	331	96
Bulgaria	5 564	3 633	135	544	1 045	985	207	96
Croatia	4 460	1 018	458	823	1 389	1 290	771	466
Cyprus	9 261	4 827	-	964	2 682	2 678	788	394
Georgia	1 333	273	42	188	515	476	314	184
Gibraltar	17 263	4 437	-	2 256	10 569	10 569	-	-
Kazakhstan	11 930	5 660	1 897	1 807	769	688	1 797	457
Kyrgyzstan	1 326	212	-	358	479	479	278	-
Latvia	2 994	874	-	393	1 214	1 097	513	178
Lithuania	3 709	925	575	632	1 235	1 150	343	172
FYR of Macedonia	4 083	2 873	2	399	613	601	197	70
Malta	5 893	4 441	-	224	1 103	1 103	125	118
Republic of Moldova	1 594	729	1	59	240	222	565	481
Romania	3 648	1 632	239	652	688	645	437	274
Russian Federation	10 800	5 727	465	1 933	1 595	964	1 080	826
Serbia	6 320	4 367	79	615	877	776	382	195
Tajikistan	398	72	-	-	38	38	288	-
Turkmenistan	9 544	2 800	1 440	288	769	482	4 247	-
Ukraine	5 573	2 427	165	1 448	569	446	964	843
Uzbekistan	4 047	1 290	139	729	330	193	1 558	1 170
Non-OECD Europe and Eurasia	**7 456**	**3 705**	**394**	**1 315**	**1 032**	**712**	**1 009**	**669**
Argentina	4 137	1 075	420	901	940	872	800	475
Bolivia	1 305	244	130	156	628	589	147	112
Brazil	1 744	155	145	495	759	682	190	85
Colombia	1 326	220	151	354	438	412	163	88
Costa Rica	1 370	81	14	220	953	951	102	28
Cuba	2 396	1 188	9	847	133	120	219	80
Dominican Republic	1 791	877	4	154	520	414	235	215
Ecuador	2 090	366	83	343	1 055	947	243	213
El Salvador	1 102	299	8	292	415	415	88	85
Guatemala	1 034	225	5	332	431	431	40	39
Haiti	236	39	-	47	129	70	21	21
Honduras	957	303	-	147	403	403	104	22
Jamaica	3 064	1 116	-	106	1 094	543	748	45
Netherlands Antilles	25 100	4 634	10 267	3 373	5 961	5 961	865	865
Nicaragua	735	304	8	96	268	268	59	15
Panama	2 100	608	-	470	876	465	147	85
Paraguay	639	-	-	16	594	586	30	30
Peru	1 322	286	96	324	500	479	115	62
Trinidad and Tobago	30 001	4 152	5 242	18 003	2 081	2 081	521	507
Uruguay	2 315	670	192	258	846	841	348	132
Venezuela	5 446	864	1 052	1 447	1 820	1 819	263	233
Other Latin America	4 466	2 079	2	324	1 310	1 159	751	306
Latin America	**2 161**	**392**	**215**	**565**	**751**	**692**	**238**	**133**

Per capita emissions with electricity and heat allocated to consuming sectors * in 2009

kg CO_2 / capita

	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 * **	**4 289**	**297**	**1 547**	**991**	**721**	**1 454**	**774**
Annex I Parties	*10 154*	*737*	*2 703*	*2 676*	*2 261*	*4 038*	*2 184*
Annex II Parties	*11 311*	*735*	*2 756*	*3 268*	*2 849*	*4 552*	*2 320*
North America	*16 751*	*1 144*	*3 458*	*5 210*	*4 484*	*6 938*	*3 423*
Europe	*7 321*	*467*	*1 890*	*2 061*	*1 874*	*2 903*	*1 671*
Asia Oceania	*9 879*	*513*	*3 255*	*2 135*	*1 823*	*3 977*	*1 700*
Annex I EIT	*8 275*	*840*	*2 890*	*1 393*	*919*	*3 153*	*2 090*
Non-Annex I Parties	*2 732*	*189*	*1 333*	*409*	*361*	*801*	*418*
Annex I Kyoto Parties	*8 405*	*661*	*2 538*	*1 959*	*1 627*	*3 248*	*1 834*
Non-OECD Total	**2 879**	**222**	**1 363**	**419**	**346**	**876**	**492**
OECD Total	**9 833**	**661**	**2 510**	**2 749**	**2 417**	**3 913**	**1 999**
Canada	15 434	2 100	3 706	4 691	3 768	4 937	2 092
Chile	3 836	207	1 683	1 221	1 060	725	420
Mexico	3 720	509	1 055	1 377	1 336	779	433
United States	16 895	1 026	3 376	5 265	4 562	7 229	3 593
OECD Americas	**13 274**	**963**	**2 840**	**4 181**	**3 633**	**5 291**	**2 624**
Australia	17 867	1 474	6 459	3 858	3 172	6 076	3 019
Israel	8 687	295	1 353	2 286	2 286	4 753	2 073
Japan	8 583	377	2 840	1 798	1 557	3 568	1 473
Korea	10 574	752	4 369	1 771	1 640	3 682	1 478
New Zealand	7 228	408	1 991	3 116	2 785	1 712	699
OECD Asia Oceania	**9 998**	**562**	**3 456**	**2 056**	**1 797**	**3 924**	**1 656**
Austria	7 578	751	2 045	2 665	2 474	2 116	1 356
Belgium	9 333	551	2 879	2 490	2 389	3 413	2 041
Czech Republic	10 454	685	3 644	1 817	1 608	4 308	2 477
Denmark	8 472	500	1 355	2 399	2 167	4 218	2 356
Estonia	10 942	442	2 186	1 615	1 469	6 699	3 763
Finland	10 303	707	3 715	2 315	2 096	3 567	1 909
France	5 494	295	1 082	1 942	1 830	2 174	1 191
Germany	9 163	414	2 701	1 911	1 722	4 137	2 512
Greece	7 996	435	1 615	2 196	1 844	3 750	1 937
Hungary	4 805	254	940	1 311	1 245	2 300	1 370
Iceland	6 256	-	1 929	2 686	2 436	1 641	33
Ireland	8 831	114	1 832	2 716	2 635	4 170	2 469
Italy	6 467	422	1 794	1 906	1 736	2 346	1 268
Luxembourg	20 098	-	3 041	12 321	12 238	4 736	2 856
Netherlands	10 656	904	3 566	2 027	1 938	4 158	1 746
Norway	7 730	2 391	1 558	2 798	2 049	984	264
Poland	7 516	579	1 940	1 229	1 132	3 768	2 310
Portugal	4 998	288	1 367	1 790	1 663	1 553	689
Slovak Republic	6 124	921	1 931	1 126	923	2 147	1 008
Slovenia	7 421	38	2 248	2 512	2 458	2 624	1 478
Spain	6 170	423	1 712	2 211	1 928	1 823	894
Sweden	4 485	302	1 012	2 283	2 172	889	397
Switzerland	5 438	133	864	2 205	2 153	2 236	1 452
Turkey	3 565	173	1 227	628	543	1 537	852
United Kingdom	7 538	569	1 707	2 008	1 789	3 255	2 155
OECD Europe	**6 854**	**431**	**1 829**	**1 791**	**1 624**	**2 803**	**1 608**
European Union - 27	*7 148*	*449*	*1 894*	*1 878*	*1 710*	*2 927*	*1 683*

* 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 100-102.

** 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 with electricity and heat allocated to consuming sectors in 2009

kg CO_2 / capita

	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	**2 879**	**222**	**1 363**	**419**	**346**	**876**	**492**
Algeria	2 651	319	571	868	796	894	894
Angola	698	15	177	293	254	214	100
Benin	465	-	18	312	311	135	131
Botswana	2 145	-	805	974	954	366	165
Cameroon	245	8	61	128	122	48	32
Congo	451	-	29	380	315	41	41
Dem. Rep. of Congo	43	-	15	10	10	18	5
Côte d'Ivoire	289	8	55	69	57	158	66
Egypt	2 113	150	684	491	453	788	493
Eritrea	93	-	16	22	22	54	28
Ethiopia	90	-	24	51	51	15	13
Gabon	1 149	29	509	238	237	374	241
Ghana	379	2	94	202	186	81	55
Kenya	252	13	72	98	94	68	46
Libyan Arab Jamahiriya	7 796	463	1 682	1 876	1 875	3 774	1 451
Morocco	1 291	29	373	378	358	510	262
Mozambique	98	1	20	66	60	11	5
Namibia	1 698	-	166	949	851	583	-
Nigeria	266	29	30	152	152	55	42
Senegal	420	2	110	154	147	153	84
South Africa	7 489	355	3 627	1 091	947	2 417	1 293
Sudan	314	12	53	177	176	72	47
United Rep. of Tanzania	143	1	31	79	79	31	28
Togo	170	-	13	132	132	24	23
Tunisia	1 991	13	658	454	436	867	388
Zambia	131	3	66	42	29	20	1
Zimbabwe	692	4	283	86	80	319	123
Other Africa	155	1	40	63	55	51	25
Africa	**919**	**47**	**313**	**235**	**218**	**324**	**195**
Bangladesh	312	1	150	46	35	115	77
Brunei Darussalam	20 302	4 650	6 699	2 776	2 776	6 176	2 888
Cambodia	288	-	28	75	74	184	128
Chinese Taipei	10 886	625	5 541	1 527	1 446	3 194	1 517
India	1 373	43	644	143	116	543	220
Indonesia	1 636	119	648	403	359	467	286
DPR of Korea	2 769	1	1 974	39	39	755	3
Malaysia	5 976	593	2 312	1 507	1 475	1 564	608
Mongolia	4 487	9	1 408	558	397	2 512	1 474
Myanmar	203	11	63	54	52	75	13
Nepal	116	-	27	59	59	31	13
Pakistan	807	10	324	189	184	285	196
Philippines	767	4	229	257	228	276	140
Singapore	8 988	1 907	2 511	1 741	1 637	2 829	895
Sri Lanka	623	8	147	275	242	193	106
Thailand	3 362	99	1 548	806	799	908	320
Vietnam	1 307	17	649	335	317	306	214
Other Asia	327	7	127	80	53	113	39
Asia	**1 428**	**60**	**642**	**229**	**206**	**497**	**229**
People's Rep. of China	5 131	348	3 250	374	271	1 159	640
Hong Kong, China	6 510	-	1 380	863	863	4 267	1 217
China	**5 138**	**346**	**3 238**	**376**	**274**	**1 178**	**643**

Per capita emissions with electricity and heat allocated to consuming sectors in 2009

kg CO_2 / capita

	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*
Bahrain	28 856	5 518	9 933	4 214	4 166	9 190	5 669
Islamic Rep. of Iran	7 314	455	2 257	1 566	1 552	3 036	2 005
Iraq	3 412	160	947	1 072	1 072	1 233	765
Jordan	3 227	124	773	853	849	1 477	818
Kuwait	28 881	6 063	4 250	4 153	4 153	14 415	9 461
Lebanon	4 577	-	919	1 194	1 194	2 464	1 632
Oman	13 690	2 592	3 430	1 985	1 985	5 683	3 326
Qatar	40 117	13 566	15 521	4 491	4 491	6 539	2 283
Saudi Arabia	16 166	2 861	3 856	3 961	3 881	5 487	3 534
Syrian Arab Republic	2 835	94	989	738	708	1 014	790
United Arab Emirates	31 973	422	14 988	5 514	5 514	11 049	5 411
Yemen	941	169	108	218	218	446	209
Middle East	**7 758**	**849**	**2 296**	**1 691**	**1 671**	**2 922**	**1 822**
Albania	855	41	226	428	379	160	48
Armenia	1 381	-	366	493	487	523	420
Azerbaijan	2 872	403	448	546	461	1 474	1 061
Belarus	6 291	488	2 258	641	431	2 903	1 817
Bosnia and Herzegovina	5 067	408	1 174	744	701	2 742	1 894
Bulgaria	5 564	468	1 743	1 086	985	2 268	1 365
Croatia	4 460	479	1 046	1 404	1 290	1 531	914
Cyprus	9 261	7	1 563	2 682	2 678	5 008	2 141
Georgia	1 333	69	249	540	476	474	302
Gibraltar	17 263	-	2 256	10 569	10 569	4 437	-
Kazakhstan	11 930	1 897	5 023	972	688	4 037	1 548
Kyrgyzstan	1 326	5	441	480	479	400	30
Latvia	2 994	-	506	1 223	1 097	1 265	641
Lithuania	3 709	617	839	1 238	1 150	1 015	586
FYR of Macedonia	4 083	130	1 163	623	601	2 168	1 421
Malta	5 893	-	1 548	1 103	1 103	3 242	1 600
Republic of Moldova	1 594	25	203	246	222	1 120	842
Romania	3 648	403	1 195	724	645	1 326	915
Russian Federation	10 800	1 260	3 863	1 801	964	3 877	2 606
Serbia	6 320	159	1 813	938	776	3 410	2 466
Tajikistan	398	-	30	38	38	329	15
Turkmenistan	9 544	1 799	1 002	820	482	5 924	416
Ukraine	5 573	293	2 632	672	446	1 975	1 604
Uzbekistan	4 047	166	1 018	355	193	2 508	1 307
Non-OECD Europe and Eurasia	**7 456**	**812**	**2 621**	**1 156**	**712**	**2 866**	**1 813**
Argentina	4 137	420	1 361	947	872	1 408	802
Bolivia	1 305	130	235	628	589	312	200
Brazil	1 744	145	566	759	682	273	124
Colombia	1 326	151	422	439	412	315	179
Costa Rica	1 370	14	237	953	951	166	60
Cuba	2 396	9	1 155	155	120	1 077	614
Dominican Republic	1 791	4	512	520	414	755	504
Ecuador	2 090	83	450	1 055	947	502	346
El Salvador	1 102	8	426	415	415	253	184
Guatemala	1 034	5	423	431	431	174	113
Haiti	236	-	60	129	70	47	35
Honduras	957	-	221	403	403	333	151
Jamaica	3 064	-	662	1 094	543	1 308	286
Netherlands Antilles	25 100	10 267	5 920	5 961	5 961	2 952	865
Nicaragua	735	8	163	268	268	296	112
Panama	2 100	-	530	876	465	695	276
Paraguay	639	-	16	594	586	30	30
Peru	1 322	96	474	500	479	252	132
Trinidad and Tobago	30 001	5 242	20 449	2 081	2 081	2 227	1 807
Uruguay	2 315	192	449	846	841	828	389
Venezuela	5 446	1 074	1 818	1 823	1 819	730	472
Other Latin America	4 466	2	591	1 310	1 159	2 562	567
Latin America	**2 161**	**216**	**728**	**752**	**692**	**465**	**243**

