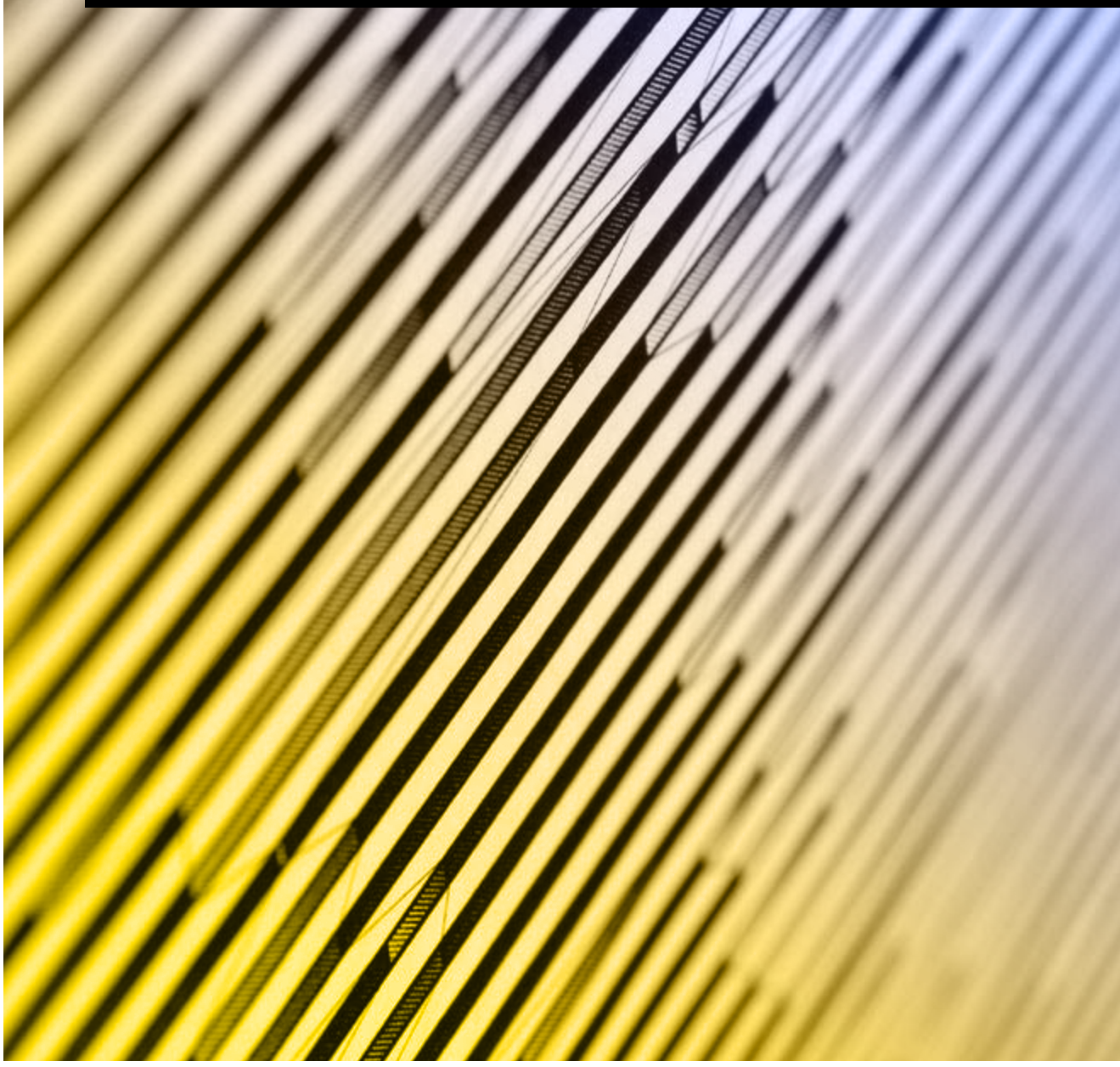
statistics

CO_2 emissions from fuel combustion

HIGHLIGHTS



International Energy Agency
Secure Sustainable Together

2016

CO_2 emissions from fuel combustion

HIGHLIGHTS

2016

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 29 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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Secure Sustainable Together

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FOREWORD

In recent years, we have seen a fundamental shift in the way governments around the world approach energy-related environmental issues. Promoting sustainable development and combating climate change have become integral aspects of energy planning, analysis and policy making both within International Energy Agency (IEA) member countries, and beyond. Because energy accounts for two-thirds of total greenhouse gas emissions and 80% of CO_2, any effort to reduce emissions and mitigate climate change must include the energy sector. As a result, climate change has become a key focus of IEA work.

In the lead-up to the UN climate negotiations at COP 22 in Marrakesh, Morocco, which follows the successful outcome of the Paris meeting, the latest information on the level and growth of CO_2 emissions from fuel combustion, their source and geographic distribution will be essential in laying the foundation for a global agreement.

Therefore, the IEA Secretariat has prepared this publication to provide the most comprehensive estimates of CO_2 emissions from fuel combustion across the world and across the sectors of the global economy, based on official energy data from around 150 countries and regions. Any energy-related policy to address climate change needs to be based on accurate data. The IEA works with countries around the world to improve their reporting of energy data and through this, more accurate estimations of CO_2 emissions will occur. The purpose of this publication is to place current and detailed information in the hands of those who need it, including in particular the participants and decision makers in the UNFCCC process.

Most of the data presented in this publication are for CO_2 emissions from fuel combustion only. Therefore, they may differ from countries' official greenhouse gas inventory submissions to the UNFCCC Secretariat, which include emissions of other greenhouse gases and from other sources.

This edition includes data from 1971 to 2014 for more than 150 countries and regions worldwide, by sector and by fuel; as well as a number of CO_2-related indicators. It is our hope that this breakdown will assist the reader in better understanding the evolution of emissions worldwide.

The IEA will continue to provide evidence-based policy recommendations on climate change and to provide accurate data to shape the debate.

Fatih Birol
Executive Director

2016 Highlights

This excerpt from the CO_2 emissions from fuel combustion 2016 publication contains an extensive selection of CO_2 emissions data for over 150 countries and regions, including detailed graphs and tables for the world and regional aggregates, and an analysis of recent trends. Emissions data are based on the IEA World Energy Balances 2016 and on the 2006 IPCC Methodologies for Greenhouse Gas Inventories.

For more comprehensive data by country and sector, please refer to the IEA data services portal (*www.iea.org/statistics/onlinedataservice/*); for the full publication please refer to the IEA Bookshop (*www.iea.org/publications/*).

Inquiries should be addressed to emissions@iea.org.

Please note that all IEA data is subject to the following Terms and Conditions found on the IEA's website: *www.iea.org/t&c/termsandconditions/*.

What's new?

Revisions to data: People's Republic of China

In September 2015, the National Bureau of Statistics of China (NBS) published China's energy statistics for 2013, as well as revised statistics for the years 2000 to 2012. The NBS supplied the IEA with detailed energy balances for 2011 to 2013 and these were data were incorporated in the 2015 edition of this publication. In 2016, the NBS supplied the IEA with detailed energy balances for 2000 to 2010 and the IEA revised its 2000-2010 data based on these newly available figures, as published in this document.

For more information, please refer to the section *Country Notes*.

Geographical coverage

The IEA continues to try to expand the coverage of its statistics reports and encourages more countries to collaborate on data exchange. This year data have become available for Suriname from 2000 to 2014, and have been included in this edition. Therefore Suriname, published separately, has been removed from the region Other non-OECD Americas for those years.

In previous editions of the publication, the country composition of the regional grouping *Annex I Kyoto Parties* reflected those countries with targets under the first commitment period of the Kyoto Protocol (2008-2012). In this edition, the country composition of this grouping has been updated as per Annex B of the Doha Amendment, to reflect those countries with targets under the second commitment period of the Kyoto Protocol (2013-2020). In addition, the name of this aggregate has been amended to *Annex B Kyoto Parties*, to account for the fact that Kazakhstan, a non-Annex I country, has adopted a target under the Doha Amendment.

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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 *2006 IPCC Guidelines for National Greenhouse Gas Inventories.* There are many reasons why **the IEA Secretariat estimates of CO_2 emissions from fuel combustion may not be the same as the figures 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 from fuel combustion. IEA estimates include emissions from all reported energy use of fuels, but exclude emissions from non-energy use of fuels. Such totals may differ from those calculated using the Sectoral Approach of the *2006 IPCC Guidelines,* as under these guidelines some fuel combustion emissions have been reallocated out of the Source category energy and reclassified as industrial process emissions.

Information on "key sources" from fuel combustion, as developed in the *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, are only given for combustion sources and will not include key sources from fugitive emissions, industrial processes, solvents, agriculture and waste. Please see the chapters *IEA emissions estimates* and *IPCC methodologies* for further information.

Energy data on OECD member and non-member countries[1] are collected by the Energy Data Centre (EDC) of the IEA Secretariat, headed by Mr. Duncan Millard. The IEA would like to thank and acknowledge the dedication and professionalism of the statisticians working on energy data in the respective countries.

Summary data for other greenhouse gases and sources are provided in cooperation with the PBL Netherlands Environmental Assessment Agency and the Joint Research Centre of the European Commission (JRC).

Mr. Aidan Kennedy was responsible for the CO_2 emissions from fuel combustion estimates, and Mr. Loïc Coënt was in charge of the preparation of this excerpt. Input on international mitigation efforts was provided by Ms. Christina Hood and Mr. George Kamiya. Desktop publishing support was provided by Ms. Sharon Burghgraeve. Ms. Roberta Quadrelli had overall responsibility for this publication.

CO_2 emission estimates from 1960 to 2014 for the Annex II countries and from 1971 to 2014 for all other countries are available on CD-ROM suitable for use on Windows-based systems. To order, please see the information provided at the end of this publication.

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

Enquiries about data or methodology should be addressed to:

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

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

1. KEY TRENDS IN CO_2 EMISSIONS FROM FUEL COMBUSTION

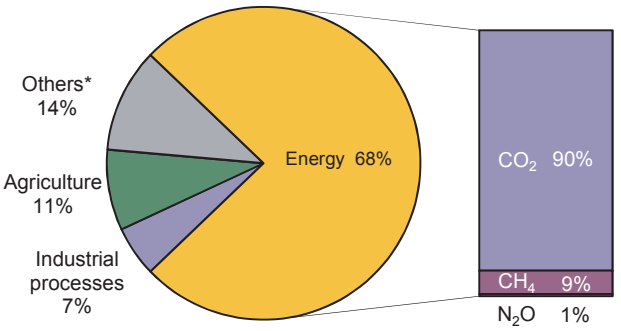
The growing importance of energy-related emissions

Climate scientists have observed that carbon dioxide (CO_2) concentrations in the atmosphere have been increasing significantly over the past century, compared to the pre-industrial era level of about 280 parts per million (ppm). In 2015, the average concentration of CO_2 (399 ppm)[1] was about 40% higher than in the mid-1800s, with an average growth of 2 ppm/year in the last ten years. Significant increases have also occurred in the levels of methane (CH_4) and nitrous oxide (N_2O).

Energy use and greenhouse gases

The *Fifth Assessment Report* from the Intergovernmental Panel on Climate Change (Working Group I) states that human influence on the climate system is clear (IPCC, 2013). Among the many human activities that produce greenhouse gases, the use of energy represents by far the largest source of emissions. Smaller shares correspond to agriculture, producing mainly CH_4 and N_2O from domestic livestock and rice cultivation, and to industrial processes not related to energy, producing mainly fluorinated gases and N_2O (Figure 1).

Figure 1. Estimated shares of global anthropogenic GHG



* Others include large-scale biomass burning, post-burn decay, peat decay, indirect N_2O emissions from non-agricultural emissions of NO_x and NH_3, Waste, and Solvent Use.

Source: based on IEA estimates for CO_2 from fuel combustion and EDGAR 4.3.0 and 4.3.2 for non-fuel combustion CO_2 and 4.2 FT2010 for all other sources; for 2010; based on 100-year Global Warming Potential (GWP).

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

CO_2 emissions from energy account for the largest share of global anthropogenic GHG emissions, representing over three quarters of emissions from

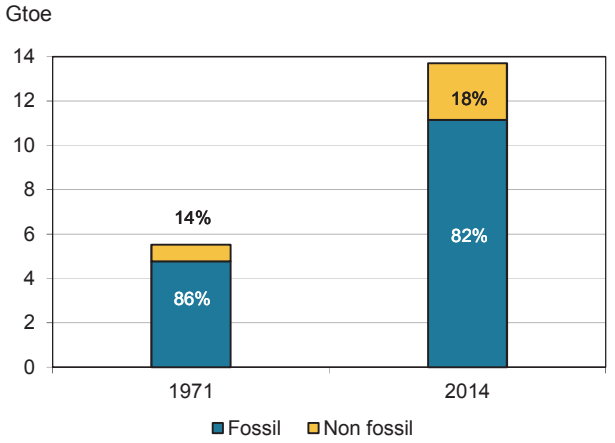
1. Globally averaged marine surface annual mean expressed as a mole fraction in dry air. Ed Dlugokencky and Pieter Tans, NOAA/ESRL (www.esrl.noaa.gov/gmd/ccgg/trends/).

2. The energy sector includes emissions from "fuel combustion" (the large majority) and "fugitive emissions", which are intentional or unintentional releases of gases resulting from production, processes, transmission, storage and use of fuels (*e.g.* CH4 emissions from coal mining).

Annex I[1] countries, and about 60% of global emissions.[2] This percentage varies greatly by country, due to diverse national structures.

Increasing demand for energy comes from worldwide economic growth and development. Global total primary energy supply (TPES) increased by almost 150% between 1971 and 2014, still mainly relying on fossil fuels (Figure 2).

Figure 2. World primary energy supply*

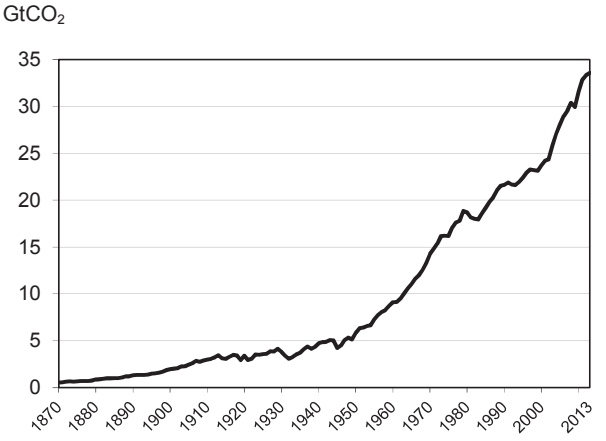


* World primary energy supply includes international bunkers. In this graph, non-renewable waste is included in Fossil.

Despite the growth of non-fossil energy (such as nuclear, hydropower and other renewable sources), considered as non-emitting,[3] the share of fossil fuels within the world energy supply is relatively unchanged over the past four decades. In 2014, fossil sources accounted for 82% of the global TPES.

Growing world energy demand from fossil fuels plays a key role in the upward trend in CO_2 emissions (Figure 3). Since the Industrial Revolution, annual CO_2 emissions from fuel combustion have dramatically increased from near zero to over 32 $GtCO_2$ in 2014.

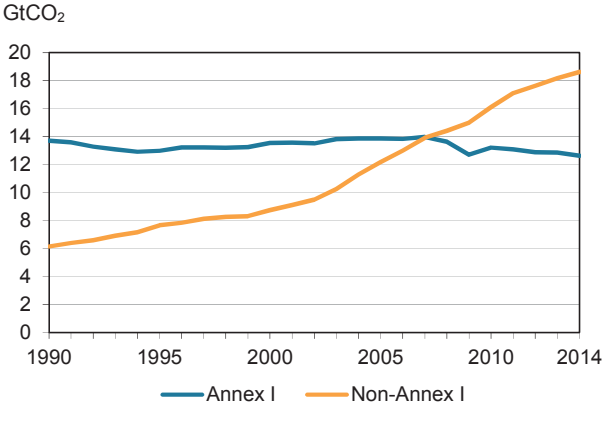
Figure 3. Trend in CO_2 emissions from fossil fuel combustion



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

More recently, since 1990, emissions in non-Annex I countries have tripled, while emissions in Annex I countries have declined slightly (Figure 4).

Figure 4. Regional CO_2 emissions trends (1990-2014)



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

1. The Annex I Parties to the 1992 UN Framework Convention on Climate Change (UNFCCC) are: Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Cyprus (please refer to the chapter: *Geographical Coverage*), the Czech Republic, Denmark, Estonia, European Economic Community, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom and United States. These are broadly divided into two groupings: Annex I EIT and Annex II. Annex I EIT consists of those members of Annex I that are Economies in Transition (EIT). Annex II includes of the remaining members of Annex I, aside from Cyprus, Malta and Turkey. See *www.unfccc.int*. For further details, see *Geographical Coverage*.

2. Based on 100-year Global Warming Potential (GWP).

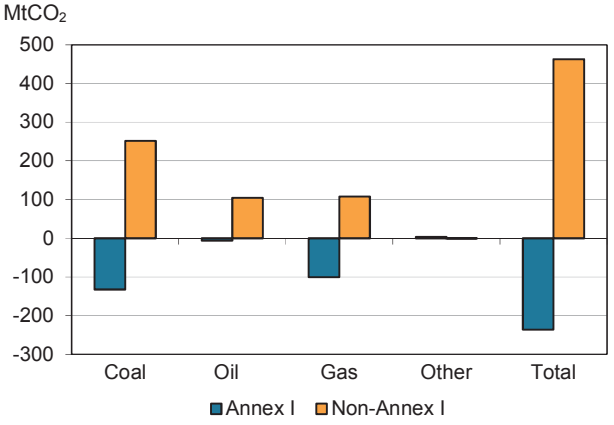
3. Excluding the life cycle of all non-emitting sources and excluding combustion of biofuels (considered as non-emitting CO_2, based on the assumption that the released carbon will be reabsorbed by biomass regrowth, under balanced conditions).

Recent emissions trends

In 2014, global CO_2 emissions reached 32.4 $GtCO_2$, an increase of 0.8% over 2013 levels[1]. This was much lower growth than in 2013 (1.7%), and far below the average annual growth rate since 2000 (2.4%). In absolute terms, the emissions growth in 2014 (0.25 $GtCO_2$) was one of the smallest observed since 2000.

Emissions in non-Annex I countries continued to increase (2.5%), although at a slower rate than in 2012 (3.1%), while emissions in Annex I countries decreased (-1.8%) due to modest declines in emissions from coal (-3.2%) and natural gas (-2.6%). In absolute terms, global CO_2 emissions increased by 0.3 $GtCO_2$ in 2014, driven by increased emissions from coal and (to a lesser extent) oil and natural gas in non-Annex I countries (Figure 5).

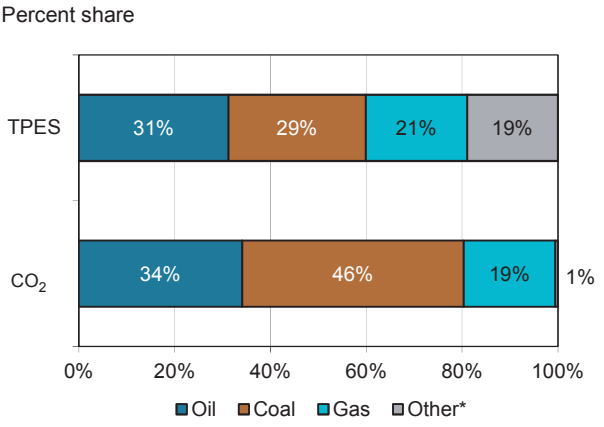
Figure 5. Change in CO_2 emissions (2013-14)



Emissions by fuel

Although coal represented 29% of the world TPES in 2014, it accounted for 46% of the global CO_2 emissions due to its heavy carbon content per unit of energy released, and to the fact that almost of fifth of the TPES derives from carbon-neutral fuels (Figure 6). Compared to gas, coal is nearly twice as emission intensive on average.[2]

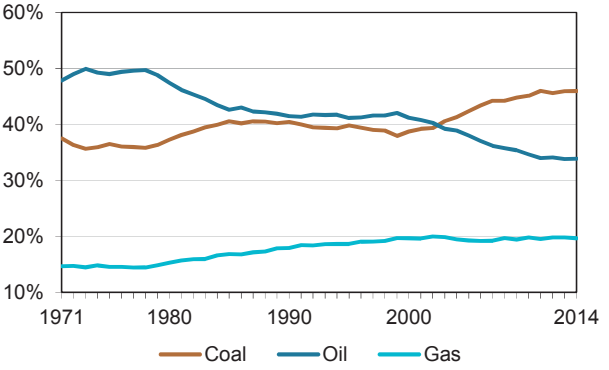
Figure 6. World primary energy supply and CO_2 emissions: shares by fuel in 2014



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

From the late 1980s until the early 2000s, coal and oil were each responsible for approximately 40% of global CO_2 emissions, with emissions from oil generally exceeding those from coal by a few percentage points. However, the trends differed at a regional level. In Annex I countries, oil was the largest source of fuel combustion emissions, whereas, in non-Annex I countries emissions from coal ranked highest Since then, mainly due to the increasing influence of non-Annex I countries, coal has increased from 39% in 2002 to 46% in 2014, while oil has decreased from 40% to 34%, with natural gas approximately stable at 20% (Figure 7).

Figure 7. Fuel shares in global CO_2 emissions



Emissions by region

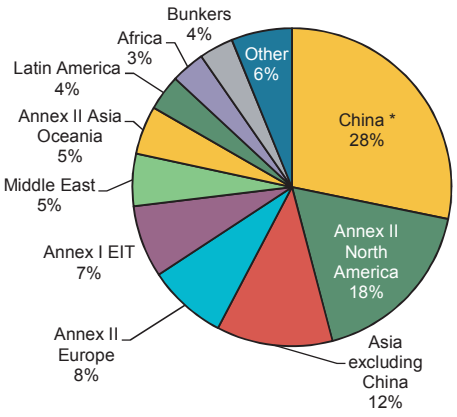
Non-Annex I countries, collectively, represented 58% of global CO_2 emissions in 2014, while Annex I countries represented 39%, with international marine and aviation bunkers responsible for 3%. On a more regional level, the contribution to global CO_2 emissions varies greatly: in 2014, China (28%) and Annex II

1. The IEA CO_2 emissions estimates are derived from the IEA energy balances, which use official country data to the maximum extent possible. The IEA is continuously working together with national administrations worldwide to ensure data quality improvements in the longer-term. As this work progresses, revisions to the underlying energy data and thus the CO_2 estimates may occur.

2. Default carbon emission factors from the *2006 IPCC Guidelines*: 15.3 tC/TJ for gas, 15.7 to 26.6 tC/TJ for oil products, 25.8 to 29.1 tC/TJ for primary coals.

North America[1] (18%) were responsible for the largest share of emissions, followed by Asia excluding China (12%), Annex II Europe (8%) and Annex I EIT (7%), with smaller shares coming from the Middle East (5%), Annex II Asia Oceania (5%), Latin America (4%) and Africa (3%) (Figure 8).

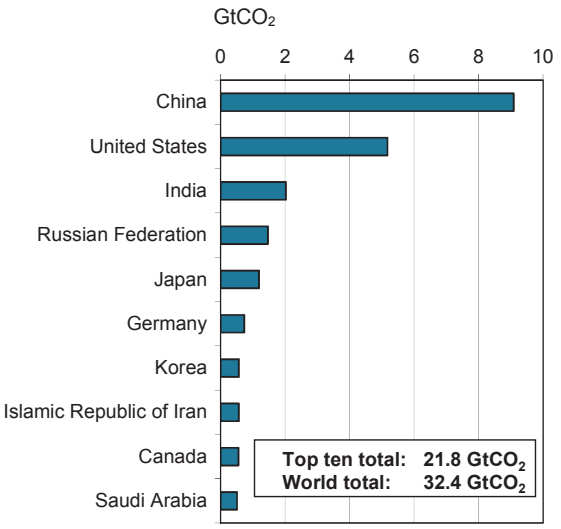
Figure 8. CO_2 emissions by region (2014)



* China includes Hong Kong, China.

Regional differences in contributions to global emissions conceal even larger differences among individual countries. Over two-thirds of global emissions for 2014 originated from just ten countries, with the shares of China (28%) and the United States (16%) far surpassing those of all others. Combined, these two countries alone produced 14.3 $GtCO_2$. The top-10 emitting countries include five Annex I countries and five non-Annex I countries (Figure 9).

Figure 9. Top ten emitting countries in 2014

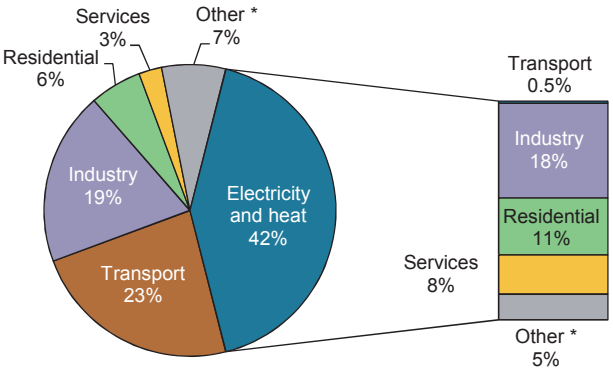


As different regions and countries have contrasting economic and social structures, the picture changes significantly when moving from absolute emissions to indicators such as emissions per capita or per GDP. A more comprehensive analysis is given in the section *Coupling emissions with socio-economic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

Emissions by sector

Two sectors produced nearly two-thirds of global CO_2 emissions from fuel combustion in 2014: electricity and heat generation, by far the largest, which accounted for 42%, while transport accounted for 23% (Figure 10).

Figure 10. World CO_2 emissions from fuel combustion by sector in 2014



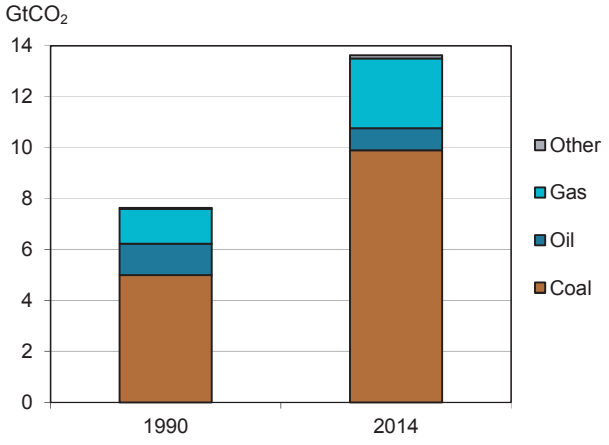
Note: Also shows allocation of electricity and heat to end-use sectors.

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

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

Between 2013 and 2014, CO_2 emissions from electricity and heat increased by 0.2%, compared with an increase of 1.3% between 2012 and 2013. This was slower than the increase in total emissions (0.8%), as declining emissions in the OECD and in non-OECD Europe and Eurasia offset much of the increases in emissions from electricity and heat elsewhere. While the share of oil in electricity and heat emissions has declined steadily since 1990, the share of gas increased slightly, and the share of coal increased significantly, from 66% in 1990 to 73% in 2014 (Figure 11).

Figure 11. CO_2 emissions from electricity and heat generation*

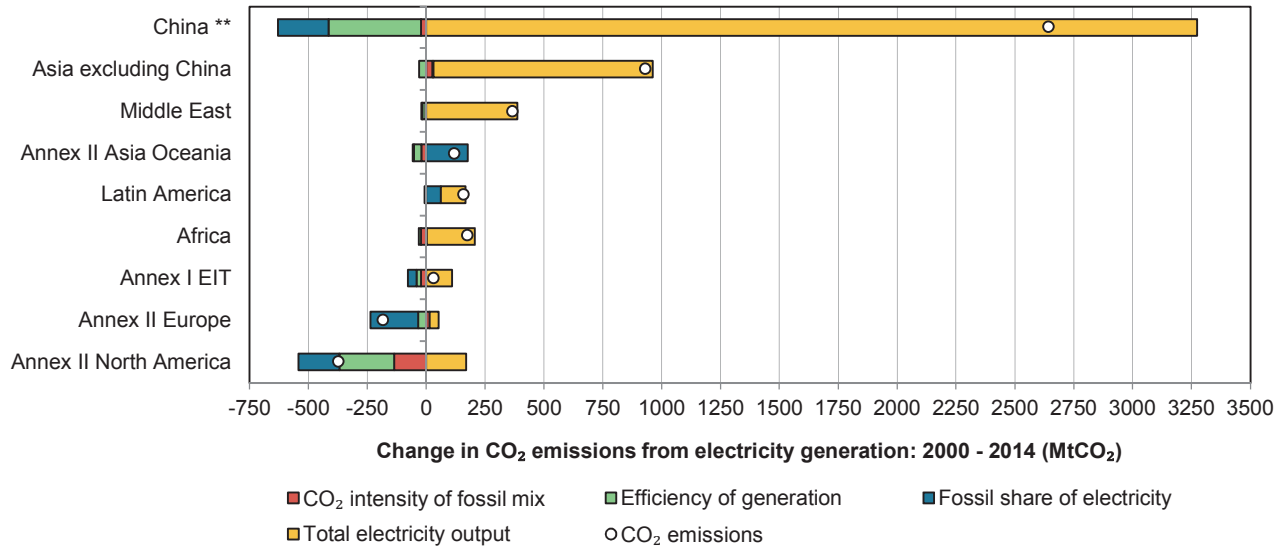


* Refers to main activity producers and autoproducers of electricity and heat.

Emissions from electricity generation specifically increased by 50% between 2000 and 2014. At a regional level, trends over the same period differed (Figure 12). Both Annex II Europe and Annex II North America showed a decrease in total emissions from electricity generation. In Annex II North America, this was driven by improvements in i) the thermal efficiency of generation; ii) the CO_2 intensity of the fossil fuel mix (both reflecting a shift from coal towards natural gas), and iii) an increase in the share of electricity output from non-emitting sources. In Annex II Europe, the share of electricity output from fossil fuels fell 21% between 2000 and 2014 lead by decreases in Italy and the United Kingdom. In Italy, the share of fossil-based electricity declined significantly (2000: 81%; 2014: 56%), as output from oil products fell, while that from solar PV, wind and hydro increased. Likewise, in the United Kingdom, electricity output from coal and gas decreased, while that from wind and combustible renewables increased, lowering the share of fossil fuels in the electricity mix (2000: 75%; 2014: 62%).

By contrast, Annex II Asia Oceania showed an increase in emissions from electricity generation, primarily due to a higher share of electricity output from fossil fuels. This predominantly reflected events in Japan, where sizeable fossil-fuel-powered generating capacity was brought online in the wake of the accident at Fukushima Daiichi in 2011.

Figure 12. CO_2 emissions from electricity generation: driving factors (2000-2014) *



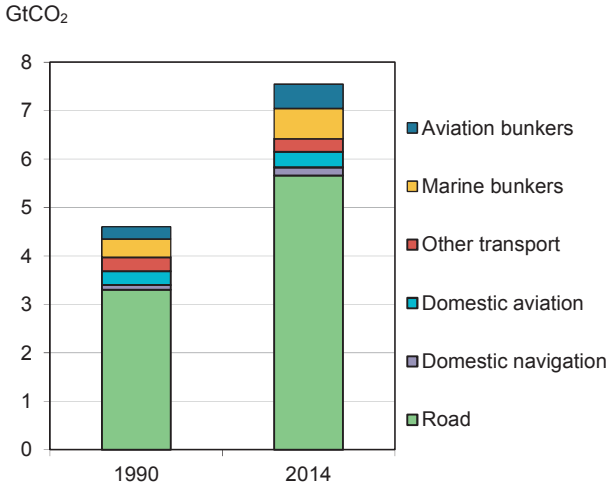
* Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec output.

** China includes Hong Kong, China.

Outside Annex I, all regions exhibited an increase in emissions from electricity generation, driven primarily by increased output. This was particularly notable in China, where total output has increased over four-fold since 2000, and in the remainder of Asia[1], where output more than doubled. In both of these regions, much of the increased output was met through carbon intensive coal-fired plants[5]. However, in China, efficiency improvements and a recently increased share of non-fossil generation (from a combination of increased output from wind, hydro and nuclear sources) reduced emissions per unit of output.

For transport, the 71% increase since 1990 (Figure 13) was driven by emissions from the road sector, which accounted for three quarters of transport emissions in 2014. Despite efforts to limit emissions from international transport, between 1990 and 2014, emissions from marine and aviation bunkers grew even faster than those from road (marine: +69% aviation: +95%).

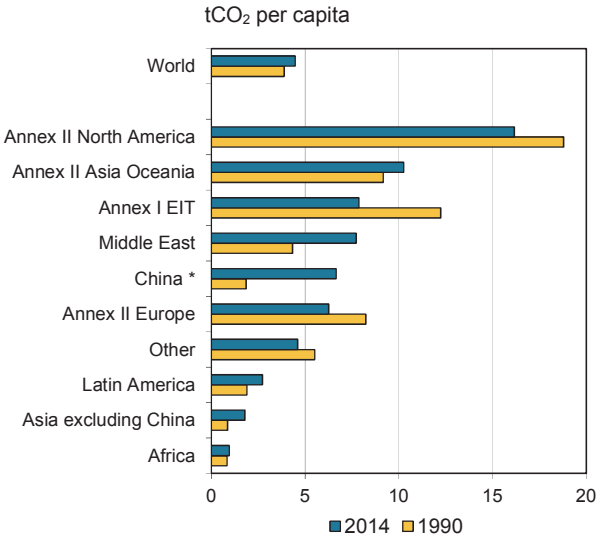
Figure 13. CO_2 emissions from transport



Coupling emissions with socio-economic indicators[2]

Per-capita emission levels vary significantly across the world, highlighting the wide divergences in the way different countries and regions use energy (Figure 14). For example, among the five largest emitters, the levels of per-capita emissions were very diverse, ranging from 1.6 tCO_2 for India and 6.7 tCO_2 for China to 16.2 tCO_2 for the United States. On average, industrialised countries emit far larger amounts of CO_2 per capita than developing countries, with the lowest levels worldwide observed in Africa.

Figure 14. CO_2 emissions per capita by major world regions



* China includes Hong Kong, China.

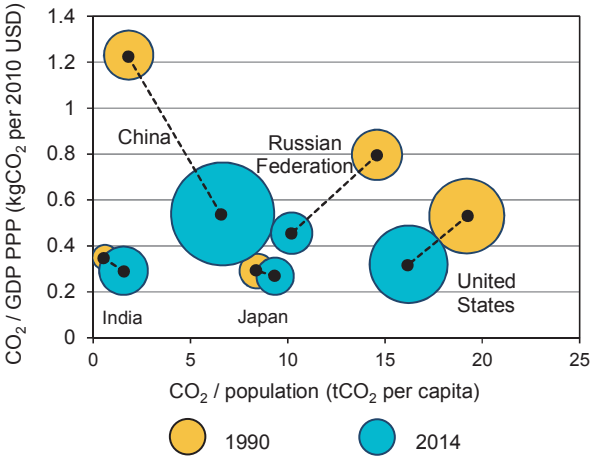
Globally, per-capita emissions increased by 16% between 1990 and 2014, however, contrasting trends were observed amongst the top five emitting countries, generally reducing gaps (Figure 15). China more than tripled its per-capita emissions, while India more than doubled theirs (as did some other rapidly expanding economies), reflecting strong per-capita GDP growth. Conversely, per-capita emissions decreased significantly in both the Russian Federation (-30%) and the United States (-16%), although following very different patterns. Values for Russia dramatically dropped in the early 1990s, and increased somewhat since then, while

1. For the purposes of this discussion, Asia excludes China and the OECD countries of the Asian region (Japan and Korea).

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

values for the United States began falling in the mid-to-late 2000s, having remained stable for many years.

Figure 15. Trends in CO_2 emission intensities for the top five emitting countries*

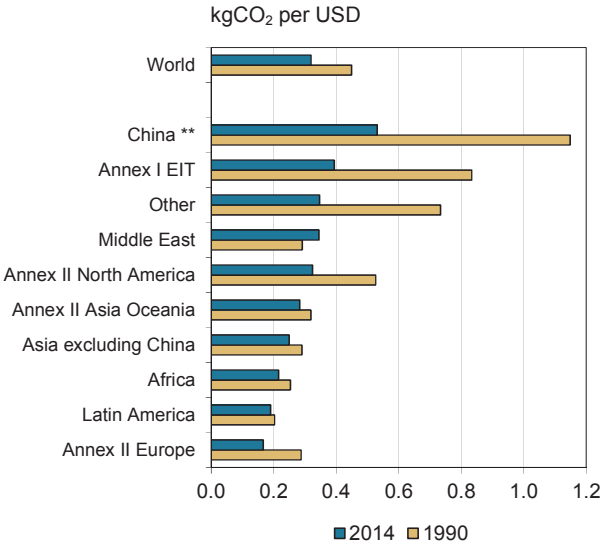


* The size of the circle represents the total CO_2 emissions from the country in that year.

For emissions per unit of GDP[1], all the five largest emitters have shown reductions between 1990 and 2014, in line with the decoupling observed globally (29%). This trend was most pronounced for China and the Russian Federation, whose 1990 levels were significantly higher than those of other countries, and for the United States.

Levels of emissions per GDP also vary significantly across regions, but much less in 2014 than in 1990 (Figure 16). Although climate, economic structure and other variables can affect energy use, relatively high values of emissions per GDP indicate a potential for decoupling CO_2 emissions from economic growth, including through fuel switching away from carbon-intensive sources or from energy efficiency at all stages of the energy value chain (from raw material extraction to energy end-use).[2]

Figure 16 CO_2 emissions per GDP* by major world regions



* GDP in 2010 USD, using purchasing power parities.
** China includes Hong Kong, China.

On a global level, CO_2 emissions grew by 58% between 1990 and 2014. A simple decomposition[3] shows the main driving factors of the world CO_2 emissions trend. Globally, economic growth partially decoupled from energy use, as energy intensity decreased by 30% over the period. However, with a practically unchanged carbon intensity of the energy mix[4], the combined growth in population (37%) and in per capita GDP (62%) led to a significant increase in global CO_2 emissions between 1990 and 2014. However, due to differences in levels of economic, demographic and technological development and growth, emissions evolved at different rates in Annex I and non-Annex I countries and regions.

In Annex I countries as a whole, CO_2 emissions in 2014 were actually 8% lower than in 1990 (Figure 17). Significant decoupling of energy consumption from economic activity (TPES/GDP: -34%) acted to decrease emissions but per-capita economic output grew (GDP/population: +39%), as did population (+11%), however, the energy sector's carbon intensity (CO_2/TPES) declined mildly (-9%).

1. Throughout this analysis, GDP refers to GDP in 2010 USD, using purchasing power parities. A note of caution is necessary concerning the indicator of CO_2 emissions per GDP. It can be very useful to measure efforts over time for one country, but has limitations when comparing countries, as it is very sensitive to the base year used for the GDP purchasing power parity (PPP).