Electricity and heat output *

terawatt hours

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	% change 90-09
World	**..**	**17 081.7**	**18 788.2**	**19 560.8**	**20 301.1**	**21 135.0**	**22 042.9**	**22 900.8**	**23 574.8**	**23 853.1**	**23 653.7**	**..**
Annex I Parties	*..*	*12 742.0*	*13 148.1*	*13 270.7*	*13 495.3*	*13 726.0*	*14 010.0*	*14 226.1*	*14 195.7*	*14 137.1*	*13 534.2*	*..*
Annex II Parties	*..*	*8 194.5*	*9 168.1*	*9 298.0*	*9 469.3*	*9 697.5*	*9 942.3*	*10 054.7*	*10 098.3*	*10 089.7*	*9 686.2*	*..*
North America	*..*	*4 241.0*	*4 731.4*	*4 741.2*	*4 757.6*	*4 825.0*	*4 975.7*	*5 051.9*	*5 129.0*	*5 141.6*	*4 921.4*	*..*
Europe	*2 547.0*	*2 779.4*	*3 131.6*	*3 232.5*	*3 399.1*	*3 517.6*	*3 580.8*	*3 609.9*	*3 541.7*	*3 564.4*	*3 412.5*	*34.0%*
Asia Oceania	*1 025.5*	*1 174.1*	*1 305.1*	*1 324.4*	*1 312.6*	*1 354.9*	*1 385.9*	*1 392.9*	*1 427.7*	*1 383.8*	*1 352.3*	*31.9%*
Annex I EIT	*..*	*4 459.6*	*3 848.7*	*3 836.4*	*3 878.9*	*3 870.4*	*3 893.6*	*3 981.7*	*3 891.5*	*3 834.8*	*3 638.7*	*..*
Non-Annex I Parties	*..*	*4 339.7*	*5 640.1*	*6 290.2*	*6 805.8*	*7 409.0*	*8 032.8*	*8 674.8*	*9 379.1*	*9 716.1*	*10 119.5*	*..*
Annex I Kyoto Parties	*..*	*8 875.3*	*8 797.4*	*8 899.2*	*9 084.4*	*9 243.1*	*9 386.5*	*9 498.1*	*9 405.6*	*9 326.2*	*8 912.1*	*..*
Non-OECD Total	**..**	**7 914.0**	**8 399.3**	**8 965.0**	**9 488.7**	**10 027.6**	**10 636.9**	**11 340.7**	**11 918.4**	**12 181.9**	**12 402.8**	**..**
OECD Total	**..**	**9 167.6**	**10 388.9**	**10 595.8**	**10 812.4**	**11 107.4**	**11 406.0**	**11 560.1**	**11 656.5**	**11 671.2**	**11 250.9**	**..**
Canada	490.0	568.8	615.6	611.7	601.0	611.3	637.4	626.4	651.8	650.3	611.4	24.8%
Chile	18.4	28.0	40.1	43.7	46.8	51.2	52.5	55.3	58.5	59.7	60.7	230.5%
Mexico	115.8	152.2	204.2	215.9	213.7	232.6	243.8	249.5	257.2	261.9	261.0	125.3%
United States	..	3 672.2	4 115.8	4 129.5	4 156.5	4 213.7	4 338.3	4 425.5	4 477.2	4 491.2	4 310.0	..
OECD Americas	**..**	**4 421.3**	**4 975.7**	**5 000.7**	**5 018.1**	**5 108.8**	**5 272.0**	**5 356.7**	**5 444.8**	**5 463.1**	**5 243.1**	**..**
Australia	154.9	172.8	209.9	227.4	226.3	236.3	245.2	247.0	250.8	257.1	260.9	68.4%
Israel	20.9	30.4	42.7	45.5	47.0	47.3	48.6	50.6	53.8	57.0	55.0	163.2%
Japan	837.9	964.8	1 055.5	1 055.6	1 045.0	1 075.5	1 097.1	1 101.7	1 132.7	1 082.4	1 047.5	25.0%
Korea	105.4	190.8	327.4	369.9	382.4	418.1	441.3	454.8	481.1	499.9	504.6	378.9%
New Zealand	32.7	36.4	39.7	41.3	41.4	43.1	43.5	44.1	44.1	44.3	43.9	34.2%
OECD Asia Oceania	**1 151.8**	**1 395.4**	**1 675.2**	**1 739.8**	**1 742.1**	**1 820.2**	**1 875.8**	**1 898.2**	**1 962.5**	**1 940.7**	**1 911.9**	**66.0%**
Austria	57.2	66.1	73.2	73.8	72.3	77.1	80.7	78.5	79.1	82.7	84.8	48.3%
Belgium	73.0	76.3	89.2	87.3	90.0	90.9	91.9	93.9	95.6	92.3	98.7	35.2%
Czech Republic	105.3	109.4	111.6	115.6	123.7	123.9	120.6	120.1	123.6	119.2	115.5	9.6%
Denmark	51.7	69.8	69.2	74.6	82.4	76.5	71.9	81.0	73.9	72.1	72.7	40.7%
Estonia	46.2	17.4	16.0	16.1	17.4	17.8	17.6	17.2	19.4	17.6	15.6	-66.2%
Finland	78.5	91.2	104.8	115.1	131.6	133.1	115.9	137.7	134.6	129.9	123.1	56.9%
France	422.8	497.5	573.7	601.4	607.8	615.8	619.9	614.8	609.6	613.8	581.8	37.6%
Germany	672.2	648.5	660.1	669.8	799.8	810.9	839.8	854.0	759.8	764.5	717.1	6.7%
Greece	34.8	41.3	53.8	54.3	58.4	59.3	60.0	60.8	63.2	63.4	61.7	77.3%
Hungary	49.0	51.1	54.4	53.4	51.9	51.1	53.4	52.9	55.8	55.6	50.7	3.5%
Iceland	6.0	7.2	9.9	11.3	11.2	11.4	11.3	12.8	14.5	19.5	19.9	232.3%
Ireland	14.2	17.6	23.7	24.8	24.9	25.2	25.6	27.1	27.9	29.9	27.9	96.0%
Italy	213.1	237.4	269.9	277.5	286.3	348.4	350.5	365.7	365.0	368.6	338.6	58.8%
Luxembourg	0.6	0.5	0.4	2.8	2.8	3.4	3.4	3.6	3.3	2.8	3.2	418.0%
Netherlands	76.1	110.7	132.7	143.3	143.9	151.4	147.7	137.7	143.9	145.8	152.7	100.6%
Norway	123.4	124.2	141.9	133.2	110.1	113.6	140.8	124.9	140.1	145.3	136.4	10.5%
Poland	339.9	253.9	237.8	240.1	252.3	248.6	250.0	255.5	247.9	241.6	237.8	-30.0%
Portugal	28.7	33.6	44.9	48.0	49.1	47.8	50.0	52.4	50.8	49.2	53.9	88.0%
Slovak Republic	34.8	38.1	41.0	46.4	46.4	45.4	45.9	44.2	39.7	39.8	37.6	8.1%
Slovenia	14.7	15.4	16.2	17.1	16.5	18.0	17.9	17.8	17.5	19.0	18.9	28.5%
Spain	151.2	165.6	222.2	241.6	257.9	277.2	288.9	295.5	301.8	311.1	291.0	92.5%
Sweden	167.7	193.6	189.1	194.9	184.2	201.0	208.7	193.7	198.1	199.2	188.6	12.5%
Switzerland	58.1	65.9	70.2	69.7	69.9	68.5	62.6	67.1	71.2	72.0	71.6	23.2%
Turkey	57.5	86.2	129.4	134.2	144.8	155.9	171.8	187.4	203.6	210.2	207.1	259.9%
United Kingdom	317.8	332.5	402.7	408.9	416.6	406.1	411.3	408.6	409.3	402.4	388.7	22.3%
OECD Europe	**3 194.5**	**3 351.0**	**3 738.1**	**3 855.3**	**4 052.2**	**4 178.4**	**4 258.2**	**4 305.2**	**4 249.2**	**4 267.4**	**4 095.8**	**28.2%**
European Union - 27	*..*	*3 338.3*	*3 589.2*	*3 711.3*	*3 923.2*	*4 030.9*	*4 073.5*	*4 116.3*	*4 016.6*	*4 020.8*	*3 852.9*	*..*

* Includes electricity, CHP and heat from both main activity producer and autoproducer plants. Due to missing data for heat in 1990, the output for some countries and regions is not available.

Electricity and heat output

terawatt hours

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	% change 90-09
Non-OECD Total	**..**	**7 914.0**	**8 399.3**	**8 965.0**	**9 488.7**	**10 027.6**	**10 636.9**	**11 340.7**	**11 918.4**	**12 181.9**	**12 402.8**	**..**
Algeria	..	19.7	25.4	27.6	29.6	31.3	33.9	35.2	37.2	40.2	42.8	..
Angola	..	1.0	1.4	1.8	2.0	2.2	2.8	3.3	3.2	3.9	4.2	..
Benin	..	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	..
Botswana	..	1.0	0.9	0.9	0.7	0.8	0.9	0.8	0.7	0.6	0.4	..
Cameroon	..	2.8	3.5	3.3	3.7	4.1	4.0	5.1	5.2	5.6	5.7	..
Congo	..	0.4	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.5	..
Dem. Rep. of Congo	..	6.2	6.0	6.1	6.2	7.1	7.4	7.5	7.9	7.5	7.8	..
Côte d'Ivoire	..	2.9	4.8	5.3	5.1	5.5	5.7	5.7	5.6	5.8	5.9	..
Egypt	..	52.0	78.1	89.2	95.2	101.3	108.7	115.4	125.1	131.0	139.0	..
Eritrea	..	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	..
Ethiopia	..	1.5	1.7	2.0	2.3	2.5	2.8	3.3	3.5	3.8	4.1	..
Gabon	..	1.1	1.3	1.5	1.5	1.5	1.6	1.7	1.7	1.8	1.7	..
Ghana	..	6.1	7.2	7.3	5.9	6.0	6.8	8.4	7.0	8.3	9.0	..
Kenya	..	4.2	4.1	4.8	5.2	5.6	6.0	6.5	6.7	6.8	6.9	..
Libyan Arab Jamahiriya	..	11.4	15.5	17.5	18.9	20.2	22.3	24.0	25.7	28.7	30.4	..
Morocco	..	12.1	12.9	16.1	17.4	18.5	19.9	20.4	20.5	20.8	21.4	..
Mozambique	..	0.4	9.7	12.7	10.9	11.7	13.3	14.7	16.1	15.1	17.0	..
Namibia	..	1.2	1.3	1.4	1.6	1.6	1.6	1.5	1.7	2.1	1.7	..
Nigeria	..	15.9	14.7	21.5	20.2	24.3	23.5	23.1	23.0	21.1	19.8	..
Senegal	..	1.1	1.9	2.5	2.6	2.7	3.0	2.5	2.8	2.5	3.0	..
South Africa	..	186.6	207.8	215.7	231.2	240.9	242.1	250.9	260.5	255.5	246.8	..
Sudan	..	1.9	2.6	3.1	3.4	3.5	3.8	4.5	5.0	5.5	6.8	..
United Rep. of Tanzania	..	1.9	2.5	2.9	2.7	2.9	3.6	3.5	4.2	4.4	4.6	..
Togo	..	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	..
Tunisia	..	7.7	10.6	11.8	12.4	13.1	13.8	14.1	14.7	15.3	15.7	..
Zambia	..	7.9	7.8	8.2	8.3	8.5	8.9	9.9	9.8	9.7	10.3	..
Zimbabwe	..	7.8	7.0	8.6	8.8	9.7	10.3	8.5	8.5	8.0	7.9	..
Other Africa	..	8.9	11.9	12.7	13.1	13.9	14.3	14.3	15.3	16.0	15.9	..
Africa	**..**	**364.2**	**441.5**	**485.4**	**509.7**	**540.5**	**561.9**	**585.9**	**612.6**	**621.3**	**629.8**	**..**
Bangladesh	..	10.8	15.8	18.7	19.7	24.7	26.5	29.9	31.3	35.0	37.9	..
Brunei Darussalam	..	2.0	2.5	2.7	3.2	3.3	3.3	3.3	3.4	3.4	3.6	..
Cambodia	..	0.2	0.5	0.6	0.6	0.8	0.9	1.1	1.3	1.5	1.2	..
Chinese Taipei	..	129.1	180.6	195.2	205.2	215.1	223.5	231.6	239.2	234.9	226.4	..
India	..	417.6	561.2	597.3	634.0	666.6	698.2	753.2	813.9	843.3	899.4	..
Indonesia	..	59.3	93.4	108.3	114.1	121.3	127.8	132.7	140.9	148.4	155.5	..
DPR of Korea	..	23.0	19.4	19.8	21.0	22.0	22.9	22.4	21.5	23.2	21.1	..
Malaysia	..	45.5	69.2	74.2	78.5	82.0	84.8	89.8	97.5	97.4	105.1	..
Mongolia	..	10.6	11.0	11.2	11.5	12.4	12.6	12.8	12.8	13.2	13.9	..
Myanmar	..	4.1	5.1	5.1	5.4	5.6	6.0	6.2	6.4	6.6	5.9	..
Nepal	..	1.2	1.7	2.1	2.3	2.4	2.5	2.7	2.8	2.8	3.1	..
Pakistan	..	57.0	68.1	75.7	80.8	85.7	93.8	98.4	95.7	91.6	95.4	..
Philippines	..	33.6	45.3	48.5	52.9	56.0	56.6	56.8	59.6	60.8	61.9	..
Singapore	..	22.2	31.7	34.7	35.3	36.8	38.2	39.4	41.1	41.7	41.8	..
Sri Lanka	..	4.8	7.0	7.1	7.7	8.2	9.3	9.5	9.9	9.2	9.9	..
Thailand	..	80.4	96.0	109.0	117.0	125.7	132.2	138.7	143.4	147.4	148.4	..
Vietnam	..	14.6	26.6	35.8	40.9	46.0	53.5	60.5	66.9	73.0	83.2	..
Other Asia	..	8.9	13.4	15.0	15.7	16.1	16.4	18.1	20.2	20.5	21.5	..
Asia	**..**	**924.8**	**1 248.4**	**1 360.9**	**1 445.9**	**1 530.6**	**1 609.1**	**1 707.2**	**1 807.8**	**1 854.1**	**1 935.0**	**..**
People's Rep. of China	..	1 305.6	1 762.2	2 097.5	2 401.0	2 736.0	3 135.5	3 549.9	3 994.6	4 174.8	4 436.9	..
Hong Kong, China	..	27.9	31.3	34.3	35.5	37.1	38.5	38.6	39.0	38.0	38.7	..
China	**..**	**1 333.5**	**1 793.5**	**2 131.8**	**2 436.5**	**2 773.1**	**3 173.9**	**3 588.5**	**4 033.6**	**4 212.8**	**4 475.6**	**..**