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

3. CO_2 emissions can be decomposed into the product of four factors: population, per capita GDP, TPES/GDP, CO_2/TPES. For a more detailed description of the Kaya decomposition, see the chapter *Indicator sources and methods*.

4. Also known, in its index form, as Energy Sector Carbon Intensity Index (ESCII), as in the IEA publication *Tracking Clean Energy Progress 2016*.

Figure 17. Annex I CO_2 emissions and drivers (Kaya decomposition)[3]

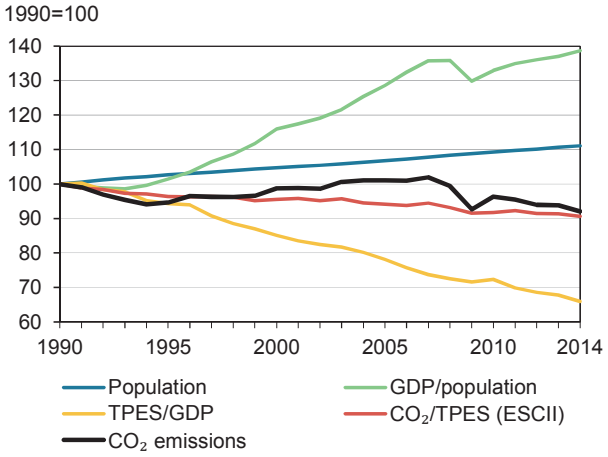
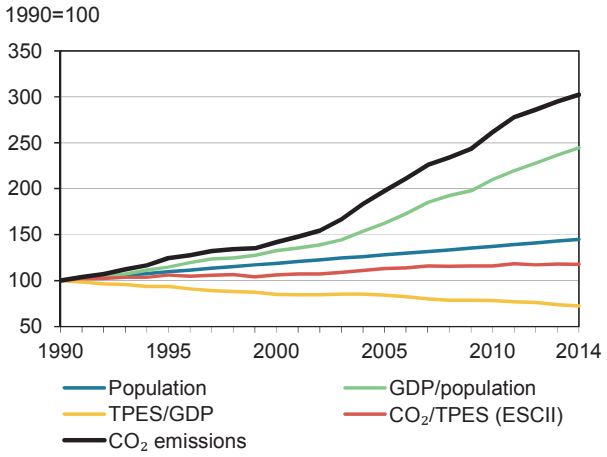


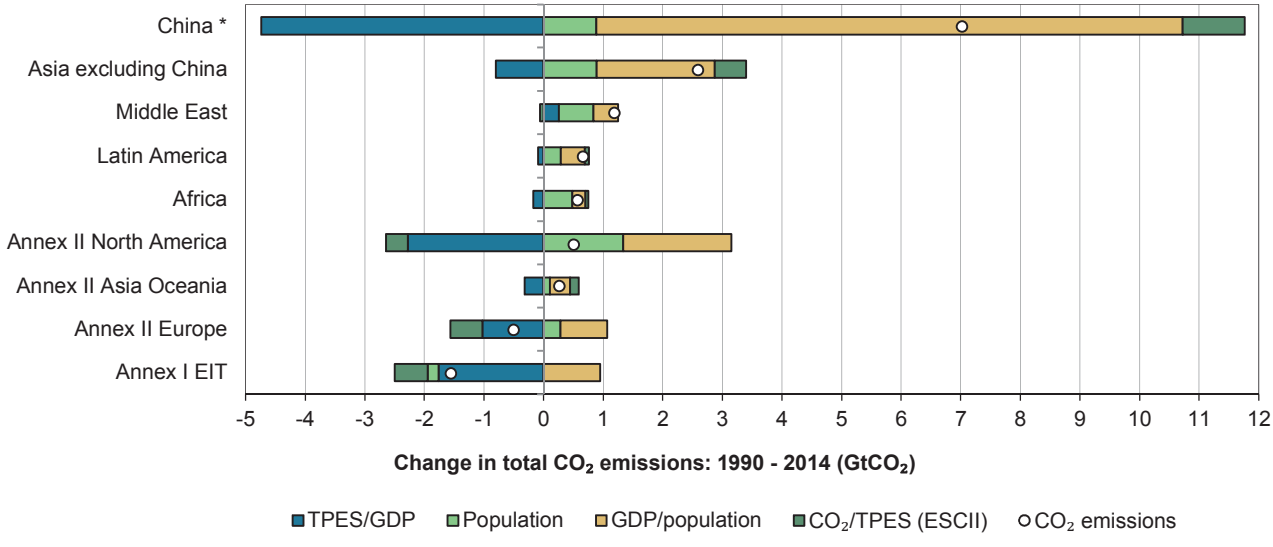
Figure 18. Non-Annex I CO_2 emissions and drivers (Kaya decomposition)[3]



By contrast, emissions in non-Annex I countries tripled over the same period (Figure 18), as very strong growth in per-capita economic output (+143%) combined with population growth (+45%). The CO_2 intensity of the energy mix grew slowly until 1999, before increasing somewhat (CO_2/TPES: +18%), mainly due to higher coal consumption in larger countries. However, a significant decrease in the energy intensity of the economic output (TPES/GDP: -27%) tempered those increases.

A decomposition showing the effect of changes in the four driving factors on regional emissions over time is presented in Figure 19. As can be seen, trends vary greatly across countries and regions. Therefore, a thorough understanding of the factors driving CO_2 emissions trends is essential when designing sound and effective emissions reduction policies at a national and international level.

Figure 19. Global CO_2 emissions and drivers (Kaya decomposition): 1990-2014[3]



Developing a low-carbon world

The year 2015 was a milestone for climate action, with the negotiation at the 21st Conference of the Parties (COP21) in December of the Paris Agreement on climate change. The Paris Agreement is the first international climate agreement extending mitigation obligations to all countries, both developed and developing.

With the energy sector accounting for approximately two-thirds of global GHG emissions, action in the energy sector can make or break efforts to achieve global climate goals. Traditionally, industrialised countries have emitted the large majority of anthropogenic greenhouse gases (GHGs). More recently, shares of developing country emissions surpassed those of industrialised countries, and have kept rising very rapidly. To shift towards a low-carbon world, mitigation efforts must occur across all countries: decarbonising the energy supplies of industrialised countries, and shifting developing countries onto a low-carbon development path.

The Agreement notably includes the collective aim to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C" (UNFCCC, 2015). To achieve this, Parties aim to reach a global peaking of GHG emissions as soon as possible, and to undertake rapid reductions thereafter "so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of GHGs in the second half of this century".

Previous climate agreements: Kyoto and Cancún

The first binding commitments to reduce greenhouse gas emissions were set under the Kyoto Protocol's first commitment period (2008-12). Participating industrialised countries were required (as a group) to curb domestic emissions by about 5% relative to 1990 over this period. Thirty-eight Parties have also agreed to take commitments under a second commitment period which will run from 2013 to 2020. The Doha Amendment to the Kyoto Protocol, which would bring this second commitment period into force requires ratification by 144 countries (two-thirds of those participating); as of 18 July 2016 only 66 have ratified.

Countries comply with their Kyoto Protocol targets by reducing emissions from fossil fuel combustion, reducing emission in other sectors (e.g. land-use or direct industrial emissions), or through use of the Kyoto Protocol's "flexible mechanisms" by which industrialised countries can earn emission credits from emissions reduction projects in participating developing countries and economies in transition (EITs).

Through its flexibility mechanisms and provisions for international trading, the Kyoto Protocol has made CO_2 a tradable commodity, and has been a key driver for the development of national emissions trading schemes. However the smaller pool of countries with targets in the Kyoto Protocol's second commitment period, coupled with a large surplus of project credits carried forward from the first period, have led to low prices and project developers exiting the market.

Despite its extensive participation (192 Parties), the Kyoto Protocol is limited in its potential to address global emissions. The United States remains outside of the Protocol's jurisdiction, and developing countries do not face emissions targets. The Kyoto Protocol second commitment period targets imply action on less than 13% of global CO_2 emissions in 2014 (Table 2).

Alongside agreement of a second Kyoto Protocol commitment period, developed and developing countries submitted voluntary emission reduction pledges for 2020 under the Copenhagen Accord and Cancún Agreements. With the participating Parties producing over 80% of global emissions, these pledges have far greater coverage. Table 2 summarises the 2020 targets of the ten highest-emitting Parties, all remaining IEA member countries, and their progress towards these targets. While Annex I Parties submitted absolute emission reduction targets (e.g. 20% below 1990 levels), non-Annex I Parties submitted "nationally appropriate mitigation actions", many of which are intensity-based targets (e.g. reductions on a CO_2/GDP basis in China and India) or targets specifying reductions below business-as-usual scenarios (e.g. Korea, Mexico, Indonesia, South Africa). In addition, a number of these developing country targets are conditional on international support – either requiring support to be implemented or to achieve greater levels of ambition and GHG emissions reductions. Although the ambition of these pledges is insufficient to limit temperature rise to 2°C above pre-industrial levels, the breadth of participation in mitigation commitments marked a significant improvement on the coverage of the Kyoto Protocol, and laid the groundwork for the Paris Agreement.

The Paris Agreement: International action beyond 2020

In consideration of countries' differing responsibilities and capabilities, post-2020 mitigation contributions to the Paris Agreement are nationally determined. More than 170 countries submitted their intended nationally determined contributions ("INDCs") in the lead-up to COP21, representing over 90% of energy-related CO_2 emissions, and approximately seven billion people. The first round of contributions will be formalised when Parties ratify to the agreement, while those for the 2025-2030 period are to be communicated or updated by 2020. To take stock of progress, the UNFCCC will convene a facilitative dialogue among Parties in 2018. This will be followed by a formal global stocktake of progress in 2023 and every five years thereafter, ahead of setting each successive round of nationally-determined contributions (NDCs). The agreement determined that a single framework will be developed to track progress of NDCs for all countries, although with built-in flexibility for Parties' different circumstances. All Parties will report regularly on emissions, progress towards NDCs, adaptation actions, and means of implementation.

The Paris Agreement will enter into force on 4 November 2016, thirty days after the date on which at least 55 Parties to the Convention accounting in total for at least an estimated 55 % of the total global greenhouse gas emissions have deposited their instruments of ratification, acceptance, approval or accession with the Depositary.

NDCs under the Paris Agreement begin from 2020, but IEA scenarios show that emissions from the energy sector need to peak by around 2020 if there is to be a reasonable chance of limiting temperature rise to below 2°C (IEA, 2015). While the Paris Agreement urges enhanced action by Parties prior to 2020, complementary initiatives outside the UNFCCC can also help to constrain emissions in the period up to 2020.

Timely and accurate CO_2 and GHG statistics (complemented by other energy sector metrics that provide insight into underlying transformation of the energy system) will prove central to ascertaining compliance with international agreements and to informing policy makers and carbon market participants. The ability of countries to monitor and review emissions from their sources is essential in their engagement towards national and global GHG mitigation. The decision at COP21 to launch a new capacity building initiative for transparency will be critical to making this happen. The IEA will also continue to support countries through provision of energy and emissions statistics, and training developed and developing country officials in policy, modelling, and energy statistics.

Table 1. 2020 greenhouse gas reduction targets of the ten largest emitters (based on 2014 emissions) and IEA member countries [1]

Ten highest emitting Parties (as per IEA estimates of CO_2 emissions from fuel combustion in 2014)							
	1990	2005	2014	2020 GHG target	base year level	2014 level	change %
	$MtCO_2$						
China (incl. Hong Kong, China)	2 109	5 399	9 135	Reduce CO_2 emissions per unit of GDP by 40-45% below 2005 levels.	0.718 $kgCO_2$ / 2010 USD PPP	0.531 $kgCO_2$ / 2010 USD PPP	-26%
United States	4 802	5 702	5 176	In the range of a 17% emission reduction compared with 2005	5 702 Mt	5 176 Mt	-9.2%
European Union	4 024	3 920	3 160	20% averaged 2013-2020 reduction compared with 1990 under the Kyoto Protocol; 20% reduction in 2020.	4 024 Mt	3 160 Mt	-21%
India	530	1 080	2 020	Reduce the emissions intensity of GDP by 20-25% below 2005 levels.	0.300$kgCO_2$ / 2010 USD PPP	0.293 $kgCO_2$ / 2010 USD PPP	-2.4%
Russian Federation	2 163	1 482	1 468	15-25% below 1990.	2 163 Mt	1 468 Mt	-32%
Japan	1 041	1 178	1 189	3.8% below 2005.	1 178 Mt	1 189 Mt	+0.9%
Korea	232	458	568	30% below business-as-usual (BAU).[2]		568 Mt	
Islamic Republic of Iran	171	418	556	*None*			
Canada	420	535	555	17% below 2005.	535 Mt	555 Mt	+3.7%
Saudi Arabia	151	298	507	*None*			
Other IEA member countries							
	1990	2005	2014	2020 GHG target	base year level	2014 level	change %
	$MtCO_2$						
Australia	260	372	374	5% reduction relative to 2000.	335 Mt	374 Mt	+12%
New Zealand	22	34	31	5% below 1990 levels.	22 Mt	31 Mt	+41%
Norway	27	34	35	Average 16% reduction 2013-2020 compared with 1990 under the Kyoto Protocol; 20% reduction in 2020.	27 Mt	35 Mt	+30%
Switzerland	41	44	38	Average 15.8% reduction 2013-2020 compared with 1990 under Kyoto Protocol; 20% reduction in 2020.	41 Mt	38 Mt	-7.3%
Turkey	127	216	307	*None*			

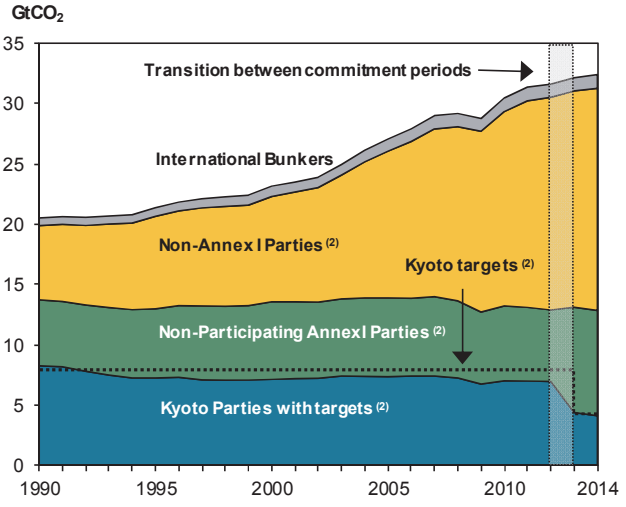
1. Voluntary targets under the Cancún Agreement, and (where indicated) second commitment period targets under the Kyoto Protocol.

2. BAU emissions (including non-energy sectors) for 2020 are projected at 776.1 $MtCO_2$-equivalent. Korea aims to peak emissions around 2014-15 (Source: Korea's First Biennial Update Report under the UNFCCC).

Table 2. World CO_2 emissions from fuel combustion and Kyoto Protocol second commitment period targets [1,2]

	1990 $MtCO_2$	2014 $MtCO_2$	% change 90-14	Kyoto Target
KYOTO PARTIES WITH TARGETS [1,2]	**5,379.1**	**4,126.5**	**-23.3%**	**-19.3%** [2]
Annex I Europe	*3,114.5*	*2,617.2*	*-16.0%*	
Austria	56.3	60.8	8.0%	-20%
Belgium	106.2	87.4	-17.8%	-20%
Cyprus [3]	3.9	5.8	48.1%	-20%
Denmark	51.0	34.5	-32.3%	-20%
Finland	53.8	45.3	-15.9%	-20%
France [4]	345.5	285.7	-17.3%	-20%
Germany	940.3	723.3	-23.1%	-20%
Greece	69.9	65.9	-5.8%	-20%
Iceland	1.9	2.0	7.8%	-20%
Ireland	30.1	33.9	12.5%	-20%
Italy	389.3	319.7	-17.9%	-20%
Luxembourg	10.7	9.2	-13.9%	-20%
Malta	2.3	2.3	1.3%	-20%
Netherlands	144.9	148.3	2.4%	-20%
Norway	27.5	35.3	28.6%	-16%
Portugal	37.9	42.8	13.0%	-20%
Spain	202.6	232.0	14.5%	-20%
Sweden	52.1	37.4	-28.1%	-20%
Switzerland	40.8	37.7	-7.4%	-15.8%
United Kingdom	547.7	407.8	-25.5%	-20%
Economies in Transition	*1,905.0*	*1,078.2*	*-43.4%*	
Belarus	99.8	57.4	-42.5%	-12%
Bulgaria	74.6	42.1	-43.5%	-20%
Croatia	20.3	15.1	-25.5%	-20%
Czech Republic	150.3	96.6	-35.8%	-20%
Estonia	36.0	17.5	-51.3%	-20%
Hungary	65.7	40.3	-38.7%	-20%
Kazakhstan	237.2	223.7	-5.7%	-5%
Latvia	18.8	6.7	-64.2%	-20%
Lithuania	32.2	10.3	-68.0%	-20%
Poland	344.8	279.0	-19.1%	-20%
Romania	168.3	68.2	-59.5%	-20%
Slovak Republic	54.8	29.3	-46.5%	-20%
Slovenia	13.5	12.8	-5.7%	-20%
Ukraine	688.4	236.5	-65.6%	-24%
Others				
Australia	259.7	373.8	43.9%	-0.5%
European Union	4,023.8	3,160.0	-21.5%	-20%

	1990 $MtCO_2$	2014 $MtCO_2$	% change 90-14	Kyoto Target
OTHER COUNTRIES	**99.8**	**57.4**	**-42.5%**	
Non-participating Annex I Parties [1]	*8,574.7*	*8,725.5*	*1.8%*	
Canada	419.5	554.8	32.2%	none
Japan	1,040.6	1,188.6	14.2%	none
New Zealand	21.7	31.2	43.7%	none
Russian Federation	2,163.2	1,467.6	-32.2%	none
Turkey	127.1	307.1	141.6%	none
United States	4,802.5	5,176.2	7.8%	none
Other Regions	*5,709.3*	*18,172.6*	*218.3%*	none
Africa	529.0	1,105.3	108.9%	none
Middle East	535.9	1,727.8	222.4%	none
N-OECD Eur. & Eurasia [5]	284.0	225.0	-20.8%	none
Latin America [5]	810.1	1,604.9	98.1%	none
Asia (excl. China) [5]	1,441.1	4,374.8	203.6%	none
China (incl. Hong Kong)	2,109.2	9,134.9	333.1%	none
INTL. MARINE BUNKERS	**371.5**	**626.1**	**68.5%**	
INTL. AVIATION BUNKERS	**258.7**	**504.3**	**94.9%**	
WORLD	**20,502.5**	**32,381.0**	**57.9%**	



1. The country composition and specific reduction targets shown in the table refer to those agreed to under the second commitment period (CP) of the Kyoto Protocol (2013-2020), as per the Doha Amendment.

2. The respective targets, gases and participating Parties differ between the first and second commitment periods of the Kyoto Protocol (CP1: 2008-2012, CP2: 2013-2020). The actual country targets apply to a basket of several greenhouse gases and allow sinks and international credits to be used for compliance. The overall "Kyoto targets" for each CP are estimated for this publication by applying the country targets to IEA data for CO_2 emissions from fuel combustion for 1990, and are shown as an indication only. These do not represent the total targets for the multi-gas baskets, and assume that the reduction targets are spread equally across all gases. The combined EU-28 under CP2 is -20%, but the member countries may agree on a burden-sharing arrangement as was done under CP1.

3. Please refer to the chapter *Geographical Coverage*.

4. Emissions from Monaco are included with France.

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

References

IEA (2015), *World Energy Outlook Special Briefing for COP21*, OECD/IEA, Paris.

IEA (2015), *World Energy Outlook Special Report: Energy and Climate Change*, OECD/IEA, Paris.

IPCC (2006), *2006 IPCC Guidelines for National Greenhouse Gas Inventories.* Eggleston, S., Buendia, L., Miwa, K., Ngara, T., Tanabe, K. (eds.). IPCC-TSU NGGIP, IGES, Japan.

IPCC (2013), *Working Group I Contribution to the IPCC Fifth Assessment Report, Climate Change 2013: The Physical Science Basis, Summary for Policy Makers*, available at: *www.ipcc.ch/*.

UNFCCC (2015), *Adoption of the Paris Agreement.*

2. UNDERSTANDING THE IEA CO_2 EMISSIONS ESTIMATES

The importance of estimating emissions

The ultimate objective of the UNFCCC (the Convention) is the stabilisation of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The Convention also calls for all Parties to commit themselves to the following objectives:

- to develop, update periodically, publish and make available to the Conference of the Parties (COP) their national inventories of anthropogenic emissions by sources and removals by sinks, of all greenhouse gases not controlled by the Montreal Protocol.
- to use comparable methodologies for inventories of GHG emissions and removals, to be agreed upon by the COP.

As a response to the objectives of the UNFCCC, the IEA Secretariat, together with the IPCC, the OECD and numerous international experts, has helped to develop and refine an internationally-agreed methodology for the calculation and reporting of national GHG emissions from fuel combustion. This methodology was published in 1995 in the *IPCC Guidelines for National Greenhouse Gas Inventories*. After the initial dissemination of the methodology, revisions were added to several chapters, and published as the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (*1996 GLs*). In April 2006, the IPCC approved the *2006 IPCC Guidelines for National Greenhouse Gas Inventories (2006 GLs)* at the 25th session of the IPCC in Mauritius. Until 2015, most Parties, as well as the IEA, still calculated their inventories using the *1996 GLs*. In December 2011, Parties adopted Decision 15/CP.17 to update their reporting tables so as to implement the *2006 GLs*. The new reporting tables have been mandatory since 15 April 2015.

The IEA estimates of CO_2 emissions from fuel combustion

Energy is at the core of the greenhouse gas estimation. It is estimated that for Annex I Parties energy accounts for 82%[1] of total GHG emissions, while for the world the share is about 60%, although shares vary greatly by country. Within energy, CO_2 from fuel combustion accounts for the largest fraction, 92% for Annex I countries, once again varying depending on the economic structure of the country.

Given its extensive work in global energy data collection and compilation, the IEA is able to produce comparable estimates of CO_2 emissions from fuel combustion across countries and regions, providing a reference database for countries with more and less advanced national systems.

The estimates of CO_2 emissions from fuel combustion presented in this publication are calculated using the IEA energy data[2] and the default methods and emission factors from the *2006 GLs*[3].

1. Based on data reported to the UNFCCC for 2012, excluding land-use, land-use change and forestry (LULUCF).
2. Published in *World Energy Statistics* and *World Energy Balances*, OECD/IEA, Paris, 2016.
3. See: http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html.

Prior to the 2015 edition of this publication, the IEA used the methods and emission factors of the *Revised 1996 IPCC Guidelines,* in line with UNFCCC recommendations for the reporting under the Kyoto Protocol. The IEA implementation of the *2006 GLs* in this edition follows the decision of UNFCCC Parties to update their reporting tables and to implement the *2006 GLs* starting on 15 April 2015.

The implications of changes in methods and emissions factors on the IEA emissions estimates for this edition are discussed in the chapter *IEA estimates: Changes under the 2006 IPCC Guidelines*.

Data in this publication and its corresponding database may have been revised with respect to previous editions also because the IEA reviews its energy databases each year. In the light of new assessments, revisions may be made to the energy data time series for any individual country.

CO_2 emissions from fuel combustion: key concepts

The IEA uses the simplest (Tier 1) methodology to estimate CO_2 emissions from fuel combustion based on the *2006 GLs*. The computation follows the concept of conservation of carbon, from the fuel combusted into CO_2. While for the complete methodology the reader should refer to the full IPCC documents, a basic description follows.

Generally, the Tier 1 estimation of CO_2 emissions from fuel combustion for a given fuel can be summarised as follows:

CO_2 emissions from fuel combustion
CO_2 = Fuel consumption * Emission factor

where:

Fuel consumption = amount of fuel combusted;
Emission factor = default emission factor

Emissions are then summed across all fuels and all sectors of consumption to obtain national totals. A more detailed explanation of the step by step calculation is presented in the chapter *IEA estimates: Changes under the 2006 IPCC Guidelines*.

IEA estimates vs. UNFCCC submissions

Based on the IEA globally collected energy data, the IEA estimates of CO_2 emissions from fuel combustion are a global database obtained following harmonised definitions and comparable methodologies across countries. They do not represent an official source for national submissions, as national administrations should use the best available country-specific information to complete their emissions reporting.

The IEA CO_2 estimates can be compared with those reported by countries to the UNFCCC Secretariat to highlight possible problems in methods, input data or emission factors. Still, 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.

For most Annex II countries, the two calculations are expected to be within 5-10%, depending on the coverage of the fuel combustion sector in the national inventory. For some EIT and non-Annex I countries, differences may be larger. If the underlying energy data are different, more work is needed on the collecting and reporting of energy statistics.

In case of systematic biases in the energy data or emission factors, 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 methodological differences.

Some of the reasons for these differences are:

The IEA uses a Tier 1 method to compute emissions estimates.

For the calculation of CO_2 emissions from fuel combustion, the IEA uses a Tier 1 method. Countries may be using a more sophisticated Tier 2 or Tier 3 method that takes into account more detailed country-specific information available (e.g. on different technologies or processes).

Energy activity data based on IEA energy balances may differ from those used for the UNFCCC calculations.

Countries often have several "official" data sources such as a Ministry, a Central Bureau of Statistics, a nationalised electricity company, etc. Data can also be

collected from the energy suppliers, the energy consumers or customs statistics. The IEA Secretariat tries to collect the most accurate data, but does not necessarily have access to the complete data set that may be available to national experts calculating emission inventories for the UNFCCC. In addition to different sources, the methodology used by the national bodies providing the data to the IEA and to the UNFCCC may differ. For example, general surveys, specific surveys, questionnaires, estimations, combined methods and classifications of data used in national statistics and in their subsequent reclassification according to international standards may result in different series.

The IEA uses average net calorific values for oil products.

To transform fuel consumption data from physical units to energy units, 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 more detailed data on calorific values available when calculating the energy content of the fuels. This in turn could produce different values than those of the IEA.

The IEA uses average carbon content values.

The IEA uses the default carbon content values given in the *2006 GLs*. Country experts may have better information available, allowing them to use country-specific values.

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

The *2006 GLs* 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 *2006 GLs*, military emissions should be reported in Source/Sink Category 1 A 5, *Non-Specified*. Previously, the IEA questionnaires requested that warships be included in international marine bunkers and that the military use of aviation fuels be included in domestic air. All other military use should have been reported in *non-specified other*.

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

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

The IEA estimates include all CO_2 emissions from fuel combustion. Countries may have included parts of these emissions in the IPCC category industrial processes and product use.

Although emissions totals would not differ, the allocation to the various sub-totals of a national inventory could. National GHG inventories submitted to the UNFCCC divide emissions according to source categories. Two of these IPCC Source/Sink Categories are energy, and industrial processes and product use. Care must be taken not to double count emissions from fuel combustion that occur within certain industrial processes (e.g. iron and steel). The IEA estimates in this publication include all the CO_2 emissions from fuel combustion, while countries are asked to report some of them within the industrial processes and product use category under the *2006 GLs*. See a more detailed discussion in the chapter *IEA Estimates: Changes under the 2006 IPCC Guidelines*.

The units may be different.

The *2006 GLs* ask that CO_2 emissions be reported in Gg of CO_2 (1 Gg = 1 kilotonne). 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.

Inventory quality: identifying key categories

The *IPCC Guidelines* allow Parties to 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.

To reduce the overall inventory uncertainty in a cost-effective way, it is useful to identify those categories (key categories[1]) that have the greatest contribution to overall inventory uncertainty. By identifying key categories in the national inventory, inventory compilers can prioritise their efforts and improve their overall estimates. It is good practice for each country to identify its national key categories in a systematic and objective manner. Such a process will lead to improved inventory quality, as well as greater confidence in the estimates that are developed.

The *2006 GLs* identify a key 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 greenhouse gases in terms of the absolute level, the trend, or the uncertainty in emissions and removals.

For a more complete description of the IPCC methodology for determining key categories, see Volume 1, Chapter 4 of the 2006 GLs.

The IEA has disaggregated the key category analysis to the same level of detail presented in the country tables of this publication. For each country, the nine largest categories are shown, split by the various fuel types: coal, oil, gas and other.

For the level assessment, the CO_2 emissions from fuel combustion as calculated by the IEA are supplemented, where possible, by the figures submitted by the Annex I Parties to the UNFCCC in their latest GHG inventory submissions for CO_2 (fugitive emissions), 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.[2]

For the non-Annex I Parties, CO_2 emissions from fuel combustion are taken from IEA estimates, and are supplemented by data for other sources and provided by JRC and PBL.

Notes on tables and graphs

This publication presents for each country and regional aggregate a set of six graphs and three tables with key indicators (Country Tables). A selection of key indicators is also presented in summary tables for country-to-country comparison (Summary Tables). An overall description of the various

Table 1: Key indicators

Row 1: CO_2 *fuel combustion* presents total CO_2 emissions from fuel combustion as calculated using the IEA energy balances and the methodologies outlined in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. For notes on methods and sources, see the chapter *IEA estimates: Changes under the 2006 IPCC Guidelines*.

Row 2: Share of World CO_2 from fuel combustion presents national/regional CO_2 emissions from fuel combustion divided by World CO_2 emissions from fuel combustion, expressed as a percentage.

Row 3: TPES presents the Total Primary Energy Supply, calculated as production + imports - exports - international marine bunkers - international aviation bunkers ± stock changes.

Row 4: GDP presents the Gross Domestic Product in 2010 US dollars using exchange rates. For notes on methods and sources, please see the chapter on Indicator sources and methods.

Row 5: GDP PPP presents the Gross Domestic Product in 2010 US dollars using purchasing power parities. For notes on methods and sources, see the chapter on Indicator sources and methods.

Row 6: Population. For notes on sources see the chapter on Indicator sources and methods.

Row 7: CO_2/TPES presents the carbon intensity of the energy mix. For notes on methods see the chapter on Indicator sources and methods.

Row 8: CO_2/GDP presents the carbon intensity of the economy, using exchange rates. For notes on methods and sources, see the chapter on Indicator sources and methods.

Row 9: CO_2/GDP PPP presents the carbon intensity of the economy, using purchasing power parities. For

1. In the 2000 IPCC Good Practice Guidance for National Greenhouse Gas Inventories, the concept was named 'key source categories'.
2. As recommended in the IPCC *Good Practice Guidance*.

notes on methods and sources, see the chapter on Indicator sources and methods.

Row 10: CO_2/population presents the per capita CO_2 emissions, based on CO_2 fuel combustion. For notes on sources, see the chapter on Indicator sources and methods.

Row 11: Share of electricity output from fossil fuels presents electricity output from fossil fuels divided by total electricity output, expressed as a percentage. For notes on sources, see the chapter on Indicator sources and methods.

Row 12: CO_2/kWh of electricity presents CO_2 emissions from total fossil fuel inputs to electricity generation divided by total electricity output.

Row 13-17: CO_2 emissions and drivers - Kaya decomposition present indices of CO_2 emissions (CO_2 fuel combustion), population, GDP/population, TPES/GDP and CO_2/TPES, (based on GDP PPP time series). It represents the decomposition of CO_2 emissions into drivers (Kaya identity) explained in the chapter on Indicator sources and methods.

Table 2: CO_2 emissions by sector

Row 1: *CO_2 fuel combustion*: as in Row 1 of Table 1.

Row 2: Electricity and heat generation contains the sum of emissions from main activity producers and autoproducers of electricity and/or heat. Emissions from own on-site use of fuel are included.

Main activity producers are defined as those undertakings whose primary activity is to supply the public. They may be publicly or privately owned. This corresponds to IPCC Source/Sink Category 1 A 1 a.

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. Under the *2006 IPCC Guidelines*, these emissions would normally be distributed between industry, transport and *other*.

Row 3: *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 *2006 IPCC Guidelines*, emissions from coke inputs to blast furnaces, may be reported under the source/sink category industrial processes and product use rather than energy. 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 resulting from an industrial process. In the IEA estimations, emissions from energy industry own use in blast furnaces have been included in this category. Care must be taken not to double count these emissions in both energy, and industrial processes and product use.

Row 4: *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 *2006 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, in this publication autoproducers are excluded from this category. See Row 2, *Electricity and heat generation*.

According to the 2006 IPCC GLs, emissions resulting from the combustion of certain fuels in specific sectors (see below) may be reported under industrial processes and product use rather than energy. However, in IEA estimates, these emissions have been included in this category. Care must be taken not to double count these emissions in both energy, and industrial processes and product use.

- Coke oven coke deliveries to the iron and steel and non-ferrous metals sectors.
- Coke oven gas, blast furnace gas and other recovered gases deliveries to iron and steel.

Similarly, under the 2006 IPCC GLs coal tar deliveries to the chemical and petrochemical, and construction sectors may be completely excluded from energy sector emissions calculations, as they are deemed to be destined for non-energy use. However, where these fuels have been reported under energy-use they have been included in IEA estimates.

Row 5: *Transport* contains emissions from the combustion of fuel for all transport activity, regardless of the sector, except for *international marine bunkers* and *international aviation bunkers*, which are not included in *transport* emissions at a national or regional level (except for World transport emissions). This includes domestic aviation, domestic navigation, road, rail and pipeline transport, and corresponds to IPCC Source/Sink Category 1 A 3. The IEA data are not collected in a way that allows the autoproducer consumption to

be split by specific end-use and therefore, in this publication autoproducers are excluded from this category. See Row 2, *Electricity and heat generation*.

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

Row 6: *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 7: *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 *2006 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, in this publication autoproducers are excluded from this category. See Row 2, *Electricity and heat generation*.

Row 8: *Residential* contains all emissions from fuel combustion in households. This corresponds to IPCC Source/Sink Category 1 A 4 b.

Row 9: *Services* (*i.e.* commercial and public services) contains emissions from all activities of ISIC Rev. 4 Divisions 33, 36-39, 45-47, 52, 53, 55-56, 58-66, 68-75, 77-82, 84 (excluding Class 8422), 85-88, 90-96 and 99.

Row 10: *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 11: *International aviation bunkers* contains emissions from fuels used by aircraft for international aviation. Fuels used by airlines for their road vehicles are excluded. The domestic/international split should be determined on the basis of departure and landing locations and not by the nationality of the airline. Emissions from international aviation should be excluded from the national totals. This corresponds to IPCC Source/Sink Category 1 A 3 a i.

Table 3: Key categories for CO_2 emissions from fuel combustion in 2014

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

Figure 1: CO_2 emissions by fuel

Based on CO_2 fuel combustion emissions. The product *coal* refers to the aggregate of coal, peat and oil shale. The product *gas* refers to natural gas. The product *other* includes industrial waste and non-renewable municipal waste.

Figure 2: CO_2 emissions by sector

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

Figure 3: Electricity generation by fuel

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

Figure 4: CO_2 from electricity generation: driving factors

Presents the change in CO_2 emissions from electricity generation over time, for four time periods, as the sum of the change in four driving factors: CO_2 intensity of the fossil fuel mix, fossil share of electricity, thermal efficiency of fossil fired generation, and total electricity output. For notes on methodologies and sources, see the chapter on Indicator sources and methods.

Figure 5: Changes in selected indicators

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

Figure 6: Total CO_2 emissions and drivers

Presents indices of CO_2 emissions and of four drivers of emission trends, as identified in the Kaya identity: population, GDP/population, TPES/GDP, CO_2/TPES (1990=100 unless otherwise specified), based on GDP PPP time series. The quantitative impact of each driver on total CO_2 emissions over time is also presented. This has been calculated using the logarithmic mean divisia (LMDI) method as described in the section *Drivers of electricity generation emissions trends* earlier in the chapter. For methodology and notes on sources, see the chapter on Indicator sources and methods.

Note: in the tables and figures presented in this publication, peat and oil shale are aggregated with *coal*; the product *gas* refers to natural gas; and with the exception of figure 4, the product *other* includes industrial waste and non-renewable municipal waste.

Country notes

Australia

Starting with the 2013 edition and following, data for Australia were revised back to 2003 due to the adoption of the National Greenhouse and Energy reporting (NGER) as the main energy consumption data source for the Australian Energy Statistics. As a result, there are breaks in the time series for many data between 2002 and 2003. The revisions have also introduced some methodological problems. The national statistics appear to have problems identifying inputs and outputs to certain transformation processes such as gas works plants, electricity plants and CHP plants. Energy industry own use and inputs to the transformation processes are sometimes not reported separately in the correct categories. More detailed information is given in the online data documentation of *World Energy Balances*, see the chapter on *Country notes and sources*.[1]

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

Bosnia and Herzegovina

In 2014, the Agency for Statistics of Bosnia and Herzegovina conducted their first survey on oil product consumption. As a result, new data were made available which result in some breaks in time series between 2012 and 2013.

Cambodia

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

People's Republic of China

In early 2016, the National Bureau of Statistics (NBS) of the People's Republic of China (China) supplied the IEA with detailed energy balances for 2000 to 2010 and the IEA revised its data accordingly.

In September 2015, the NBS published China's energy statistics for 2013, as well as revised statistics for the years 2011 and 2012. These were taken into account by the IEA in the 2015 edition of this publication.

Calorific values used for bituminous coal emissions estimates were also revised in this edition. Net calorific values (NCV) for coal inputs to power generation were modified from 2000 to 2013 by applying assumptions used by China on the average thermal efficiency of coal-fired power stations in these years. NCVs were also modified for bituminous coal production from 2000 to 2013, as well as for inputs to main activity heat plants from 2008 to 2013. More detailed information is given in the online data documentation of *World Energy Balances*, see the chapter on *Country notes and sources*.

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.

Democratic People's Republic of Korea

Time series data for 2011 for primary coals were revised based on new information received in 2014. This may lead to breaks in the time series between 2010 and 2011 and differences in trends compared to previous editions for some products.

France

From 2012, the emissions breakdown is more detailed due to a more precise national survey of energy consumption.

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

The breakdown between international marine bunkers and domestic navigation is estimated by the French administration.

Japan

Between 2004 and 2007, the IEA received revisions from the Japanese Administration[1]. 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.

Kenya

The increase in electricity output from *Other* in 2014 is due to higher output from geothermal sources.

Malta

Revised data were submitted by Malta for 2010 to 2013. This may lead to breaks in time series between 2009 and 2010 for some products and flows.

Malta reported the use of motor gasoline in international marine bunkers for the first time in 2011. These data relate to unleaded petrol used by outboard engines in small vessels.

In 2011, a new power generation station fuelled by municipal and industrial waste became operation in Malta. This may lead to breaks in time series for some products and flows.

Mexico

The Mexican administration is currently undertaking major work on revisions of the time series back to 1990. In the 2015 edition, substantial revisions were submitted by Mexico, but only those for 2013 could be incorporated. In this 2016 edition, further revisions have been incorporated, mostly for the period 2003 to 2014, but some revisions track back to 1990. Further revisions to historical data are pending.

More detailed information is given in the online data documentation of *World Energy Balances*, see the chapter on *Country notes and sources*.

Mongolia

New data became available in 2015 which allowed a disaggregation of coal by type. In addition time series were revised from 2005 forward. Breaks in time series between 2004 and 2005 may result as well as differences in trends from previous editions.

Montenegro

A new survey on energy consumption in industry was conducted by Montenegro in 2014. Due to these newly available data, some breaks in time series may occur between 2013 and 2014.

Norway

Discrepancies between Reference and Sectoral Approach estimates (as presented in the database) and the difference in the resulting growth rates arise from

1. Note: Revisions to Japanese data occurred while the IEA was following the *Revised 1996 IPCC Guidelines*. The impact of these revisions under the *2006 IPCC Guidelines* may differ from that indicated.

statistical differences between supply and consumption data for oil and natural gas. For Norway, supply of these fuels is the residual of two very large and opposite terms, production and exports.

Singapore

Due to Singapore's large trade volume in comparison to its final consumption, a slight misalignment of trade figures can have a significant impact on the Energy balance of Singapore. As a result, large discrepancies between the Reference and Sectoral Approach estimates (as presented in the database) arise from statistical differences between supply and consumption of oil and oil products.

The IEA secretariat, the Energy Market Authority and the National Climate Change Secretariat (NCCS) are working closely together on improving data quality for Singapore. Efforts are continuing on this project, therefore breaks in time series between 2008 and 2009 and differences in trends when compared to previous publications may occur for some products.

Further revisions are expected in future editions, as energy data coverage is further extended by Singapore.

A new coal-fired power plant started operations in 2013. This might lead to breaks in time series between 2012 and 2013.

South Africa

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

Switzerland

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

Tajikistan

New information became available in 2016. Breaks in time series may occur between 2011 and 2013, and between 2013 and 2014.

Togo

Official energy data were submitted by Togo in 2014 for the years 2009-2012. Breaks in time series between 2008 and 2009, or differences in trends compared to previous publications may occur for this reason. The IEA continues to work with the Ministry of Mines and Energy in Togo to better understand the reasons for the breaks in time series and to reassess the historical data.

Turkey

In the 2016 edition, the Ministry of Energy revised time series for kerosene type jet fuel from 2013 onwards. Sales to foreign airlines, previously accounted for under exports, are now reported under international aviation according to the IEA methodology. Data could not be revised for the preceding years. Exports of kerosene type jet fuel up to 2012 may include consumption in international aviation.

Ukraine

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

United Kingdom

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

Breaks occur in the international marine bunkers and domestic navigation time series in 2008, after which a different methodology is applied in line with the UK's National Atmospheric Emissions Inventory. Emissions from international marine bunkers may be underestimated for previous years.

United States

End-use energy consumption data for the United States show a break in series with historical data due to a change in methodology in 2014. The break in series occurs between 2011 and 2012 for oil, and between 2001 and 2002 for electricity and natural gas. The new methodology is based on the last historical year of the most recent Annual Energy Outlook (AEO) publication. Changes occur primarily in reported end-use energy consumption in the industrial sector and its subsectors, including non-manufacturing industries of mining, construction and agriculture. Historical revisions are pending. Due to other changes in reporting methodologies, there are numerous breaks in series for the US data, particularly in 1992, 1999, 2001, 2002 and 2013. Care should be taken when evaluating consumption by sector since inputs of fuel to autoproducers are included in final consumption for some

years. No data are available for most energy products in the construction and mining and quarrying industries.

Viet Nam

A detailed sectoral breakdown is available starting in 1980.

Yemen

Breaks in time series may be observed for emissions from oil and gas between 2011 and 2012, and again between 2012 and 2013. These breaks are attributed to pipeline sabotage and unrest.

Zimbabwe

A new mining company was commissioned in 2011, leading to a rapid increase in coal production. Due to the limited availability of coal consumption data, the IEA Secretariat has estimated coal stocks for Zimbabwe. Breaks in time series may occur between 2013 and 2014 because of this.

3. GEOGRAPHICAL COVERAGE

The **Organisation for Economic Co-Operation and Development (OECD)** includes Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia[1], Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel[2], Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia[1], Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

Latvia was not an OECD Member at the time of the preparation of this publication. Accordingly, Latvia does not appear in the list of OECD Members and is not included in the zone aggregates.

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

OECD Asia Oceania includes Australia, Israel[2], Japan, Korea and New Zealand.

OECD Europe includes Austria, Belgium, the Czech Republic, Denmark, Estonia[1], Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia[1], Spain, Sweden, Switzerland, Turkey and the United Kingdom.[3]

Within the **OECD**:

- **Australia** excludes the overseas territories.
- **Denmark** excludes Greenland and the Danish Faroes, except prior to 1990, where data on oil for Greenland were included with the Danish statistics. The National Administration is planning to revise the series back to 1974 to exclude these amounts.
- **France** includes Monaco, and excludes the following overseas departments: Guadeloupe, French Guiana, Martinique, Mayotte, and Réunion, and collectivities: New Caledonia, French Polynesia, Saint Barthélemy, Saint Martin, Saint Pierre and Miquelon, and Wallis and Futuna.
- **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 Holy See.
- **Japan** includes Okinawa.
- The **Netherlands** excludes Suriname, Aruba and the other former Netherlands Antilles (Bonaire, Curaçao, Saba, Saint Eustatius and Sint Maarten).
- **Portugal** includes the Azores and Madeira.
- **Spain** includes the Canary Islands.
- **Switzerland** includes Liechtenstein for 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.
- The **United States** includes the 50 states and the District of Columbia but generally excludes all

1. 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.
2. 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.
3. Latvia was not an OECD Member at the time of the preparation of this publication. Accordingly, Latvia does not appear in the list of OECD Members and is not included in the zone aggregates.

territories, and all trade between the U.S. and its territories. Oil statistics include Guam, Puerto Rico[1], and the United States Virgin Islands; trade statistics for coal include international trade to and from Puerto Rico and the United States Virgin Islands.

The **International Energy Agency (IEA)** includes Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Estonia, 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.

Africa includes Algeria, Angola, Benin, Botswana (from 1981), Cameroon, the Republic of Congo (Congo)[2], Côte d'Ivoire, the Democratic Republic of the Congo, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Libya, Mauritius, Morocco, Mozambique, Namibia (from 1991), Niger (from 2000), Nigeria, Senegal, South Africa, South Sudan (from 2012), Sudan, United Republic of Tanzania (Tanzania), Togo, Tunisia, Zambia, Zimbabwe and **Other Africa**.

Within **Africa:**

- **Ethiopia** includes **Eritrea** prior to 1992.
- **South Sudan** became an independent country on 9 July 2011. Prior to 2012, data for South Sudan are included in **Sudan.**

Other Africa includes Botswana (until 1980), Burkina Faso, Burundi, Cabo Verde, Central African Republic, Chad, Comoros, Djibouti, Equatorial Guinea, Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Namibia (until 1990), Niger (until 1999), Réunion, Rwanda, Sao Tome and Principe, the Seychelles, Sierra Leone, Somalia, Swaziland and Uganda.

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

Non-OECD Europe and Eurasia includes Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus[3], the Former Yugoslav Republic of Macedonia, Georgia, Gibraltar, Kazakhstan, Kosovo, Kyrgyzstan, Latvia[4], Lithuania, Malta, the Republic of Moldova (Moldova), Montenegro, Romania, the Russian Federation, Serbia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, the Former Soviet Union[5] (prior to 1990) and Former Yugoslavia[5] (prior to 1990).

Within **non-OECD Europe and Eurasia:**

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

Non-OECD Americas includes Argentina, the Plurinational State of Bolivia (Bolivia), Brazil, Colombia, Costa Rica, Cuba, Curaçao[6], the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Suriname (from 2000), Trinidad and Tobago, Uruguay, the Bolivarian Republic of Venezuela (Venezuela) and **Other Non-OECD Americas**.

Other Non-OECD Americas includes Antigua and Barbuda, Aruba, the Bahamas, Barbados, Belize, Bermuda, Bonaire (from 2012), the British Virgin Islands, the Cayman Islands, Dominica, the Falkland Islands (Malvinas], French Guiana, Grenada, Guadeloupe, Guyana, Martinique, Montserrat, Puerto Rico[7] (for natural gas and electricity), Saba (from 2012), Saint Eustatius (from 2012), Saint Kitts and Nevis, Saint Lucia, Saint Pierre and Miquelon, Saint Vincent and the Grenadines, Sint Maarten (from 2012), Suriname (until 1999), and the Turks and Caicos Islands.

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

2. Country short names are included in parentheses.

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

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

4. Latvia was not an OECD Member at the time of the preparation of this publication. Accordingly, Latvia does not appear in the list of OECD Members and is still included in the non-OECD aggregate.

5. Prior to 1990, the Former Soviet Union includes Estonia and Former Yugoslavia includes Slovenia.

6. The Netherlands Antilles was dissolved on 10 October 2010 resulting in two new 'constituent countries' (Curaçao and Sint Maarten) with the other islands joining the Netherlands as 'special municipalities'. However, due to lack of detailed data the IEA secretariat's data and estimates under "Curaçao" still refer to the whole territory of the Netherlands Antilles as it was known prior to 10 October 2010 up to the end of 2011. Data refer only to the island of Curaçao from 2012. The other islands of the former Netherlands Antilles are added to Other Non-OECD Americas from 2012.

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

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

Asia includes Bangladesh, Brunei Darussalam, Cambodia (from 1995), the Democratic People's Republic of Korea , India, Indonesia, Malaysia, Mongolia (from 1985), Myanmar, Nepal, Pakistan, the Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand, Viet Nam and **Other Asia**.

Other Asia includes Afghanistan; Bhutan; Cambodia (until 1994); the Cook Islands; Fiji; French Polynesia; Kiribati; the Lao People's Democratic Republic; Macau, China; the Maldives; Mongolia (until 1984); New Caledonia; Palau (from 1994); Papua New Guinea; Samoa; the Solomon Islands; Timor-Leste; Tonga and Vanuatu.

The **European Union - 28 (EU-28)** includes Austria, Belgium, Bulgaria, Croatia, Cyprus[3], the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom.

Please note that in the interest of having comparable data, all these countries are included from 1990 despite different entry dates into the European Union.

G7 includes Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

G8 includes Canada, France, Germany, Italy, Japan, the Russian Federation, the United Kingdom, and the United States.

G20 includes Argentina, Australia, Brazil, Canada, China (including Hong Kong, China), India, Indonesia, Japan, Korea, Mexico, the Russian Federation, Saudi Arabia, South Africa, Turkey, the United States and the European Union – 28.

Annex I Parties[1] includes Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Cyprus, the Czech Republic[2], Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein (not available in this publication)[1], Lithuania, Luxembourg, Malta, Monaco (included with France), the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, the Russian Federation, the Slovak Republic[2], Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom and the United States.

The countries that are listed above are included in Annex I of the United Nations Framework Convention on Climate Change as amended on 11 December 1997 by the 12th Plenary meeting of the Third Conference of the Parties in Decision 4/CP.3. This includes the countries that were members of the OECD at the time of the signing of the Convention, the EEC, and fourteen countries in Central and Eastern Europe and the Former Soviet Union that were undergoing the process of transition to market economies. During subsequent sessions, the Conference of the Parties agreed to amend Annex I to the Convention to include Malta (Decision 3/CP.15, effective from 26 October 2010) and Cyprus (Decision 10/CP.17, effective from 9 January 2013).

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

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

Annex II North America includes Canada and the United States.

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

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

Annex I: Economies in Transition (EIT)[3] are those countries in Annex I that were undergoing the process of transition to a market economy. This includes Belarus, Bulgaria, Croatia, the Czech Republic[2], Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Russian Federation, the Slovak Republic[2], Slovenia and Ukraine.

Annex B Kyoto Parties[1] includes Australia, Austria, Belarus, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic[2], Denmark, Estonia, Finland, France,

1. The European Union is also an Annex I Party in its own right. The EU was assigned overall reduction targets under the Kyoto Protocol, which by agreement, was used to determine the individual first commitment period targets of the fifteen states that were EU members in 1997 when the Kyoto Protocol was adopted.

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

3. Kazakhstan is also classified as an EIT under Annex B of the Doha Amendment to the Kyoto Protocol, however, it is not an Annex I Party.

Germany, Greece, Hungary, Iceland, Ireland, Italy, Kazakhstan, Latvia, Liechtenstein (not available in this publication)[1], Lithuania, Luxembourg, Malta, Monaco (included with France), the Netherlands, Norway, Poland, Portugal, Romania, the Slovak Republic[2], Slovenia, Spain, Sweden, Switzerland, Ukraine and the United Kingdom.

Refers to countries with targets under second commitment period (CP) of the Kyoto Protocol (2013-2020) as per the Doha Amendment. This differs from the list of countries with targets under the first CP (2008-2012). Please note that the Doha Amendment has not yet entered into force. Membership of Annex B in the second CP of the Kyoto Protocol differs from that in Annex I. In particular, Annex B excludes, or does not contain targets for Canada, Japan, New Zealand, the Russian Federation, Turkey and the United States (all Annex I member states), but includes Kazakhstan (a non-Annex I member state).

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

- **Africa:** Mayotte, Saint Helena and Western Sahara.
- **Asia and Oceania:** Christmas Island, Nauru, Niue and Tuvalu.
- **Non-OECD Americas:** Anguilla.
- **Non-OECD Europe and Eurasia:** Andorra and Liechtenstein[1] (except for oil data).

1. Oil data for Liechtenstein are included under Switzerland.

4. GRAPHS AND TABLES FOR REGIONAL AGGREGATES

World

Figure 1. CO_2 emissions by fuel

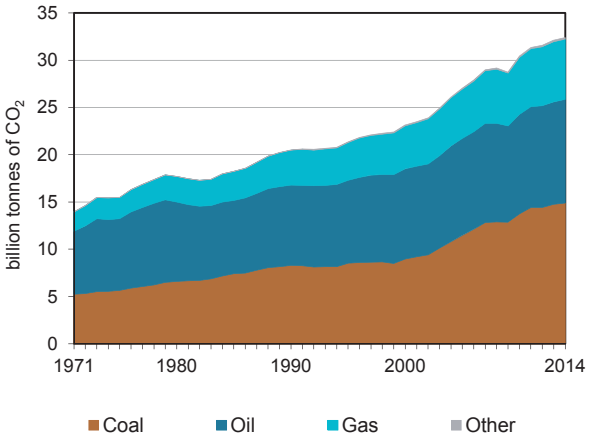


Figure 2. CO_2 emissions by sector

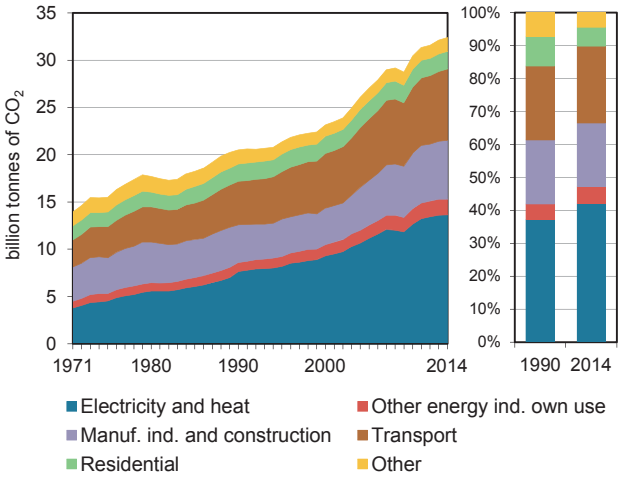


Figure 3. Electricity generation by fuel

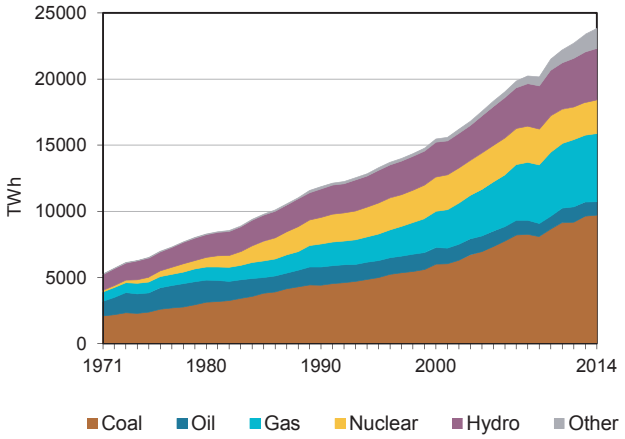


Figure 4. CO_2 from electricity generation: driving factors [1]

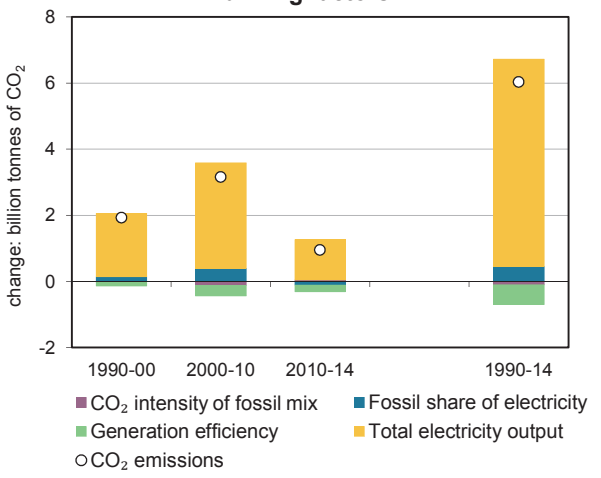


Figure 5. Changes in selected indicators

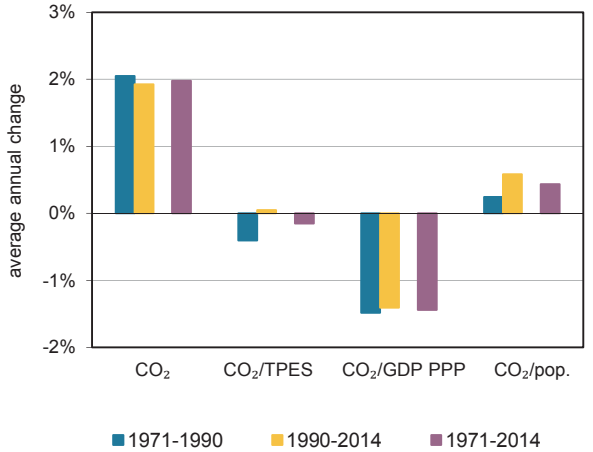
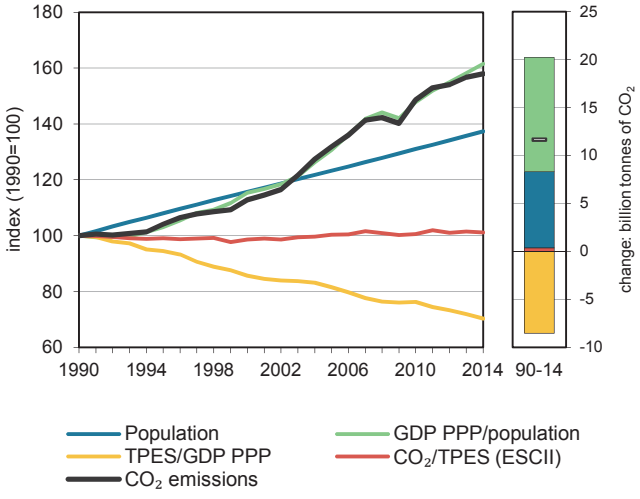


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

World

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	20 502.5	21 362.0	23 144.5	27 037.7	30 450.4	32 129.4	32 381.0	58%
Share of World CO_2 from fuel combustion	100%	100%	100%	100%	100%	100%	100%	
TPES (PJ)	367 278	386 328	420 224	482 863	542 270	567 274	573 555	56%
GDP (billion 2010 USD)	37 741	41 859	49 550	57 654	65 630	71 041	72 908	93%
GDP PPP (billion 2010 USD)	45 736	50 926	61 078	73 671	88 537	98 178	101 463	122%
Population (millions)	5 277.6	5 701.0	6 108.0	6 505.2	6 913.4	7 163.6	7 248.7	37%
CO_2 / TPES (tCO_2 per TJ)	55.8	55.3	55.1	56.0	56.2	56.6	56.5	1%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.54	0.51	0.47	0.47	0.46	0.45	0.44	-18%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.45	0.42	0.38	0.37	0.34	0.33	0.32	-29%
CO_2 / population (tCO_2 per capita)	3.88	3.75	3.79	4.16	4.40	4.49	4.47	15%
Share of electricity output from fossil fuels	64%	63%	65%	67%	68%	68%	67%	
CO_2 / kWh of electricity (gCO_2/kWh)	533	533	533	546	530	526	519	-3%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	104	113	132	149	157	158	58%
Population index	100	108	116	123	131	136	137	37%
GDP PPP per population index	100	103	115	131	148	158	162	62%
Energy intensity index - TPES / GDP PPP	100	94	86	82	76	72	70	-30%
Carbon intensity index - CO_2 / TPES	100	99	99	100	101	101	101	1%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion [3]	**14 871.4**	**10 973.4**	**6 362.8**	**173.5**	**32 381.0**	**58%**
Electricity and heat generation	9 899.3	867.7	2 729.2	128.8	13 625.0	79%
Other energy industry own use	407.4	599.8	674.5	1.4	1 683.1	73%
Manufacturing industries and construction	3 941.2	961.0	1 288.4	39.6	6 230.1	57%
Transport [3]	11.4	7 305.9	230.0	-	7 547.3	64%
of which: road	-	*5 570.3*	*89.5*	-	*5 659.8*	71%
Other	612.2	1 239.0	1 440.8	3.6	3 295.5	-1%
of which: residential	*293.5*	*579.5*	*985.7*	*0.0*	*1 858.8*	1%
of which: services	*138.6*	*253.9*	*426.8*	*3.3*	*822.6*	8%
Memo: international marine bunkers	-	*626.1*	-	-	*626.1*	*69%*
Memo: international aviation bunkers	-	*504.3*	-	-	*504.3*	*95%*

2. Other includes industrial waste and non-renewable municipal waste. 3. World includes international marine bunkers and international aviation bunkers.

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [4]	Cumulative total (%)
Main activity prod. elec. and heat - coal	9 150.0	98.1	18.7	18.7
Road - oil	5 570.3	69.0	11.4	30.1
Manufacturing industries - coal	3 941.2	89.7	8.1	38.1
Main activity prod. elec. and heat - gas	2 271.3	119.5	4.6	42.8
Other transport - oil	1 735.6	54.0	3.5	46.3
Manufacturing industries - gas	1 288.4	52.1	2.6	48.9
Residential - gas	985.7	53.0	2.0	50.9
Manufacturing industries - oil	961.0	-7.0	2.0	52.9
Unallocated autoproducers - coal	749.3	99.1	1.5	54.4
Memo: total CO_2 from fuel combustion	*32 381.0*	*57.9*	*66.1*	*66.1*

4. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Annex I Parties

Figure 1. CO_2 emissions by fuel

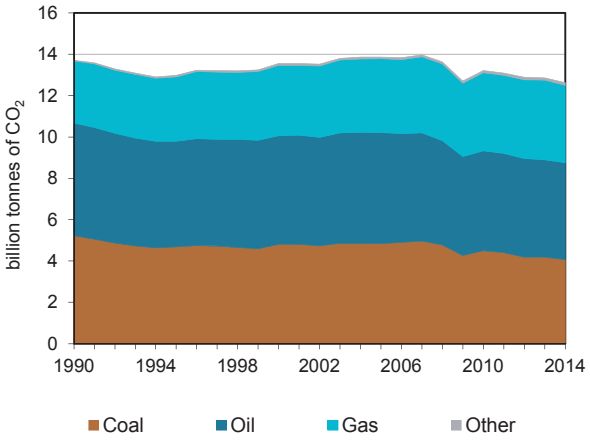


Figure 2. CO_2 emissions by sector

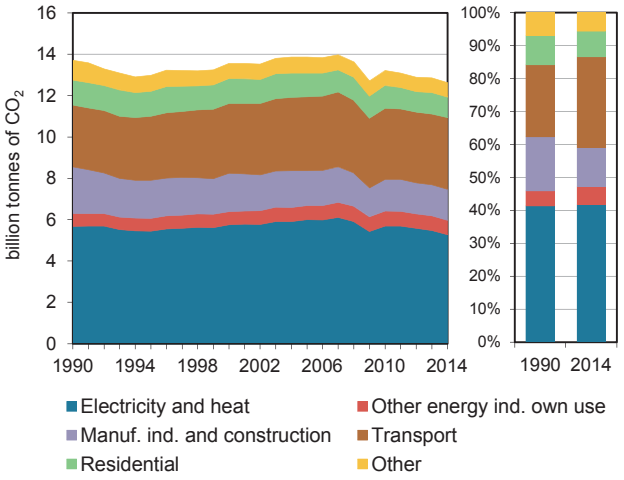


Figure 3. Electricity generation by fuel

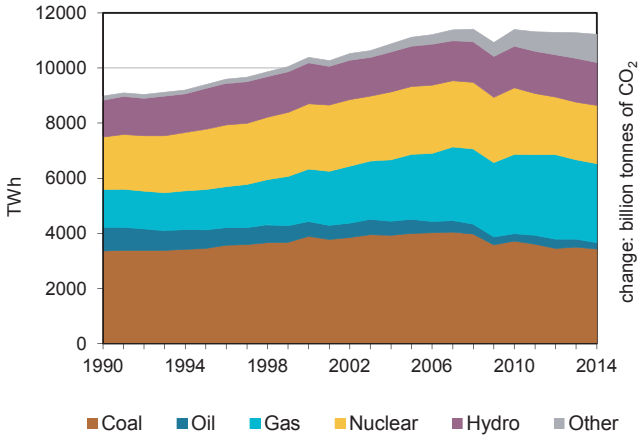


Figure 4. CO_2 from electricity generation: driving factors [1]

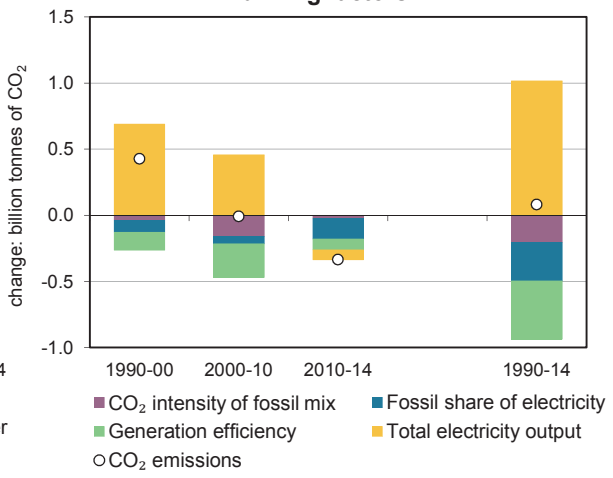


Figure 5. Changes in selected indicators

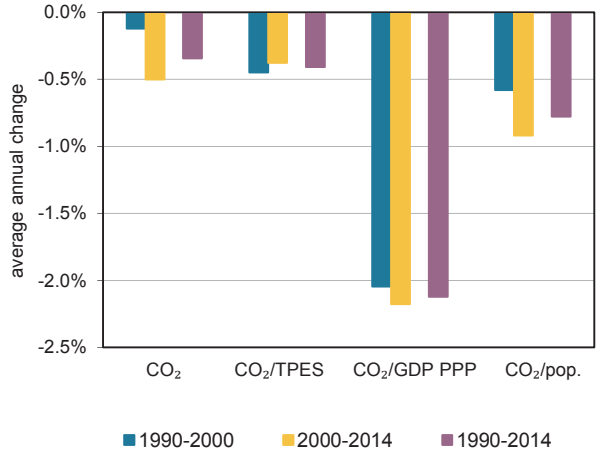
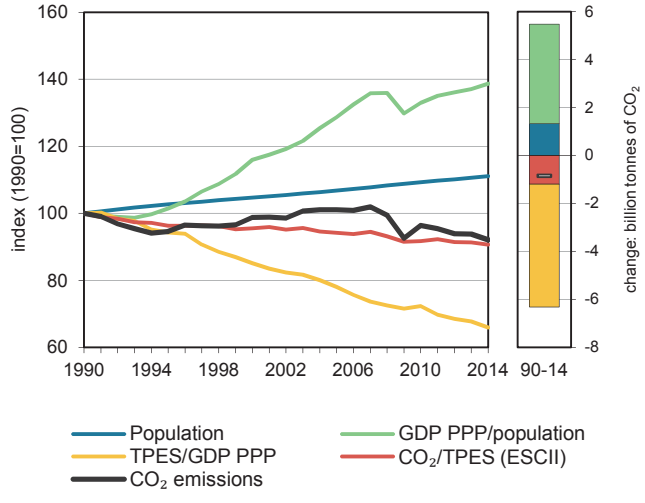


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Annex I Parties

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	13 716.5	12 978.9	13 548.9	13 867.6	13 220.1	12 864.7	12 628.4	-8%
Share of World CO_2 from fuel combustion	67%	61%	59%	51%	43%	40%	39%	
TPES (PJ)	233 887	229 741	241 705	250 983	245 782	240 135	237 564	2%
GDP (billion 2010 USD)	29 960.8	32 083.1	37 386.2	41 825.7	43 932.4	45 697.6	46 437.6	55%
GDP PPP (billion 2010 USD)	30 134.3	31 380.5	36 597.0	41 392.7	43 793.6	45 683.7	46 423.9	54%
Population (millions)	1 176.8	1 208.0	1 232.1	1 256.7	1 286.3	1 301.7	1 307.0	11%
CO_2 / TPES (tCO_2 per TJ)	58.7	56.5	56.1	55.3	53.8	53.6	53.2	-9%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.46	0.40	0.36	0.33	0.30	0.28	0.27	-41%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.46	0.41	0.37	0.34	0.30	0.28	0.27	-40%
CO_2 / population (tCO_2 per capita)	11.66	10.74	11.00	11.04	10.28	9.88	9.66	-17%
Share of electricity output from fossil fuels	62%	60%	61%	62%	61%	60%	59%	
CO_2 / kWh of electricity (gCO_2/kWh)	503	481	476	471	433	423	410	-19%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	95	99	101	96	94	92	-8%
Population index	100	103	105	107	109	111	111	11%
GDP PPP per population index	100	101	116	129	133	137	139	39%
Energy intensity index - TPES / GDP PPP	100	94	85	78	72	68	66	-34%
Carbon intensity index - CO_2 / TPES	100	96	96	94	92	91	91	-9%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**4 059.9**	**4 697.1**	**3 750.1**	**121.3**	**12 628.4**	**-8%**
Electricity and heat generation	3 407.9	199.9	1 572.4	86.4	5 266.6	-7%
Other energy industry own use	87.9	319.4	300.1	1.4	708.8	13%
Manufacturing industries and construction	479.3	306.1	680.5	30.6	1 496.6	-34%
Transport	0.1	3 329.6	130.9	-	3 460.6	15%
of which: road	*-*	*2 979.3*	*6.2*	*-*	*2 985.5*	22%
Other	84.7	542.1	1 066.2	2.8	1 695.8	-22%
of which: residential	*51.9*	*236.1*	*701.7*	*0.0*	*989.8*	-18%
of which: services	*27.6*	*153.4*	*344.8*	*2.5*	*528.2*	-17%
Memo: international marine bunkers	*-*	*246.6*	*-*	*-*	*246.6*	*4%*
Memo: international aviation bunkers	*-*	*266.6*	*-*	*-*	*266.6*	*56%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - coal	3 206.9	-5.9	18.6	18.6
Road - oil	2 979.3	21.7	17.2	35.8
Main activity prod. elec. and heat - gas	1 263.1	55.2	7.3	43.1
Residential - gas	701.7	16.4	4.1	47.2
Manufacturing industries - gas	680.5	-0.2	3.9	51.1
Manufacturing industries - coal	479.3	-50.3	2.8	53.9
Non-specified other - gas	364.5	25.7	2.1	56.0
Other transport - oil	350.3	-17.3	2.0	58.0
Other energy industry own use - oil	319.4	-13.3	1.8	59.9
Memo: total CO_2 from fuel combustion	*12 628.4*	*-7.9*	*73.1*	*73.1*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Annex II Parties

Figure 1. CO_2 emissions by fuel

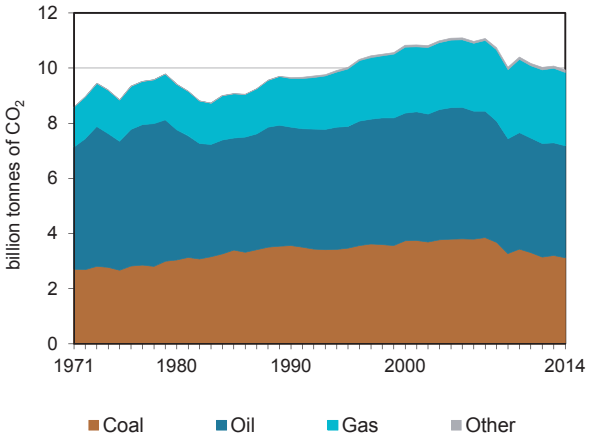


Figure 2. CO_2 emissions by sector

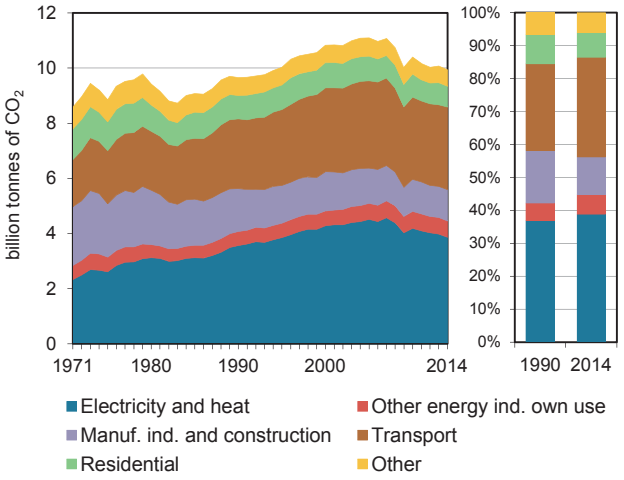
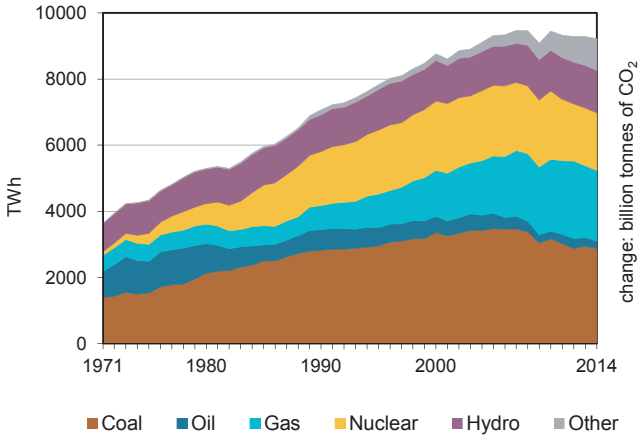


Figure 3. Electricity generation by fuel



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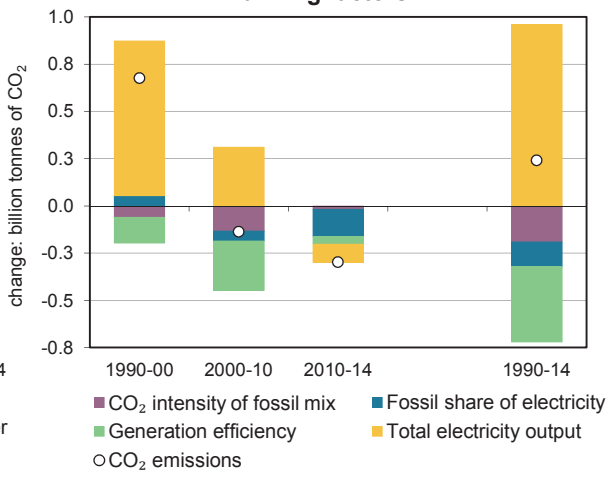


Figure 5. Changes in selected indicators

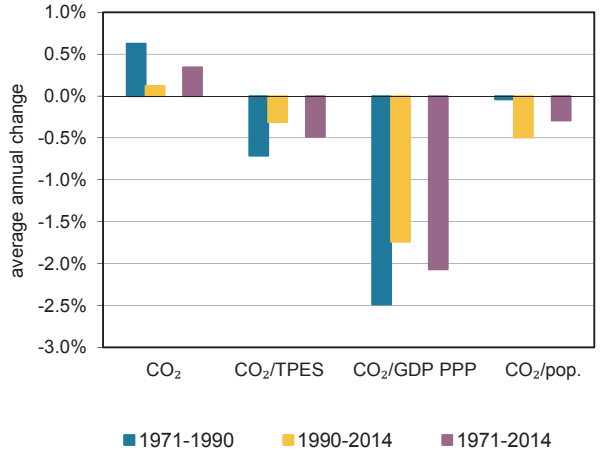
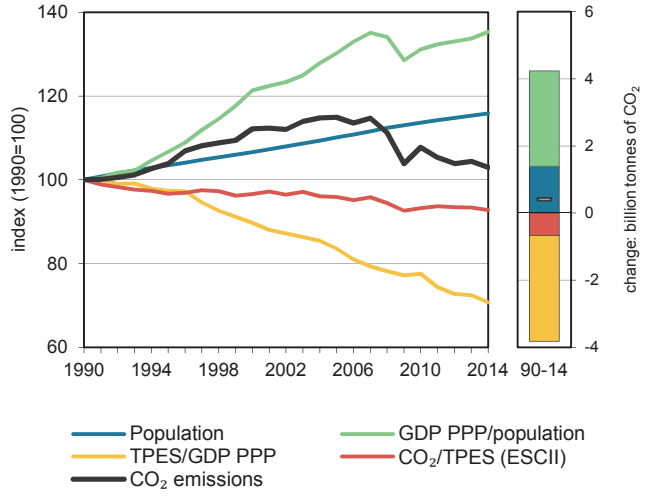