Electricity and heat output

terawatt hours

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	% change 90-09
Bahrain	..	4.6	6.3	7.3	7.8	8.4	8.9	9.7	10.9	11.9	12.1	..
Islamic Republic of Iran	..	85.0	121.4	141.1	153.9	166.9	175.7	187.2	195.7	199.0	203.2	..
Iraq	..	29.0	31.9	33.9	28.3	32.3	30.4	31.9	33.2	36.8	46.1	..
Jordan	..	5.6	7.4	8.1	8.0	9.0	9.7	11.1	13.0	13.8	14.3	..
Kuwait	..	23.7	32.3	36.4	39.8	41.3	43.7	47.6	48.8	51.7	53.2	..
Lebanon	..	5.3	9.7	11.7	12.7	12.5	12.4	11.6	12.1	13.3	13.8	..
Oman	..	6.5	9.1	10.3	10.7	11.5	12.6	13.3	14.1	15.7	17.8	..
Qatar	..	6.0	9.1	10.9	12.0	13.2	14.4	17.1	19.5	21.6	24.8	..
Saudi Arabia	..	97.8	126.2	141.7	153.0	159.9	176.1	181.4	190.5	204.2	217.1	..
Syrian Arab Republic	..	16.6	25.2	28.0	29.5	32.1	34.9	37.3	38.6	41.0	43.3	..
United Arab Emirates	..	25.0	39.9	46.9	49.5	52.4	60.7	66.8	76.1	86.3	90.6	..
Yemen	..	2.4	3.4	3.8	4.1	4.4	4.8	5.4	6.0	6.5	6.7	..
Middle East	**..**	**307.5**	**422.0**	**480.1**	**509.3**	**543.8**	**584.3**	**620.3**	**658.5**	**702.1**	**742.9**	**..**
Albania	..	4.5	4.8	3.7	5.3	5.6	5.5	5.1	2.9	3.8	5.3	..
Armenia	..	6.5	6.8	6.0	5.9	6.4	6.8	6.5	6.6	6.3	5.9	..
Azerbaijan	..	28.4	23.4	25.6	27.8	28.1	27.5	30.1	27.7	28.4	23.3	..
Belarus	..	106.6	103.6	105.7	107.3	111.1	111.2	112.7	107.1	107.1	102.8	..
Bosnia and Herzegovina	..	4.4	10.8	11.2	11.7	13.2	13.0	13.8	12.3	13.7	17.2	..
Bulgaria	..	78.9	54.7	56.0	57.3	55.5	58.4	59.5	57.4	61.4	59.5	..
Croatia	..	12.5	13.8	15.5	16.2	16.7	16.1	15.6	15.3	15.5	15.9	..
Cyprus	..	2.5	3.4	3.8	4.1	4.2	4.4	4.7	4.9	5.1	5.2	..
Georgia	..	8.9	7.4	8.1	8.1	7.9	8.0	7.7	8.8	9.0	9.1	..
Gibraltar	..	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	..
Kazakhstan	..	163.0	130.2	150.6	163.4	168.8	174.1	168.6	185.2	190.4	187.3	..
Kyrgyzstan	..	17.2	18.7	15.2	17.5	18.4	18.5	19.1	18.4	14.6	13.9	..
Latvia	..	16.8	13.0	13.2	13.3	13.3	13.6	13.2	12.7	12.6	12.9	..
Lithuania	..	32.1	24.5	31.3	33.1	32.5	28.3	26.6	27.1	26.2	27.8	..
FYR of Macedonia	..	7.7	8.9	7.9	8.5	8.3	8.6	8.6	8.0	7.8	8.3	..
Malta	..	1.6	1.9	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.2	..
Qatar	..	10.2	5.4	5.1	5.3	7.2	7.7	8.0	7.6	7.1	6.6	..
Romania	..	139.0	104.9	98.2	97.0	94.1	94.9	97.0	92.3	92.9	84.6	..
Russian Federation	..	3 095.9	2 678.4	2 638.5	2 665.9	2 665.1	2 683.1	2 780.0	2 720.4	2 684.7	2 560.5	..
Serbia	..	39.8	39.0	40.9	41.3	45.0	50.0	48.8	48.5	46.5	47.0	..
Tajikistan	..	15.7	15.1	16.2	17.5	17.5	18.1	18.0	18.6	17.1	17.1	..
Turkmenistan	..	9.8	11.2	12.1	12.2	13.5	14.5	15.5	16.9	17.1	18.1	..
Ukraine	..	492.5	378.7	389.4	380.5	377.2	382.5	369.2	355.1	341.6	298.5	..
Uzbekistan	..	77.6	76.5	80.2	78.7	78.3	76.8	79.4	77.6	76.8	77.6	..
Non-OECD Europe and Eurasia	**..**	**4 372.2**	**3 735.2**	**3 736.7**	**3 780.4**	**3 790.5**	**3 823.9**	**3 910.1**	**3 833.9**	**3 788.2**	**3 606.7**	**..**
Argentina	..	67.0	88.9	84.5	92.0	100.2	105.5	115.0	115.1	121.4	121.9	..
Bolivia	..	3.0	3.9	4.2	4.3	4.5	4.9	5.3	5.7	5.8	6.1	..
Brazil	..	275.6	350.0	346.9	366.3	389.1	404.6	421.6	447.5	464.1	467.8	..
Colombia	..	42.7	43.2	45.1	46.6	49.8	50.4	53.9	55.3	56.0	57.3	..
Costa Rica	..	4.9	6.9	7.5	7.7	8.5	8.3	8.7	9.1	9.5	9.3	..
Cuba	..	12.5	15.0	15.7	15.8	15.6	15.3	16.5	17.6	17.7	17.7	..
Dominican Republic	..	5.5	8.5	12.5	13.3	11.8	12.6	13.8	14.4	15.2	15.0	..
Ecuador	..	8.4	10.6	11.9	11.5	12.6	12.2	13.9	16.3	18.3	17.2	..
El Salvador	..	3.3	3.4	4.1	4.4	4.4	4.8	5.6	5.8	6.0	5.8	..
Guatemala	..	3.4	6.0	6.2	7.1	7.5	7.8	8.2	8.8	8.7	9.0	..
Haiti	..	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.7	..
Honduras	..	2.7	3.7	4.1	4.5	4.9	5.6	6.0	6.3	6.5	6.6	..
Jamaica	..	5.8	6.6	6.9	7.1	7.2	7.4	7.5	7.8	6.0	5.5	..
Netherlands Antilles	..	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.2	1.3	..
Nicaragua	..	1.7	2.3	2.6	2.8	2.9	3.1	3.1	3.2	3.4	3.5	..
Panama	..	3.5	4.9	5.3	5.6	5.8	5.8	6.0	6.5	6.4	6.9	..
Paraguay	..	42.2	53.5	48.2	51.8	51.9	51.2	53.8	53.7	55.5	55.0	..
Peru	..	16.1	19.9	22.0	22.9	24.3	25.5	27.4	29.9	32.4	35.4	..
Trinidad and Tobago	..	4.3	5.5	5.6	6.4	6.4	7.1	6.9	7.7	7.7	7.7	..
Uruguay	..	6.3	7.6	9.6	8.6	5.9	7.7	5.6	9.4	8.8	8.9	..
Venezuela	..	73.4	85.3	91.9	91.8	98.6	105.5	112.4	114.3	119.3	123.4	..
Other Latin America	..	27.8	31.3	33.5	34.7	35.7	36.7	35.9	35.8	33.2	30.7	..
Latin America	**..**	**611.8**	**758.6**	**770.1**	**807.0**	**849.2**	**883.7**	**928.6**	**972.0**	**1 003.5**	**1 012.7**	**..**

CO_2 emissions per kWh from electricity and heat generation *

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
World	**..**	**470**	**485**	**486**	**495**	**500**	**500**	**503**	**508**	**504**	**500**	**504**
Annex I Parties	*..*	*418*	*427*	*425*	*428*	*421*	*419*	*413*	*420*	*411*	*393*	*408*
Annex II Parties	*..*	*459*	*455*	*452*	*454*	*448*	*444*	*434*	*442*	*427*	*407*	*425*
North America	*..*	*526*	*539*	*522*	*528*	*526*	*522*	*500*	*504*	*491*	*466*	*487*
Europe	*399*	*355*	*326*	*330*	*325*	*319*	*311*	*315*	*321*	*303*	*289*	*304*
Asia Oceania	*482*	*460*	*466*	*501*	*519*	*502*	*508*	*502*	*519*	*508*	*491*	*506*
Annex I EIT	*..*	*342*	*357*	*356*	*366*	*354*	*355*	*359*	*360*	*362*	*352*	*358*
Non-Annex I Parties	*..*	*621*	*621*	*615*	*627*	*645*	*641*	*649*	*642*	*641*	*643*	*642*
Annex I Kyoto Parties	*..*	*352*	*353*	*359*	*364*	*354*	*351*	*354*	*359*	*350*	*337*	*348*
Non-OECD Total	**..**	**469**	**510**	**517**	**533**	**549**	**553**	**564**	**565**	**570**	**573**	**569**
OECD Total	**..**	**470**	**466**	**460**	**461**	**455**	**451**	**442**	**451**	**436**	**420**	**435**
Canada	203	184	222	216	229	214	200	201	197	188	167	184
Chile	457	267	349	279	295	322	318	304	408	411	373	398
Mexico	549	539	559	558	571	495	509	482	479	430	455	455
United States	..	579	586	567	571	571	570	542	549	535	508	531
OECD Americas	**..**	**525**	**538**	**521**	**527**	**522**	**520**	**497**	**502**	**487**	**464**	**485**
Australia	815	810	853	929	918	899	910	926	876	856	853	862
Israel	808	805	749	812	805	785	778	758	755	712	695	721
Japan	434	411	401	422	444	427	429	418	452	438	415	435
Korea	520	540	489	451	449	475	460	464	455	460	498	471
New Zealand	107	87	160	173	210	193	234	228	194	213	167	191
OECD Asia Oceania	**491**	**478**	**478**	**499**	**511**	**503**	**504**	**500**	**510**	**502**	**499**	**503**
Austria	245	214	180	197	233	224	219	213	200	185	163	183
Belgium	344	357	284	266	274	281	271	260	250	249	218	239
Czech Republic	596	600	595	560	523	524	524	526	550	537	514	534
Denmark	477	435	348	341	366	317	293	353	324	305	303	311
Estonia	561	679	692	662	717	701	710	652	748	752	704	735
Finland	227	247	211	252	292	253	193	241	230	187	205	207
France	109	76	84	77	81	79	93	87	90	87	90	89
Germany	553	522	494	508	434	436	406	404	468	441	430	447
Greece	990	946	817	814	778	776	776	727	749	745	722	739
Hungary	420	432	401	391	425	392	341	344	346	331	302	326
Iceland	1	2	1	1	1	1	1	1	1	1	0	1
Ireland	740	727	642	635	603	574	582	545	504	478	465	482
Italy	575	545	498	503	511	459	449	468	440	421	386	416
Luxembourg	2 552	1 738	517	401	403	394	389	387	380	382	384	382
Netherlands	588	464	400	401	406	396	387	394	400	392	374	389
Norway	3	4	4	5	8	7	6	7	7	6	17	10
Poland	641	671	671	656	655	656	650	657	659	656	640	652
Portugal	516	572	480	512	413	451	501	418	385	384	368	379
Slovak Republic	376	375	267	215	255	240	229	223	229	218	222	223
Slovenia	360	328	338	371	367	341	345	355	367	329	316	337
Spain	427	453	430	434	378	382	397	369	387	327	299	337
Sweden	48	50	42	52	59	51	44	48	40	40	43	41
Switzerland	35	34	36	39	39	40	46	45	41	40	40	40
Turkey	568	512	519	472	444	419	426	438	478	495	480	484
United Kingdom	672	529	461	460	478	486	485	507	499	490	450	480
OECD Europe	**437**	**394**	**364**	**363**	**358**	**351**	**343**	**348**	**357**	**340**	**326**	**341**
European Union - 27	*..*	*414*	*381*	*380*	*374*	*366*	*358*	*362*	*373*	*355*	*339*	*356*