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Annex II Parties

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	9 652.4	10 027.3	10 825.9	11 093.0	10 396.9	10 074.2	9 933.7	3%
Share of World CO_2 from fuel combustion	47%	47%	47%	41%	34%	31%	31%	
TPES (PJ)	168 004	180 514	195 058	201 318	194 141	187 700	186 305	11%
GDP (billion 2010 USD)	27 099.5	29 871.5	34 871.0	38 585.0	40 139.7	41 572.4	42 248.4	56%
GDP PPP (billion 2010 USD)	24 849.6	27 426.4	32 141.2	35 610.3	37 018.3	38 311.7	38 952.6	57%
Population (millions)	799.6	827.5	852.5	880.4	908.7	922.0	926.5	16%
CO_2 / TPES (tCO_2 per TJ)	57.5	55.5	55.5	55.1	53.6	53.7	53.3	-7%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.36	0.34	0.31	0.29	0.26	0.24	0.24	-34%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.39	0.37	0.34	0.31	0.28	0.26	0.26	-34%
CO_2 / population (tCO_2 per capita)	12.07	12.12	12.70	12.60	11.44	10.93	10.72	-11%
Share of electricity output from fossil fuels	59%	58%	60%	61%	59%	58%	57%	
CO_2 / kWh of electricity (gCO_2/kWh)	494	479	476	469	426	413	405	-18%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	104	112	115	108	104	103	3%
Population index	100	103	107	110	114	115	116	16%
GDP PPP per population index	100	107	121	130	131	134	135	35%
Energy intensity index - TPES / GDP PPP	100	97	90	84	78	72	71	-29%
Carbon intensity index - CO_2 / TPES	100	97	97	96	93	93	93	-7%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**3 120.1**	**4 061.4**	**2 664.2**	**88.0**	**9 933.7**	**3%**
Electricity and heat generation	2 713.3	152.0	927.2	63.7	3 856.2	8%
Other energy industry own use	68.0	264.9	266.4	0.4	599.8	17%
Manufacturing industries and construction	323.7	248.6	536.3	22.3	1 131.0	-27%
Transport	0.0	2 936.8	62.0	-	2 998.9	19%
of which: road	-	*2 622.8*	*5.5*	-	*2 628.3*	23%
Other	15.0	459.1	872.3	1.6	1 348.0	-10%
of which: residential	*7.6*	*206.8*	*537.5*	*0.0*	*752.0*	-12%
of which: services	*6.8*	*142.5*	*318.8*	*1.6*	*469.7*	-3%
Memo: international marine bunkers	-	*188.7*	-	-	*188.7*	*-16%*
Memo: international aviation bunkers	-	*234.7*	-	-	*234.7*	*77%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Road - oil	2 622.8	22.3	20.8	20.8
Main activity prod. elec. and heat - coal	2 606.7	1.2	20.7	41.6
Main activity prod. elec. and heat - gas	810.1	166.3	6.4	48.0
Residential - gas	537.5	20.1	4.3	52.3
Manufacturing industries - gas	536.3	11.9	4.3	56.5
Non-specified other - gas	334.7	34.0	2.7	59.2
Manufacturing industries - coal	323.7	-48.7	2.6	61.8
Other transport - oil	314.0	-7.5	2.5	64.3
Other energy industry own use - gas	266.4	74.0	2.1	66.4
Memo: total CO_2 from fuel combustion	*9 933.7*	*2.9*	*78.9*	*78.9*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Annex I: Economies in Transition

Figure 1. CO_2 emissions by fuel

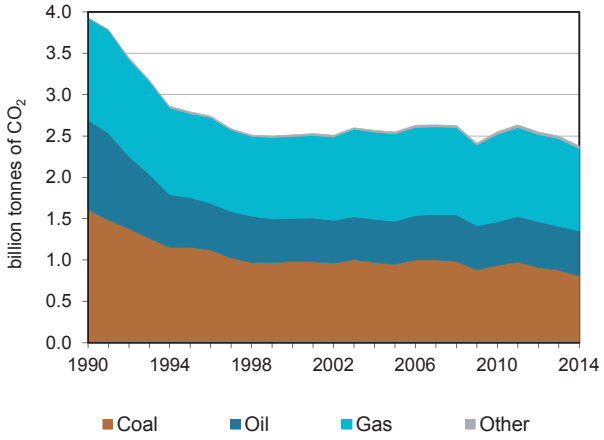


Figure 2. CO_2 emissions by sector

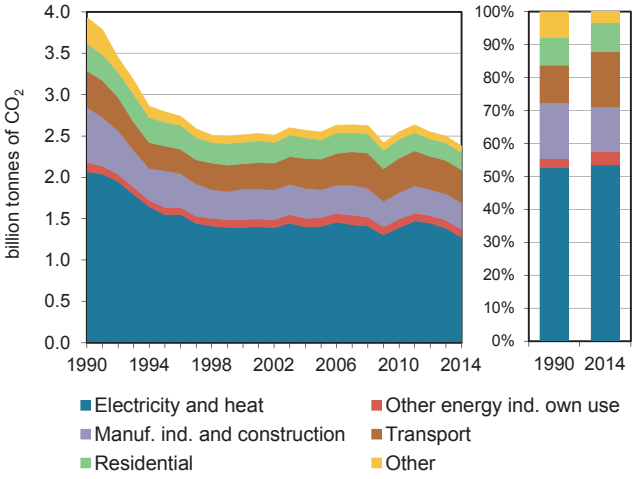


Figure 3. Electricity generation by fuel

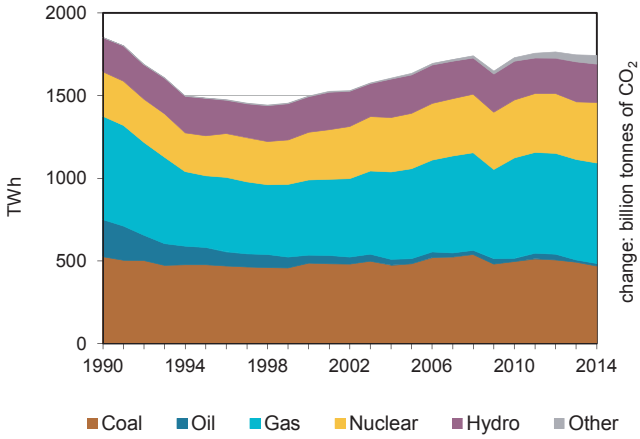


Figure 4. CO_2 from electricity generation: driving factors [1]

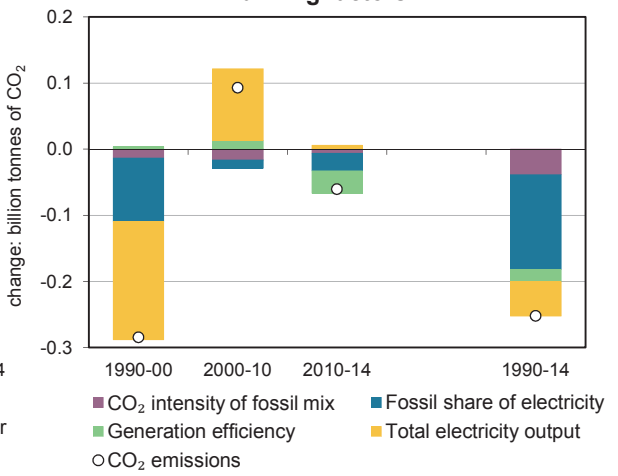


Figure 5. Changes in selected indicators

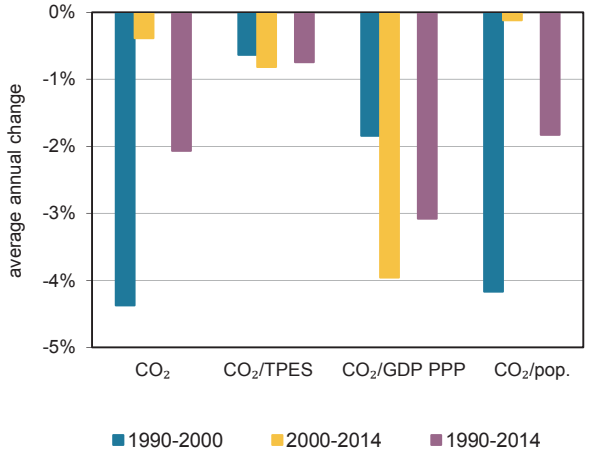
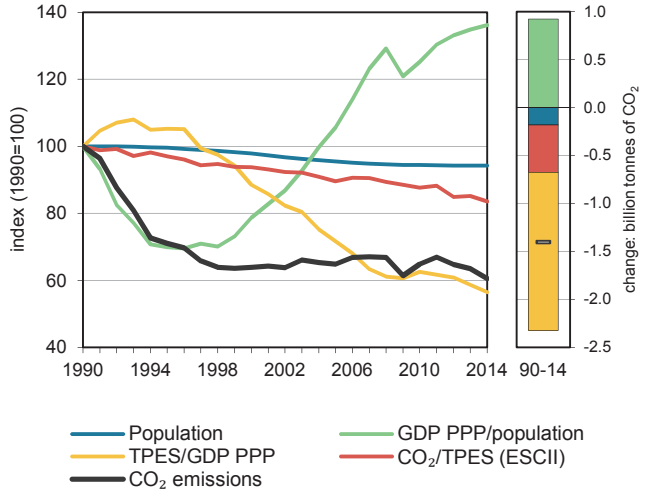


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Annex I: Economies in Transition

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	3 930.8	2 792.3	2 513.3	2 548.7	2 548.0	2 498.5	2 379.5	-39%
Share of World CO_2 from fuel combustion	19.2%	13.1%	10.9%	9.4%	8.4%	7.8%	7.4%	
TPES (PJ)	63 590	46 548	43 348	46 009	47 039	47 425	46 055	-28%
GDP (billion 2010 USD)	2 495.8	1 782.0	1 989.2	2 586.2	3 028.2	3 246.9	3 286.6	32%
GDP PPP (billion 2010 USD)	4 707.3	3 276.1	3 625.7	4 748.5	5 567.1	5 981.3	6 041.5	28%
Population (millions)	321.1	319.7	314.2	306.6	303.3	302.6	302.6	-6%
CO_2 / TPES (tCO_2 per TJ)	61.8	60.0	58.0	55.4	54.2	52.7	51.7	-16%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	1.58	1.57	1.26	0.99	0.84	0.77	0.72	-54%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.84	0.85	0.69	0.54	0.46	0.42	0.39	-53%
CO_2 / population (tCO_2 per capita)	12.24	8.73	8.00	8.31	8.40	8.26	7.86	-36%
Share of electricity output from fossil fuels	74%	69%	66%	65%	65%	64%	63%	
CO_2 / kWh of electricity (gCO_2/kWh)	535	492	472	483	462	469	424	-21%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	71	64	65	65	64	61	-39%
Population index	100	100	98	95	94	94	94	-6%
GDP PPP per population index	100	70	79	106	125	135	136	36%
Energy intensity index - TPES / GDP PPP	100	105	89	72	63	59	56	-44%
Carbon intensity index - CO_2 / TPES	100	97	94	90	88	85	84	-16%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**807.9**	**546.3**	**992.2**	**33.0**	**2 379.5**	**-39%**
Electricity and heat generation	611.6	41.4	598.4	22.6	1 273.9	-38%
Other energy industry own use	13.5	51.4	31.8	1.0	97.8	-13%
Manufacturing industries and construction	133.4	54.3	124.0	8.3	320.0	-52%
Transport	0.1	330.5	68.0	-	398.6	-9%
of which: road	*-*	*299.2*	*0.5*	*-*	*299.7*	*7%*
Other	49.4	68.7	170.0	1.2	289.2	-55%
of which: residential	*36.7*	*26.5*	*146.2*	*-*	*209.4*	*-37%*
of which: services	*8.2*	*10.7*	*20.2*	*0.9*	*39.9*	*-73%*
Memo: international marine bunkers	*-*	*50.1*	*-*	*-*	*50.1*	*407%*
Memo: international aviation bunkers	*-*	*23.1*	*-*	*-*	*23.1*	*-38%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - coal	519.9	-35.7	12.3	12.3
Main activity prod. elec. and heat - gas	407.7	-19.2	9.6	21.9
Road - oil	299.2	8.2	7.1	29.0
Unallocated autoproducers - gas	190.7	-14.1	4.5	33.5
Residential - gas	146.2	-5.7	3.5	37.0
Manufacturing industries - coal	133.4	-57.4	3.2	40.1
Manufacturing industries - gas	124.0	-38.3	2.9	43.1
Unallocated autoproducers - coal	91.7	-45.9	2.2	45.2
Other transport - gas	67.5	-13.1	1.6	46.8
Memo: total CO_2 from fuel combustion	*2 379.5*	*-39.5*	*56.3*	*56.3*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Non-Annex I Parties

Figure 1. CO_2 emissions by fuel

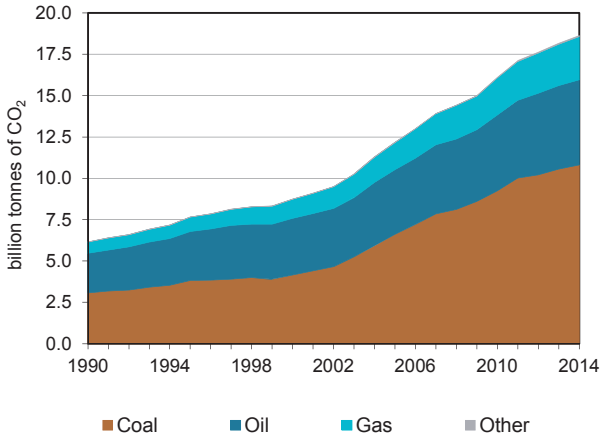


Figure 2. CO_2 emissions by sector

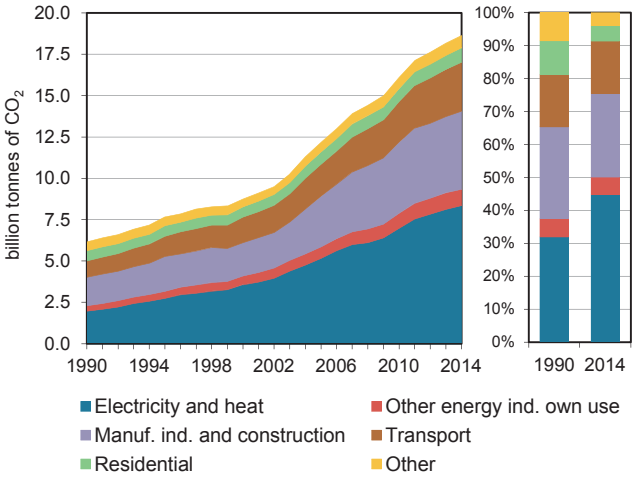


Figure 3. Electricity generation by fuel

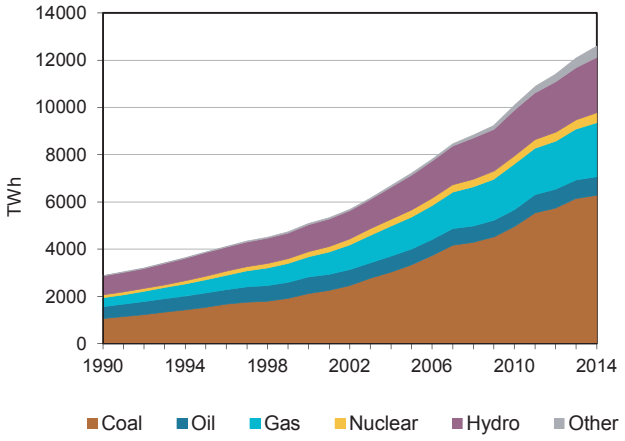


Figure 4. CO_2 from electricity generation: driving factors [1]

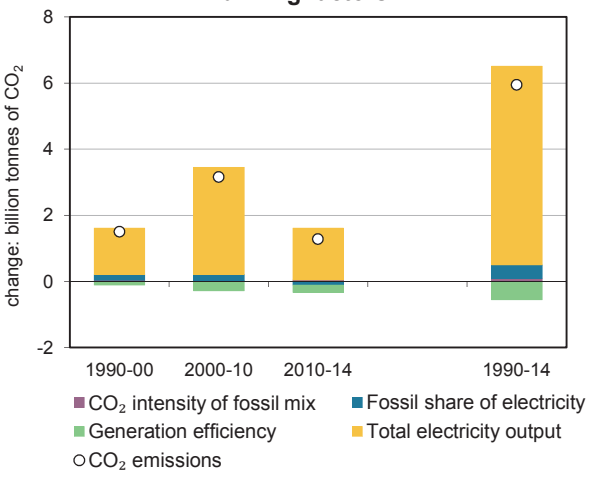


Figure 5. Changes in selected indicators

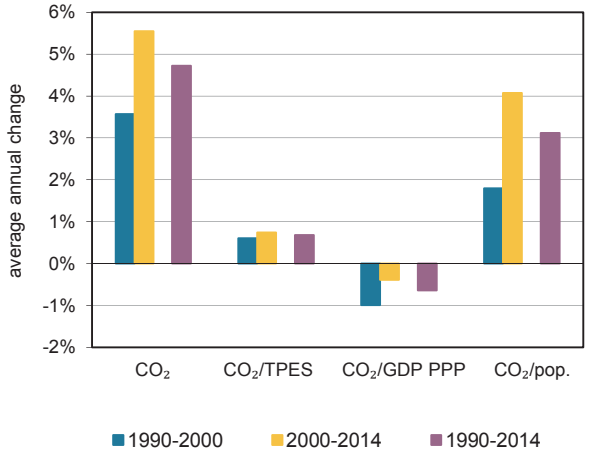
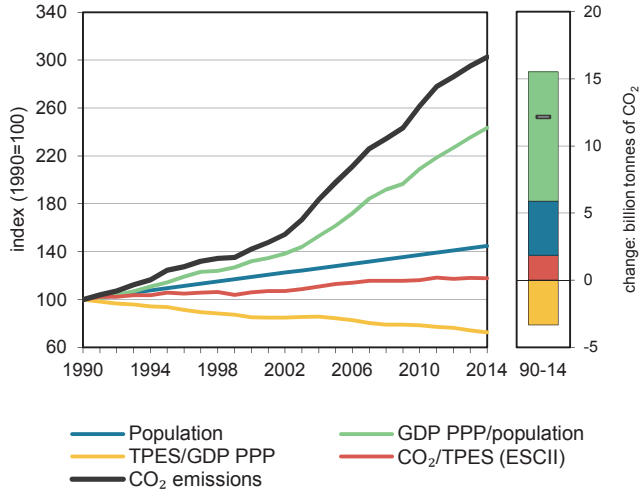


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Non-Annex I Parties

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	6 155.8	7 665.0	8 743.0	12 173.5	16 104.2	18 159.3	18 622.2	203%
Share of World CO_2 from fuel combustion	30%	36%	38%	45%	53%	57%	58%	
TPES (PJ)	124 926	146 952	167 074	218 503	281 396	312 293	320 785	157%
GDP (billion 2010 USD)	7 780.0	9 775.6	12 164.1	15 828.1	21 698.0	25 343.3	26 470.0	240%
GDP PPP (billion 2010 USD)	15 601.5	19 545.1	24 481.0	32 278.5	44 743.1	52 494.2	55 038.9	253%
Population (millions)	4 100.9	4 493.0	4 875.9	5 248.5	5 627.1	5 861.9	5 941.7	45%
CO_2 / TPES (tCO_2 per TJ)	49.3	52.2	52.3	55.7	57.2	58.1	58.1	18%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.79	0.78	0.72	0.77	0.74	0.72	0.70	-11%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.39	0.39	0.36	0.38	0.36	0.35	0.34	-14%
CO_2 / population (tCO_2 per capita)	1.50	1.71	1.79	2.32	2.86	3.10	3.13	109%
Share of electricity output from fossil fuels	67%	70%	72%	74%	76%	75%	74%	
CO_2 / kWh of electricity (gCO_2/kWh)	625	658	650	662	640	622	615	-1%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	125	142	198	262	295	303	203%
Population index	100	110	119	128	137	143	145	45%
GDP PPP per population index	100	114	132	162	209	235	243	143%
Energy intensity index - TPES / GDP PPP	100	94	85	85	79	74	73	-27%
Carbon intensity index - CO_2 / TPES	100	106	106	113	116	118	118	18%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**10 811.5**	**5 145.8**	**2 612.7**	**52.2**	**18 622.2**	**203%**
Electricity and heat generation	6 491.4	667.8	1 156.8	42.4	8 358.4	326%
Other energy industry own use	319.5	280.4	374.4	-	974.3	186%
Manufacturing industries and construction	3 461.8	654.9	607.9	8.9	4 733.6	176%
Transport	11.3	2 845.9	99.0	-	2 956.2	202%
of which: road	-	*2 591.0*	*83.3*	-	*2 674.3*	215%
Other	527.5	696.9	374.6	0.8	1 599.8	38%
of which: residential	*241.6*	*343.4*	*284.0*	-	*869.0*	38%
of which: services	*111.0*	*100.5*	*82.0*	*0.8*	*294.4*	138%
Memo: international marine bunkers	-	*379.5*	-	-	*379.5*	*181%*
Memo: international aviation bunkers	-	*237.7*	-	-	*237.7*	*171%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - coal	5 943.1	390.5	19.5	19.5
Manufacturing industries - coal	3 461.8	210.9	11.3	30.8
Road - oil	2 591.0	205.2	8.5	39.3
Main activity prod. elec. and heat - gas	1 008.2	356.3	3.3	42.6
Manufacturing industries - oil	654.9	50.0	2.1	44.7
Manufacturing industries - gas	607.9	267.3	2.0	46.7
Main activity prod. elec. and heat - oil	571.6	41.9	1.9	48.6
Unallocated autoproducers - coal	548.2	810.0	1.8	50.4
Other energy industry own use - gas	374.4	212.7	1.2	51.6
Memo: total CO_2 from fuel combustion	*18 622.2*	*202.5*	*61.0*	*61.0*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Annex B Kyoto Parties

Figure 1. CO_2 emissions by fuel

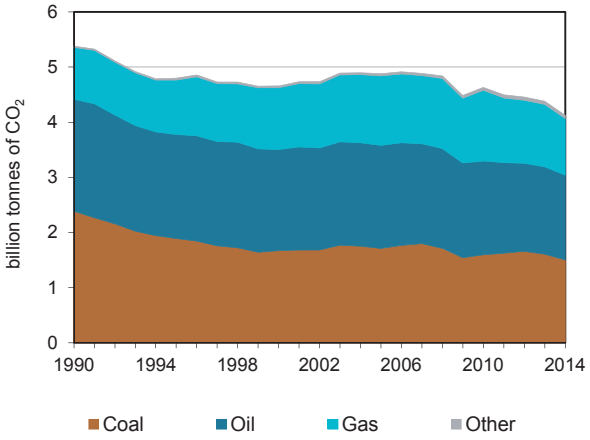


Figure 2. CO_2 emissions by sector

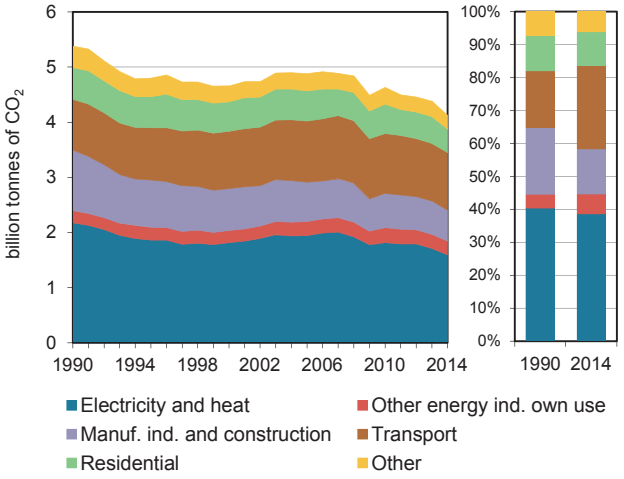


Figure 3. Electricity generation by fuel

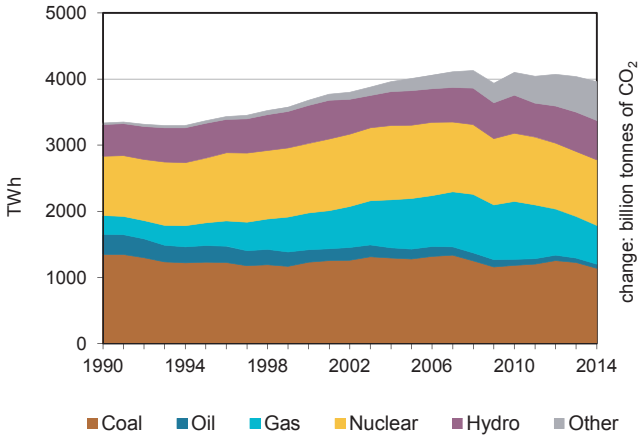


Figure 4. CO_2 from electricity generation: driving factors [1]

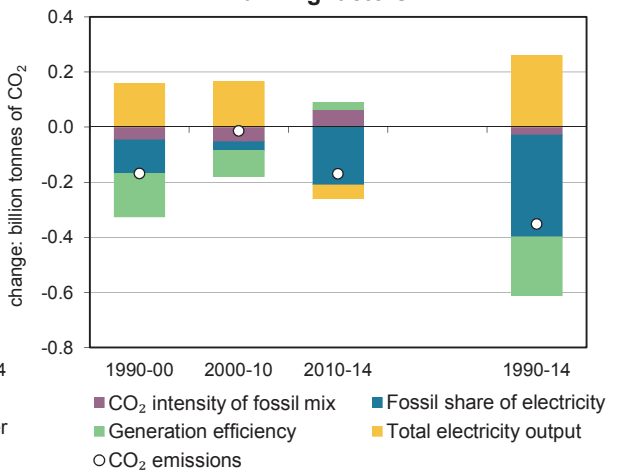


Figure 5. Changes in selected indicators

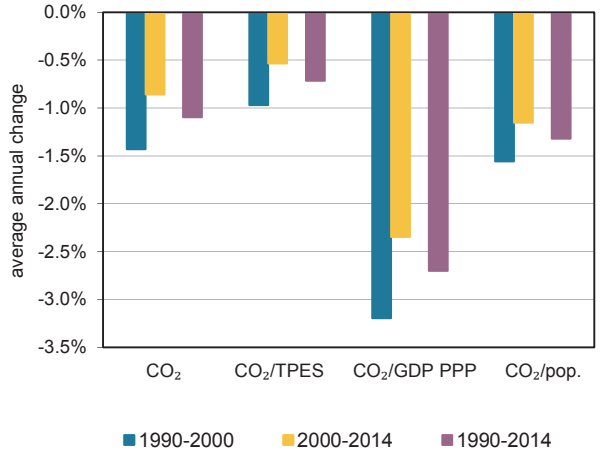
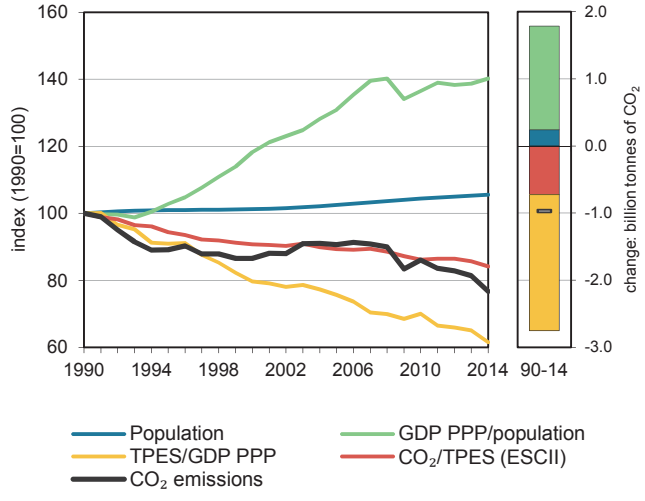


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Annex B Kyoto Parties

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	5 379.1	4 795.8	4 656.4	4 877.9	4 631.8	4 381.9	4 126.5	-23%
Share of World CO_2 from fuel combustion	26%	22%	20%	18%	15%	14%	13%	
TPES (PJ)	90 016	85 056	85 889	91 406	89 908	85 536	82 060	-9%
GDP (billion 2010 USD)	13 579.8	14 471.5	16 740.5	18 555.3	19 601.3	20 056.1	20 339.7	50%
GDP PPP (billion 2010 USD)	13 487.5	14 004.4	16 156.0	18 093.2	19 223.2	19 686.9	19 961.3	48%
Population (millions)	584.8	590.7	592.3	599.6	610.5	615.7	617.5	6%
CO_2 / TPES (tCO_2 per TJ)	59.8	56.4	54.2	53.4	51.5	51.2	50.3	-16%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.40	0.33	0.28	0.26	0.24	0.22	0.20	-49%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.40	0.34	0.29	0.27	0.24	0.22	0.21	-48%
CO_2 / population (tCO_2 per capita)	9.20	8.12	7.86	8.14	7.59	7.12	6.68	-27%
Share of electricity output from fossil fuels	58%	54%	54%	55%	53%	48%	46%	
CO_2 / kWh of electricity (gCO_2/kWh)	510	458	417	409	371	357	341	-33%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	89	87	91	86	81	77	-23%
Population index	100	101	101	103	104	105	106	6%
GDP PPP per population index	100	103	118	131	137	139	140	40%
Energy intensity index - TPES / GDP PPP	100	91	80	76	70	65	62	-38%
Carbon intensity index - CO_2 / TPES	100	94	91	89	86	86	84	-16%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**1 498.4**	**1 539.8**	**1 026.4**	**61.9**	**4 126.5**	**-23%**
Electricity and heat generation	1 189.1	54.9	307.9	41.8	1 593.8	-27%
Other energy industry own use	37.9	105.9	104.8	0.4	249.0	11%
Manufacturing industries and construction	209.2	113.5	221.9	18.6	563.2	-48%
Transport	0.1	1 032.8	14.4	-	1 047.3	13%
of which: road	-	*976.5*	*3.7*	-	*980.2*	15%
Other	62.1	232.7	377.4	1.1	673.3	-30%
of which: residential	*49.2*	*113.1*	*259.5*	*0.0*	*421.8*	-27%
of which: services	*7.6*	*54.1*	*105.3*	*1.1*	*168.1*	-22%
Memo: international marine bunkers	-	*136.6*	-	-	*136.6*	*17%*
Memo: international aviation bunkers	-	*151.5*	-	-	*151.5*	*69%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - coal	1 131.8	-17.9	19.8	19.8
Road - oil	976.5	14.7	17.1	37.0
Residential - gas	259.5	25.4	4.6	41.5
Main activity prod. elec. and heat - gas	241.3	6.6	4.2	45.8
Manufacturing industries - gas	221.9	-25.9	3.9	49.6
Manufacturing industries - coal	209.2	-60.6	3.7	53.3
Non-specified other - oil	119.6	-40.7	2.1	55.4
Non-specified other - gas	117.9	7.2	2.1	57.5
Manufacturing industries - oil	113.5	-55.4	2.0	59.5
Memo: total CO_2 from fuel combustion	*4 126.5*	*-23.3*	*72.4*	*72.4*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

OECD Total [1]

Figure 1. CO_2 emissions by fuel

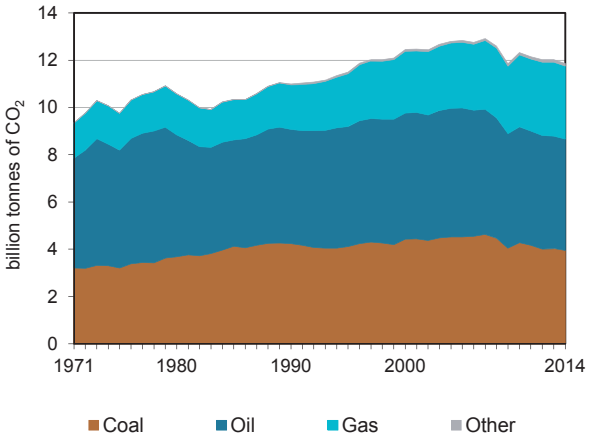


Figure 2. CO_2 emissions by sector

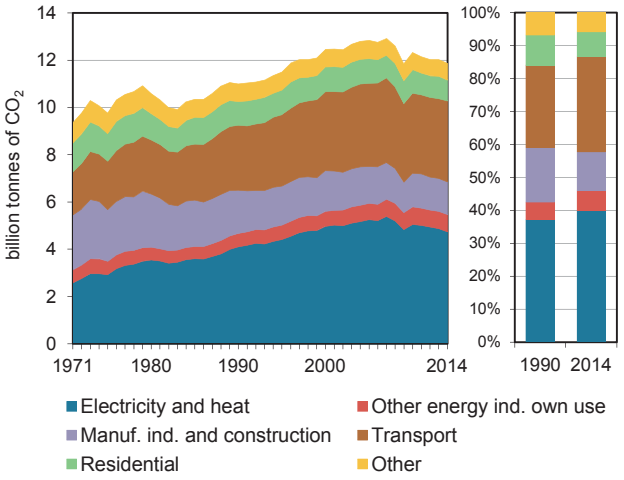


Figure 3. Electricity generation by fuel

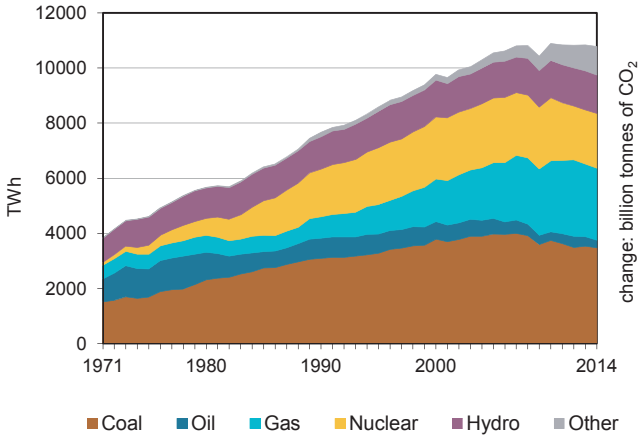


Figure 4. CO_2 from electricity generation: driving factors [2]

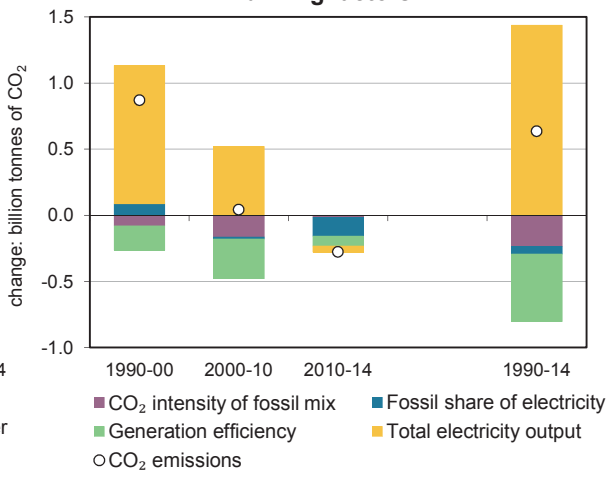


Figure 5. Changes in selected indicators

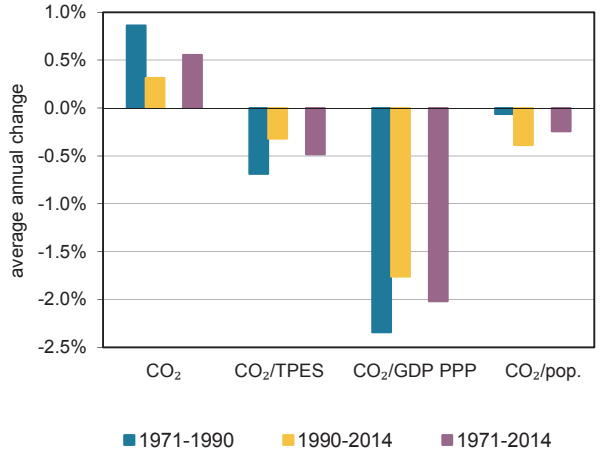
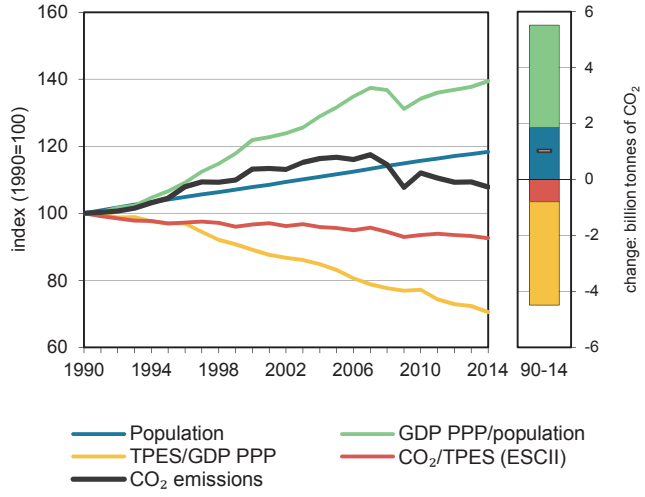


Figure 6. Total CO_2 emissions and drivers [3]



1. Excludes Estonia and Slovenia prior to 1990.
2. Electricity decomposition: CO_2 emissions = CO_2 intensity of mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
3. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

OECD Total

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	10 995.5	11 493.6	12 451.7	12 829.7	12 323.3	12 026.9	11 855.6	8%
Share of World CO_2 from fuel combustion	54%	54%	54%	47%	40%	37%	37%	
TPES (PJ)	189 485	204 289	221 898	231 291	227 082	222 309	220 781	17%
GDP (billion 2010 USD)	29 171.4	32 307.1	37 956.9	42 259.1	44 440.2	46 299.6	47 107.4	61%
GDP PPP (billion 2010 USD)	28 001.4	31 094.6	36 788.5	41 133.7	43 464.2	45 400.3	46 238.4	65%
Population (millions)	1 070.2	1 114.6	1 153.9	1 194.7	1 238.0	1 259.8	1 266.9	18%
CO_2 / TPES (tCO_2 per TJ)	58.0	56.3	56.1	55.5	54.3	54.1	53.7	-7%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.38	0.36	0.33	0.30	0.28	0.26	0.25	-33%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.39	0.37	0.34	0.31	0.28	0.26	0.26	-35%
CO_2 / population (tCO_2 per capita)	10.27	10.31	10.79	10.74	9.95	9.55	9.36	-9%
Share of electricity output from fossil fuels	60%	59%	61%	63%	61%	61%	60%	
CO_2 / kWh of electricity (gCO_2/kWh)	509	492	488	478	442	430	421	-17%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	105	113	117	112	109	108	8%
Population index	100	104	108	112	116	118	118	18%
GDP PPP per population index	100	107	122	132	134	138	139	39%
Energy intensity index - TPES / GDP PPP	100	97	89	83	77	72	71	-29%
Carbon intensity index - CO_2 / TPES	100	97	97	96	94	93	93	-7%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**3 950.2**	**4 713.3**	**3 084.4**	**107.7**	**11 855.6**	**8%**
Electricity and heat generation	3 339.4	200.0	1 124.5	68.3	4 732.2	15%
Other energy industry own use	114.4	309.0	307.0	0.4	730.9	27%
Manufacturing industries and construction	422.9	301.5	626.0	36.2	1 386.7	-24%
Transport	0.0	3 361.3	67.2	-	3 428.5	25%
of which: road	-	*3 030.8*	*8.7*	-	*3 039.5*	30%
Other	73.4	541.5	959.6	2.7	1 577.3	-10%
of which: residential	*46.1*	*238.8*	*597.5*	*0.0*	*882.4*	-13%
of which: services	*22.6*	*155.5*	*345.3*	*2.7*	*526.0*	-3%
Memo: international marine bunkers	-	*224.5*	-	-	*224.5*	*-4%*
Memo: international aviation bunkers	-	*273.8*	-	-	*273.8*	*91%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - coal	3 184.5	10.0	21.0	21.0
Road - oil	3 030.8	29.6	20.0	41.0
Main activity prod. elec. and heat - gas	983.3	196.9	6.5	47.5
Manufacturing industries - gas	626.0	18.1	4.1	51.6
Residential - gas	597.5	28.0	3.9	55.5
Manufacturing industries - coal	422.9	-43.5	2.8	58.3
Non-specified other - gas	362.2	39.9	2.4	60.7
Other transport - oil	330.5	-8.4	2.2	62.9
Other energy industry own use - oil	309.0	-7.1	2.0	64.9
Memo: total CO_2 from fuel combustion	*11 855.6*	*7.8*	*78.2*	*78.2*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

OECD Americas

Figure 1. CO_2 emissions by fuel

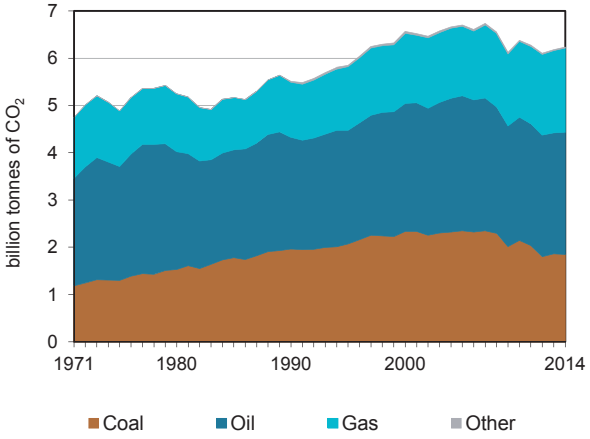


Figure 2. CO_2 emissions by sector

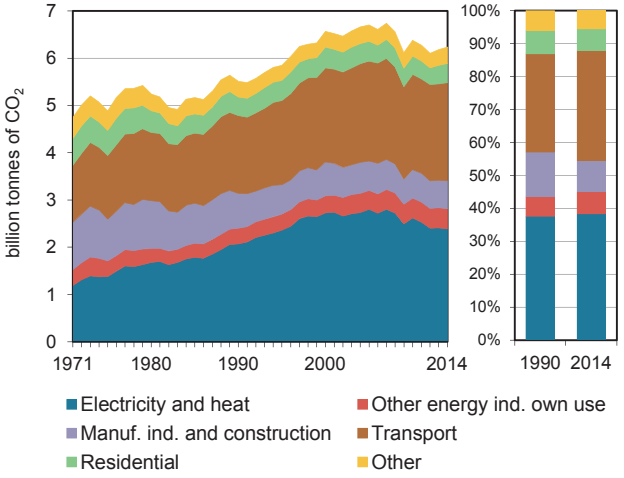


Figure 3. Electricity generation by fuel

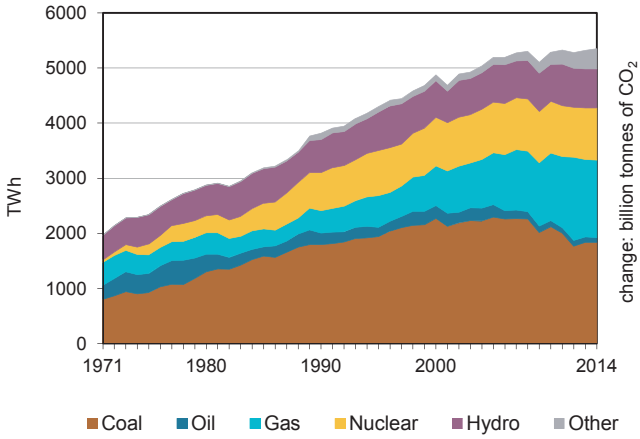


Figure 4. CO_2 from electricity generation: driving factors [1]

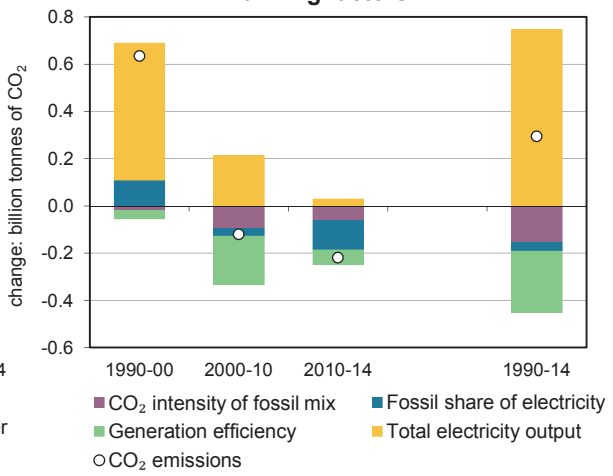


Figure 5. Changes in selected indicators

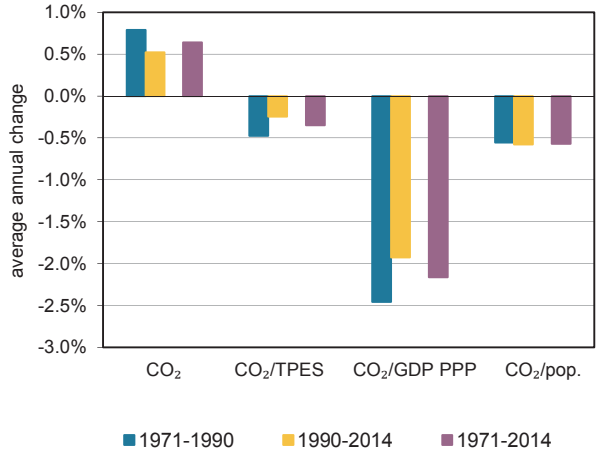
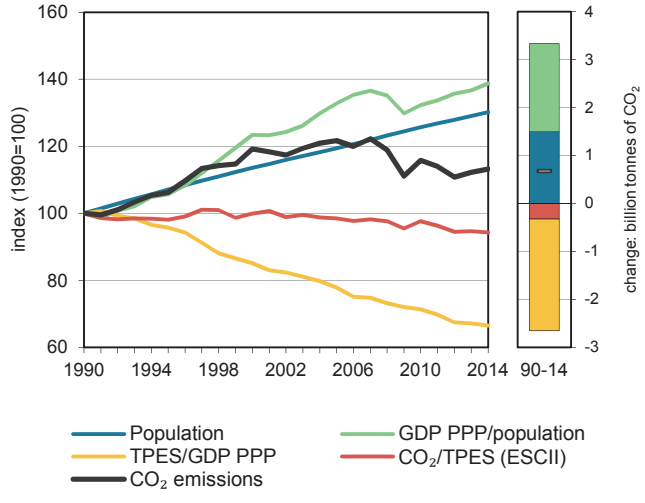


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

OECD Americas

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	5 508.3	5 850.4	6 567.0	6 702.4	6 379.4	6 183.0	6 237.8	13%
Share of World CO_2 from fuel combustion	27%	27%	28%	25%	21%	19%	19%	
TPES (PJ)	94 790	102 630	113 133	117 118	112 444	112 418	113 887	20%
GDP (billion 2010 USD)	10 772.6	12 184.0	15 069.9	17 067.4	17 845.3	18 907.9	19 364.0	80%
GDP PPP (billion 2010 USD)	11 047.8	12 493.8	15 486.2	17 525.7	18 367.7	19 492.4	19 960.6	81%
Population (millions)	378.1	404.8	429.4	451.7	475.2	488.0	492.3	30%
CO_2 / TPES (tCO_2 per TJ)	58.1	57.0	58.0	57.2	56.7	55.0	54.8	-6%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.51	0.48	0.44	0.39	0.36	0.33	0.32	-37%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.50	0.47	0.42	0.38	0.35	0.32	0.31	-37%
CO_2 / population (tCO_2 per capita)	14.57	14.45	15.29	14.84	13.43	12.67	12.67	-13%
Share of electricity output from fossil fuels	63%	63%	66%	67%	66%	63%	63%	
CO_2 / kWh of electricity (gCO_2/kWh)	541	542	554	535	488	447	441	-18%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	106	119	122	116	112	113	13%
Population index	100	107	114	119	126	129	130	30%
GDP PPP per population index	100	106	123	133	132	137	139	39%
Energy intensity index - TPES / GDP PPP	100	96	85	78	71	67	66	-34%
Carbon intensity index - CO_2 / TPES	100	98	100	98	98	95	94	-6%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**1 844.9**	**2 590.8**	**1 779.2**	**22.8**	**6 237.8**	**13%**
Electricity and heat generation	1 708.6	69.0	594.6	18.2	2 390.3	15%
Other energy industry own use	14.5	172.3	240.8	-	427.6	29%
Manufacturing industries and construction	118.4	115.3	349.5	3.8	587.0	-21%
Transport	-	2 023.9	56.0	-	2 079.9	27%
of which: road	-	*1 777.9*	*2.1*	-	*1 780.0*	33%
Other	3.5	210.3	538.3	0.8	753.0	4%
of which: residential	*0.1*	*87.5*	*318.9*	-	*406.4*	5%
of which: services	*3.4*	*53.2*	*214.5*	*0.8*	*272.0*	7%
Memo: international marine bunkers	-	*50.6*	-	-	*50.6*	*-47%*
Memo: international aviation bunkers	-	*81.1*	-	-	*81.1*	*70%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Road - oil	1 777.9	33.3	22.6	22.6
Main activity prod. elec. and heat - coal	1 690.1	2.0	21.5	44.1
Main activity prod. elec. and heat - gas	528.7	221.3	6.7	50.9
Manufacturing industries - gas	349.5	8.2	4.4	55.3
Residential - gas	318.9	18.2	4.1	59.4
Other transport - oil	246.0	-8.0	3.1	62.5
Other energy industry own use - gas	240.8	73.1	3.1	65.6
Non-specified other - gas	219.5	33.3	2.8	68.4
Other energy industry own use - oil	172.3	-7.3	2.2	70.6
Memo: total CO_2 from fuel combustion	*6 237.8*	*13.2*	*79.4*	*79.4*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

OECD Asia Oceania

Figure 1. CO_2 emissions by fuel

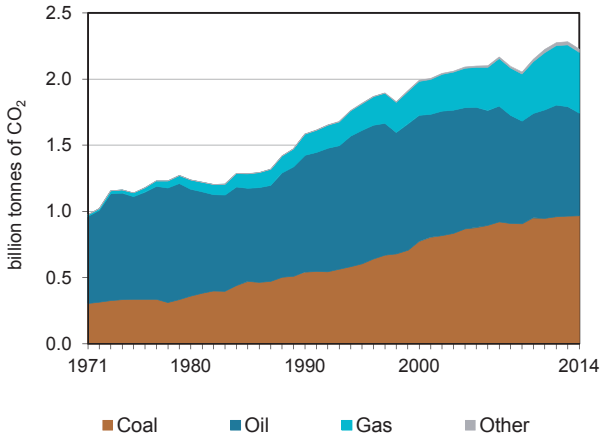


Figure 2. CO_2 emissions by sector

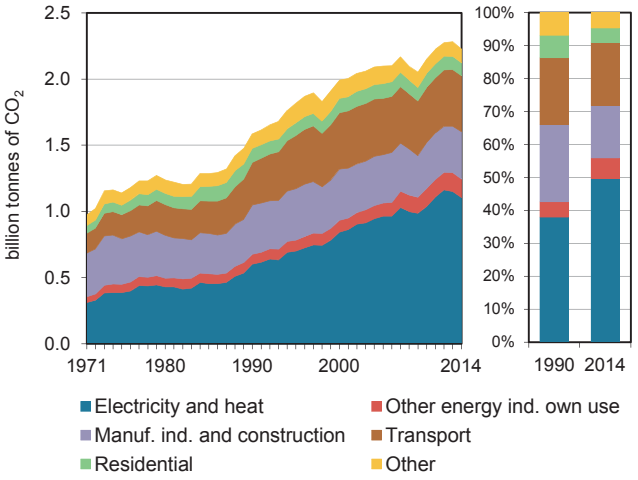


Figure 3. Electricity generation by fuel

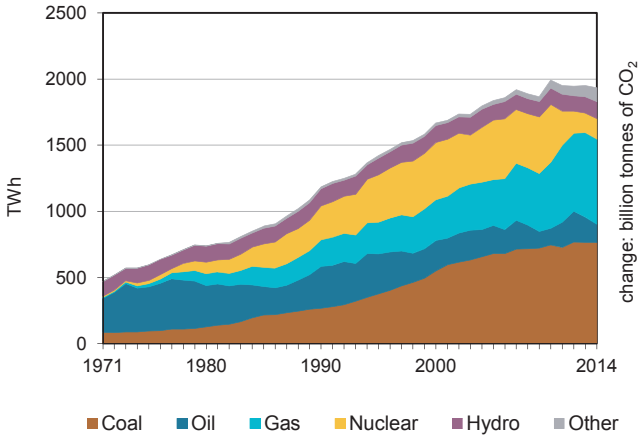


Figure 4. CO_2 from electricity generation: driving factors [1]

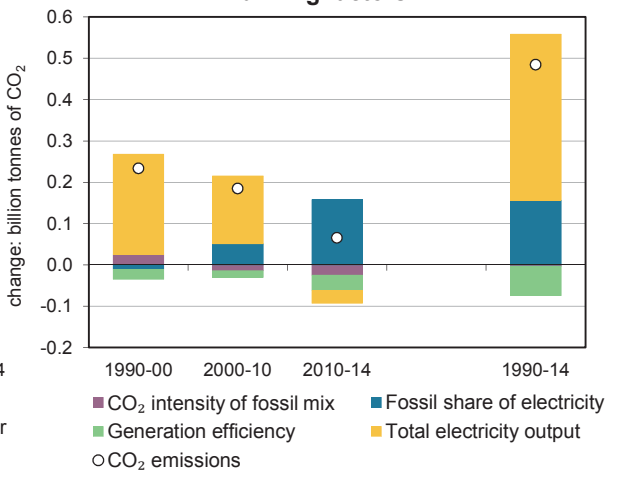


Figure 5. Changes in selected indicators

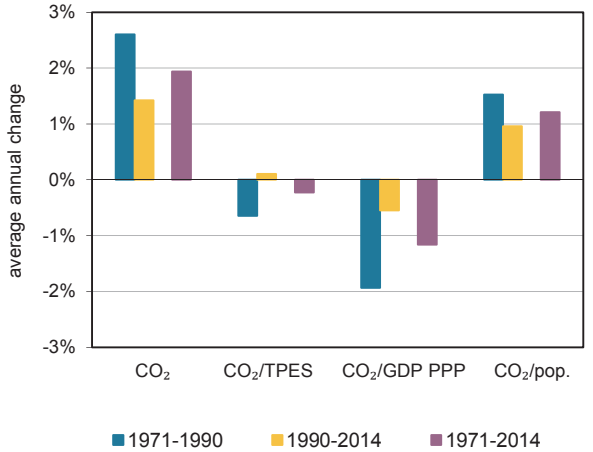
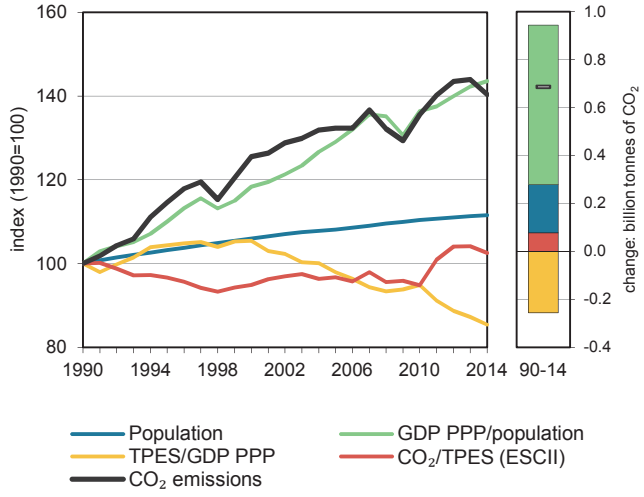


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

OECD Asia Oceania

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	1 586.6	1 819.0	1 991.5	2 099.6	2 150.9	2 283.5	2 226.2	40%
Share of World CO_2 from fuel combustion	7.7%	8.5%	8.6%	7.8%	7.1%	7.1%	6.9%	
TPES (PJ)	26 891	31 886	35 571	36 772	38 428	37 157	36 787	37%
GDP (billion 2010 USD)	5 766.6	6 446.7	7 039.1	7 755.3	8 267.3	8 664.8	8 746.0	52%
GDP PPP (billion 2010 USD)	4 733.5	5 375.1	5 937.3	6 604.8	7 123.6	7 493.7	7 580.7	60%
Population (millions)	191.7	197.9	203.1	207.3	211.6	213.3	213.9	12%
CO_2 / TPES (tCO_2 per TJ)	59.0	57.0	56.0	57.1	56.0	61.5	60.5	3%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.28	0.28	0.28	0.27	0.26	0.26	0.25	-7%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.34	0.34	0.34	0.32	0.30	0.30	0.29	-12%
CO_2 / population (tCO_2 per capita)	8.28	9.19	9.80	10.13	10.17	10.70	10.41	26%
Share of electricity output from fossil fuels	66%	65%	65%	67%	69%	82%	80%	
CO_2 / kWh of electricity (gCO_2/kWh)	507	491	501	517	512	581	561	11%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	115	126	132	136	144	140	40%
Population index	100	103	106	108	110	111	112	12%
GDP PPP per population index	100	110	118	129	136	142	144	44%
Energy intensity index - TPES / GDP PPP	100	104	105	98	95	87	85	-15%
Carbon intensity index - CO_2 / TPES	100	97	95	97	95	104	103	3%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**967.5**	**776.2**	**457.9**	**24.6**	**2 226.2**	**40%**
Electricity and heat generation	730.9	86.2	277.9	8.3	1 103.4	83%
Other energy industry own use	63.6	54.0	23.1	-	140.6	92%
Manufacturing industries and construction	167.2	99.2	76.3	15.4	358.2	-4%
Transport	0.0	420.6	3.7	-	424.3	32%
of which: road	-	*379.9*	*3.2*	-	*383.1*	37%
Other	5.8	116.2	76.8	0.8	199.6	-8%
of which: residential	*3.0*	*43.7*	*48.6*	-	*95.3*	-11%
of which: services	*2.6*	*54.1*	*28.0*	*0.8*	*85.5*	-5%
Memo: international marine bunkers	-	*42.4*	-	-	*42.4*	*58%*
Memo: international aviation bunkers	-	*49.6*	-	-	*49.6*	*130%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - coal	643.2	165.1	23.6	23.6
Road - oil	379.9	35.6	13.9	37.5
Main activity prod. elec. and heat - gas	254.5	175.2	9.3	46.8
Manufacturing industries - coal	167.2	-6.0	6.1	53.0
Manufacturing industries - oil	99.2	-40.5	3.6	56.6
Unallocated autoproducers - coal	87.7	63.5	3.2	59.8
Manufacturing industries - gas	76.3	207.4	2.8	62.6
Non-specified other - oil	72.5	-22.1	2.7	65.3
Other energy industry - coal	63.6	134.9	2.3	67.6
Memo: total CO_2 from fuel combustion	*2 226.2*	*40.3*	*81.6*	*81.6*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

OECD Europe [1]

Figure 1. CO_2 emissions by fuel

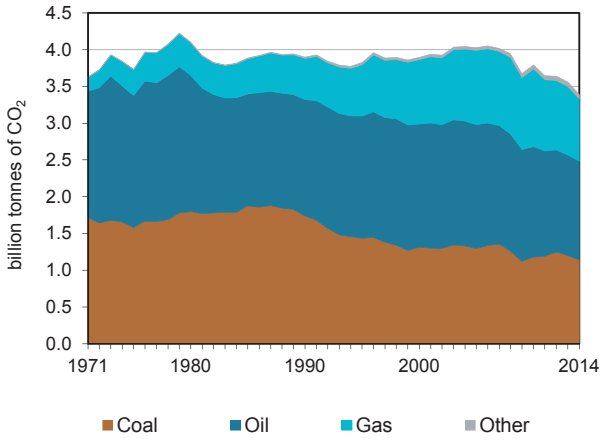


Figure 2. CO_2 emissions by sector

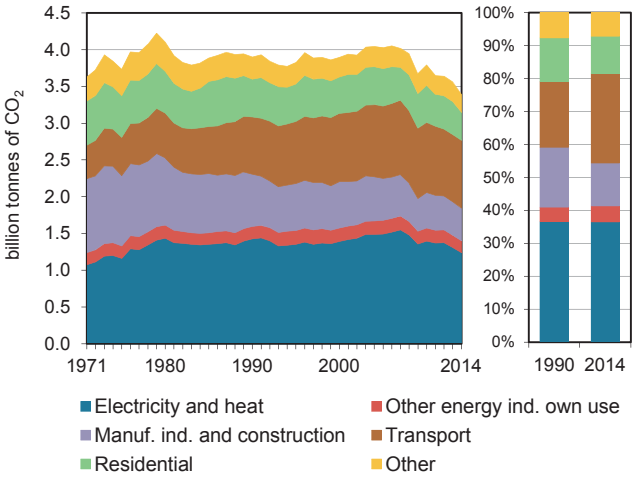


Figure 3. Electricity generation by fuel

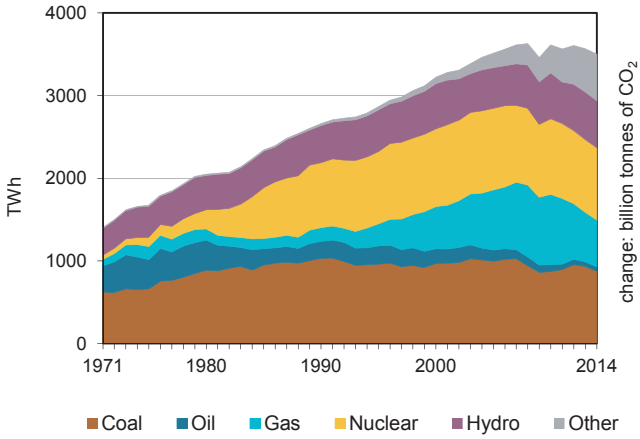


Figure 4. CO_2 from electricity generation: driving factors [2]

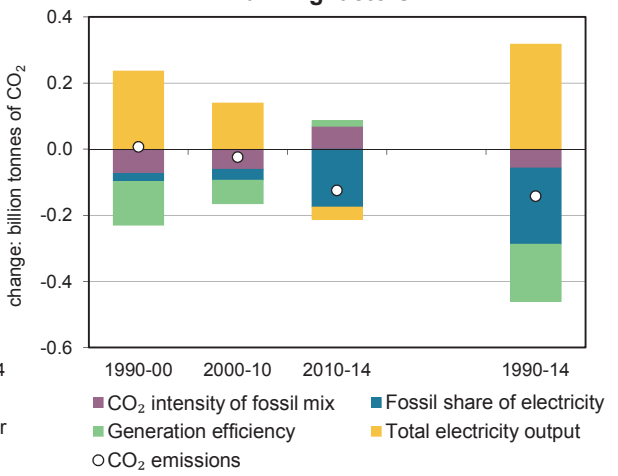


Figure 5. Changes in selected indicators

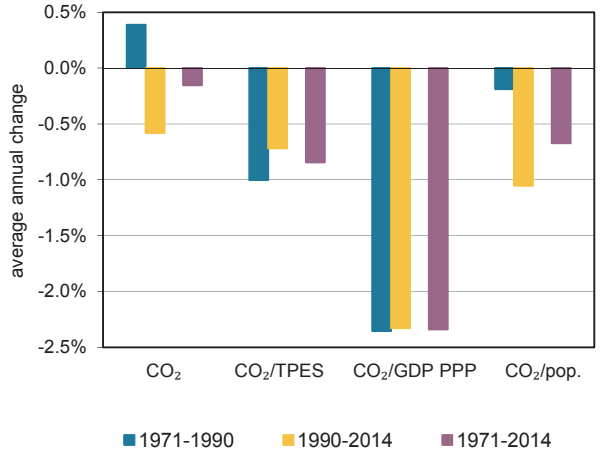
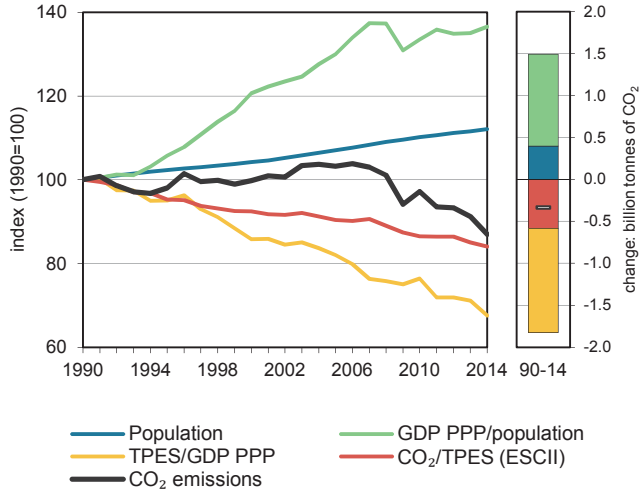


Figure 6. Total CO_2 emissions and drivers [3]



1. Excludes Estonia and Slovenia prior to 1990.
2. Electricity decomposition: CO_2 emissions = CO_2 intensity of mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
3. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

OECD Europe

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	3 900.6	3 824.2	3 893.2	4 027.7	3 792.9	3 560.4	3 391.6	-13%
Share of World CO_2 from fuel combustion	19%	18%	17%	15%	12%	11%	10%	
TPES (PJ)	67 803	69 773	73 195	77 401	76 210	72 735	70 107	3%
GDP (billion 2010 USD)	12 632.2	13 676.4	15 847.9	17 436.4	18 327.6	18 727.0	18 997.4	50%
GDP PPP (billion 2010 USD)	12 220.1	13 225.7	15 365.0	17 003.3	17 973.0	18 414.2	18 697.2	53%
Population (millions)	500.4	511.9	521.4	535.8	551.2	558.4	560.8	12%
CO_2 / TPES (tCO_2 per TJ)	57.5	54.8	53.2	52.0	49.8	49.0	48.4	-16%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.31	0.28	0.25	0.23	0.21	0.19	0.18	-42%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.32	0.29	0.25	0.24	0.21	0.19	0.18	-43%
CO_2 / population (tCO_2 per capita)	7.80	7.47	7.47	7.52	6.88	6.38	6.05	-22%
Share of electricity output from fossil fuels	53%	51%	52%	54%	51%	45%	44%	
CO_2 / kWh of electricity (gCO_2/kWh)	463	419	385	374	336	322	311	-33%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	98	100	103	97	91	87	-13%
Population index	100	102	104	107	110	112	112	12%
GDP PPP per population index	100	106	121	130	134	135	137	37%
Energy intensity index - TPES / GDP PPP	100	95	86	82	76	71	68	-32%
Carbon intensity index - CO_2 / TPES	100	95	92	90	87	85	84	-16%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**1 137.8**	**1 346.3**	**847.2**	**60.3**	**3 391.6**	**-13%**
Electricity and heat generation	899.8	44.8	252.0	41.8	1 238.4	-13%
Other energy industry own use	36.4	82.8	43.2	0.4	162.7	-5%
Manufacturing industries and construction	137.4	86.9	200.2	17.0	441.5	-38%
Transport	0.0	916.8	7.5	-	924.3	19%
of which: road	*-*	*873.0*	*3.4*	*-*	*876.4*	21%
Other	64.2	215.0	344.5	1.1	624.7	-23%
of which: residential	*43.0*	*107.6*	*230.0*	*0.0*	*380.7*	-26%
of which: services	*16.6*	*48.2*	*102.7*	*1.1*	*168.5*	-15%
Memo: international marine bunkers	*-*	*131.6*	*-*	*-*	*131.6*	*17%*
Memo: international aviation bunkers	*-*	*143.1*	*-*	*-*	*143.1*	*94%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Road - oil	873.0	20.5	19.1	19.1
Main activity prod. elec. and heat - coal	851.2	-14.4	18.6	37.7
Residential - gas	230.0	32.3	5.0	42.7
Main activity prod. elec. and heat - gas	200.2	169.7	4.4	47.1
Manufacturing industries - gas	200.2	10.0	4.4	51.4
Manufacturing industries - coal	137.4	-59.0	3.0	54.4
Non-specified other - gas	114.5	38.4	2.5	56.9
Residential - oil	107.6	-46.2	2.4	59.3
Non-specified other - oil	107.3	-30.6	2.3	61.6
Memo: total CO_2 from fuel combustion	*3 391.6*	*-13.0*	*74.1*	*74.1*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Non-OECD Total

Figure 1. CO_2 emissions by fuel

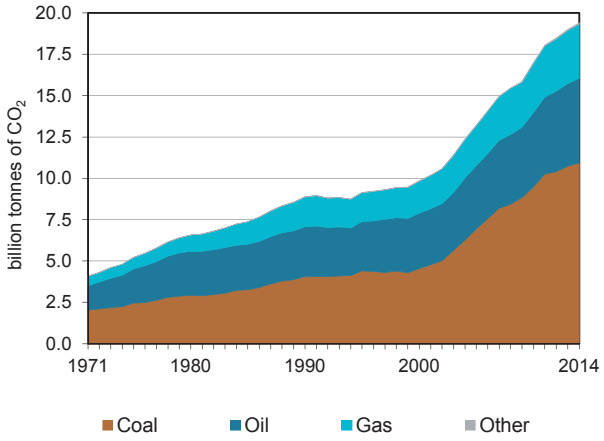


Figure 2. CO_2 emissions by sector

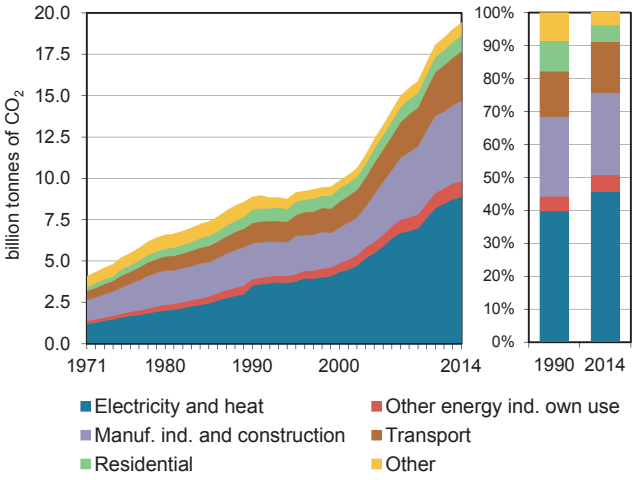


Figure 3. Electricity generation by fuel

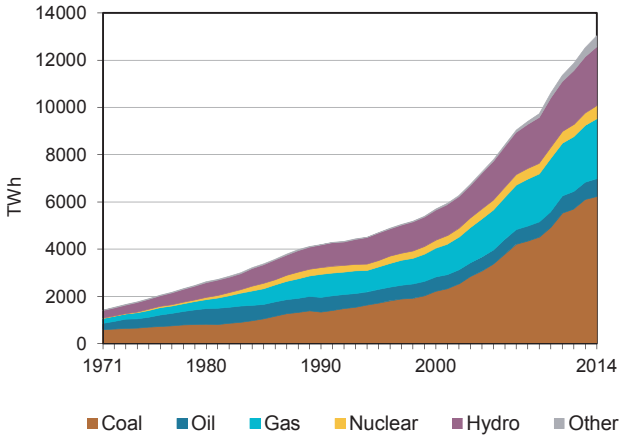


Figure 4. CO_2 from electricity generation: driving factors [1]

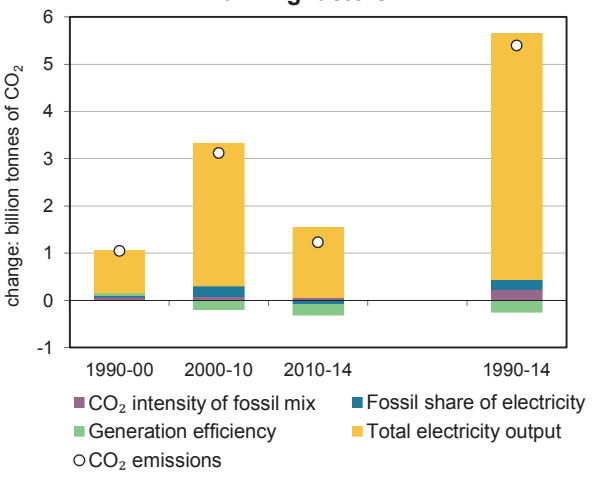


Figure 5. Changes in selected indicators

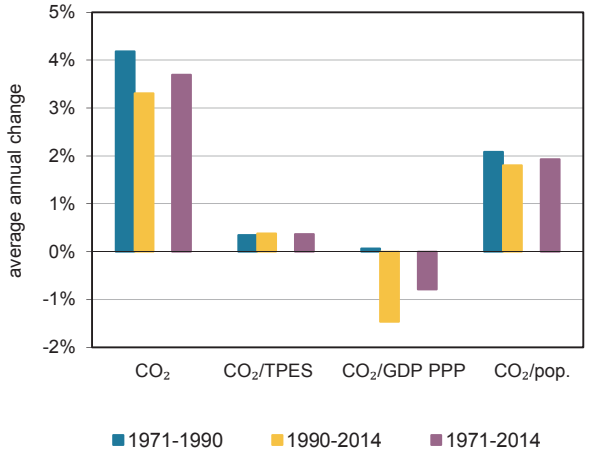
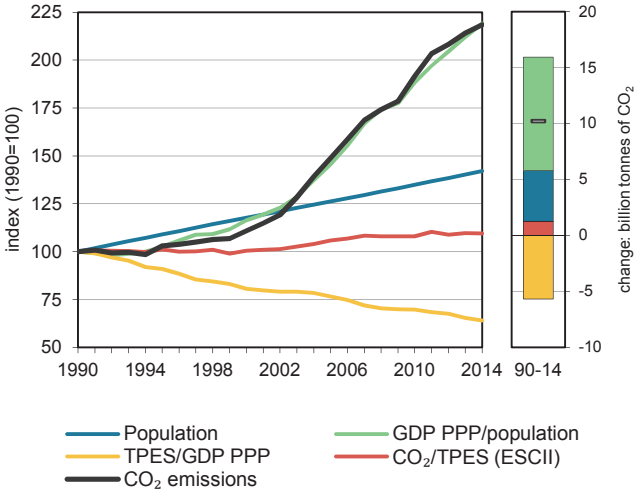


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Non-OECD Total

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	8 876.8	9 150.3	9 840.3	13 211.4	17 001.0	18 997.1	19 395.0	118%
Share of World CO_2 from fuel combustion	43%	43%	43%	49%	56%	59%	60%	
TPES (PJ)	169 329	172 404	186 881	238 194	300 096	330 118	337 567	99%
GDP (billion 2010 USD)	8 569.3	9 551.6	11 593.4	15 394.7	21 190.2	24 741.2	25 800.2	201%
GDP PPP (billion 2010 USD)	17 734.4	19 831.0	24 289.5	32 537.5	45 072.4	52 777.6	55 224.4	211%
Population (millions)	4 207.5	4 586.4	4 954.1	5 310.5	5 675.4	5 903.8	5 981.7	42%
CO_2 / TPES (tCO_2 per TJ)	52.4	53.1	52.7	55.5	56.7	57.5	57.5	10%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	1.04	0.96	0.85	0.86	0.80	0.77	0.75	-27%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.50	0.46	0.41	0.41	0.38	0.36	0.35	-30%
CO_2 / population (tCO_2 per capita)	2.11	2.00	1.99	2.49	3.00	3.22	3.24	54%
Share of electricity output from fossil fuels	70%	69%	71%	73%	74%	74%	73%	
CO_2 / kWh of electricity (gCO_2/kWh)	576	605	607	639	621	609	600	4%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	103	111	149	192	214	218	118%
Population index	100	109	118	126	135	140	142	42%
GDP PPP per population index	100	103	116	145	188	212	219	119%
Energy intensity index - TPES / GDP PPP	100	91	81	77	70	66	64	-36%
Carbon intensity index - CO_2 / TPES	100	101	100	106	108	110	110	10%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**10 921.2**	**5 129.6**	**3 278.4**	**65.8**	**19 395.0**	**118%**
Electricity and heat generation	6 560.0	667.7	1 604.7	60.5	8 892.8	152%
Other energy industry own use	293.0	290.7	367.5	1.0	952.2	142%
Manufacturing industries and construction	3 518.2	659.5	662.4	3.4	4 843.5	126%
Transport	11.3	2 814.2	162.8	-	2 988.3	143%
of which: road	*-*	*2 539.5*	*80.8*	*-*	*2 620.3*	*173%*
Other	538.7	697.5	481.2	0.9	1 718.2	9%
of which: residential	*247.4*	*340.8*	*388.2*	*-*	*976.4*	*19%*
of which: services	*116.0*	*98.4*	*81.6*	*0.6*	*296.6*	*36%*
Memo: international marine bunkers	*-*	*401.6*	*-*	*-*	*401.6*	*193%*
Memo: international aviation bunkers	*-*	*230.5*	*-*	*-*	*230.5*	*99%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - coal	5 965.5	245.8	18.3	18.3
Manufacturing industries - coal	3 518.2	164.8	10.8	29.0
Road - oil	2 539.5	165.0	7.8	36.8
Main activity prod. elec. and heat - gas	1 288.0	83.1	3.9	40.8
Manufacturing industries - gas	662.4	108.9	2.0	42.8
Manufacturing industries - oil	659.5	32.2	2.0	44.8
Unallocated autoproducers - coal	594.4	329.9	1.8	46.6
Main activity prod. elec. and heat - oil	553.6	-8.3	1.7	48.3
Residential - gas	388.2	118.7	1.2	49.5
Memo: total CO_2 from fuel combustion	*19 395.0*	*118.5*	*59.4*	*59.4*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Non-OECD Europe and Eurasia [1]