* CO_2 emissions from fossil fuels consumed for electricity, combined heat and power and main activity heat plants divided by the output of electricity and heat generated from fossil fuels, nuclear, hydro (excl. pumped storage), geothermal, solar and biofuels. Both main activity producers and autoproducers have been included in the calculation of the emissions. Due to missing data for heat in 1990, the ratio for some countries and regions is not available.

CO_2 emissions per kWh from electricity and heat generation

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
Non-OECD Total	**..**	**469**	**510**	**517**	**533**	**549**	**553**	**564**	**565**	**570**	**573**	**569**
Algeria	..	633	620	632	632	632	606	621	597	596	576	590
Angola	..	177	382	354	373	213	201	191	221	200	237	220
Benin	..	951	601	1 101	752	740	709	716	671	688	725	695
Botswana	..	1 800	1 876	1 565	2 029	2 190	2 073	2 134	1 748	1 936	2 063	1 916
Cameroon	..	10	10	27	31	28	40	83	223	218	243	228
Congo	..	9	-	-	82	97	103	102	102	108	207	139
Dem. Rep. of Congo	..	4	1	1	1	1	1	2	3	4	3	3
Côte d'Ivoire	..	275	379	409	384	356	457	385	409	449	426	428
Egypt	..	443	412	437	432	473	474	473	450	460	466	459
Eritrea	..	1 463	698	646	694	711	666	679	655	669	672	665
Ethiopia	..	42	11	8	6	6	3	3	44	119	118	94
Gabon	..	255	326	291	315	328	383	348	424	350	322	366
Ghana	..	3	66	255	277	84	147	276	360	215	187	254
Kenya	..	73	445	187	141	216	246	258	247	321	395	321
Libyan Arab Jamahiriya	..	1 131	1 022	971	978	888	907	879	846	885	872	868
Morocco	..	875	763	766	736	754	739	729	714	718	638	690
Mozambique	..	64	5	3	3	3	1	1	1	0	1	0
Namibia	..	37	5	-	13	1	29	95	100	424	237	253
Nigeria	..	371	338	359	330	362	359	385	385	386	416	396
Senegal	..	881	782	645	520	555	634	726	605	563	614	594
South Africa	..	878	893	819	849	871	851	832	827	948	926	900
Sudan	..	465	508	592	603	612	546	559	554	500	356	470
United Rep. of Tanzania	..	284	192	57	51	121	361	431	248	242	281	257
Togo	..	185	561	333	216	442	352	459	404	206	202	271
Tunisia	..	588	574	564	554	532	476	546	557	545	538	547
Zambia	..	7	7	7	7	6	6	5	3	3	3	3
Zimbabwe	..	920	740	717	515	572	572	658	618	619	619	619
Other Africa	..	303	361	439	448	437	449	493	479	495	494	489
Africa	**..**	**685**	**658**	**618**	**633**	**644**	**631**	**625**	**615**	**666**	**643**	**641**
Bangladesh	..	601	556	603	574	546	553	574	567	574	585	575
Brunei Darussalam	..	880	795	818	780	782	762	802	703	755	755	738
Cambodia	..	1 816	1 798	1 970	1 880	1 301	1 205	1 141	1 152	1 160	1 151	1 154
Chinese Taipei	..	533	626	631	651	646	651	659	655	650	635	647
India	..	901	920	907	892	931	923	921	943	954	951	950
Indonesia	..	591	653	678	719	701	716	738	775	752	746	757
DPR of Korea	..	481	584	568	542	528	522	533	469	481	499	483
Malaysia	..	524	476	547	492	538	605	607	611	656	649	638
Mongolia	..	610	587	613	554	526	533	523	563	539	535	546
Myanmar	..	508	457	376	426	414	365	296	280	272	196	249
Nepal	..	26	12	2	1	6	7	5	4	4	4	4
Pakistan	..	405	479	443	371	397	380	413	433	451	458	447
Philippines	..	457	494	449	453	452	495	433	448	487	478	471
Singapore	..	916	762	664	597	566	543	530	528	521	519	523
Sri Lanka	..	51	448	470	488	513	476	335	394	420	460	425
Thailand	..	603	567	548	536	543	535	511	546	529	513	530
Vietnam	..	301	427	430	381	413	412	448	430	413	384	409
Other Asia	..	257	258	325	345	362	353	310	285	268	268	274
Asia	**..**	**699**	**726**	**717**	**704**	**721**	**721**	**722**	**742**	**748**	**745**	**745**
People's Rep. of China	..	803	765	748	776	805	787	787	758	744	743	748
Hong Kong, China	..	855	712	725	795	749	755	754	775	757	763	765
China	**..**	**804**	**764**	**748**	**776**	**804**	**787**	**787**	**758**	**744**	**743**	**748**

CO_2 emissions per kWh from electricity and heat generation

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
Bahrain	..	815	868	835	883	881	873	824	837	651	665	718
Islamic Republic of Iran	..	606	574	565	529	542	548	566	570	627	630	609
Iraq	..	698	731	751	787	811	745	694	817	691	684	731
Jordan	..	834	708	740	680	682	660	626	587	589	581	586
Kuwait	..	578	780	849	721	727	799	786	782	778	870	810
Lebanon	..	678	737	726	675	599	591	706	662	715	717	698
Oman	..	830	795	829	853	885	861	887	876	858	842	859
Qatar	..	1 131	771	782	779	649	618	617	565	534	494	531
Saudi Arabia	..	813	805	751	737	754	739	749	726	736	757	740
Syrian Arab Republic	..	586	567	585	565	568	621	637	652	654	641	649
United Arab Emirates	..	737	728	764	805	913	844	820	720	729	631	694
Yemen	..	946	930	919	884	874	841	781	679	636	630	649
Middle East	**..**	**714**	**707**	**700**	**677**	**693**	**688**	**692**	**679**	**691**	**690**	**687**
Albania	..	37	51	57	28	28	32	33	45	14	11	23
Armenia	..	214	236	153	148	120	138	138	163	165	108	145
Azerbaijan	..	504	648	490	523	547	528	557	488	455	443	462
Belarus	..	322	306	297	292	301	296	296	293	303	302	300
Bosnia and Herzegovina	..	176	807	836	860	755	781	833	977	971	776	908
Bulgaria	..	428	431	433	470	473	449	444	519	493	463	492
Croatia	..	272	303	357	380	300	314	320	385	341	283	337
Cyprus	..	822	838	756	833	772	788	758	761	759	744	755
Georgia	..	599	225	75	79	104	110	150	164	88	129	127
Gibraltar	..	766	760	760	755	766	761	771	771	757	740	756
Kazakhstan	..	448	497	477	474	455	449	570	489	485	480	485
Kyrgyzstan	..	127	106	106	94	90	82	79	86	94	81	87
Latvia	..	239	200	188	182	166	162	167	164	162	153	160
Lithuania	..	174	160	123	114	114	136	138	121	115	111	116
FYR of Macedonia	..	776	676	718	705	702	696	693	762	787	710	753
Malta	..	957	819	934	946	913	1 034	954	1 012	849	850	904
Qatar	..	514	739	738	755	515	519	476	507	477	400	461
Romania	..	440	396	412	451	418	403	439	453	440	414	436
Russian Federation	..	292	321	327	329	325	325	329	322	326	317	322
Serbia	..	900	807	795	825	781	646	699	636	668	680	662
Tajikistan	..	36	38	28	29	33	32	33	32	32	29	31
Turkmenistan	..	931	795	795	795	795	795	795	795	844	789	810
Ukraine	..	383	347	325	381	316	331	346	360	386	374	373
Uzbekistan	..	433	480	478	473	468	471	467	482	444	461	462
Non-OECD Europe and Eurasia	**..**	**326**	**344**	**345**	**354**	**342**	**343**	**353**	**349**	**353**	**344**	**349**
Argentina	..	273	338	258	275	308	313	311	352	366	355	358
Bolivia	..	400	314	259	318	295	329	326	334	375	393	368
Brazil	..	55	88	85	79	85	84	81	73	89	64	75
Colombia	..	205	160	154	152	117	131	127	127	107	175	136
Costa Rica	..	155	8	15	19	7	26	47	72	63	40	58
Cuba	..	870	678	772	794	800	813	752	734	719	752	735
Dominican Republic	..	876	759	675	700	704	649	668	675	634	591	633
Ecuador	..	314	215	281	299	313	391	455	345	267	290	301
El Salvador	..	391	324	356	340	316	362	361	319	274	319	304
Guatemala	..	306	392	484	435	323	299	345	369	343	349	354
Haiti	..	327	346	399	320	301	307	305	511	480	547	513
Honduras	..	326	281	287	352	452	412	267	418	409	344	391
Jamaica	..	888	824	806	822	618	572	400	400	491	544	478
Netherlands Antilles	..	714	714	714	714	713	711	710	708	707	707	707
Nicaragua	..	508	614	568	543	536	481	522	533	480	506	506
Panama	..	317	231	270	356	266	275	310	317	273	302	297
Paraguay	..	2	-	-	-	-	-	-	-	-	-	-
Peru	..	186	154	146	152	212	209	183	199	240	236	225
Trinidad and Tobago	..	711	685	767	753	751	759	753	753	704	719	725
Uruguay	..	53	57	4	2	151	103	296	104	307	253	221
Venezuela	..	219	191	266	265	222	208	222	207	203	199	203
Other Latin America	..	213	207	221	224	215	214	222	226	250	249	242
Latin America	**..**	**167**	**173**	**179**	**180**	**178**	**178**	**178**	**176**	**184**	**175**	**178**