Figure 1. CO_2 emissions by fuel

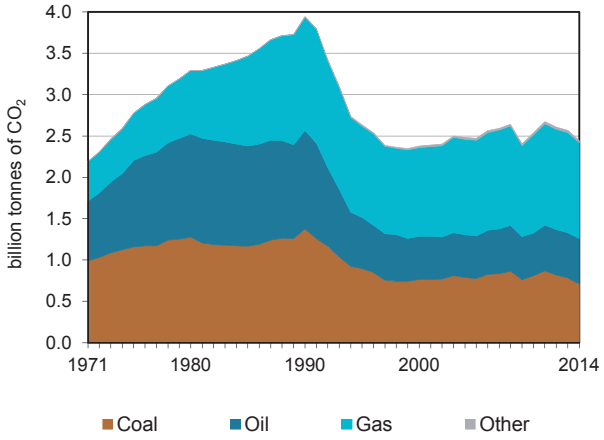


Figure 2. CO_2 emissions by sector

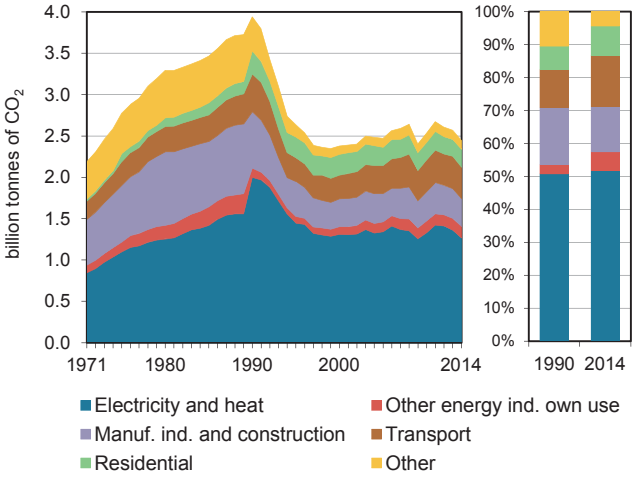


Figure 3. Electricity generation by fuel

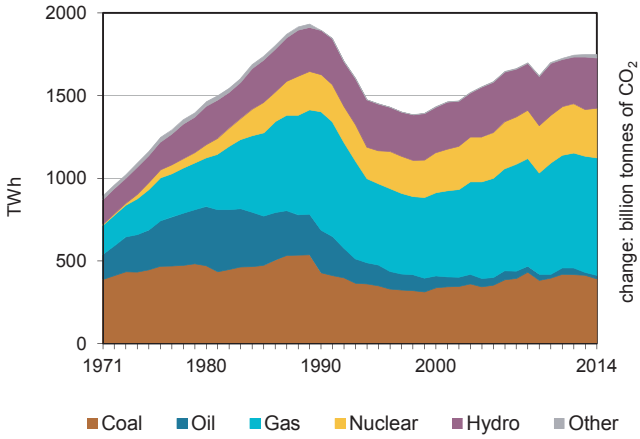


Figure 4. CO_2 from electricity generation: driving factors [2]

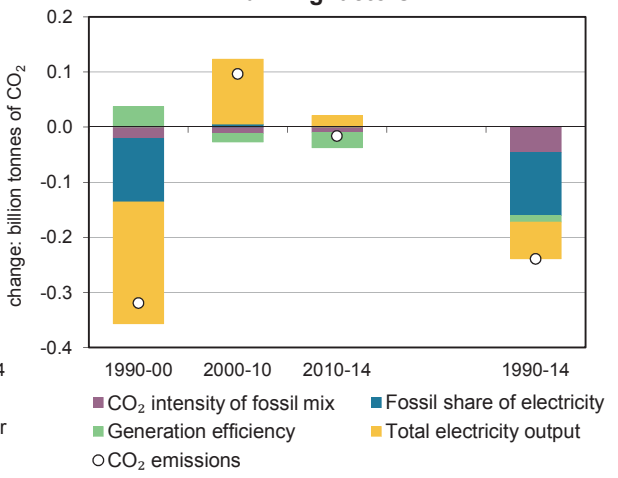


Figure 5. Changes in selected indicators

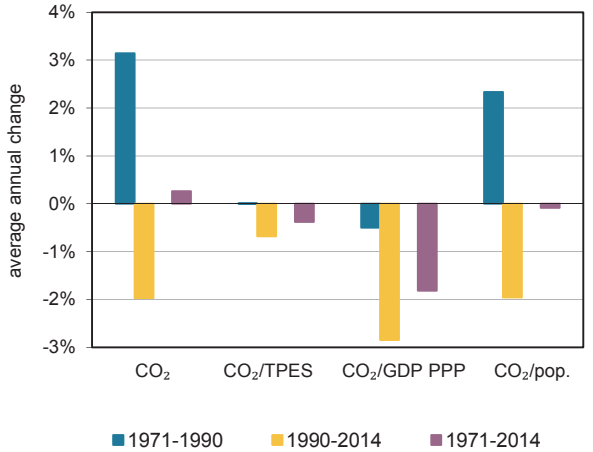
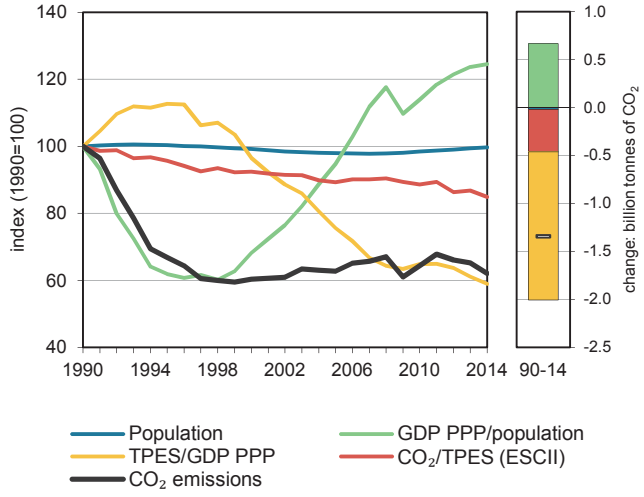


Figure 6. Total CO_2 emissions and drivers [3]



1. Includes Estonia and Slovenia prior to 1990.
2. Electricity decomposition: CO_2 emissions = CO_2 intensity of mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
3. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Non-OECD Europe and Eurasia

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	3 940.1	2 634.8	2 377.0	2 470.7	2 536.7	2 568.8	2 446.1	-38%
Share of World CO_2 from fuel combustion	19.2%	12.3%	10.3%	9.1%	8.3%	8.0%	7.6%	
TPES (PJ)	64 366	44 999	42 027	45 202	46 769	48 333	47 064	-27%
GDP (billion 2010 USD)	2 205.1	1 382.0	1 509.6	2 063.6	2 474.5	2 706.0	2 733.9	24%
GDP PPP (billion 2010 USD)	4 457.9	2 765.8	3 014.1	4 137.2	4 995.8	5 476.7	5 534.1	24%
Population (millions)	343.7	344.7	340.8	336.6	338.2	341.5	342.7	0%
CO_2 / TPES (tCO_2 per TJ)	61.2	58.6	56.6	54.7	54.2	53.1	52.0	-15%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	1.79	1.91	1.57	1.20	1.03	0.95	0.89	-50%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.88	0.95	0.79	0.60	0.51	0.47	0.44	-50%
CO_2 / population (tCO_2 per capita)	11.46	7.64	6.97	7.34	7.50	7.52	7.14	-38%
Share of electricity output from fossil fuels	74%	67%	64%	63%	64%	65%	64%	
CO_2 / kWh of electricity (gCO_2/kWh)	507	456	447	459	434	453	412	-19%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	67	60	63	64	65	62	-38%
Population index	100	100	99	98	98	99	100	0%
GDP PPP per population index	100	62	68	95	114	124	124	24%
Energy intensity index - TPES / GDP PPP	100	113	97	76	65	61	59	-41%
Carbon intensity index - CO_2 / TPES	100	96	92	89	89	87	85	-15%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**711.7**	**549.3**	**1 158.0**	**27.1**	**2 446.1**	**-38%**
Electricity and heat generation	525.8	46.1	672.1	21.8	1 265.8	-37%
Other energy industry own use	7.4	51.7	79.4	1.0	139.6	27%
Manufacturing industries and construction	143.3	60.5	128.4	3.3	335.6	-51%
Transport	0.1	306.4	74.6	-	381.1	-17%
of which: road	*-*	*273.9*	*2.0*	*-*	*275.9*	*-5%*
Other	35.2	84.5	203.5	0.9	324.0	-53%
of which: residential	*22.2*	*31.5*	*163.7*	*-*	*217.4*	*-22%*
of which: services	*8.4*	*12.0*	*34.5*	*0.6*	*55.5*	*-58%*
Memo: international marine bunkers	*-*	*62.4*	*-*	*-*	*62.4*	*351%*
Memo: international aviation bunkers	*-*	*24.9*	*-*	*-*	*24.9*	*-42%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - gas	481.2	-14.5	11.0	11.0
Main activity prod. elec. and heat - coal	441.5	-38.2	10.1	21.0
Road - oil	273.9	-4.7	6.2	27.3
Unallocated autoproducers - gas	190.9	-12.8	4.4	31.6
Residential - gas	163.7	9.2	3.7	35.4
Manufacturing industries - coal	143.3	-54.8	3.3	38.6
Manufacturing industries - gas	128.4	-36.5	2.9	41.5
Unallocated autoproducers - coal	84.3	-17.9	1.9	43.5
Other energy industry own use - gas	79.4	121.3	1.8	45.3
Memo: total CO_2 from fuel combustion	*2 446.1*	*-37.9*	*55.8*	*55.8*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Africa

Figure 1. CO_2 emissions by fuel

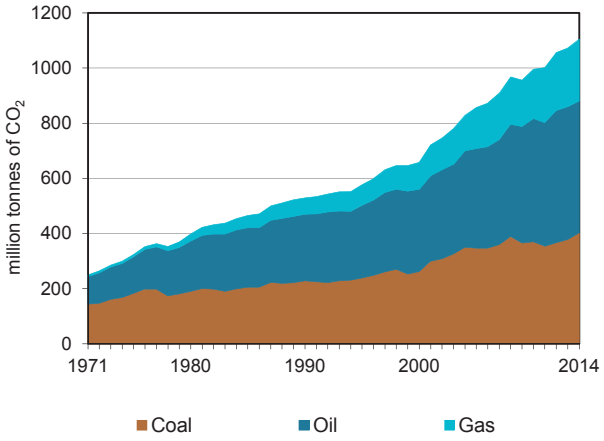


Figure 2. CO_2 emissions by sector

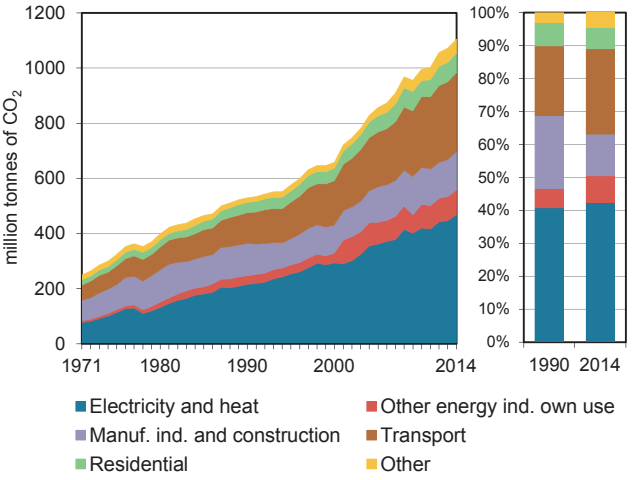


Figure 3. Electricity generation by fuel

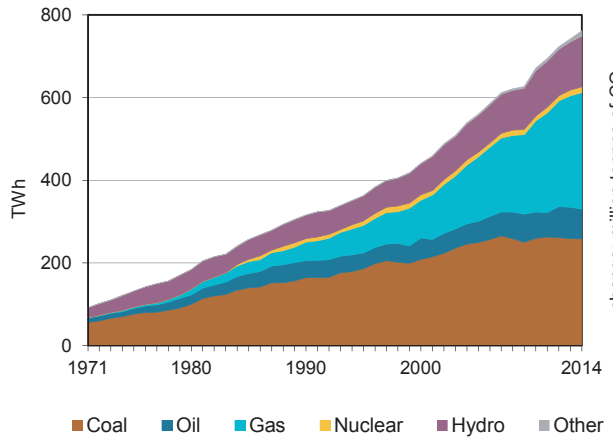


Figure 4. CO_2 from electricity generation: driving factors [1]

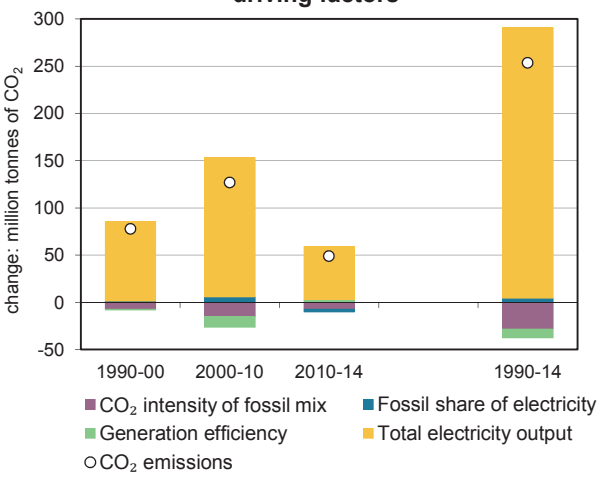


Figure 5. Changes in selected indicators

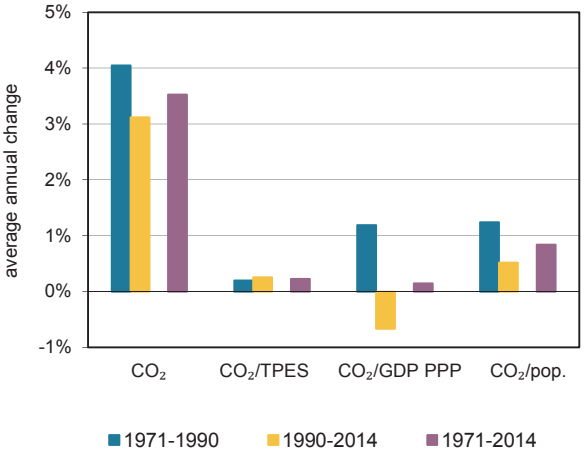
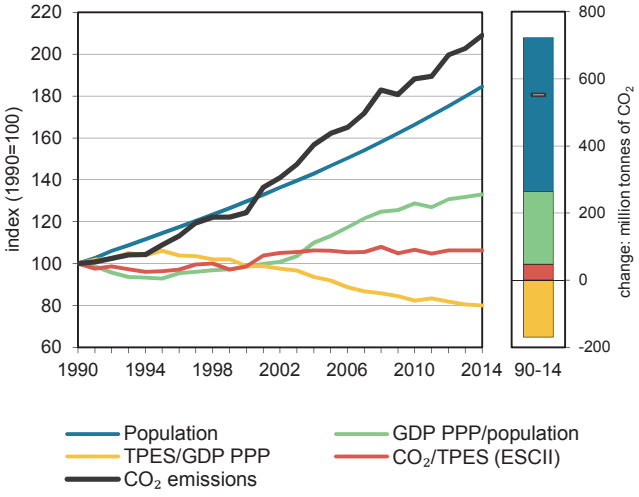


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Africa

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	529.0	576.2	658.1	856.9	995.8	1 072.5	1 105.3	109%
Share of World CO_2 from fuel combustion	2.6%	2.7%	2.8%	3.2%	3.3%	3.3%	3.4%	
TPES (PJ)	16 451	18 589	20 749	25 102	29 050	31 385	32 325	97%
GDP (billion 2010 USD)	920.9	969.2	1 155.1	1 507.2	1 941.4	2 148.4	2 222.7	141%
GDP PPP (billion 2010 USD)	2 091.5	2 225.8	2 671.8	3 470.0	4 482.4	4 959.4	5 131.2	145%
Population (millions)	626.5	717.6	812.6	918.5	1 042.5	1 126.4	1 155.7	84%
CO_2 / TPES (tCO_2 per TJ)	32.2	31.0	31.7	34.1	34.3	34.2	34.2	6%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.57	0.59	0.57	0.57	0.51	0.50	0.50	-13%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.25	0.26	0.25	0.25	0.22	0.22	0.22	-15%
CO_2 / population (tCO_2 per capita)	0.84	0.80	0.81	0.93	0.96	0.95	0.96	13%
Share of electricity output from fossil fuels	79%	80%	80%	82%	81%	81%	80%	
CO_2 / kWh of electricity (gCO_2/kWh)	681	699	663	645	625	602	615	-10%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	109	124	162	188	203	209	109%
Population index	100	115	130	147	166	180	184	84%
GDP PPP per population index	100	93	98	113	129	132	133	33%
Energy intensity index - TPES / GDP PPP	100	106	99	92	82	80	80	-20%
Carbon intensity index - CO_2 / TPES	100	96	99	106	107	106	106	6%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**402.6**	**478.6**	**224.1**	**-**	**1 105.3**	**109%**
Electricity and heat generation	282.0	57.7	129.0	-	468.7	117%
Other energy industry own use	41.6	10.8	36.9	-	89.3	190%
Manufacturing industries and construction	52.1	51.6	36.1	-	139.8	19%
Transport	0.1	283.7	2.4	-	286.3	156%
of which: road	*-*	*272.3*	*1.0*	*-*	*273.3*	156%
Other	26.8	74.7	19.8	-	121.3	127%
of which: residential	*14.7*	*39.0*	*17.4*	*-*	*71.1*	90%
of which: services	*7.3*	*6.4*	*0.4*	*-*	*14.2*	151%
Memo: international marine bunkers	*-*	*20.4*	*-*	*-*	*20.4*	*22%*
Memo: international aviation bunkers	*-*	*22.7*	*-*	*-*	*22.7*	*93%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Road - oil	272.3	155.2	9.0	9.0
Main activity prod. elec. and heat - coal	268.8	83.9	8.9	17.9
Main activity prod. elec. and heat - gas	122.8	389.7	4.1	22.0
Main activity prod. elec. and heat - oil	53.2	67.3	1.8	23.7
Manufacturing industries - coal	52.1	-13.6	1.7	25.5
Manufacturing industries - oil	51.6	11.5	1.7	27.2
Other energy industry - coal	41.6	+	1.4	28.6
Residential - oil	39.0	36.6	1.3	29.8
Other energy industry own use - gas	36.9	90.2	1.2	31.1
Memo: total CO_2 from fuel combustion	*1 105.3*	*108.9*	*36.6*	*36.6*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Asia (excluding China)

Figure 1. CO_2 emissions by fuel

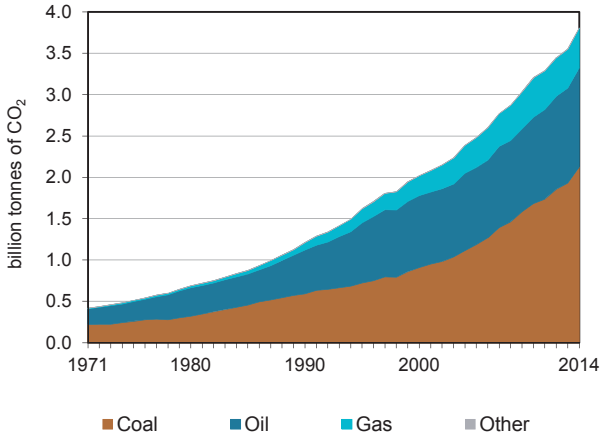


Figure 2. CO_2 emissions by sector

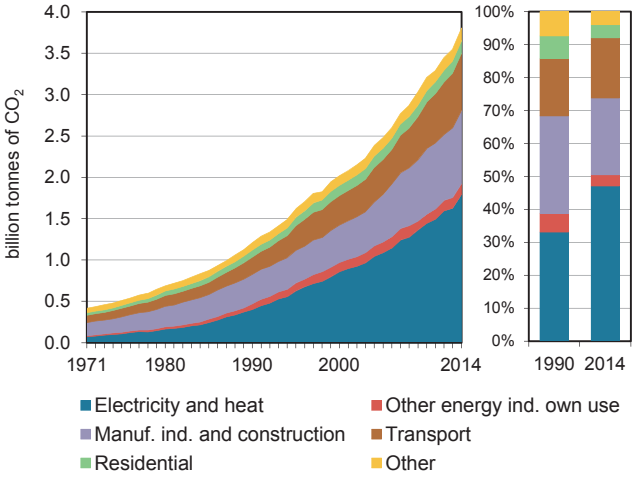


Figure 3. Electricity generation by fuel

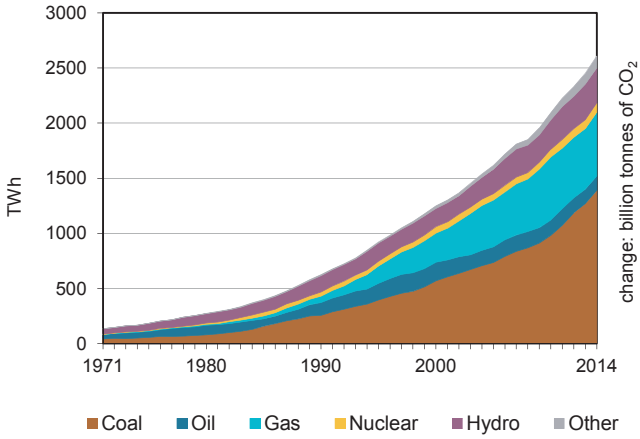


Figure 4. CO_2 from electricity generation: driving factors [1]

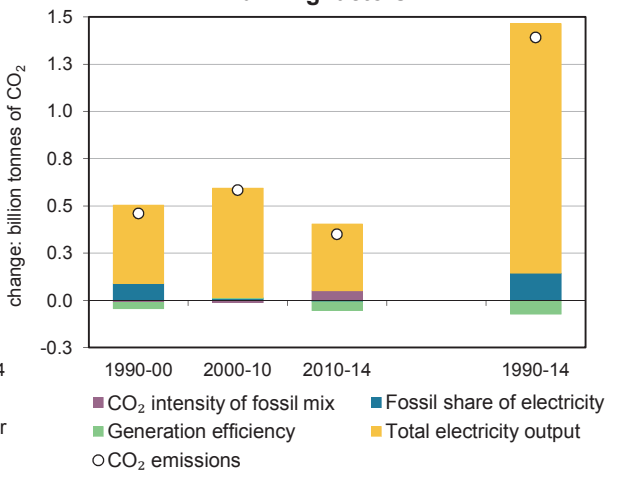


Figure 5. Changes in selected indicators

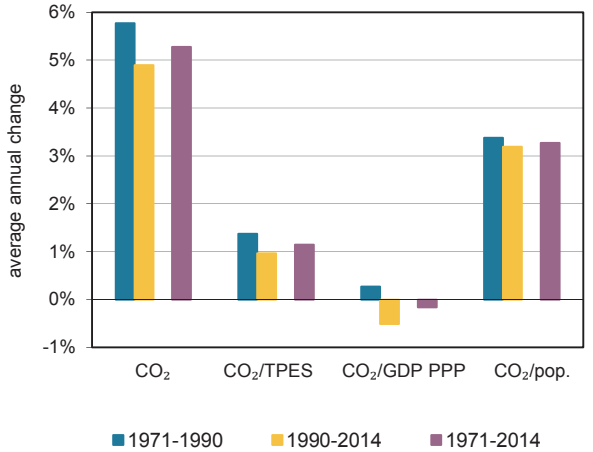
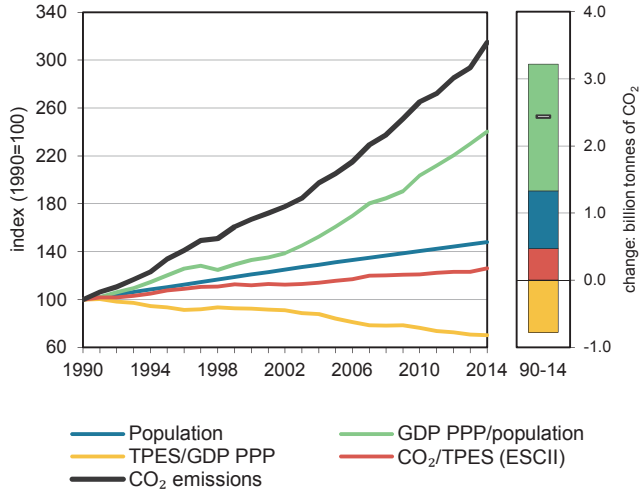


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Asia (excluding China)

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	1 209.4	1 619.4	2 018.3	2 481.2	3 206.9	3 552.5	3 807.0	215%
Share of World CO_2 from fuel combustion	5.9%	7.6%	8.7%	9.2%	10.5%	11.1%	11.8%	
TPES (PJ)	29 176	36 301	43 447	51 771	63 887	69 596	72 897	150%
GDP (billion 2010 USD)	1 608.8	2 166.0	2 619.7	3 408.0	4 598.4	5 387.9	5 685.3	253%
GDP PPP (billion 2010 USD)	4 461.5	5 929.2	7 184.1	9 408.1	12 767.0	15 004.5	15 871.3	256%
Population (millions)	1 625.3	1 795.1	1 965.3	2 130.2	2 284.8	2 376.7	2 407.6	48%
CO_2 / TPES (tCO_2 per TJ)	41.5	44.6	46.5	47.9	50.2	51.0	52.2	26%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.75	0.75	0.77	0.73	0.70	0.66	0.67	-11%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.27	0.27	0.28	0.26	0.25	0.24	0.24	-12%
CO_2 / population (tCO_2 per capita)	0.74	0.90	1.03	1.16	1.40	1.49	1.58	113%
Share of electricity output from fossil fuels	69%	76%	80%	81%	81%	80%	81%	
CO_2 / kWh of electricity (gCO_2/kWh)	634	673	685	671	687	661	685	8%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	134	167	205	265	294	315	215%
Population index	100	110	121	131	141	146	148	48%
GDP PPP per population index	100	120	133	161	204	230	240	140%
Energy intensity index - TPES / GDP PPP	100	94	92	84	77	71	70	-30%
Carbon intensity index - CO_2 / TPES	100	108	112	116	121	123	126	26%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**2 123.5**	**1 197.8**	**480.7**	**5.1**	**3 807.0**	**215%**
Electricity and heat generation	1 405.6	107.1	273.9	5.1	1 791.7	348%
Other energy industry own use	13.8	52.5	62.8	-	129.1	86%
Manufacturing industries and construction	630.2	164.0	95.2	0.0	889.5	149%
Transport	0.1	674.9	18.1	-	693.1	231%
of which: road	-	*623.3*	*17.4*	-	*640.6*	255%
Other	73.7	199.2	30.6	-	303.5	76%
of which: residential	*19.7*	*107.4*	*23.6*	-	*150.7*	79%
of which: services	*22.1*	*21.2*	*6.2*	-	*49.5*	114%
Memo: international marine bunkers	-	*147.8*	-	-	*147.8*	*220%*
Memo: international aviation bunkers	-	*74.5*	-	-	*74.5*	*227%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - coal	1 179.8	372.4	17.5	17.5
Manufacturing industries - coal	630.2	154.0	9.4	26.9
Road - oil	623.3	245.5	9.3	36.2
Main activity prod. elec. and heat - gas	240.1	590.1	3.6	39.7
Unallocated autoproducers - coal	225.8	+	3.4	43.1
Manufacturing industries - oil	164.0	71.9	2.4	45.5
Residential - oil	107.4	63.0	1.6	47.1
Manufacturing industries - gas	95.2	577.6	1.4	48.6
Non-specified other - oil	91.8	124.9	1.4	49.9
Memo: total CO_2 from fuel combustion	*3 807.0*	*214.8*	*56.6*	*56.6*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

China (incl. Hong Kong, China) [1]

Figure 1. CO_2 emissions by fuel

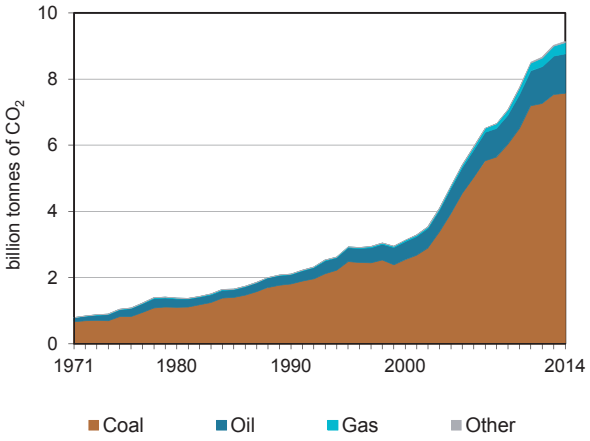


Figure 2. CO_2 emissions by sector

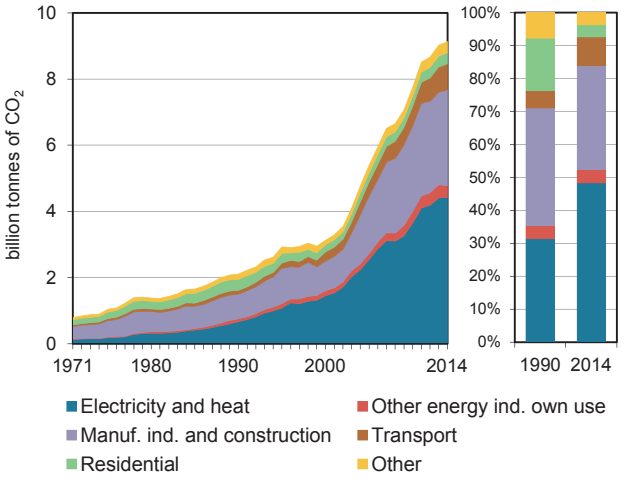


Figure 3. Electricity generation by fuel

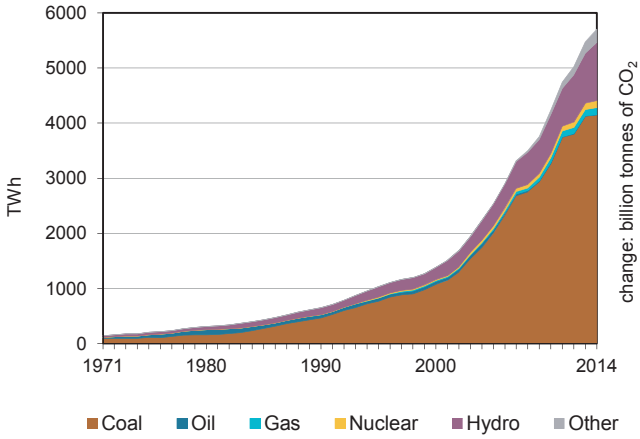


Figure 4. CO_2 from electricity generation: driving factors [1]

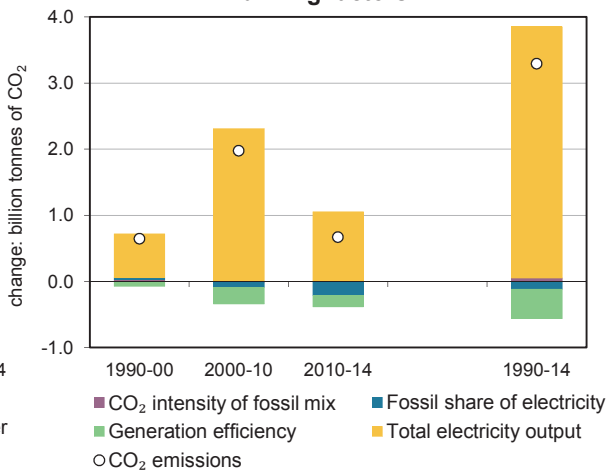


Figure 5. Changes in selected indicators

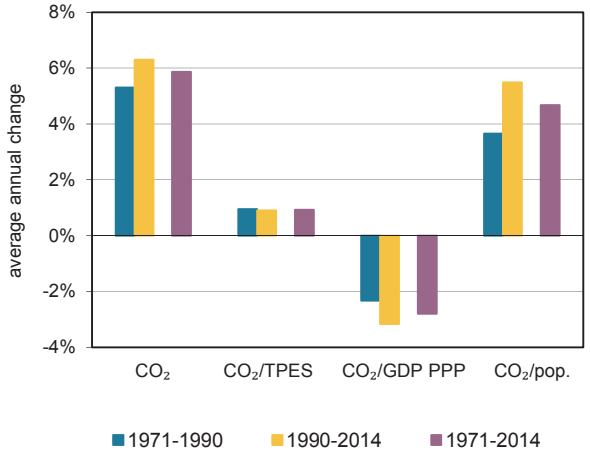
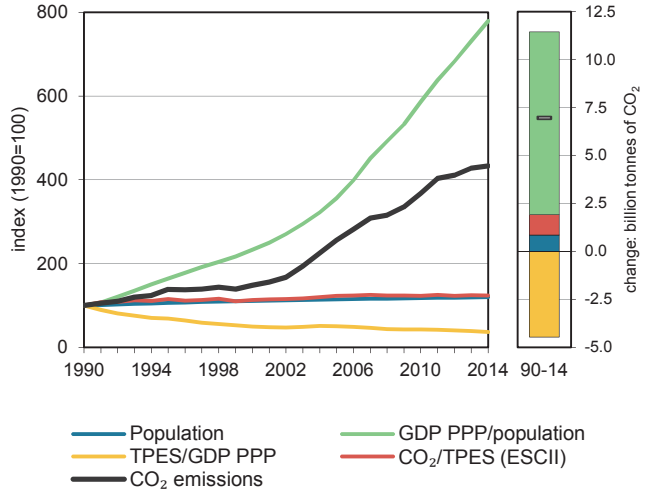


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

China (incl. Hong Kong, China)

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	2 109.2	2 923.6	3 126.5	5 399.4	7 749.0	9 025.9	9 134.9	333%
Share of World CO_2 from fuel combustion	10%	14%	14%	20%	25%	28%	28%	
TPES (PJ)	36 814	44 171	48 093	76 600	110 051	126 394	128 357	249%
GDP (billion 2010 USD)	928.2	1 606.4	2 377.1	3 731.5	6 268.3	7 923.7	8 487.6	814%
GDP PPP (billion 2010 USD)	1 837.1	3 206.4	4 772.4	7 522.7	12 689.8	16 063.6	17 213.8	837%
Population (millions)	1 140.9	1 211.0	1 269.3	1 310.5	1 344.7	1 364.6	1 371.5	20%
CO_2 / TPES (tCO_2 per TJ)	57.3	66.2	65.0	70.5	70.4	71.4	71.2	24%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	2.27	1.82	1.32	1.45	1.24	1.14	1.08	-53%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	1.15	0.91	0.66	0.72	0.61	0.56	0.53	-54%
CO_2 / population (tCO_2 per capita)	1.85	2.41	2.46	4.12	5.76	6.61	6.66	260%
Share of electricity output from fossil fuels	81%	80%	83%	82%	80%	78%	75%	
CO_2 / kWh of electricity (gCO_2/kWh)	911	918	893	878	759	710	681	-25%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	139	148	256	367	428	433	333%
Population index	100	106	111	115	118	120	120	20%
GDP PPP per population index	100	164	233	356	586	731	779	679%
Energy intensity index - TPES / GDP PPP	100	69	50	51	43	39	37	-63%
Carbon intensity index - CO_2 / TPES	100	116	113	123	123	125	124	24%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**7 569.3**	**1 195.7**	**336.3**	**33.6**	**9 134.9**	**333%**
Electricity and heat generation	4 293.6	24.7	63.8	33.6	4 415.7	565%
Other energy industry own use	225.7	88.6	50.0	-	364.2	323%
Manufacturing industries and construction	2 636.3	156.3	97.4	-	2 890.0	286%
Transport	11.0	742.1	34.9	-	787.9	606%
of which: road	-	*604.6*	*34.2*	-	*638.8*	912%
Other	402.7	184.0	90.4	-	677.0	36%
of which: residential	*190.5*	*85.3*	*68.1*	-	*343.9*	3%
of which: services	*78.1*	*44.4*	*22.1*	-	*144.6*	279%
Memo: international marine bunkers	-	*47.3*	-	-	*47.3*	*431%*
Memo: international aviation bunkers	-	*39.7*	-	-	*39.7*	*468%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - coal	4 044.8	565.6	29.8	29.8
Manufacturing industries - coal	2 636.3	289.9	19.4	49.2
Road - oil	604.6	858.0	4.5	53.7
Unallocated autoproducers - coal	248.9	+	1.8	55.5
Other energy industry - coal	225.7	335.8	1.7	57.2
Non-specified other sectors - coal	212.2	104.2	1.6	58.7
Residential - coal	190.5	-40.9	1.4	60.1
Manufacturing industries - oil	156.3	136.0	1.2	61.3
Other transport - oil	137.5	+	1.0	62.3
Memo: total CO_2 from fuel combustion	*9 134.9*	*333.1*	*67.3*	*67.3*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Non-OECD Americas

Figure 1. CO_2 emissions by fuel

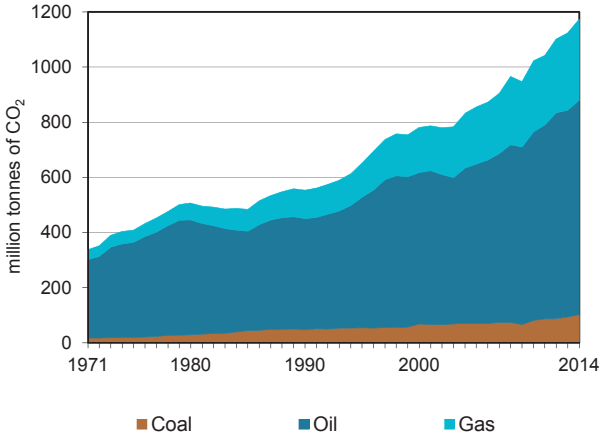


Figure 2. CO_2 emissions by sector

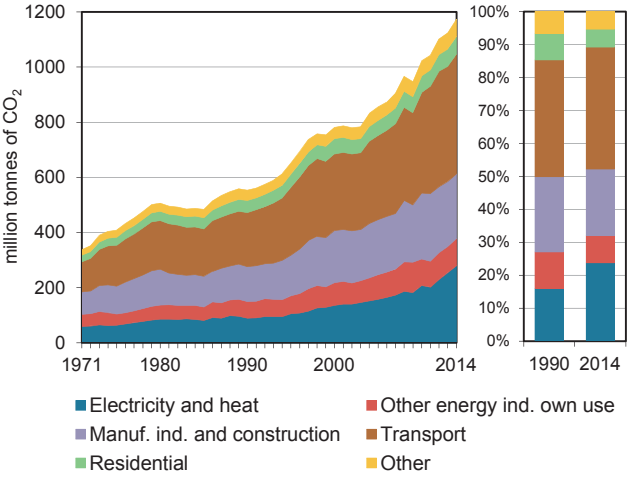


Figure 3. Electricity generation by fuel

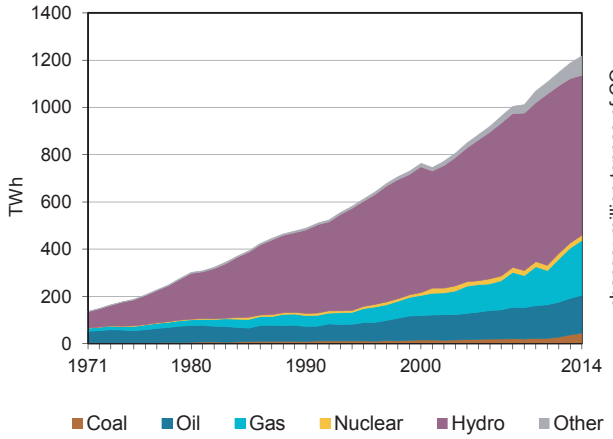


Figure 4. CO_2 from electricity generation: driving factors [1]

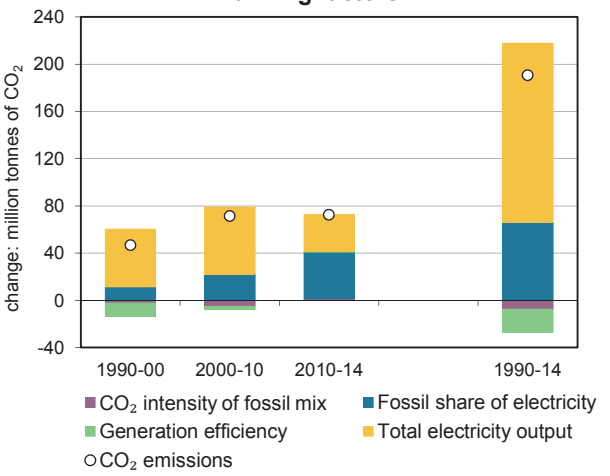


Figure 5. Changes in selected indicators

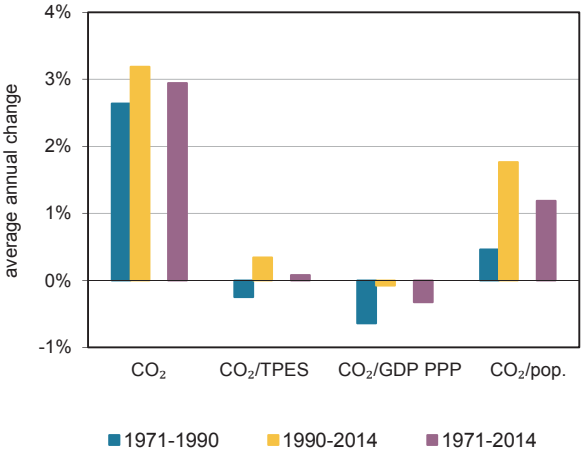
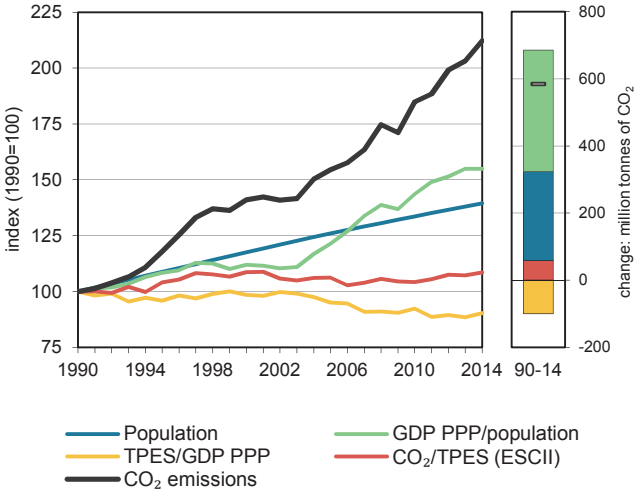


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Non-OECD Americas

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	553.2	652.4	780.7	855.2	1 022.3	1 124.0	1 173.9	112%
Share of World CO_2 from fuel combustion	2.7%	3.1%	3.4%	3.2%	3.4%	3.5%	3.6%	
TPES (PJ)	13 684	15 503	17 764	19 905	24 255	25 917	26 743	95%
GDP (billion 2010 USD)	2 101.5	2 494.1	2 771.2	3 205.7	4 008.3	4 451.2	4 480.4	113%
GDP PPP (billion 2010 USD)	3 020.3	3 564.2	3 979.3	4 621.7	5 797.6	6 463.2	6 527.9	116%
Population (millions)	344.2	374.6	404.7	433.7	460.0	475.2	480.3	40%
CO_2 / TPES (tCO_2 per TJ)	40.4	42.1	43.9	43.0	42.2	43.4	43.9	9%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.26	0.26	0.28	0.27	0.26	0.25	0.26	0%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.18	0.18	0.20	0.19	0.18	0.17	0.18	-2%
CO_2 / population (tCO_2 per capita)	1.61	1.74	1.93	1.97	2.22	2.37	2.44	52%
Share of electricity output from fossil fuels	24%	24%	27%	28%	31%	34%	36%	
CO_2 / kWh of electricity (gCO_2/kWh)	182	172	178	179	194	213	230	26%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	118	141	155	185	203	212	112%
Population index	100	109	118	126	134	138	140	40%
GDP PPP per population index	100	108	112	121	144	155	155	55%
Energy intensity index - TPES / GDP PPP	100	96	99	95	92	89	90	-10%
Carbon intensity index - CO_2 / TPES	100	104	109	106	104	107	109	9%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**101.4**	**778.1**	**294.4**	**-**	**1 173.9**	**112%**
Electricity and heat generation	51.0	109.3	119.0	-	279.4	215%
Other energy industry own use	3.1	38.0	57.2	-	98.3	62%
Manufacturing industries and construction	47.0	118.1	69.9	-	234.9	86%
Transport	0.0	416.5	17.8	-	434.3	121%
of which: road	*-*	*389.7*	*12.2*	*-*	*401.9*	126%
Other	0.3	96.2	30.5	-	127.0	57%
of which: residential	*0.3*	*38.3*	*25.3*	*-*	*63.9*	46%
of which: services	*-*	*8.5*	*5.1*	*-*	*13.6*	27%
Memo: international marine bunkers	*-*	*46.2*	*-*	*-*	*46.2*	*133%*
Memo: international aviation bunkers	*-*	*27.9*	*-*	*-*	*27.9*	*219%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Road - oil	389.7	119.2	15.2	15.2
Manufacturing industries - oil	118.1	71.9	4.6	19.9
Main activity prod. elec. and heat - gas	106.7	342.1	4.2	24.0
Main activity prod. elec. and heat - oil	97.9	170.8	3.8	27.9
Manufacturing industries - gas	69.9	122.7	2.7	30.6
Non-specified other - oil	57.9	77.5	2.3	32.9
Other energy industry own use - gas	57.2	107.4	2.2	35.1
Manufacturing industries - coal	47.0	78.4	1.8	36.9
Residential - oil	38.3	14.0	1.5	38.4
Memo: total CO_2 from fuel combustion	*1 173.9*	*112.2*	*45.9*	*45.9*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

Middle East

Figure 1. CO_2 emissions by fuel

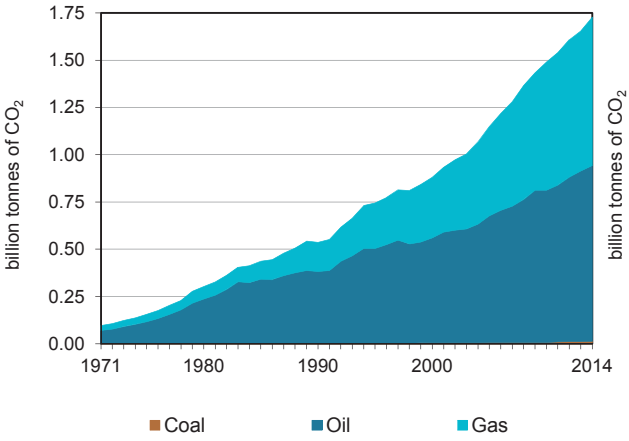


Figure 2. CO_2 emissions by sector

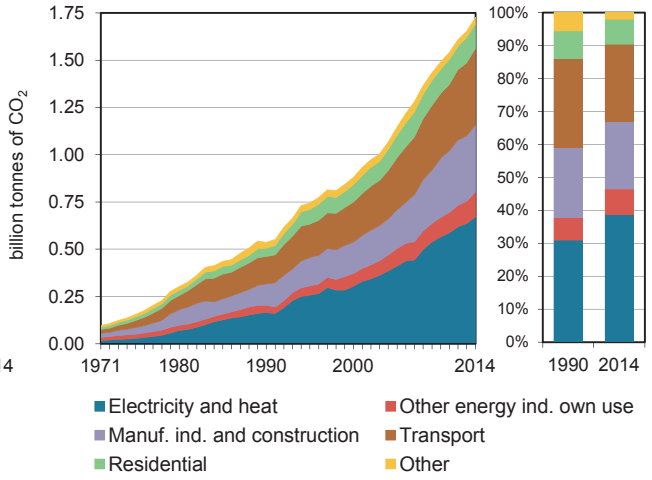


Figure 3. Electricity generation by fuel

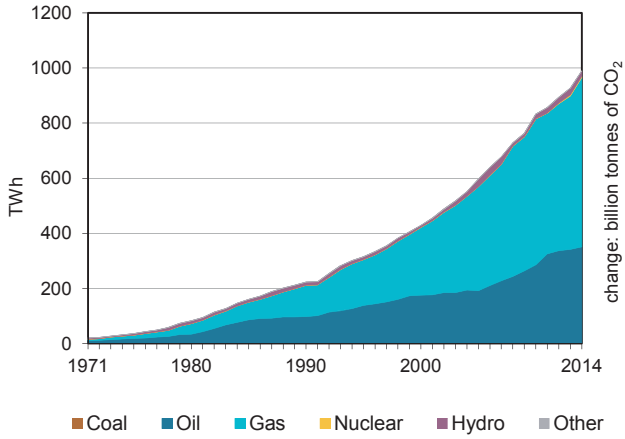


Figure 4. CO_2 from electricity generation: driving factors [1]

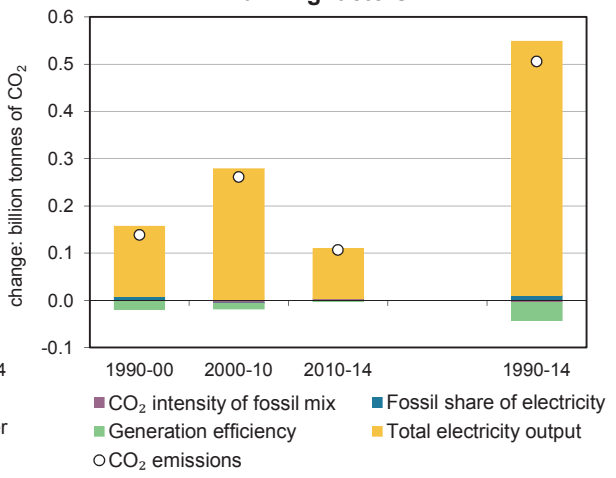


Figure 5. Changes in selected indicators

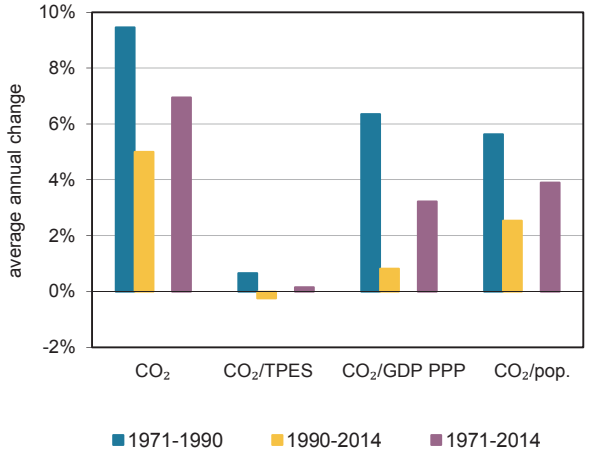
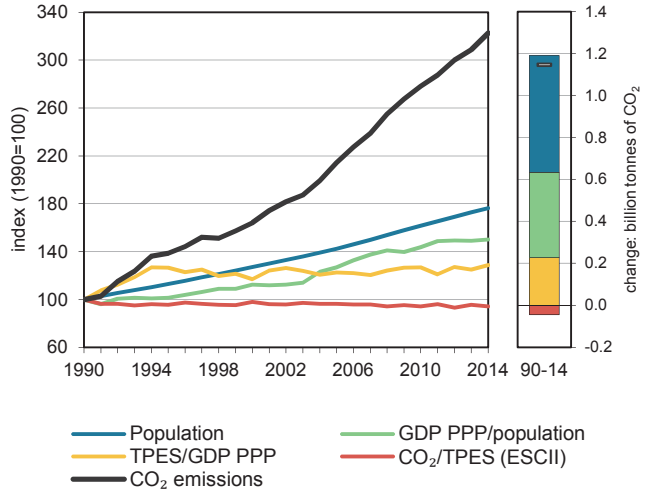


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

Middle East

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	535.9	743.8	879.6	1 147.9	1 490.2	1 653.5	1 727.8	222%
Share of World CO_2 from fuel combustion	2.6%	3.5%	3.8%	4.3%	4.9%	5.2%	5.3%	
TPES (PJ)	8 838	12 840	14 800	19 614	26 085	28 493	30 182	241%
GDP (billion 2010 USD)	804.8	934.0	1 160.7	1 478.8	1 899.3	2 124.2	2 190.3	172%
GDP PPP (billion 2010 USD)	1 866.1	2 139.6	2 667.7	3 377.7	4 339.8	4 810.1	4 946.1	165%
Population (millions)	126.9	143.5	161.5	180.9	205.3	219.4	223.9	76%
CO_2 / TPES (tCO_2 per TJ)	60.6	57.9	59.4	58.5	57.1	58.0	57.2	-6%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.67	0.80	0.76	0.78	0.78	0.78	0.79	18%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.29	0.35	0.33	0.34	0.34	0.34	0.35	22%
CO_2 / population (tCO_2 per capita)	4.22	5.18	5.45	6.35	7.26	7.54	7.72	83%
Share of electricity output from fossil fuels	95%	96%	98%	95%	98%	97%	97%	
CO_2 / kWh of electricity (gCO_2/kWh)	742	814	708	688	678	685	678	-9%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	139	164	214	278	309	322	222%
Population index	100	113	127	142	162	173	176	76%
GDP PPP per population index	100	101	112	127	144	149	150	50%
Energy intensity index - TPES / GDP PPP	100	127	117	123	127	125	129	29%
Carbon intensity index - CO_2 / TPES	100	96	98	97	94	96	94	-6%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**12.7**	**930.2**	**784.9**	**-**	**1 727.8**	**222%**
Electricity and heat generation	1.9	322.7	346.9	-	671.6	305%
Other energy industry own use	1.4	49.2	81.2	-	131.7	257%
Manufacturing industries and construction	9.4	109.0	235.4	-	353.7	211%
Transport	-	390.6	14.9	-	405.5	181%
of which: road	-	*375.7*	*14.0*	-	*389.7*	173%
Other	0.0	58.9	106.4	-	165.3	121%
of which: residential	*0.0*	*39.2*	*90.1*	-	*129.4*	188%
of which: services	-	*6.0*	*13.2*	-	*19.2*	85%
Memo: international marine bunkers	-	*77.5*	-	-	*77.5*	*145%*
Memo: international aviation bunkers	-	*40.9*	-	-	*40.9*	*83%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Road - oil	375.7	163.2	15.6	15.6
Main activity prod. elec. and heat - oil	296.9	262.2	12.4	28.0
Main activity prod. elec. and heat - gas	273.4	401.1	11.4	39.4
Manufacturing industries - gas	235.4	346.3	9.8	49.2
Manufacturing industries - oil	109.0	80.1	4.5	53.7
Residential - gas	90.1	+	3.8	57.5
Other energy industry own use - gas	81.2	519.7	3.4	60.9
Unallocated autoproducers - gas	73.5	196.5	3.1	63.9
Other energy industry own use - oil	49.2	111.0	2.0	66.0
Memo: total CO_2 from fuel combustion	*1 727.8*	*222.4*	*72.0*	*72.0*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

G20

Figure 1. CO_2 emissions by fuel

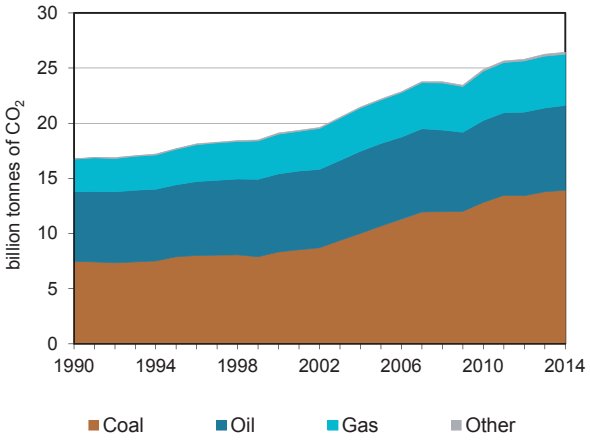


Figure 2. CO_2 emissions by sector

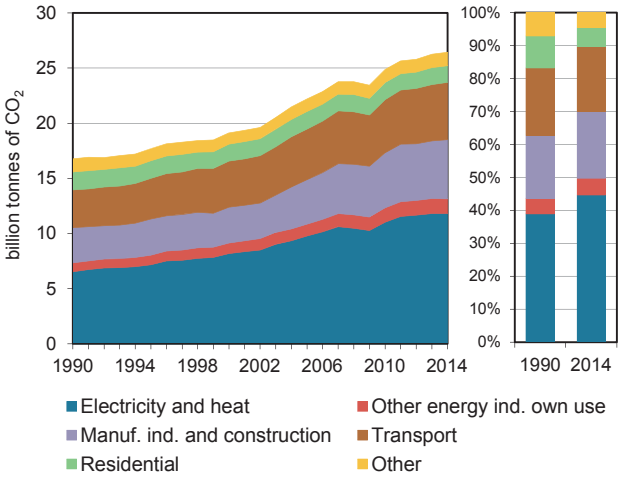


Figure 3. Electricity generation by fuel

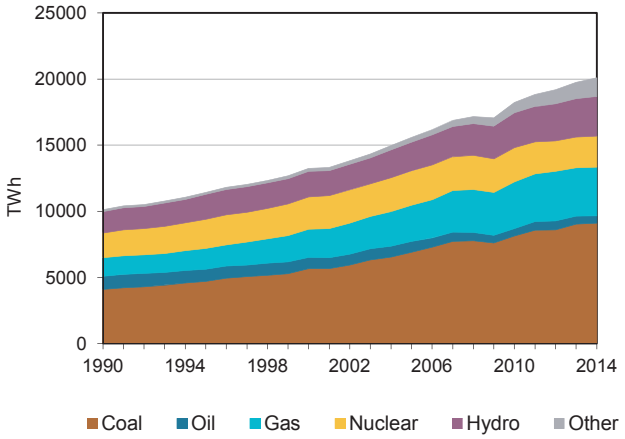


Figure 4. CO_2 from electricity generation: driving factors [1]

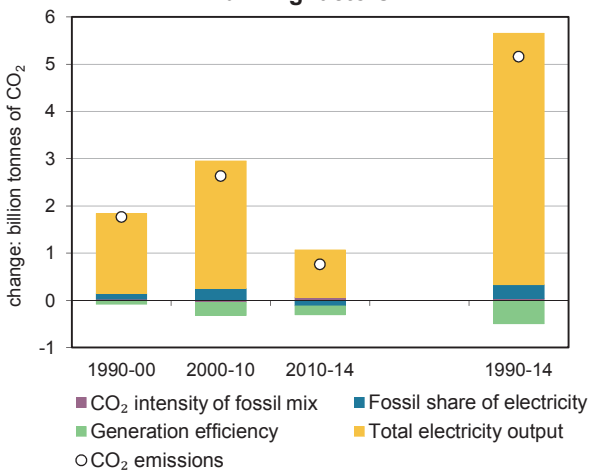


Figure 5. Changes in selected indicators

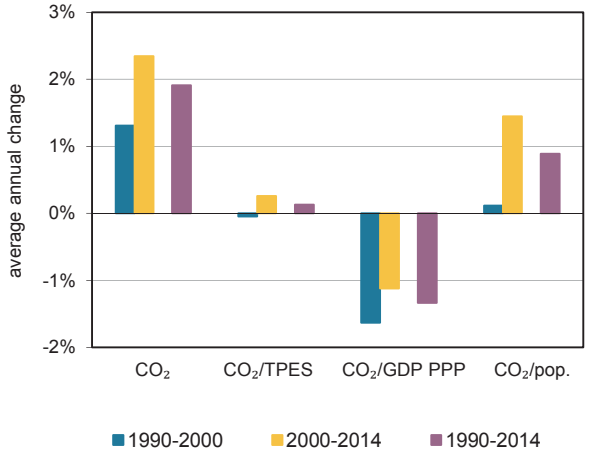
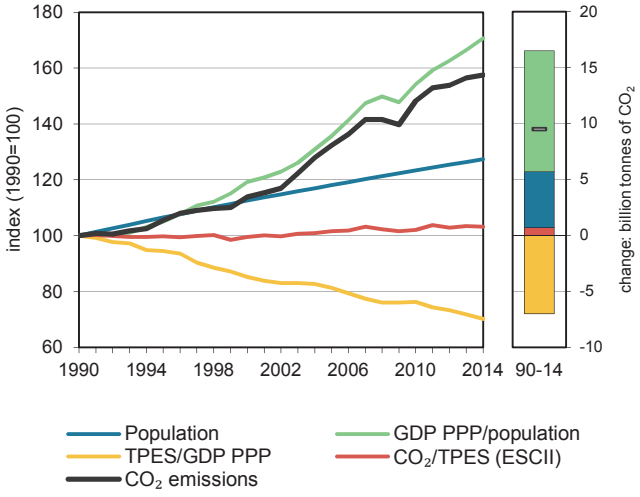


Figure 6. Total CO_2 emissions and drivers [2]



1. Electricity decomposition: CO_2 emissions = CO_2 intensity of fossil mix x fossil share of elec. x thermal efficiency x elec. output. See Chapter 6.
2. Kaya decomposition: CO_2 emissions = CO_2/TPES x TPES/GDP x GDP/population x population. See Chapter 6.

G20

Key indicators

	1990	1995	2000	2005	2010	2013	2014	% change 90-14
CO_2 fuel combustion ($MtCO_2$)	16 777.1	17 707.7	19 107.2	22 200.2	24 859.9	26 256.5	26 430.3	58%
Share of World CO_2 from fuel combustion	82%	83%	83%	82%	82%	82%	82%	
TPES (PJ)	295 745	312 791	338 401	385 170	429 441	447 335	451 472	53%
GDP (billion 2010 USD)	33 499.2	37 168.7	43 973.5	50 729.4	57 020.2	61 437.8	63 017.3	88%
GDP PPP (billion 2010 USD)	37 379.0	41 835.9	50 194.3	59 876.9	71 095.2	78 650.4	81 298.8	117%
Population (millions)	3 657.6	3 895.0	4 117.5	4 319.5	4 513.2	4 622.9	4 659.4	27%
CO_2 / TPES (tCO_2 per TJ)	56.7	56.6	56.5	57.6	57.9	58.7	58.5	3%
CO_2 / GDP ($kgCO_2$ per 2010 USD)	0.50	0.48	0.43	0.44	0.44	0.43	0.42	-16%
CO_2 / GDP PPP ($kgCO_2$ per 2010 USD)	0.45	0.42	0.38	0.37	0.35	0.33	0.33	-28%
CO_2 / population (tCO_2 per capita)	4.59	4.55	4.64	5.14	5.51	5.68	5.67	24%
Share of electricity output from fossil fuels	64%	63%	65%	67%	67%	68%	67%	
CO_2 / kWh of electricity (gCO_2/kWh)	541	542	547	561	542	538	529	-2%
CO_2 emissions and drivers - Kaya decomposition (1990=100) [1]								
CO_2 emissions index	100	106	114	132	148	157	158	58%
Population index	100	106	113	118	123	126	127	27%
GDP PPP per population index	100	105	119	136	154	166	171	71%
Energy intensity index - TPES / GDP PPP	100	94	85	81	76	72	70	-30%
Carbon intensity index - CO_2 / TPES	100	100	100	102	102	103	103	3%

1. Please see the chapter *Indicator sources and methods* for methodological notes. Based on GDP in 2010 USD, using purchasing power parities.

2014 CO_2 emissions by sector

million tonnes of CO_2	Coal	Oil	Natural gas	Other [2]	Total	% change 90-14
CO_2 fuel combustion	**13 910.1**	**7 695.3**	**4 660.2**	**164.7**	**26 430.3**	**58%**
Electricity and heat generation	9 277.7	477.1	1 928.2	121.8	11 804.9	81%
Other energy industry own use	391.4	512.0	422.6	1.4	1 327.4	65%
Manufacturing industries and construction	3 658.0	716.1	952.1	38.1	5 364.3	67%
Transport	11.1	5 027.1	179.3	-	5 217.4	52%
of which: road	*-*	*4 477.0*	*55.8*	*-*	*4 532.8*	63%
Other	571.9	963.0	1 178.0	3.4	2 716.3	-4%
of which: residential	*271.7*	*455.6*	*780.3*	*0.0*	*1 507.7*	-7%
of which: services	*132.8*	*212.9*	*378.1*	*3.2*	*726.9*	3%
Memo: international marine bunkers	*-*	*361.7*	*-*	*-*	*361.7*	*36%*
Memo: international aviation bunkers	*-*	*353.7*	*-*	*-*	*353.7*	*92%*

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

Key categories for CO_2 emissions from fuel combustion in 2014

IPCC source category	CO_2 emissions ($MtCO_2$)	% change 90-14	Level assessment (%) [3]	Cumulative total (%)
Main activity prod. elec. and heat - coal	8 585.9	103.2	22.5	22.5
Road - oil	4 477.0	60.7	11.7	34.2
Manufacturing industries - coal	3 658.0	110.9	9.6	43.8
Main activity prod. elec. and heat - gas	1 538.7	106.5	4.0	47.8
Manufacturing industries - gas	952.1	39.4	2.5	50.3
Residential - gas	780.3	31.2	2.0	52.4
Manufacturing industries - oil	716.1	-8.0	1.9	54.2
Unallocated autoproducers - coal	691.8	90.8	1.8	56.0
Other transport - oil	550.0	18.9	1.4	57.5
Memo: total CO_2 from fuel combustion	*26 430.3*	*57.5*	*69.2*	*69.2*

3. Percent calculated using the total GHG estimate excluding CO_2 emissions/removals from agriculture, forestry and other land use.

5. SUMMARY TIME SERIES

CO_2 emissions from fuel combustion

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World [1]	**13 942.2**	**15 484.1**	**17 706.3**	**18 246.5**	**20 502.5**	**21 362.0**	**23 144.5**	**27 037.7**	**30 450.4**	**32 129.4**	**32 381.0**	**57.9%**
Annex I Parties	*..*	*..*	*..*	*..*	*13 716.5*	*12 978.9*	*13 548.9*	*13 867.6*	*13 220.1*	*12 864.7*	*12 628.4*	*-7.9%*
Annex II Parties	*8 578.7*	*8 843.1*	*9 417.5*	*9 071.6*	*9 652.4*	*10 027.3*	*10 825.9*	*11 093.0*	*10 396.9*	*10 074.2*	*9 933.7*	*2.9%*
North America	*4 628.2*	*4 732.0*	*5 017.1*	*4 907.5*	*5 222.0*	*5 522.1*	*6 158.8*	*6 237.4*	*5 872.9*	*5 652.8*	*5 731.0*	*9.7%*
Europe	*3 043.0*	*3 065.7*	*3 307.0*	*3 059.3*	*3 108.3*	*3 088.2*	*3 162.2*	*3 272.4*	*2 992.3*	*2 777.7*	*2 609.0*	*-16.1%*
Asia Oceania	*907.5*	*1 045.4*	*1 093.4*	*1 104.9*	*1 322.1*	*1 417.0*	*1 504.9*	*1 583.3*	*1 531.7*	*1 643.7*	*1 593.6*	*20.5%*
Annex I EIT	*..*	*..*	*..*	*..*	*3 930.8*	*2 792.3*	*2 513.3*	*2 548.7*	*2 548.0*	*2 498.5*	*2 379.5*	*-39.5%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*6 155.8*	*7 665.0*	*8 743.0*	*12 173.5*	*16 104.2*	*18 159.3*	*18 622.2*	*202.5%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*5 379.1*	*4 795.8*	*4 656.4*	*4 877.9*	*4 631.8*	*4 381.9*	*4 126.5*	*-23.3%*
Intl. marine bunkers	**353.8**	**341.1**	**357.3**	**306.8**	**371.5**	**427.8**	**498.4**	**575.7**	**668.6**	**615.8**	**626.1**	**68.5%**
Intl. aviation bunkers	**169.2**	**173.9**	**202.1**	**224.9**	**258.7**	**290.3**	**354.2**	**421.0**	**457.4**	**489.5**	**504.3**	**94.9%**
Non-OECD Total [2]	**4 077.2**	**5 213.4**	**6 564.8**	**7 375.1**	**8 876.8**	**9 150.3**	**9 840.3**	**13 211.4**	**17 001.0**	**18 997.1**	**19 395.0**	**118.5%**
OECD Total [3]	**9 342.0**	**9 755.8**	**10 582.0**	**10 339.8**	**10 995.5**	**11 493.6**	**12 451.7**	**12 829.7**	**12 323.3**	**12 026.9**	**11 855.6**	**7.8%**
Canada	340.1	377.0	422.2	393.8	419.5	448.9	516.2	535.1	525.8	549.7	554.8	32.2%
Chile	21.0	17.1	21.4	19.6	29.4	37.1	48.6	54.4	68.6	82.0	75.8	157.6%
Mexico	93.7	134.5	204.5	241.1	256.9	291.2	359.6	410.7	437.9	448.1	430.9	67.8%
United States	4 288.1	4 355.0	4 594.9	4 513.7	4 802.5	5 073.2	5 642.6	5 702.3	5 347.0	5 103.2	5 176.2	7.8%
OECD Americas	**4 743.0**	**4 883.6**	**5 243.0**	**5 168.2**	**5 508.3**	**5 850.4**	**6 567.0**	**6 702.4**	**6 379.4**	**6 183.0**	**6 237.8**	**13.2%**
Australia	143.4	179.5	206.7	220.2	259.7	285.4	334.7	371.9	389.5	383.1	373.8	43.9%
Israel	13.8	16.4	18.8	24.3	32.8	44.9	54.8	58.8	68.4	67.7	64.7	97.2%
Japan	750.7	849.5	870.2	865.9	1 040.6	1 107.7	1 141.2	1 177.7	1 111.8	1 229.6	1 188.6	14.2%
Korea	52.9	77.7	125.6	155.7	231.7	357.1	431.7	457.5	550.8	572.2	567.8	145.0%
New Zealand	13.5	16.4	16.5	18.9	21.7	23.9	29.0	33.7	30.3	31.0	31.2	43.7%
OECD Asia Oceania	**974.2**	**1 139.6**	**1 237.9**	**1 284.9**	**1 586.6**	**1 819.0**	**1 991.5**	**2 099.6**	**2 150.9**	**2 283.5**	**2 226.2**	**40.3%**
Austria	48.6	49.5	54.3	52.6	56.3	59.6	61.9	74.6	68.7	64.2	60.8	8.0%
Belgium	117.9	115.5	125.5	101.0	106.2	111.6	114.0	107.3	105.3	93.4	87.4	-17.8%
Czech Republic	153.6	155.1	168.1	175.4	150.3	123.3	121.3	118.5	111.4	101.2	96.6	-35.8%
Denmark	55.4	52.6	63.0	61.0	51.0	58.4	50.8	48.4	47.2	38.6	34.5	-32.3%
Estonia	..	..	..	..	36.0	16.0	14.5	16.8	18.7	18.9	17.5	-51.3%
Finland	39.8	44.2	54.8	48.3	53.8	55.7	54.6	54.8	61.9	49.4	45.3	-15.9%
France	423.2	422.9	455.1	351.7	345.5	343.5	364.5	370.4	340.1	317.1	285.7	-17.3%
Germany	978.2	973.4	1 048.4	1 004.6	940.3	856.7	812.4	786.8	758.9	763.9	723.3	-23.1%
Greece	25.1	34.1	45.2	54.5	69.9	76.5	88.0	95.2	83.4	68.9	65.9	-5.8%
Hungary	60.3	70.2	82.6	79.8	65.7	56.3	53.3	54.7	47.6	40.6	40.3	-38.7%
Iceland	1.4	1.6	1.7	1.6	1.9	2.0	2.2	2.2	1.9	2.0	2.0	7.8%
Ireland	21.6	21.1	25.9	26.4	30.1	32.6	40.8	44.2	39.3	34.4	33.9	12.5%
Italy	289.3	316.9	355.2	341.9	389.3	401.0	420.3	456.3	391.9	337.4	319.7	-17.9%
Luxembourg	16.5	12.7	12.4	10.3	10.7	8.2	8.1	11.5	10.6	9.8	9.2	-13.9%
Netherlands	127.6	131.9	145.4	138.3	144.9	163.5	161.5	167.0	170.0	155.7	148.3	2.4%
Norway	23.0	23.6	27.2	26.4	27.5	31.4	31.9	34.5	37.6	35.1	35.3	28.6%
Poland	287.4	338.9	416.0	422.4	344.8	333.4	289.7	296.4	307.6	292.1	279.0	-19.1%
Portugal	14.4	18.0	23.7	23.9	37.9	47.2	57.8	61.4	47.5	43.7	42.8	13.0%
Slovak Republic	38.9	43.2	55.8	54.4	54.8	41.2	36.9	37.3	34.6	31.8	29.3	-46.5%
Slovenia	..	..	..	..	13.5	14.1	14.1	15.4	15.5	14.2	12.8	-5.7%
Spain	119.0	155.8	186.2	173.0	202.6	228.2	278.5	333.6	262.0	235.1	232.0	14.5%
Sweden	82.0	79.0	73.1	58.4	52.1	56.9	52.0	49.1	46.0	37.7	37.4	-28.1%
Switzerland	38.9	36.7	39.2	41.8	40.8	41.5	41.9	43.9	43.1	41.6	37.7	-7.4%
Turkey	41.7	59.6	71.5	95.4	127.1	151.8	201.2	216.2	265.4	284.0	307.1	141.6%
United Kingdom	621.0	575.9	570.5	543.4	547.7	513.7	521.2	531.2	476.8	449.7	407.8	-25.5%
OECD Europe [3]	**3 624.8**	**3 732.6**	**4 101.1**	**3 886.7**	**3 900.6**	**3 824.2**	**3 893.2**	**4 027.7**	**3 792.9**	**3 560.4**	**3 391.6**	**-13.0%**
European Union - 28	*..*	*..*	*..*	*..*	*4 023.8*	*3 812.5*	*3 786.7*	*3 919.6*	*3 612.4*	*3 347.6*	*3 160.0*	*-21.5%*
G7	*7 690.6*	*7 870.8*	*8 316.5*	*8 015.0*	*8 485.3*	*8 744.7*	*9 418.5*	*9 559.7*	*8 952.4*	*8 750.6*	*8 656.1*	*2.0%*
G8	*..*	*..*	*..*	*..*	*10 648.6*	*10 292.7*	*10 892.7*	*11 041.3*	*10 481.3*	*10 285.2*	*10 123.7*	*-4.9%*
G20	*..*	*..*	*..*	*..*	*16 777.1*	*17 707.7*	*19 107.2*	*22 200.2*	*24 859.9*	*26 256.5*	*26 430.3*	*57.5%*

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

CO_2 emissions from fuel combustion

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**4 077.2**	**5 213.4**	**6 564.8**	**7 375.1**	**8 876.8**	**9 150.3**	**9 840.3**	**13 211.4**	**17 001.0**	**18 997.1**	**19 395.0**	**118.5%**
Albania	3.9	4.3	6.8	6.9	5.7	1.8	3.1	3.8	3.9	3.6	4.1	-27.4%
Armenia	..	..	..	..	19.8	3.4	3.4	4.1	4.0	5.2	5.2	-73.7%
Azerbaijan	..	..	..	..	53.5	32.4	27.3	29.0	23.5	29.5	30.8	-42.4%
Belarus	..	..	..	..	99.8	56.9	52.1	55.0	59.9	58.2	57.4	-42.5%
Bosnia and Herzegovina	..	..	..	..	24.0	3.3	13.7	15.9	20.5	21.5	21.6	-9.9%
Bulgaria	63.8	73.3	85.0	82.2	74.6	52.7	42.2	46.5	44.4	39.3	42.1	-43.5%
Croatia	..	..	..	..	20.3	14.8	16.8	19.9	18.2	15.9	15.1	-25.5%
Cyprus [2]	1.7	1.7	2.6	2.8	3.9	5.0	6.3	7.0	7.3	5.6	5.8	48.1%
FYR of Macedonia	..	..	..	..	8.6	8.3	8.5	8.9	8.3	7.9	7.4	-13.6%
Georgia	..	..	..	..	33.5	8.1	4.6	4.1	5.0	6.7	7.7	-76.9%
Gibraltar	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.5	0.5	0.5	275.9%
Kazakhstan	..	..	..	..	237.2	170.5	112.0	156.9	221.1	249.2	223.7	-5.7%
Kosovo	..	..	..	..	..	..	5.1	6.6	8.7	8.3	7.4	..
Kyrgyzstan	..	..	..	..	22.8	4.5	4.5	4.9	6.0	8.9	8.4	-63.3%
Latvia	..	..	..	..	18.8	8.9	6.8	7.6	8.1	6.9	6.7	-64.2%
Lithuania	..	..	..	..	32.2	13.4	10.2	12.3	12.2	10.7	10.3	-68.0%
Malta	0.7	0.7	1.0	1.2	2.3	2.4	2.1	2.7	2.6	2.4	2.3	1.3%
Republic of Moldova	..	..	..	..	30.5	11.9	6.5	7.7	7.9	6.7	7.2	-76.3%
Montenegro	..	..	..	..	..	..	..	2.0	2.5	2.3	2.2	..
Romania	114.6	140.6	177.3	174.9	168.3	117.6	86.2	92.7	74.8	69.0	68.2	-59.5%
Russian Federation	..	..	..	..	2 163.2	1 548.0	1 474.2	1 481.7	1 528.9	1 534.6	1 467.6	-32.2%
Serbia	..	..	..	..	62.0	44.6	43.0	49.6	45.9	45.4	38.1	-38.5%
Tajikistan	..	..	..	..	11.0	2.5	2.2	2.3	2.3	3.5	4.7	-57.7%
Turkmenistan	..	..	..	..	44.6	33.2	36.7	48.1	56.9	65.5	67.0	50.1%
Ukraine	..	..	..	..	688.4	395.7	295.0	293.9	266.3	265.0	236.5	-65.6%
Uzbekistan	..	..	..	..	114.9	94.5	114.0	107.1	97.1	96.3	97.9	-14.8%
Former Soviet Union [3]	1 941.6	2 480.6	2 935.6	3 078.1	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	61.8	73.5	84.2	119.7	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**2 188.3**	**2 774.7**	**3 292.7**	**3 465.8**	**3 940.1**	**2 634.8**	**2 377.0**	**2 470.7**	**2 536.7**	**2 568.8**	**2 446.1**	**-37.9%**
Algeria	8.6	13.5	27.7	42.1	51.2	55.3	61.5	77.4	95.8	113.9	122.9	140.3%
Angola	1.6	2.0	2.7	2.8	3.9	3.9	4.6	6.1	15.1	18.1	19.3	392.2%
Benin	0.3	0.5	0.4	0.5	0.3	0.2	1.4	2.7	4.6	5.2	5.7	+
Botswana	..	..	..	1.5	2.8	3.2	4.0	4.3	3.3	5.2	6.9	145.1%
Cameroon	0.7	1.0	1.7	2.4	2.6	2.5	2.8	2.9	5.0	5.9	6.0	128.6%
Congo	0.6	0.6	0.7	0.8	0.6	0.5	0.5	0.8	1.8	2.5	2.6	313.2%
Côte d'Ivoire	2.4	3.0	3.4	3.0	2.7	3.3	6.3	5.8	6.2	8.6	9.4	245.8%
Dem. Rep. of the Congo	2.6	2.6	3.2	3.3	3.0	1.1	0.9	1.3	1.9	3.5	4.7	55.8%
Egypt	20.0	25.6	40.7	64.4	77.8	81.6	99.7	144.6	176.4	174.9	173.3	122.6%
Eritrea	..	..	..	..	..	0.8	0.6	0.6	0.5	0.6	0.6	..
Ethiopia	1.3	1.2	1.4	1.4	2.2	2.3	3.2	4.5	6.0	8.5	9.1	320.5%
Gabon	0.5	0.8	1.3	1.7	0.9	1.3	1.5	1.7	2.7	3.4	3.5	283.9%
Ghana	1.9	2.3	2.2	2.1	2.5	3.2	5.0	6.4	10.4	13.6	13.1	416.7%
Kenya	3.2	3.5	4.4	4.6	5.5	5.7	7.8	7.5	11.2	11.7	12.4	123.9%
Libya	3.7	8.7	17.6	21.2	25.8	32.9	36.8	43.0	48.1	48.2	47.9	85.4%
Mauritius	0.3	0.4	0.6	0.6	1.2	1.6	2.4	3.0	3.7	3.8	4.0	240.2%
Morocco	6.6	9.7	13.7	16.3	19.6	26.1	29.5	38.9	46.0	50.5	53.1	170.3%
Mozambique	2.9	2.4	2.3	1.5	1.1	1.1	1.3	1.5	2.4	3.0	3.9	257.2%
Namibia	..	..	..	..	..	1.8	1.9	2.5	3.1	3.4	3.6	..
Niger	..	..	..	..	..	..	0.6	0.7	1.4	1.8	2.0	..
Nigeria	5.7	10.8	25.3	31.8	28.1	32.8	43.8	56.4	55.8	61.8	60.2	114.4%
Senegal	1.2	1.6	2.0	2.1	2.1	2.5	3.5	4.6	5.5	6.0	6.3	194.6%
South Africa	157.1	203.0	208.4	222.9	243.8	259.8	280.5	372.3	406.7	423.3	437.4	79.4%
South Sudan	..	..	..	..	..	..	..	..	..	1.5	1.5	..
Sudan	3.2	3.2	3.7	4.0	5.3	4.3	5.5	9.9	15.0	13.5	13.3	152.0%
United Rep. of Tanzania	1.4	1.4	1.5	1.5	1.7	2.5	2.6	5.1	6.1	10.3	10.4	520.8%
Togo	0.3	0.3	0.4	0.3	0.6	0.6	0.9	1.0	2.1	1.7	1.7	199.5%
Tunisia	3.7	4.8	7.9	9.7	12.2	14.0	17.6	19.5	23.3	23.7	25.0	105.1%
Zambia	3.4	4.3	3.3	2.7	2.6	2.0	1.7	2.1	1.6	2.9	3.2	24.5%
Zimbabwe	7.2	7.2	8.0	9.7	16.2	15.1	13.3	10.3	9.2	11.8	11.5	-29.3%
Other Africa	8.4	9.6	13.3	10.9	12.6	14.2	16.4	19.6	25.3	29.8	31.0	145.3%
Africa	**249.0**	**323.9**	**397.6**	**465.6**	**529.0**	**576.2**	**658.1**	**856.9**	**995.8**	**1 072.5**	**1 105.3**	**108.9%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
3. Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions from fuel combustion