CO_2 emissions per kWh from electricity and heat generation using coal/peat *

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
World	**..**	**881**	**878**	**879**	**888**	**909**	**908**	**911**	**902**	**901**	**901**	**901**
Annex I Parties	*..*	*837*	*836*	*848*	*852*	*855*	*864*	*866*	*872*	*854*	*851*	*859*
Annex II Parties	*..*	*922*	*905*	*916*	*908*	*911*	*905*	*906*	*911*	*895*	*892*	*899*
North America	*..*	*941*	*917*	*919*	*918*	*922*	*913*	*903*	*917*	*897*	*896*	*903*
Europe	*858*	*857*	*842*	*863*	*841*	*847*	*846*	*869*	*864*	*854*	*842*	*853*
Asia Oceania	*1 019*	*972*	*963*	*1 002*	*985*	*973*	*967*	*981*	*965*	*949*	*947*	*954*
Annex I EIT	*..*	*613*	*612*	*625*	*663*	*658*	*709*	*718*	*723*	*700*	*699*	*707*
Non-Annex I Parties	*..*	*982*	*954*	*927*	*939*	*978*	*958*	*958*	*931*	*943*	*940*	*938*
Annex I Kyoto Parties	*..*	*755*	*761*	*784*	*795*	*797*	*819*	*831*	*827*	*806*	*804*	*813*
Non-OECD Total	**..**	**846**	**856**	**854**	**881**	**919**	**922**	**924**	**906**	**912**	**913**	**910**
OECD Total	**..**	**907**	**895**	**901**	**895**	**899**	**893**	**895**	**898**	**885**	**883**	**889**
Canada	1 010	992	934	890	915	958	898	921	851	812	807	824
Chile	1 035	890	1 005	1 180	1 167	850	923	866	875	958	873	902
Mexico	921	1 110	1 046	1 054	1 011	992	974	963	957	1 001	970	976
United States	..	938	916	921	918	921	914	902	920	901	900	907
OECD Americas	**..**	**942**	**919**	**921**	**920**	**923**	**914**	**904**	**917**	**898**	**897**	**904**
Australia	944	933	964	1 092	1 070	1 046	1 053	1 076	1 010	993	993	999
Israel	844	823	827	836	838	830	830	834	836	837	838	837
Japan	1 099	1 006	961	940	930	925	911	917	933	917	912	921
Korea	2 017	1 250	1 005	890	943	987	971	980	902	896	921	906
New Zealand	901	793	1 319	1 234	1 113	1 094	1 045	1 076	1 154	1 054	1 123	1 110
OECD Asia Oceania	**1 078**	**1 001**	**965**	**966**	**967**	**969**	**961**	**973**	**942**	**929**	**934**	**935**
Austria	866	922	845	880	864	925	941	956	1 003	945	963	970
Belgium	990	1 024	992	1 088	1 092	1 136	1 180	1 237	1 301	1 438	1 131	1 290
Czech Republic	733	774	774	778	764	780	769	777	801	794	787	794
Denmark	577	554	519	538	600	556	536	602	588	566	557	570
Estonia	742	913	963	910	928	951	988	907	989	1 031	1 019	1 013
Finland	504	536	546	572	622	613	532	590	578	550	534	554
France	1 053	1 111	938	919	886	905	898	931	938	942	815	899
Germany	826	854	814	871	820	818	805	840	841	827	841	836
Greece	1 137	1 126	986	987	989	1 006	1 000	1 007	983	1 000	991	991
Hungary	867	860	838	940	955	987	962	916	915	925	976	939
Iceland	-	-	-	-	-	-	-	-	-	-	-	-
Ireland	917	923	898	912	908	877	868	866	830	838	882	850
Italy	963	987	974	976	967	967	988	1 161	1 004	1 015	961	993
Luxembourg	3 170	3 701	-	-	-	-	-	-	-	-	-	-
Netherlands	859	817	789	801	798	791	788	756	774	777	753	768
Norway	1 100	574	612	663	664	701	772	783	769	872	843	828
Poland	665	682	689	679	679	683	685	691	697	701	697	698
Portugal	886	854	865	842	838	843	857	859	849	848	853	850
Slovak Republic	745	795	760	788	838	778	786	790	783	786	780	783
Slovenia	863	726	838	877	839	839	826	841	860	843	833	845
Spain	936	911	917	912	910	891	886	901	943	901	920	921
Sweden	467	473	638	608	611	584	637	618	620	599	581	600
Switzerland	495	908	-	-	-	-	-	-	-	-	-	-
Turkey	1 199	1 132	1 080	1 102	1 068	1 045	916	1 015	1 037	1 037	1 021	1 032
United Kingdom	910	880	906	890	901	930	934	926	928	917	910	918
OECD Europe	**809**	**822**	**816**	**829**	**813**	**819**	**815**	**835**	**838**	**832**	**821**	**830**
European Union - 27	*..*	*818*	*809*	*823*	*809*	*816*	*815*	*832*	*833*	*825*	*814*	*824*

* CO_2 emissions from coal consumed for electricity, combined heat and power and main activity heat plants divided by output of electricity and heat generated from coal. Both main activity producers and autoproducers have been included in the calculation of the emissions. Due to missing data for heat in 1990, the ratio for some countries and regions is not available.

CO_2 emissions per kWh from electricity and heat generation using coal/peat

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
Non-OECD Total	**..**	**846**	**856**	**854**	**881**	**919**	**922**	**924**	**906**	**912**	**913**	**910**
Algeria	..	-	-	-	-	-	-	-	-	-	-	-
Angola	..	-	-	-	-	-	-	-	-	-	-	-
Benin	..	-	-	-	-	-	-	-	-	-	-	-
Botswana	..	1 815	1 900	1 581	2 068	2 268	2 081	2 142	1 755	1 936	2 063	1 918
Cameroon	..	-	-	-	-	-	-	-	-	-	-	-
Congo	..	-	-	-	-	-	-	-	-	-	-	-
Dem. Rep. of Congo	..	-	-	-	-	-	-	-	-	-	-	-
Côte d'Ivoire	..	-	-	-	-	-	-	-	-	-	-	-
Egypt	..	-	-	-	-	-	-	-	-	-	-	-
Eritrea	..	-	-	-	-	-	-	-	-	-	-	-
Ethiopia	..	-	-	-	-	-	-	-	-	-	-	-
Gabon	..	-	-	-	-	-	-	-	-	-	-	-
Ghana	..	-	-	-	-	-	-	-	-	-	-	-
Kenya	..	-	-	-	-	-	-	-	-	-	-	-
Libyan Arab Jamahiriya	..	-	-	-	-	-	-	-	-	-	-	-
Morocco	..	912	839	821	817	814	822	831	840	862	832	845
Mozambique	..	-	-	-	-	-	-	-	-	-	-	-
Namibia	..	1 346	1 262	-	1 403	2 104	1 503	1 388	1 339	1 333	1 336	1 336
Nigeria	..	-	-	-	-	-	-	-	-	-	-	-
Senegal	..	-	-	-	-	-	-	-	-	-	-	-
South Africa	..	938	960	879	902	927	900	878	870	1 005	984	953
Sudan	..	-	-	-	-	-	-	-	-	-	-	-
United Rep. of Tanzania	..	1 116	1 107	1 116	1 114	1 113	1 111	1 106	1 101	1 105	1 110	1 105
Togo	..	-	-	-	-	-	-	-	-	-	-	-
Tunisia	..	-	-	-	-	-	-	-	-	-	-	-
Zambia	..	1 718	1 636	1 527	1 575	1 527	1 575	1 636	2 290	2 290	2 290	2 290
Zimbabwe	..	1 287	1 383	1 287	1 311	1 321	1 321	1 321	1 322	1 321	1 321	1 321
Other Africa	..	956	955	955	955	955	955	955	956	956	956	956
Africa	**..**	**952**	**966**	**888**	**908**	**932**	**908**	**887**	**878**	**1 006**	**984**	**956**
Bangladesh	..	-	-	-	-	-	1 405	1 391	1 390	1 390	1 390	1 390
Brunei Darussalam	..	-	-	-	-	-	-	-	-	-	-	-
Cambodia	..	-	-	-	-	-	-	-	-	-	-	-
Chinese Taipei	..	854	944	923	924	923	929	938	935	949	928	937
India	..	1 177	1 177	1 136	1 145	1 207	1 227	1 230	1 275	1 264	1 246	1 261
Indonesia	..	941	974	966	1 025	983	1 023	998	1 051	1 078	1 068	1 066
DPR of Korea	..	1 253	1 217	1 208	1 208	1 208	1 208	1 208	1 208	1 208	1 208	1 208
Malaysia	..	856	975	856	1 083	1 076	1 076	1 076	1 076	1 196	1 076	1 116
Mongolia	..	613	586	612	552	523	530	519	559	534	530	541
Myanmar	..	-	-	-	-	-	-	-	-	-	-	-
Nepal	..	-	-	-	-	-	-	-	-	-	-	-
Pakistan	..	1 581	1 491	1 628	1 920	2 053	2 316	2 616	2 636	2 137	2 363	2 379
Philippines	..	1 436	970	912	952	917	1 158	1 038	1 008	1 237	1 152	1 132
Singapore	..	-	-	-	-	-	-	-	-	-	-	-
Sri Lanka	..	-	-	-	-	-	-	-	-	-	-	-
Thailand	..	984	964	977	1 006	1 005	988	818	982	951	937	957
Vietnam	..	1 415	1 479	1 240	958	961	991	991	988	988	987	988
Other Asia	..	-	980	982	982	982	980	980	981	980	981	981
Asia	**..**	**1 108**	**1 107**	**1 069**	**1 080**	**1 115**	**1 136**	**1 131**	**1 168**	**1 177**	**1 158**	**1 168**
People's Rep. of China	..	987	911	902	918	969	938	931	893	900	900	898
Hong Kong, China	..	856	869	880	890	881	881	888	891	898	888	892
China	**..**	**984**	**911**	**902**	**917**	**968**	**937**	**930**	**893**	**900**	**900**	**898**

CO_2 emissions per kWh from electricity and heat generation using coal/peat

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
Bahrain	..	-	-	-	-	-	-	-	-	-	-	-
Islamic Republic of Iran	..	-	2 650	2 668	2 892	2 779	2 774	2 789	2 904	3 296	3 355	3 185
Iraq	..	-	-	-	-	-	-	-	-	-	-	-
Jordan	..	-	-	-	-	-	-	-	-	-	-	-
Kuwait	..	-	-	-	-	-	-	-	-	-	-	-
Lebanon	..	-	-	-	-	-	-	-	-	-	-	-
Oman	..	-	-	-	-	-	-	-	-	-	-	-
Qatar	..	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	..	-	-	-	-	-	-	-	-	-	-	-
Syrian Arab Republic	..	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	..	-	-	-	-	-	-	-	-	-	-	-
Yemen	..	-	-	-	-	-	-	-	-	-	-	-
Middle East	**..**	**-**	**2 650**	**2 668**	**2 892**	**2 779**	**2 774**	**2 789**	**2 904**	**3 296**	**3 355**	**3 185**
Albania	..	-	920	-	-	-	-	-	-	-	-	-
Armenia	..	-	-	-	-	-	-	-	-	-	-	-
Azerbaijan	..	-	-	-	-	-	-	-	-	-	-	-
Belarus	..	474	424	488	499	530	484	488	488	491	488	489
Bosnia and Herzegovina	..	977	1 615	1 686	1 479	1 463	1 532	1 532	1 531	1 531	1 283	1 449
Bulgaria	..	887	853	870	897	941	959	937	897	856	870	874
Croatia	..	1 037	895	908	860	914	894	860	859	858	882	866
Cyprus	..	-	-	-	-	-	-	-	-	-	-	-
Georgia	..	1 300	-	-	-	-	-	-	-	-	-	-
Gibraltar	..	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	..	450	496	480	480	469	448	585	494	494	488	492
Kyrgyzstan	..	517	527	508	668	608	474	475	470	506	439	472
Latvia	..	520	700	567	528	485	510	460	478	479	529	495
Lithuania	..	526	468	488	517	463	449	473	499	484	469	484
FYR of Macedonia	..	992	950	958	1 005	1 012	997	1 030	1 046	1 041	980	1 022
Malta	..	1 382	-	-	-	-	-	-	-	-	-	-
Qatar	..	804	1 012	1 058	1 013	398	398	455	415	457	560	477
Romania	..	861	824	831	824	845	829	883	920	933	912	922
Russian Federation	..	471	501	523	565	558	632	645	633	597	596	609
Serbia	..	1 568	1 367	1 335	1 277	1 255	1 091	1 125	1 024	1 030	1 038	1 031
Tajikistan	..	-	-	-	-	-	-	-	-	-	-	-
Turkmenistan	..	-	-	-	-	-	-	-	-	-	-	-
Ukraine	..	1 222	1 042	953	1 116	1 084	1 153	1 082	1 082	1 078	1 051	1 070
Uzbekistan	..	1 140	1 121	1 121	1 120	1 120	1 121	1 120	1 121	1 120	1 121	1 121
Non-OECD Europe and Eurasia	**..**	**576**	**582**	**595**	**637**	**624**	**674**	**714**	**689**	**665**	**661**	**672**
Argentina	..	2 026	1 246	1 945	1 709	1 420	1 372	1 229	1 149	1 137	1 130	1 139
Bolivia	..	-	-	-	-	-	-	-	-	-	-	-
Brazil	..	1 542	1 464	1 511	1 566	1 450	1 580	1 611	1 464	1 353	1 456	1 424
Colombia	..	1 167	1 091	1 204	1 200	1 124	1 140	1 063	948	1 048	1 105	1 034
Costa Rica	..	-	-	-	-	-	-	-	-	-	-	-
Cuba	..	-	-	-	-	-	-	-	-	-	-	-
Dominican Republic	..	952	955	954	954	954	954	953	954	953	954	954
Ecuador	..	-	-	-	-	-	-	-	-	-	-	-
El Salvador	..	-	-	-	-	-	-	-	-	-	-	-
Guatemala	..	-	954	954	954	954	953	953	953	954	954	954
Haiti	..	-	-	-	-	-	-	-	-	-	-	-
Honduras	..	-	-	-	-	-	-	-	-	-	-	-
Jamaica	..	-	-	-	-	-	-	-	-	-	-	-
Netherlands Antilles	..	-	-	-	-	-	-	-	-	-	-	-
Nicaragua	..	-	-	-	-	-	-	-	-	-	-	-
Panama	..	-	-	-	-	-	-	-	-	-	-	-
Paraguay	..	-	-	-	-	-	-	-	-	-	-	-
Peru	..	-	1 112	1 112	1 112	1 112	1 112	1 112	1 113	1 112	1 113	1 113
Trinidad and Tobago	..	-	-	-	-	-	-	-	-	-	-	-
Uruguay	..	-	-	-	-	-	-	-	-	-	-	-
Venezuela	..	-	-	-	-	-	-	-	-	-	-	-
Other Latin America	..	-	-	-	-	-	-	-	-	-	-	-
Latin America	**..**	**1 475**	**1 359**	**1 407**	**1 370**	**1 312**	**1 395**	**1 367**	**1 251**	**1 220**	**1 258**	**1 243**

CO_2 emissions per kWh from electricity and heat generation using oil *

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
World	**..**	**587**	**655**	**651**	**656**	**654**	**669**	**658**	**659**	**663**	**677**	**666**
Annex I Parties	*..*	*488*	*575*	*563*	*577*	*580*	*590*	*551*	*564*	*555*	*531*	*550*
Annex II Parties	*..*	*606*	*660*	*633*	*650*	*642*	*656*	*616*	*622*	*608*	*593*	*608*
North America	*..*	*506*	*789*	*743*	*741*	*761*	*738*	*752*	*718*	*691*	*679*	*696*
Europe	*635*	*611*	*589*	*571*	*591*	*556*	*610*	*552*	*596*	*602*	*580*	*593*
Asia Oceania	*633*	*654*	*635*	*622*	*617*	*611*	*616*	*598*	*587*	*569*	*546*	*567*
Annex I EIT	*..*	*355*	*403*	*409*	*401*	*405*	*400*	*393*	*390*	*395*	*396*	*393*
Non-Annex I Parties	*..*	*746*	*729*	*732*	*733*	*717*	*735*	*735*	*722*	*727*	*756*	*735*
Annex I Kyoto Parties	*..*	*487*	*527*	*528*	*533*	*525*	*545*	*516*	*537*	*536*	*515*	*529*
Non-OECD Total	**..**	**557**	**649**	**661**	**654**	**671**	**684**	**686**	**686**	**699**	**715**	**700**
OECD Total	**..**	**630**	**662**	**639**	**659**	**633**	**649**	**614**	**616**	**600**	**595**	**604**
Canada	701	624	613	688	704	668	685	940	929	984	1 024	979
Chile	849	1 550	938	1 059	1 142	1 110	1 088	1 073	686	618	647	651
Mexico	781	770	780	822	991	744	780	754	761	731	758	750
United States	..	491	811	750	747	777	744	731	693	652	631	659
OECD Americas	**..**	**611**	**786**	**775**	**806**	**760**	**755**	**758**	**729**	**697**	**704**	**710**
Australia	832	898	912	722	749	957	787	781	881	835	832	849
Israel	772	777	578	730	695	707	685	723	705	703	712	707
Japan	630	651	631	620	615	607	613	594	583	563	537	561
Korea	765	682	482	410	400	404	420	415	407	344	412	388
New Zealand	2 343	857	-	-	781	911	781	679	-	734	694	714
OECD Asia Oceania	**647**	**664**	**592**	**575**	**567**	**552**	**565**	**548**	**547**	**526**	**510**	**528**
Austria	500	422	383	378	418	423	401	395	408	434	428	423
Belgium	403	341	729	511	825	828	747	736	719	574	669	654
Czech Republic	430	351	550	456	440	406	398	406	414	433	473	440
Denmark	414	550	624	531	408	401	390	394	425	400	397	407
Estonia	341	349	365	402	402	361	369	372	403	423	373	399
Finland	341	323	322	332	350	341	344	340	334	337	328	333
France	603	506	238	191	275	320	585	521	530	546	480	519
Germany	497	363	438	473	496	376	718	411	606	589	597	597
Greece	746	737	731	743	749	721	714	694	731	753	763	749
Hungary	457	574	599	555	574	779	751	827	904	745	455	701
Iceland	520	490	296	270	270	781	624	781	493	509	744	582
Ireland	756	736	696	759	826	766	740	814	650	650	752	684
Italy	672	663	704	640	690	627	607	609	610	606	547	588
Luxembourg	1 021	1 226	-	-	-	-	-	-	-	-	-	-
Netherlands	693	532	560	391	389	390	383	403	389	381	357	376
Norway	1 640	1 035	400	281	316	346	401	326	448	452	377	426
Poland	385	451	463	456	456	484	454	460	450	447	435	444
Portugal	693	720	594	621	617	597	601	564	557	563	520	547
Slovak Republic	381	753	757	414	410	382	400	403	386	408	398	397
Slovenia	449	973	477	494	436	439	437	396	535	397	399	444
Spain	802	795	630	654	645	660	696	603	723	718	681	707
Sweden	297	301	333	316	324	345	329	333	338	336	411	362
Switzerland	498	542	343	339	336	327	357	352	383	348	342	358
Turkey	899	951	852	672	668	688	654	740	675	714	771	720
United Kingdom	660	672	431	553	641	668	585	527	677	715	1 147	846
OECD Europe	**604**	**609**	**597**	**571**	**588**	**558**	**604**	**553**	**594**	**602**	**578**	**591**
European Union - 27	*..*	*560*	*572*	*558*	*580*	*554*	*603*	*552*	*598*	*600*	*573*	*590*

* CO_2 emissions from oil consumed for electricity, combined heat and power and main activity heat plants divided by output of electricity and heat generated from oil. Both main activity producers and autoproducers have been included in the calculation of the emissions. Due to missing data for heat in 1990, the ratio for some countries and regions is not available.

CO_2 emissions per kWh from electricity and heat generation using oil

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
Non-OECD Total	**..**	**557**	**649**	**661**	**654**	**671**	**684**	**686**	**686**	**699**	**715**	**700**
Algeria	..	1 178	863	968	864	869	948	961	916	914	911	914
Angola	..	2 835	1 037	1 004	986	985	986	985	990	989	992	990
Benin	..	951	616	1 137	771	749	716	716	671	688	725	695
Botswana	..	1 054	1 051	1 085	1 085	1 055	1 026	1 026	1 026	-	-	1 026
Cameroon	..	893	919	753	733	600	698	739	705	739	700	715
Congo	..	1 587	-	-	-	-	-	-	-	-	-	-
Dem. Rep. of Congo	..	1 219	1 058	794	907	794	907	1 058	907	747	1 058	904
Côte d'Ivoire	..	692	970	970	1 042	718	933	968	1 037	1 047	907	997
Egypt	..	808	548	693	645	778	810	743	621	632	606	620
Eritrea	..	1 463	702	649	696	713	668	684	659	674	676	670
Ethiopia	..	641	828	756	794	882	794	953	960	959	956	958
Gabon	..	803	777	680	677	681	699	709	689	659	660	670
Ghana	..	836	772	824	811	665	860	827	772	842	803	806
Kenya	..	730	858	889	896	895	895	896	897	896	896	896
Libyan Arab Jamahiriya	..	1 290	1 144	1 089	1 067	943	1 003	1 078	1 077	1 087	1 087	1 084
Morocco	..	932	741	809	797	915	872	832	740	768	731	746
Mozambique	..	907	1 058	1 027	840	814	907	794	1 058	-	-	1 058
Namibia	..	833	-	-	1 666	-	666	740	740	666	740	716
Nigeria	..	729	725	726	727	726	725	725	725	724	725	725
Senegal	..	980	1 045	993	845	876	917	871	709	678	733	706
South Africa	..	819	-	-	-	-	-	-	753	748	771	757
Sudan	..	972	942	1 014	922	899	814	802	779	681	681	714
United Rep. of Tanzania	..	1 495	1 488	1 482	1 459	1 499	924	919	891	924	953	923
Togo	..	1 058	1 309	780	732	799	589	798	842	847	819	836
Tunisia	..	921	907	919	1 000	953	960	839	813	832	849	831
Zambia	..	917	922	896	896	896	847	690	859	967	1 006	944
Zimbabwe	..	-	1 539	3 175	2 963	1 965	2 117	2 117	2 117	2 117	2 117	2 117
Other Africa	..	535	610	769	769	746	752	745	735	761	760	752
Africa	**..**	**931**	**831**	**886**	**882**	**845**	**872**	**851**	**782**	**796**	**783**	**787**
Bangladesh	..	1 004	1 078	1 116	1 079	1 013	1 091	1 091	1 117	1 117	1 118	1 118
Brunei Darussalam	..	847	690	762	762	766	766	819	770	770	772	771
Cambodia	..	1 816	1 798	2 076	2 010	1 350	1 269	1 199	1 201	1 202	1 204	1 202
Chinese Taipei	..	697	689	676	752	793	807	784	832	828	911	857
India	..	1 105	1 036	870	915	930	878	884	819	939	1 282	1 013
Indonesia	..	861	769	775	764	699	710	716	791	738	751	760
DPR of Korea	..	1 379	1 379	1 379	1 379	1 379	1 379	1 378	1 380	1 380	1 379	1 380
Malaysia	..	721	920	808	839	845	831	812	836	917	1 008	920
Mongolia	..	481	606	700	682	726	864	906	844	873	916	878
Myanmar	..	894	868	747	738	736	735	440	470	650	602	574
Nepal	..	827	755	850	850	971	1 062	1 042	1 129	1 129	1 042	1 100
Pakistan	..	757	755	773	675	795	692	749	719	731	762	738
Philippines	..	645	674	705	719	710	740	712	654	711	687	684
Singapore	..	1 115	834	832	832	831	826	828	830	828	828	829
Sri Lanka	..	696	826	761	855	803	758	657	657	763	763	728
Thailand	..	741	749	752	726	715	729	739	764	732	772	756
Vietnam	..	900	914	907	894	891	1 148	1 181	721	690	991	801
Other Asia	..	567	640	738	754	755	770	770	795	812	811	806
Asia	**..**	**796**	**812**	**799**	**811**	**799**	**783**	**784**	**786**	**807**	**885**	**826**
People's Rep. of China	..	619	639	648	669	668	681	646	617	573	523	571
Hong Kong, China	..	825	788	859	769	742	798	805	829	836	983	883
China	**..**	**620**	**639**	**648**	**669**	**668**	**681**	**647**	**617**	**574**	**524**	**572**

CO_2 emissions per kWh from electricity and heat generation using oil

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
Bahrain	..	-	-	-	-	-	-	1 312	1 314	1 231	-	1 273
Islamic Republic of Iran	..	750	563	588	490	524	592	669	671	755	782	736
Iraq	..	712	745	763	799	824	928	859	988	763	736	829
Jordan	..	860	717	755	686	753	730	699	675	683	659	672
Kuwait	..	665	917	947	820	845	917	942	939	977	1 008	975
Lebanon	..	784	773	771	756	658	645	751	696	736	754	729
Oman	..	1 056	1 056	1 055	1 055	1 055	1 056	1 055	1 056	1 056	1 055	1 056
Qatar	..	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	..	831	876	831	803	872	840	828	776	795	832	801
Syrian Arab Republic	..	777	730	738	716	753	831	837	806	785	785	792
United Arab Emirates	..	968	953	999	1 052	1 194	1 194	1 194	1 194	1 195	1 053	1 147
Yemen	..	946	930	919	884	874	841	781	679	636	630	649
Middle East	**..**	**779**	**778**	**780**	**736**	**767**	**804**	**812**	**799**	**802**	**823**	**808**
Albania	..	501	1 527	959	1 415	1 228	1 693	1 328	1 218	1 385	1 838	1 481
Armenia	..	306	-	-	-	-	-	-	-	-	-	-
Azerbaijan	..	603	725	725	725	854	815	936	800	765	755	773
Belarus	..	403	359	346	343	370	350	362	328	386	392	369
Bosnia and Herzegovina	..	1 977	1 085	1 059	1 051	1 044	1 043	1 041	1 041	1 045	405	830
Bulgaria	..	321	511	577	595	522	542	570	575	459	339	457
Croatia	..	456	582	630	622	578	531	547	600	568	535	567
Cyprus	..	822	838	756	833	772	789	758	761	761	750	757
Georgia	..	1 817	1 921	3 474	3 474	3 502	3 483	3 450	3 450	5 206	5 286	4 648
Gibraltar	..	766	760	760	755	766	761	771	771	757	740	756
Kazakhstan	..	1 033	919	919	919	918	916	890	889	913	900	901
Kyrgyzstan	..	-	-	-	-	-	-	-	-	-	-	-
Latvia	..	341	373	337	354	372	350	386	409	435	379	408
Lithuania	..	353	376	398	409	439	463	433	450	444	448	447
FYR of Macedonia	..	376	434	382	328	336	324	389	474	430	412	438
Malta	..	932	819	934	946	913	1 034	954	1 012	849	850	904
Qatar	..	760	805	835	815	345	402	379	458	488	469	472
Romania	..	378	374	392	406	411	395	389	428	411	435	425
Russian Federation	..	328	398	407	392	396	392	383	375	382	384	380
Serbia	..	418	394	676	688	626	381	427	350	347	467	388
Tajikistan	..	-	-	-	-	-	-	-	-	-	-	-
Turkmenistan	..	-	-	-	-	-	-	-	-	-	-	-
Ukraine	..	481	372	395	433	771	889	940	914	917	915	915
Uzbekistan	..	606	637	625	621	620	621	621	621	622	625	622
Non-OECD Europe and Eurasia	**..**	**379**	**439**	**442**	**439**	**445**	**445**	**449**	**444**	**434**	**428**	**435**
Argentina	..	632	1 013	1 059	1 132	922	808	767	777	756	845	792
Bolivia	..	948	953	934	947	947	943	938	943	940	946	943
Brazil	..	825	796	695	759	714	762	722	689	661	677	676
Colombia	..	891	864	861	874	877	877	874	871	871	893	878
Costa Rica	..	916	965	936	928	959	807	773	896	888	820	868
Cuba	..	927	751	857	880	897	891	820	801	791	826	806
Dominican Republic	..	995	834	716	751	806	770	766	794	684	628	702
Ecuador	..	810	761	749	739	729	975	1 130	887	737	634	753
El Salvador	..	927	773	741	807	708	880	859	730	733	730	731
Guatemala	..	873	769	774	798	802	813	794	792	795	786	791
Haiti	..	669	716	761	611	573	587	582	761	766	767	765
Honduras	..	842	737	476	578	646	619	423	670	661	627	653
Jamaica	..	923	852	820	839	635	591	415	413	511	565	496
Netherlands Antilles	..	714	714	714	714	713	711	710	708	707	707	707
Nicaragua	..	868	751	753	745	742	736	746	751	745	732	742
Panama	..	1 027	781	764	727	782	769	778	735	721	693	716
Paraguay	..	926	-	-	-	-	-	-	-	-	-	-
Peru	..	965	881	874	841	812	1 142	934	1 425	1 131	1 120	1 225
Trinidad and Tobago	..	-	1 058	1 058	32 034	705	32 254	6 830	9 271	756	2 597	4 208
Uruguay	..	826	860	1 211	1 435	820	824	843	807	785	811	801
Venezuela	..	1 200	890	909	915	936	907	1 000	932	886	874	897
Other Latin America	..	225	202	209	209	201	200	209	213	237	237	229
Latin America	**..**	**665**	**633**	**625**	**645**	**627**	**639**	**635**	**629**	**636**	**648**	**638**

CO_2 emissions per kWh from electricity and heat generation using natural gas *

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
World	**..**	**364**	**389**	**389**	**385**	**385**	**389**	**384**	**388**	**391**	**392**	**390**
Annex I Parties	*..*	*331*	*350*	*348*	*343*	*341*	*345*	*338*	*344*	*346*	*346*	*345*
Annex II Parties	*..*	*455*	*415*	*402*	*388*	*389*	*388*	*373*	*379*	*374*	*374*	*376*
North America	*..*	*502*	*459*	*434*	*426*	*436*	*435*	*393*	*398*	*393*	*389*	*393*
Europe	*401*	*361*	*348*	*340*	*323*	*320*	*320*	*324*	*329*	*329*	*329*	*329*
Asia Oceania	*474*	*465*	*442*	*446*	*449*	*449*	*452*	*452*	*452*	*448*	*445*	*449*
Annex I EIT	*..*	*265*	*296*	*298*	*302*	*296*	*301*	*299*	*304*	*312*	*310*	*309*
Non-Annex I Parties	*..*	*559*	*543*	*535*	*522*	*522*	*524*	*523*	*515*	*512*	*507*	*511*
Annex I Kyoto Parties	*..*	*293*	*324*	*325*	*325*	*318*	*321*	*322*	*328*	*333*	*332*	*331*
Non-OECD Total	**..**	**324**	**374**	**384**	**386**	**385**	**393**	**394**	**397**	**407**	**409**	**404**
OECD Total	**..**	**451**	**410**	**396**	**383**	**385**	**384**	**372**	**377**	**373**	**372**	**374**
Canada	371	360	407	395	424	392	395	391	409	443	430	427
Chile	777	574	370	359	361	407	465	414	463	501	450	471
Mexico	555	513	489	435	415	419	420	428	420	417	400	412
United States	..	509	462	437	427	438	437	393	398	390	387	392
OECD Americas	**..**	**503**	**459**	**433**	**424**	**434**	**434**	**396**	**401**	**395**	**391**	**396**
Australia	565	558	584	564	606	572	569	573	571	514	515	533
Israel	-	516	541	535	673	526	559	481	499	440	433	457
Japan	465	457	433	432	432	434	437	440	441	442	438	440
Korea	496	389	336	338	325	347	343	349	351	343	339	345
New Zealand	507	509	450	449	435	433	428	415	415	397	402	405
OECD Asia Oceania	**475**	**457**	**429**	**430**	**430**	**430**	**431**	**431**	**432**	**425**	**424**	**427**
Austria	384	404	313	299	292	291	286	287	289	290	281	286
Belgium	454	412	335	310	336	334	348	307	307	306	315	309
Czech Republic	237	227	252	249	245	267	256	260	244	252	253	249
Denmark	222	235	250	250	252	254	249	252	244	243	244	243
Estonia	221	220	224	225	223	222	223	220	217	224	230	223
Finland	241	274	238	242	244	243	233	247	234	232	230	232
France	337	335	250	245	240	233	241	263	265	267	309	281
Germany	367	314	345	326	259	259	260	257	281	278	270	276
Greece	459	435	505	446	434	416	459	416	416	423	385	408
Hungary	343	359	305	315	335	308	305	312	329	319	293	314
Iceland	-	-	-	-	-	-	-	-	-	-	-	-
Ireland	499	480	460	445	421	407	412	405	413	392	395	400
Italy	475	466	431	435	420	367	361	355	354	351	348	351
Luxembourg	662	633	641	399	401	398	399	400	397	406	395	399
Netherlands	434	306	273	282	282	283	282	297	295	299	298	297
Norway	-	302	293	288	283	288	283	283	322	282	354	319
Poland	289	318	304	330	320	332	287	294	292	285	282	286
Portugal	-	-	364	347	347	339	337	330	329	336	337	334
Slovak Republic	442	429	333	239	240	251	241	236	239	239	250	243
Slovenia	229	234	237	271	278	246	260	244	266	268	298	277
Spain	423	469	311	325	316	324	319	356	339	349	357	349
Sweden	217	218	227	252	220	216	219	218	215	229	210	218
Switzerland	241	236	235	237	239	238	238	242	242	244	244	243
Turkey	488	419	346	357	347	355	357	341	347	350	355	351
United Kingdom	521	426	382	379	379	388	386	393	383	380	383	382
OECD Europe	**389**	**360**	**344**	**337**	**323**	**320**	**320**	**323**	**328**	**329**	**329**	**328**
European Union - 27	*..*	*348*	*339*	*332*	*320*	*316*	*315*	*319*	*324*	*324*	*323*	*323*

* CO_2 emissions from natural gas consumed for electricity, combined heat and power and main activity heat plants divided by output of electricity and heat generated from natural gas. Both main activity producers and autoproducers have been included in the calculation of the emissions. Due to missing data for heat in 1990, the ratio for some countries and regions is not available.

CO_2 emissions per kWh from electricity and heat generation using natural gas

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
Non-OECD Total	**..**	**324**	**374**	**384**	**386**	**385**	**393**	**394**	**397**	**407**	**409**	**404**
Algeria	..	621	614	625	632	631	609	618	594	594	574	587
Angola	..	-	-	-	-	-	-	-	-	-	-	-
Benin	..	-	-	-	-	-	-	-	-	-	-	-
Botswana	..	-	-	-	-	-	-	-	-	-	-	-
Cameroon	..	-	-	-	-	-	-	-	1 164	1 164	1 164	1 164
Congo	..	-	-	-	573	576	573	572	575	576	574	575
Dem. Rep. of Congo	..	-	-	-	-	-	-	574	573	573	573	573
Côte d'Ivoire	..	736	598	606	600	536	627	539	617	687	687	664
Egypt	..	490	490	490	490	490	490	490	490	490	490	490
Eritrea	..	-	-	-	-	-	-	-	-	-	-	-
Ethiopia	..	-	-	-	-	-	-	-	-	-	-	-
Gabon	..	876	929	916	926	964	1 013	1 007	1 043	719	720	827
Ghana	..	-	-	-	-	-	-	-	-	-	-	-
Kenya	..	-	-	-	-	-	-	-	-	-	-	-
Libyan Arab Jamahiriya	..	591	591	529	632	662	662	591	562	595	562	573
Morocco	..	-	-	-	-	-	397	394	409	350	403	387
Mozambique	..	652	778	1 155	1 674	775	724	684	573	502	711	595
Namibia	..	-	-	-	-	-	-	-	-	-	-	-
Nigeria	..	502	543	502	502	502	502	502	502	502	502	502
Senegal	..	604	628	518	512	517	519	516	513	513	680	569
South Africa	..	-	-	-	-	-	-	-	-	-	-	-
Sudan	..	-	-	-	-	-	-	-	-	-	-	-
United Rep. of Tanzania	..	-	-	-	-	484	569	602	579	563	669	604
Togo	..	-	-	-	-	-	-	-	-	-	-	-
Tunisia	..	533	536	529	521	502	440	503	511	513	513	512
Zambia	..	-	-	-	-	-	-	-	-	-	-	-
Zimbabwe	..	-	-	-	-	-	-	-	-	-	-	-
Other Africa	..	-	-	-	-	-	-	-	-	-	-	-
Africa	**..**	**539**	**536**	**530**	**532**	**531**	**524**	**527**	**525**	**528**	**523**	**525**
Bangladesh	..	586	555	603	573	545	546	561	555	554	568	559
Brunei Darussalam	..	881	796	819	780	782	762	802	702	754	755	737
Cambodia	..	-	-	-	-	-	-	-	-	-	-	-
Chinese Taipei	..	505	462	446	432	425	428	429	423	429	422	425
India	..	539	503	538	469	480	480	480	460	445	488	464
Indonesia	..	514	524	510	526	596	539	615	581	566	579	575
DPR of Korea	..	-	-	-	-	-	-	-	-	-	-	-
Malaysia	..	528	472	510	409	418	485	491	463	499	487	483
Mongolia	..	-	-	-	-	-	-	-	-	-	-	-
Myanmar	..	843	686	654	725	725	725	725	725	725	725	725
Nepal	..	-	-	-	-	-	-	-	-	-	-	-
Pakistan	..	594	550	529	536	526	537	536	573	586	562	573
Philippines	..	854	1 202	300	349	356	345	330	338	341	349	342
Singapore	..	447	446	446	446	446	446	446	446	446	446	446
Sri Lanka	..	-	-	-	-	-	-	-	-	-	-	-
Thailand	..	468	492	504	489	480	476	474	473	461	456	463
Vietnam	..	514	591	643	522	546	515	465	444	456	418	439
Other Asia	..	502	502	502	502	503	502	502	502	502	502	502
Asia	**..**	**529**	**505**	**512**	**478**	**482**	**485**	**486**	**476**	**476**	**480**	**478**
People's Rep. of China	..	513	318	290	311	311	334	352	412	407	428	416
Hong Kong, China	..	859	468	448	457	451	454	454	454	454	454	454
China	**..**	**521**	**378**	**351**	**356**	**355**	**365**	**379**	**419**	**416**	**431**	**422**

CO_2 emissions per kWh from electricity and heat generation using natural gas

grammes CO_2 / kilowatt hour

	1990	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	Average 07-09
Bahrain	..	815	868	835	883	881	873	797	826	650	665	714
Islamic Republic of Iran	..	594	594	593	593	593	598	598	598	598	600	599
Iraq	..	-	-	-	-	-	-	-	-	-	-	-
Jordan	..	681	671	646	666	622	610	600	566	571	574	570
Kuwait	..	502	502	502	418	419	446	446	446	418	529	465
Lebanon	..	-	-	-	-	-	-	-	-	-	502	502
Oman	..	776	741	780	809	847	819	850	836	814	796	815
Qatar	..	1 131	771	782	779	649	618	617	565	534	494	531
Saudi Arabia	..	792	723	687	683	665	661	679	676	673	665	672
Syrian Arab Republic	..	543	543	543	543	543	543	543	543	543	543	543
United Arab Emirates	..	730	721	758	798	906	836	812	711	721	624	685
Yemen	..	-	-	-	-	-	-	-	-	-	-	-
Middle East	**..**	**702**	**665**	**665**	**668**	**675**	**666**	**665**	**644**	**636**	**616**	**632**
Albania	..	-	-	-	-	-	-	-	-	-	-	-
Armenia	..	328	457	454	455	351	404	442	495	511	450	485
Azerbaijan	..	341	582	444	481	496	496	496	494	483	496	491
Belarus	..	276	298	292	289	298	297	297	300	309	295	301
Bosnia and Herzegovina	..	-	287	287	287	287	287	287	287	287	321	298
Bulgaria	..	302	296	288	261	232	235	244	265	246	233	248
Croatia	..	423	338	346	312	318	304	323	356	320	323	333
Cyprus	..	-	-	-	-	-	-	-	-	-	-	-
Georgia	..	934	887	393	348	369	389	459	704	393	597	565
Gibraltar	..	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	..	559	1 009	870	780	602	778	574	574	574	574	574
Kyrgyzstan	..	309	309	309	309	309	309	309	307	297	214	272
Latvia	..	247	240	239	236	238	236	234	232	242	232	235
Lithuania	..	255	268	257	257	260	264	257	258	264	264	262
FYR of Macedonia	..	-	238	235	248	254	242	242	238	220	221	226
Malta	..	-	-	-	-	-	-	-	-	-	-	-
Qatar	..	402	734	744	752	525	527	483	509	479	395	461
Romania	..	322	295	309	349	313	311	315	308	310	285	301
Russian Federation	..	259	293	301	297	297	305	305	309	315	315	313
Serbia	..	241	260	258	268	268	226	229	235	238	248	240
Tajikistan	..	515	517	428	422	501	498	459	405	405	378	396
Turkmenistan	..	931	795	795	795	795	795	795	795	844	790	810
Ukraine	..	273	317	294	348	293	284	267	276	312	295	295
Uzbekistan	..	422	474	475	481	487	491	489	490	484	491	488
Non-OECD Europe and Eurasia	**..**	**273**	**309**	**312**	**315**	**309**	**315**	**313**	**318**	**326**	**325**	**323**
Argentina	..	437	514	482	474	450	460	467	468	468	469	468
Bolivia	..	696	642	552	593	566	552	550	560	624	632	605
Brazil	..	742	496	478	445	472	473	451	450	436	438	441
Colombia	..	646	534	495	502	492	496	485	544	462	464	490
Costa Rica	..	-	-	-	-	-	-	-	-	-	-	-
Cuba	..	502	502	502	502	502	502	502	502	502	502	502
Dominican Republic	..	-	-	-	502	502	502	502	502	502	502	502
Ecuador	..	-	-	937	976	903	630	723	767	796	754	773
El Salvador	..	-	-	-	-	-	-	-	-	-	-	-
Guatemala	..	-	-	-	-	-	-	-	-	-	-	-
Haiti	..	-	-	-	-	-	-	-	-	-	-	-
Honduras	..	-	-	-	-	-	-	-	-	-	-	-
Jamaica	..	-	-	-	-	-	-	-	-	-	-	-
Netherlands Antilles	..	-	-	-	-	-	-	-	-	-	-	-
Nicaragua	..	-	-	-	-	-	-	-	-	-	-	-
Panama	..	-	-	-	-	-	-	-	-	-	-	-
Paraguay	..	-	-	-	-	-	-	-	-	-	-	-
Peru	..	670	670	648	648	610	548	534	462	472	472	469
Trinidad and Tobago	..	716	688	771	725	754	708	742	735	705	715	718
Uruguay	..	-	-	-	-	578	469	536	578	466	505	516
Venezuela	..	675	644	654	652	638	658	654	630	625	607	621
Other Latin America	..	448	452	452	452	452	452	452	452	452	452	452
Latin America	**..**	**568**	**551**	**541**	**526**	**510**	**512**	**515**	**513**	**499**	**505**	**506**

7. GLOBAL TOTAL

World

Figure 1. CO_2 emissions by fuel

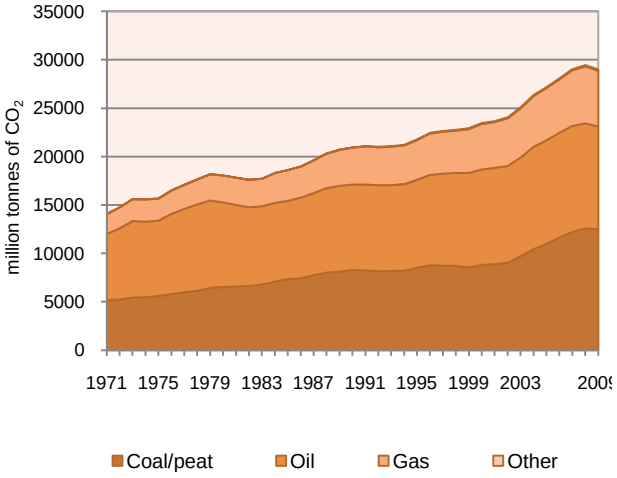


Figure 2. CO_2 emissions by sector

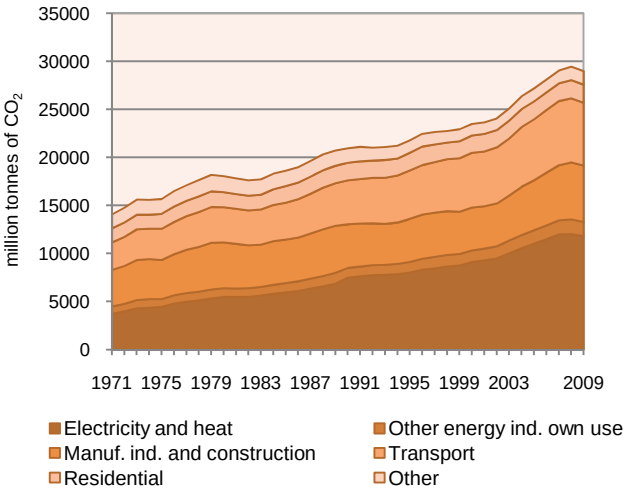


Figure 3. CO_2 emissions by sector

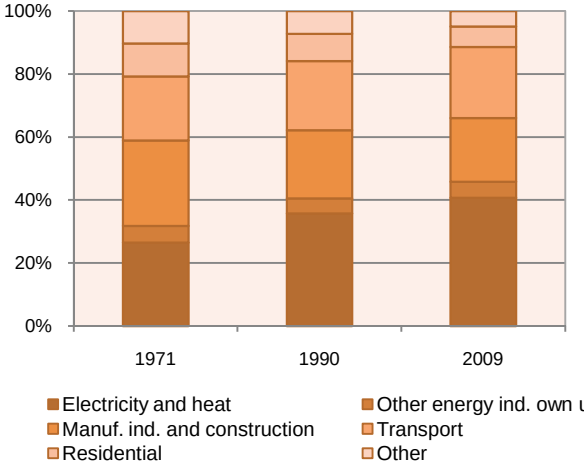


Figure 4. Reference vs Sectoral Approach

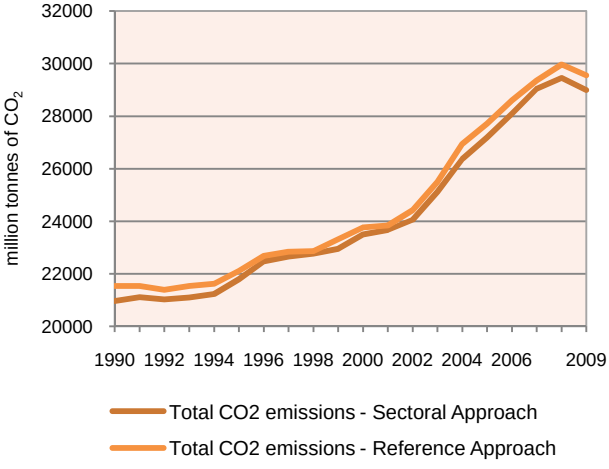


Figure 5. Electricity generation by fuel

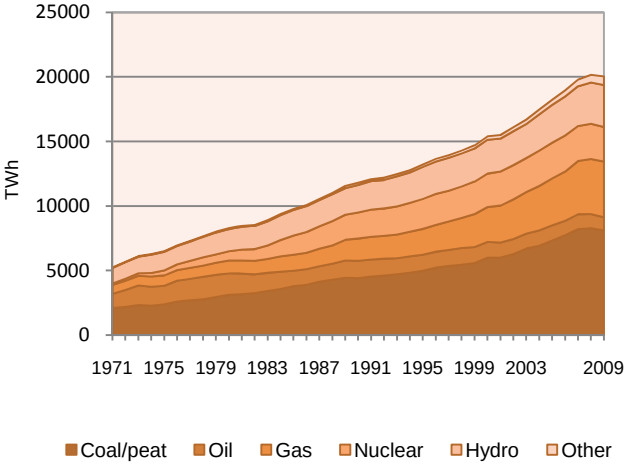
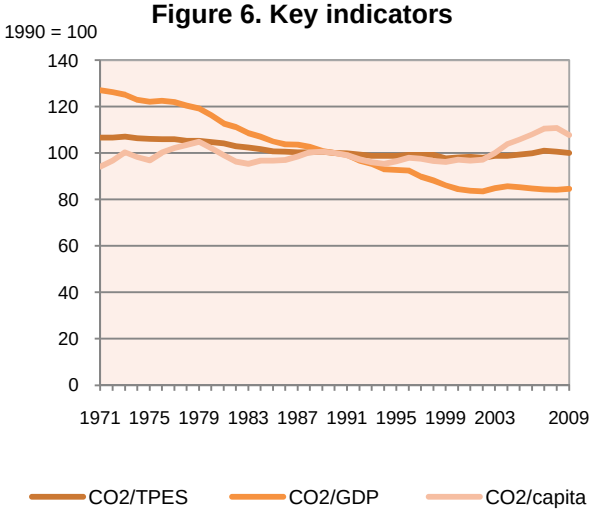


Figure 6. Key indicators



World

Key indicators

	1990	1995	2000	2005	2007	2008	2009	% change 90-09
CO_2 Sectoral Approach (Mt of CO_2)	20 966.3	21 791.6	23 492.9	27 188.3	29 047.9	29 454.0	28 999.4	38.3%
CO_2 Reference Approach (Mt of CO_2)	21 536.2	22 110.9	23 763.5	27 708.5	29 354.8	29 967.1	29 549.3	37.2%
TPES (PJ)	367 696	386 906	420 014	480 084	504 633	513 874	508 690	38.3%
TPES (Mtoe)	8 782.3	9 241.1	10 031.9	11 466.6	12 053.0	12 273.7	12 149.8	38.3%
GDP (billion 2000 USD)	24 257.5	27 196.0	32 174.3	36 896.6	39 885.3	40 470.4	39 674.4	63.6%
GDP PPP (billion 2000 USD)	33 340.6	37 834.2	45 799.1	55 547.2	62 111.5	64 095.3	64 244.4	92.7%
Population (millions)	5 266.9	5 680.5	6 075.5	6 455.4	6 607.2	6 684.0	6 760.7	28.4%
CO_2 / TPES (t CO_2 per TJ)	57.0	56.3	55.9	56.6	57.6	57.3	57.0	0.0%
CO_2 / GDP (kg CO_2 per 2000 USD)	0.86	0.80	0.73	0.74	0.73	0.73	0.73	-15.4%
CO_2 / GDP PPP (kg CO_2 per 2000 USD)	0.63	0.58	0.51	0.49	0.47	0.46	0.45	-28.2%
CO_2 / population (t CO_2 per capita)	3.98	3.84	3.87	4.21	4.40	4.41	4.29	7.8%

Ratios are based on the Sectoral Approach.

2009 CO_2 emissions by sector

million tonnes of CO_2	Coal/peat	Oil	Natural gas	Other *	Total	% change 90-09
Sectoral Approach	**12 493.1**	**10 630.8**	**5 762.3**	**113.1**	**28 999.4**	**38.3%**
Main activity producer elec. and heat	8 091.3	695.1	1 972.2	37.6	10 796.1	63.1%
Unallocated autoproducers	453.5	150.4	386.8	40.3	1 031.0	16.2%
Other energy industry own use	273.5	641.8	548.0	0.8	1 464.1	45.6%
Manufacturing industries and construction	3 093.1	1 500.2	1 247.3	30.3	5 870.9	29.5%
Transport	13.0	6 366.7	164.1	-	6 543.8	42.5%
of which: road	-	*4 835.4*	*41.2*	-	*4 876.6*	48.3%
Other	568.7	1 276.6	1 443.9	4.2	3 293.4	-1.1%
of which: residential	*305.8*	*597.2*	*972.1*	*0.0*	*1 875.0*	2.9%
Reference Approach	**12 848.8**	**10 753.8**	**5 833.6**	**113.1**	**29 549.3**	**37.2%**
Diff. due to losses and/or transformation	256.5	85.6	56.6	0.0	398.8	
Statistical differences	99.2	37.4	14.6	- 0.0	151.2	
Memo: international marine bunkers **	-	*592.2*	-	-	*592.2*	*65.5%*
Memo: international aviation bunkers **	-	*423.4*	-	-	*423.4*	*65.5%*

* 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 2009

IPCC source category	CO_2 emissions (Mt of CO_2)	% change 90-09	Level assessment (%) ***	Cumulative total (%)
Main activity prod. elec. and heat - coal/peat	8 091.3	77.7%	19.1	19.1
Road - oil	4 835.4	47.2%	11.4	30.4
Manufacturing industries - coal/peat	3 093.1	41.0%	7.3	37.7
Main activity prod. elec. and heat - gas	1 972.2	91.7%	4.6	42.4
Other transport - oil	1 531.4	36.0%	3.6	46.0
Manufacturing industries - oil	1 500.2	11.0%	3.5	49.5
Manufacturing industries - gas	1 247.3	27.1%	2.9	52.4
Residential - gas	972.1	51.8%	2.3	54.7
Main activity prod. elec. and heat - oil	695.1	-32.8%	1.6	56.4
Non-specified other - oil	679.5	-6.3%	1.6	58.0
Other energy industry own use - oil	641.8	15.6%	1.5	59.5
Memo: total CO_2 from fuel combustion	*28 999.4*	*38.3%*	*68.3*	*68.3*

*** Percent calculated using the total GHG estimate for CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 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 Statistics Division, 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.

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International Energy Agency
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75739 Paris Cedex 15, France
Email: recruitment@iea.org

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Ten Annual Publications

Energy Statistics of OECD Countries, 2011 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 2008 and 2009 and supply estimates are available for the most recent year (*i.e.* 2010). 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.

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Energy Balances of OECD Countries, 2011 Edition

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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 2008 and 2009. For a description of the content, please see *Energy Statistics of OECD Countries* above.

Published August 2011 - Price €120

Energy Balances of Non-OECD Countries, 2011 Edition

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Published August 2011 - Price €165

Oil Information 2011

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 the OECD regions. Trade data are reported extensively by origin and destination.

Published August 2011 - Price €165

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Published August 2011 - Price €110

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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 2009 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 2011 - Price €165

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Published Quarterly - Price €120, annual subscription €380

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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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International Energy Agency

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