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Bangladesh	2.9	4.4	6.6	7.7	11.4	16.5	20.9	32.0	49.9	59.6	62.3	445.2%
Brunei Darussalam	0.4	1.4	2.6	2.9	3.3	4.5	4.4	4.8	6.9	6.9	6.7	105.4%
Cambodia	..	..	..	..	..	1.5	2.0	2.6	4.6	5.2	6.1	..
DPR of Korea	69.2	78.6	108.1	129.4	116.8	76.5	70.0	75.3	65.5	33.3	37.8	-67.6%
India	181.0	217.1	262.0	375.8	530.4	707.7	890.4	1 079.6	1 594.3	1 852.5	2 019.7	280.8%
Indonesia	25.2	37.8	67.6	83.9	133.9	204.1	255.3	318.5	376.8	399.6	436.5	226.0%
Malaysia	12.8	16.2	23.7	32.9	49.6	79.6	115.0	155.8	189.8	209.0	220.5	344.7%
Mongolia	..	..	..	11.8	12.9	10.2	9.0	11.0	14.2	18.7	18.2	41.2%
Myanmar	4.5	3.9	5.1	5.7	3.9	6.7	9.3	10.6	7.9	13.4	19.6	399.8%
Nepal	0.2	0.3	0.5	0.6	0.9	1.8	3.1	3.1	4.1	4.9	5.9	562.1%
Pakistan	15.9	20.0	24.3	36.5	56.0	79.2	96.0	116.8	131.4	135.1	137.4	145.6%
Philippines	23.0	28.9	33.3	28.5	38.0	57.2	68.1	71.5	77.1	89.6	95.7	151.6%
Singapore	6.1	8.4	12.7	16.6	29.0	37.6	42.1	37.9	44.3	46.2	45.3	56.5%
Sri Lanka	2.8	2.6	3.6	3.5	3.7	5.5	10.5	13.4	12.4	13.7	16.7	355.5%
Chinese Taipei	29.8	40.7	71.4	69.1	111.1	154.0	214.3	253.6	256.2	247.6	249.7	124.7%
Thailand	16.2	21.1	33.7	42.1	80.9	139.9	152.3	200.2	223.4	247.4	243.5	201.1%
Viet Nam	16.3	17.0	14.9	17.4	17.4	27.5	44.2	79.1	126.1	130.0	143.3	724.5%
Other Asia	10.6	12.8	16.7	10.2	10.3	9.4	11.4	15.5	22.1	39.7	42.1	307.7%
Asia (excl. China)	**416.8**	**511.4**	**686.8**	**874.6**	**1 209.4**	**1 619.4**	**2 018.3**	**2 481.2**	**3 206.9**	**3 552.5**	**3 807.0**	**214.8%**
People's Rep. of China	780.2	1 029.3	1 363.8	1 625.7	2 075.9	2 887.1	3 086.2	5 358.1	7 707.0	8 979.8	9 087.0	337.7%
Hong Kong, China	9.2	10.9	14.6	22.3	33.3	36.5	40.3	41.3	42.0	46.0	47.9	44.0%
China	**789.4**	**1 040.2**	**1 378.4**	**1 648.0**	**2 109.2**	**2 923.6**	**3 126.5**	**5 399.4**	**7 749.0**	**9 025.9**	**9 134.9**	**333.1%**
Argentina	82.5	85.2	95.2	87.7	99.4	117.3	139.3	149.4	173.7	180.8	192.4	93.6%
Bolivia	2.2	3.2	4.2	4.3	5.2	6.9	7.1	9.1	13.7	16.9	18.3	255.2%
Brazil	87.5	129.6	167.7	156.2	184.3	227.7	292.3	310.5	370.5	451.3	476.0	158.4%
Colombia	26.7	28.3	34.8	39.5	45.8	54.5	54.2	53.6	60.2	70.9	72.5	58.4%
Costa Rica	1.3	1.7	2.2	1.9	2.6	4.4	4.5	5.4	6.6	7.1	7.2	175.3%
Cuba	20.8	24.2	30.5	32.2	34.1	22.4	27.3	25.0	32.7	29.4	29.4	-13.7%
Curaçao [1]	14.5	10.2	8.7	4.5	2.7	2.6	5.6	6.0	4.4	4.4	4.7	78.2%
Dominican Republic	3.5	5.2	6.3	6.2	7.4	11.2	18.3	17.3	19.2	19.7	19.3	160.2%
Ecuador	3.5	5.9	10.4	11.7	13.3	16.7	18.1	23.9	32.0	35.9	38.7	190.8%
El Salvador	1.3	1.9	1.6	1.6	2.1	4.6	5.2	6.3	5.8	5.7	5.9	179.0%
Guatemala	2.3	3.0	4.2	3.2	3.2	5.9	8.6	10.6	10.3	12.2	16.1	403.6%
Haiti	0.4	0.4	0.6	0.8	0.9	0.9	1.4	2.0	2.1	2.2	2.8	195.7%
Honduras	1.1	1.3	1.7	1.7	2.2	3.6	4.5	7.2	7.3	8.5	8.7	301.9%
Jamaica	5.5	7.4	6.5	4.7	7.2	8.4	9.8	10.3	6.9	7.3	7.2	-1.0%
Nicaragua	1.5	1.8	1.8	1.8	1.8	2.5	3.5	4.0	4.3	4.3	4.5	147.1%
Panama	2.5	3.1	2.9	2.7	2.6	4.1	4.9	6.8	8.8	9.9	10.6	313.1%
Paraguay	0.6	0.7	1.3	1.4	1.9	3.5	3.3	3.5	4.7	4.9	5.2	168.9%
Peru	15.4	18.2	20.4	18.0	19.1	23.3	26.4	28.6	41.1	44.8	47.8	149.6%
Suriname	..	..	..	..	..	..	1.5	1.7	1.7	2.0	2.0	..
Trinidad and Tobago	5.4	4.6	6.4	6.7	7.9	8.2	10.1	17.5	22.3	22.9	23.2	193.9%
Uruguay	5.1	5.3	5.3	3.0	3.6	4.4	5.1	5.2	6.0	7.1	6.3	74.2%
Venezuela	45.9	56.1	83.3	85.1	93.6	106.1	116.2	137.1	171.5	156.0	155.0	65.7%
Other Non-OECD Americas	8.2	10.9	10.3	9.2	12.4	13.3	13.6	14.2	16.4	19.8	20.1	62.5%
Non-OECD Americas	**337.4**	**408.4**	**506.4**	**484.1**	**553.2**	**652.4**	**780.7**	**855.2**	**1 022.3**	**1 124.0**	**1 173.9**	**112.2%**
Bahrain	2.9	5.2	7.2	9.1	10.7	13.5	15.8	20.6	25.5	28.3	29.7	178.1%
Islamic Republic of Iran	38.9	68.0	88.5	145.0	171.2	244.5	312.2	417.6	498.4	535.3	556.1	224.9%
Iraq	10.3	15.5	26.2	38.0	52.4	95.1	70.5	73.2	103.5	135.2	141.0	169.2%
Jordan	1.4	2.2	4.3	7.5	9.3	12.3	14.4	18.1	18.9	22.5	24.1	159.2%
Kuwait	14.0	15.1	26.4	36.7	27.8	32.3	46.3	64.7	77.0	84.1	86.1	209.7%
Lebanon	4.6	5.7	6.7	6.6	5.5	12.8	14.0	14.5	18.2	20.6	22.4	305.8%
Oman	0.3	0.7	2.2	5.6	10.2	14.7	20.4	24.7	42.4	56.5	59.9	489.6%
Qatar	2.2	4.9	7.0	10.7	12.4	16.8	21.3	33.2	57.1	72.8	77.6	524.5%
Saudi Arabia	12.7	22.5	99.4	117.8	151.1	191.6	234.6	298.0	419.1	471.0	506.6	235.3%
Syrian Arab Republic	5.4	8.3	12.3	19.5	27.2	31.1	37.0	53.4	55.9	29.9	27.6	1.3%
United Arab Emirates	2.5	4.9	19.2	35.6	51.9	69.6	79.8	111.1	151.8	173.5	175.4	238.2%
Yemen	1.2	1.8	3.5	4.9	6.3	9.4	13.3	18.8	22.4	23.9	21.3	239.0%
Middle East	**96.3**	**154.8**	**303.0**	**437.0**	**535.9**	**743.8**	**879.6**	**1 147.9**	**1 490.2**	**1 653.5**	**1 727.8**	**222.4%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

CO_2 emissions from fuel combustion - coal

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World [1]	**5 229.3**	**5 648.0**	**6 600.8**	**7 394.2**	**8 286.8**	**8 505.6**	**8 963.2**	**11 450.1**	**13 738.6**	**14 752.2**	**14 871.4**	**79.5%**
Annex I Parties	*..*	*..*	*..*	*..*	*5 223.6*	*4 685.0*	*4 803.5*	*4 841.8*	*4 494.0*	*4 192.4*	*4 059.9*	*-22.3%*
Annex II Parties	*2 704.3*	*2 668.0*	*3 033.8*	*3 393.1*	*3 560.1*	*3 470.9*	*3 730.1*	*3 805.2*	*3 435.1*	*3 195.9*	*3 120.1*	*-12.4%*
North America	*1 169.6*	*1 285.1*	*1 515.5*	*1 762.8*	*1 933.3*	*2 039.2*	*2 297.7*	*2 289.5*	*2 074.0*	*1 781.1*	*1 772.6*	*-8.3%*
Europe	*1 254.1*	*1 080.5*	*1 209.5*	*1 251.9*	*1 184.9*	*950.4*	*866.4*	*866.8*	*723.8*	*767.8*	*709.8*	*-40.1%*
Asia Oceania	*280.6*	*302.4*	*308.9*	*378.4*	*441.9*	*481.2*	*565.9*	*648.8*	*637.4*	*647.0*	*637.7*	*44.3%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 602.9*	*1 151.5*	*981.7*	*947.7*	*935.9*	*877.8*	*807.9*	*-49.6%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*3 063.2*	*3 820.7*	*4 159.7*	*6 608.3*	*9 244.6*	*10 559.8*	*10 811.5*	*252.9%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*2 381.1*	*1 889.1*	*1 670.0*	*1 711.9*	*1 594.8*	*1 608.1*	*1 498.4*	*-37.1%*
Intl. marine bunkers	**0.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Intl. aviation bunkers	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Non-OECD Total [2]	**2 029.1**	**2 441.3**	**2 917.2**	**3 271.8**	**4 046.7**	**4 397.2**	**4 541.6**	**6 929.2**	**9 464.9**	**10 727.6**	**10 921.2**	**169.9%**
OECD Total [3]	**3 200.1**	**3 206.7**	**3 683.6**	**4 122.3**	**4 240.1**	**4 108.4**	**4 421.6**	**4 521.0**	**4 273.7**	**4 024.6**	**3 950.2**	**-6.8%**
Canada	63.9	59.0	82.1	100.8	96.2	100.7	125.9	110.4	92.0	76.1	73.9	-23.2%
Chile	5.1	3.6	4.8	5.0	9.8	8.9	11.7	10.3	17.5	28.2	24.3	148.7%
Mexico	5.2	6.7	7.3	11.7	15.1	21.8	26.4	46.5	51.2	49.9	48.0	217.4%
United States	1 105.7	1 226.1	1 433.4	1 662.0	1 837.2	1 938.5	2 171.8	2 179.2	1 982.0	1 705.0	1 698.7	-7.5%
OECD Americas	**1 179.9**	**1 295.4**	**1 527.7**	**1 779.5**	**1 958.2**	**2 069.9**	**2 335.8**	**2 346.3**	**2 142.7**	**1 859.2**	**1 844.9**	**-5.8%**
Australia	75.3	92.9	106.7	119.4	140.9	156.5	190.2	208.2	202.5	176.5	167.8	19.1%
Israel	0.0	0.0	0.0	7.3	9.5	16.5	25.6	29.5	29.3	27.9	26.0	174.7%
Japan	201.4	205.3	198.3	255.0	297.6	321.4	371.2	431.6	429.3	464.5	464.2	56.0%
Korea	22.2	32.1	50.5	84.0	90.7	106.5	180.4	200.0	284.2	289.7	303.8	234.7%
New Zealand	4.0	4.3	3.9	4.0	3.4	3.4	4.5	9.0	5.6	5.9	5.7	68.0%
OECD Asia Oceania	**302.9**	**334.5**	**359.4**	**469.7**	**542.1**	**604.2**	**771.9**	**878.3**	**950.9**	**964.6**	**967.5**	**78.5%**
Austria	16.3	13.9	14.2	17.4	16.6	14.4	15.1	16.3	14.4	14.5	13.4	-19.6%
Belgium	44.2	38.6	41.8	39.2	40.4	34.7	30.2	20.6	14.0	12.5	12.1	-70.1%
Czech Republic	132.2	124.3	132.3	139.1	116.7	91.5	86.4	78.1	73.2	65.8	62.1	-46.8%
Denmark	6.1	8.1	24.2	29.0	24.2	25.8	15.7	14.7	15.5	12.9	10.2	-57.8%
Estonia	..	..	..	..	24.5	11.4	10.5	12.1	14.3	14.3	13.3	-46.0%
Finland	8.7	9.6	20.1	20.3	21.7	23.8	21.6	20.6	28.6	20.6	18.5	-14.6%
France	140.1	108.2	125.5	94.4	75.9	59.2	59.6	55.9	45.8	44.0	33.1	-56.4%
Germany	558.2	499.7	561.6	592.0	516.6	380.6	346.1	334.8	314.5	333.6	317.4	-38.6%
Greece	6.7	10.9	13.2	24.9	33.6	37.2	38.4	38.6	33.6	29.3	27.5	-18.1%
Hungary	35.9	33.8	37.4	35.6	24.6	17.6	15.6	12.6	10.7	9.1	9.0	-63.5%
Iceland	0.0	-	0.1	0.3	0.3	0.2	0.4	0.4	0.4	0.4	0.4	35.1%
Ireland	8.9	7.2	8.1	10.7	14.7	12.5	10.6	11.0	8.2	8.4	8.3	-43.3%
Italy	32.6	31.3	44.4	59.8	56.5	45.4	43.9	63.8	52.4	53.1	51.8	-8.4%
Luxembourg	12.3	8.1	8.4	6.7	5.2	2.1	0.4	0.3	0.3	0.2	0.2	-96.0%
Netherlands	15.2	12.4	14.4	24.0	32.3	33.7	29.7	31.0	29.0	31.6	35.1	8.7%
Norway	3.8	4.0	4.0	4.5	3.5	3.9	4.0	2.9	2.6	3.0	3.0	-14.4%
Poland	254.6	292.7	356.9	366.0	291.2	273.6	221.5	215.8	214.7	206.4	194.6	-33.2%
Portugal	2.5	1.7	1.7	2.9	10.8	14.2	15.0	13.4	6.5	10.5	10.6	-2.1%
Slovak Republic	24.2	24.2	32.8	34.2	31.4	21.6	16.4	16.0	14.5	13.0	12.7	-59.7%
Slovenia	..	..	..	..	6.7	5.8	5.6	6.3	6.0	5.6	4.4	-33.9%
Spain	38.2	38.8	49.0	70.7	75.2	72.9	83.4	81.9	32.4	44.7	47.4	-37.0%
Sweden	5.5	7.0	5.5	10.7	10.5	9.6	8.3	10.0	9.2	7.6	6.9	-34.6%
Switzerland	1.9	1.0	1.4	2.0	1.4	0.8	0.6	0.6	0.6	0.5	0.6	-59.5%
Turkey	16.4	21.2	27.6	46.4	59.6	62.4	91.6	88.8	123.0	118.7	132.0	121.5%
United Kingdom	352.9	280.0	271.9	242.4	245.5	179.5	143.3	149.9	115.8	140.3	113.4	-53.8%
OECD Europe [3]	**1 717.3**	**1 576.8**	**1 796.6**	**1 873.2**	**1 739.7**	**1 434.3**	**1 313.9**	**1 296.4**	**1 180.1**	**1 200.8**	**1 137.8**	**-34.6%**
European Union - 28	*..*	*..*	*..*	*..*	*1 773.9*	*1 441.6*	*1 275.8*	*1 272.7*	*1 116.0*	*1 131.7*	*1 056.7*	*-40.4%*
G7	*2 454.8*	*2 409.7*	*2 717.2*	*3 006.4*	*3 125.4*	*3 025.3*	*3 261.9*	*3 325.6*	*3 031.8*	*2 816.7*	*2 752.4*	*-11.9%*
G8	*..*	*..*	*..*	*..*	*3 832.7*	*3 509.1*	*3 705.1*	*3 739.2*	*3 436.8*	*3 176.5*	*3 069.7*	*-19.9%*
G20	*..*	*..*	*..*	*..*	*7 436.9*	*7 873.9*	*8 325.8*	*10 667.0*	*12 812.7*	*13 778.1*	*13 910.1*	*87.0%*

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

CO_2 emissions from fuel combustion - coal

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**2 029.1**	**2 441.3**	**2 917.2**	**3 271.8**	**4 046.7**	**4 397.2**	**4 541.6**	**6 929.2**	**9 464.9**	**10 727.6**	**10 921.2**	**169.9%**
Albania	1.2	1.6	2.5	3.8	2.4	0.1	0.1	0.1	0.5	0.3	0.4	-85.6%
Armenia	..	..	..	..	1.0	0.0	-	-	0.0	0.0	-	-100.0%
Azerbaijan	..	..	..	..	0.4	0.0	-	-	-	-	-	-100.0%
Belarus	..	..	..	..	9.6	5.5	3.8	2.4	2.2	3.2	3.3	-65.1%
Bosnia and Herzegovina	..	..	..	..	17.7	1.5	10.1	12.0	15.6	17.0	17.1	-3.5%
Bulgaria	34.1	36.0	38.8	43.4	37.7	30.3	26.1	28.7	28.7	24.7	26.6	-29.5%
Croatia	..	..	..	..	3.4	0.7	1.7	2.7	2.7	2.7	2.6	-23.2%
Cyprus [2]	-	-	-	0.2	0.3	0.1	0.1	0.1	0.1	0.0	0.0	-96.5%
FYR of Macedonia	..	..	..	..	5.6	6.0	5.7	6.2	5.5	4.9	4.5	-19.2%
Georgia	..	..	..	..	3.5	0.1	0.0	0.0	0.1	1.3	1.2	-65.0%
Gibraltar	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	..	..	..	..	158.7	114.3	74.7	102.7	137.6	145.9	130.2	-17.9%
Kosovo	..	..	..	..	..	..	4.1	5.3	7.1	6.6	5.8	..
Kyrgyzstan	..	..	..	..	10.2	1.3	1.9	2.2	2.8	3.5	4.2	-59.4%
Latvia	..	..	..	..	2.8	1.1	0.5	0.3	0.4	0.3	0.2	-91.5%
Lithuania	..	..	..	..	3.2	1.0	0.4	0.8	0.8	1.1	0.9	-70.9%
Malta	-	-	-	0.5	0.7	0.1	-	-	-	-	-	-100.0%
Republic of Moldova	..	..	..	..	7.9	2.3	0.5	0.3	0.4	0.6	0.4	-95.3%
Montenegro	..	..	..	..	..	..	..	1.2	1.7	1.6	1.5	..
Romania	32.5	39.5	50.8	59.7	50.8	41.3	29.5	36.3	29.7	24.8	24.5	-51.8%
Russian Federation	..	..	..	..	707.3	483.7	443.2	413.7	405.0	359.8	317.3	-55.1%
Serbia	..	..	..	..	42.2	36.9	35.7	34.1	32.4	33.0	26.5	-37.2%
Tajikistan	..	..	..	..	2.5	0.1	0.0	0.2	0.4	0.9	1.5	-38.8%
Turkmenistan	..	..	..	..	1.2	-	-	-	-	-	-	-100.0%
Ukraine	..	..	..	..	292.8	166.3	120.5	122.0	132.9	146.9	136.4	-53.4%
Uzbekistan	..	..	..	..	14.0	4.5	5.2	4.7	5.5	6.0	6.5	-53.5%
Former Soviet Union [3]	884.8	1 039.7	1 138.2	987.0	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	36.7	41.5	43.7	74.1	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**989.3**	**1 158.3**	**1 274.0**	**1 168.6**	**1 376.0**	**897.3**	**763.9**	**775.9**	**812.1**	**785.2**	**711.7**	**-48.3%**
Algeria	0.4	0.3	0.2	1.0	1.3	1.4	0.7	1.1	0.8	0.4	0.2	-82.0%
Angola	-	-	-	-	-	-	-	-	-	-	-	-
Benin	-	-	-	-	-	-	-	-	-	-	0.2	x
Botswana	..	..	..	1.0	1.8	2.0	2.3	2.3	0.7	2.4	3.9	113.1%
Cameroon	-	-	-	-	-	-	-	-	-	-	-	-
Congo	-	-	-	-	-	-	-	-	-	-	-	-
Côte d'Ivoire	-	-	-	-	-	-	-	-	-	-	-	-
Dem. Rep. of the Congo	1.0	0.8	0.9	0.8	0.9	-	-	-	-	-	-	-100.0%
Egypt	1.4	2.3	2.2	2.9	2.9	3.2	3.1	3.4	1.8	1.6	1.6	-42.8%
Eritrea	..	..	..	..	..	-	-	-	-	-	-	..
Ethiopia	-	-	-	-	-	-	-	-	0.1	0.7	0.8	x
Gabon	-	-	-	-	-	-	-	-	-	-	-	-
Ghana	-	-	-	-	-	-	-	-	-	-	-	-
Kenya	0.2	0.1	0.0	0.2	0.4	0.4	0.3	0.4	0.7	0.8	1.3	253.0%
Libya	-	-	-	-	-	-	-	-	-	-	-	-
Mauritius	-	-	-	0.1	0.1	0.2	0.6	0.9	1.6	1.7	1.8	+
Morocco	1.2	1.7	1.6	2.7	4.2	6.9	10.5	12.4	11.1	11.8	16.0	279.1%
Mozambique	1.5	1.2	0.7	0.3	0.1	0.1	-	-	0.0	0.0	0.0	-67.2%
Namibia	..	..	..	..	..	0.0	0.0	0.0	0.0	0.1	-	..
Niger	..	..	..	..	..	..	0.2	0.2	0.3	0.3	0.3	..
Nigeria	0.5	0.6	0.5	0.3	0.2	0.0	0.0	0.0	0.1	0.1	0.1	-39.8%
Senegal	-	-	-	-	-	-	-	0.4	0.7	0.9	0.9	x
South Africa	129.3	168.6	174.5	186.0	200.7	211.5	231.4	314.9	342.2	346.8	364.3	81.5%
South Sudan	..	..	..	..	..	..	..	..	..	-	-	..
Sudan	-	-	0.0	-	-	-	-	-	-	-	-	-
United Rep. of Tanzania	-	-	0.0	0.0	0.0	0.1	0.2	0.1	-	0.2	0.6	+
Togo	-	-	-	-	-	-	-	-	-	-	-	-
Tunisia	0.3	0.4	0.3	0.3	0.3	0.3	0.3	-	-	-	-	-100.0%
Zambia	2.0	1.9	1.4	1.1	0.9	0.3	0.3	0.3	0.0	0.3	0.4	-57.6%
Zimbabwe	5.8	5.2	6.2	7.7	13.7	11.5	10.3	8.2	7.4	7.6	7.7	-43.4%
Other Africa	0.1	0.2	1.6	0.6	0.9	0.5	1.5	1.7	2.3	2.4	2.5	192.7%
Africa	**143.7**	**183.3**	**190.0**	**205.2**	**228.4**	**238.6**	**261.8**	**346.4**	**369.7**	**378.1**	**402.6**	**76.3%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
3. Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions from fuel combustion - coal

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Bangladesh	0.4	0.5	0.5	0.2	1.1	1.3	1.3	1.9	3.2	3.8	3.1	176.2%
Brunei Darussalam	-	-	-	-	-	-	-	-	-	-	-	-
Cambodia	..	..	..	..	..	-	-	-	0.0	0.2	0.9	..
DPR of Korea	66.6	74.3	100.0	122.0	108.9	72.6	66.8	72.5	63.0	30.5	35.2	-67.7%
India	127.2	157.0	180.3	261.1	366.2	481.4	577.3	717.5	1 102.0	1 345.0	1 492.9	307.7%
Indonesia	0.5	0.5	0.6	4.8	18.2	26.5	52.5	87.6	108.3	115.9	145.3	699.0%
Malaysia	0.0	0.0	0.2	1.4	5.3	6.6	9.8	27.3	58.5	59.7	60.8	+
Mongolia	..	..	..	9.6	10.4	9.2	7.7	9.3	11.7	15.0	14.7	40.5%
Myanmar	0.6	0.6	0.6	0.6	0.3	0.1	1.3	1.4	1.6	1.5	1.6	503.4%
Nepal	0.0	0.1	0.2	0.0	0.2	0.3	1.0	1.0	1.2	1.3	1.9	+
Pakistan	2.6	2.2	2.7	5.0	7.3	8.0	6.9	14.6	16.4	13.8	13.2	80.7%
Philippines	0.1	0.2	1.5	5.6	5.1	6.9	19.9	22.7	29.8	42.5	45.4	794.7%
Singapore	0.0	0.0	0.0	0.1	0.1	0.1	-	0.0	0.0	1.1	1.6	+
Sri Lanka	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	2.1	4.1	+
Chinese Taipei	10.2	8.6	14.9	26.6	42.7	64.4	111.3	147.6	155.0	152.7	153.2	259.2%
Thailand	0.5	0.6	1.9	6.7	16.4	30.0	32.1	47.8	65.5	69.0	64.7	294.4%
Viet Nam	5.7	10.2	9.4	11.5	9.1	13.7	18.0	34.0	60.2	70.8	78.8	761.1%
Other Asia	4.5	4.9	7.8	1.0	0.8	0.6	1.4	1.7	4.4	5.7	6.0	615.9%
Asia (excl. China)	**218.9**	**259.8**	**320.6**	**456.2**	**592.1**	**721.6**	**907.3**	**1 187.1**	**1 681.2**	**1 930.6**	**2 123.5**	**258.6%**
People's Rep. of China	659.4	818.3	1 101.4	1 384.4	1 778.0	2 459.9	2 520.0	4 518.2	6 489.6	7 497.1	7 535.7	323.8%
Hong Kong, China	0.1	0.0	0.0	12.6	24.1	23.7	16.8	26.4	25.2	31.7	33.7	39.5%
China	**659.5**	**818.4**	**1 101.5**	**1 397.1**	**1 802.1**	**2 483.6**	**2 536.8**	**4 544.6**	**6 514.8**	**7 528.8**	**7 569.3**	**320.0%**
Argentina	3.3	3.4	3.2	3.6	3.6	4.9	4.8	5.9	6.1	5.7	7.6	109.9%
Bolivia	-	-	-	0.3	-	-	-	-	-	-	-	-
Brazil	6.0	6.9	15.0	26.4	27.7	32.8	46.4	45.6	54.1	63.9	68.2	146.8%
Colombia	6.1	6.7	8.8	10.2	12.2	13.9	12.1	10.5	10.8	12.7	13.6	11.6%
Costa Rica	0.0	0.0	0.0	0.0	-	-	0.0	0.1	0.3	0.3	0.3	x
Cuba	0.4	0.3	0.4	0.5	0.6	0.3	0.1	0.1	0.1	0.0	0.0	-98.2%
Curaçao [1]	-	-	-	-	-	-	-	-	-	-	-	-
Dominican Republic	-	-	-	0.5	0.0	0.2	0.2	1.7	3.0	3.3	3.9	+
Ecuador	-	-	-	-	-	-	-	-	-	-	-	-
El Salvador	-	-	0.0	-	-	0.0	0.0	0.0	-	-	-	-
Guatemala	-	-	0.1	-	-	-	0.5	1.0	1.2	1.4	1.8	x
Haiti	-	-	-	0.1	0.0	-	-	-	-	-	-	-100.0%
Honduras	-	-	-	-	0.0	0.0	0.3	0.6	0.5	0.8	0.5	+
Jamaica	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.2	0.2	61.5%
Nicaragua	-	-	-	-	-	-	-	-	-	-	-	-
Panama	0.0	0.0	-	0.1	0.1	0.1	0.1	-	-	0.8	0.8	953.1%
Paraguay	-	-	-	-	-	-	-	-	-	-	-	-
Peru	0.6	0.6	0.7	0.7	0.6	1.4	2.5	3.6	3.6	3.6	3.6	493.8%
Suriname	..	..	..	..	..	..	-	-	-	-	-	..
Trinidad and Tobago	-	-	-	-	-	-	-	-	-	-	-	-
Uruguay	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-100.0%
Venezuela	0.6	1.1	0.7	0.8	1.9	0.0	0.5	0.1	0.8	0.8	0.8	-58.7%
Other Non-OECD Americas	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1%
Non-OECD Americas	**17.3**	**19.2**	**29.0**	**43.2**	**46.9**	**53.8**	**67.8**	**69.4**	**80.6**	**93.5**	**101.4**	**116.2%**
Bahrain	-	-	-	-	-	-	-	-	-	-	-	-
Islamic Republic of Iran	0.4	2.1	2.0	1.6	1.2	1.9	3.4	4.7	2.7	3.8	4.3	252.2%
Iraq	-	-	-	-	-	-	-	-	-	-	-	-
Jordan	-	-	-	-	-	-	-	-	-	0.9	1.5	x
Kuwait	-	-	-	-	-	-	-	-	-	-	-	-
Lebanon	0.0	0.0	0.0	-	-	0.5	0.5	0.5	0.6	0.5	0.7	x
Oman	-	-	-	-	-	-	-	-	-	-	-	-
Qatar	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Syrian Arab Republic	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	x
United Arab Emirates	-	-	-	-	-	-	-	0.6	2.8	5.7	5.8	x
Yemen	-	-	-	-	-	-	-	-	0.4	0.5	0.5	x
Middle East	**0.5**	**2.2**	**2.0**	**1.7**	**1.2**	**2.3**	**3.9**	**5.8**	**6.6**	**11.4**	**12.7**	**943.3%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

CO_2 emissions from fuel combustion - oil

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World [1]	**6 668.1**	**7 581.5**	**8 389.8**	**7 772.9**	**8 495.5**	**8 791.3**	**9 531.0**	**10 283.9**	**10 538.3**	**10 851.0**	**10 973.4**	**29.2%**
Annex I Parties	*..*	*..*	*..*	*..*	*5 455.4*	*5 100.8*	*5 252.3*	*5 371.8*	*4 829.9*	*4 703.7*	*4 697.1*	*-13.9%*
Annex II Parties	*4 431.3*	*4 671.6*	*4 727.3*	*4 071.9*	*4 298.3*	*4 413.1*	*4 639.9*	*4 767.1*	*4 224.7*	*4 090.6*	*4 061.4*	*-5.5%*
North America	*2 194.9*	*2 297.7*	*2 320.0*	*2 087.1*	*2 155.2*	*2 164.4*	*2 423.8*	*2 573.1*	*2 316.1*	*2 260.0*	*2 301.8*	*6.8%*
Europe	*1 622.3*	*1 659.4*	*1 692.4*	*1 369.6*	*1 417.6*	*1 495.3*	*1 497.4*	*1 496.9*	*1 310.6*	*1 183.0*	*1 156.3*	*-18.4%*
Asia Oceania	*614.1*	*714.5*	*715.0*	*615.2*	*725.5*	*753.4*	*718.7*	*697.1*	*598.0*	*647.7*	*603.3*	*-16.8%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 090.7*	*603.2*	*523.4*	*520.2*	*526.6*	*527.8*	*546.3*	*-49.9%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*2 409.9*	*2 972.4*	*3 426.2*	*3 915.4*	*4 582.4*	*5 042.0*	*5 145.8*	*113.5%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*2 034.0*	*1 888.0*	*1 833.0*	*1 867.5*	*1 699.0*	*1 584.3*	*1 539.8*	*-24.3%*
Intl. marine bunkers	**353.7**	**341.1**	**357.3**	**306.8**	**371.5**	**427.8**	**498.4**	**575.7**	**668.6**	**615.8**	**626.1**	**68.5%**
Intl. aviation bunkers	**169.2**	**173.9**	**202.1**	**224.9**	**258.7**	**290.3**	**354.2**	**421.0**	**457.4**	**489.5**	**504.3**	**94.9%**
Non-OECD Total [2]	**1 489.3**	**2 077.1**	**2 674.7**	**2 735.1**	**3 034.4**	**2 995.8**	**3 343.3**	**3 833.1**	**4 513.6**	**4 988.3**	**5 129.6**	**69.1%**
OECD Total [3]	**4 655.9**	**4 989.4**	**5 155.7**	**4 506.1**	**4 830.9**	**5 077.5**	**5 335.2**	**5 454.1**	**4 898.7**	**4 757.4**	**4 713.3**	**-2.4%**
Canada	208.0	230.2	243.5	184.4	203.9	204.2	227.2	257.0	260.9	269.0	266.0	30.4%
Chile	14.6	12.4	15.1	13.1	18.7	27.2	30.3	33.6	42.3	44.6	43.6	133.4%
Mexico	69.0	103.4	156.8	178.9	193.4	213.1	251.3	255.1	251.6	257.3	245.4	26.9%
United States	1 986.9	2 067.5	2 076.4	1 902.7	1 951.2	1 960.1	2 196.6	2 316.1	2 055.2	1 991.0	2 035.8	4.3%
OECD Americas	**2 278.5**	**2 413.5**	**2 491.9**	**2 279.0**	**2 367.2**	**2 404.7**	**2 705.3**	**2 861.7**	**2 610.0**	**2 561.9**	**2 590.8**	**9.4%**
Australia	64.1	77.9	83.8	77.0	85.5	90.4	99.8	109.1	119.9	133.9	131.8	54.2%
Israel	13.7	16.4	18.8	17.0	23.3	28.4	29.3	26.1	28.9	24.1	21.9	-6.2%
Japan	540.7	625.0	620.5	528.6	628.3	648.9	603.1	570.2	460.9	496.1	453.6	-27.8%
Korea	30.7	45.6	75.0	71.7	132.9	226.5	205.3	185.3	163.0	156.1	151.0	13.6%
New Zealand	9.3	11.5	10.7	9.6	11.8	14.1	15.7	17.8	17.3	17.7	18.0	52.9%
OECD Asia Oceania	**658.5**	**776.5**	**808.8**	**703.9**	**881.8**	**1 008.3**	**953.3**	**908.5**	**789.9**	**827.9**	**776.2**	**-12.0%**
Austria	26.9	28.5	31.9	25.4	27.2	29.5	30.8	37.6	32.5	30.8	29.8	9.4%
Belgium	62.4	59.5	64.0	44.8	46.1	51.3	51.7	52.3	50.2	45.9	44.5	-3.4%
Czech Republic	19.6	27.6	30.2	27.1	22.0	17.0	17.4	21.5	19.8	18.3	19.1	-13.4%
Denmark	49.3	44.3	38.6	30.3	22.0	24.3	23.4	21.7	19.8	16.5	16.1	-26.9%
Estonia	..	..	..	..	9.0	3.5	2.7	3.1	3.0	3.0	3.0	-66.9%
Finland	31.2	33.1	33.0	26.0	27.0	25.3	24.7	25.3	24.3	21.8	20.4	-24.7%
France	265.4	284.0	285.4	206.2	214.1	218.7	223.5	220.4	195.7	180.3	174.2	-18.6%
Germany	381.5	386.6	372.0	308.9	303.6	323.8	301.8	276.5	249.3	248.2	239.3	-21.2%
Greece	18.3	23.3	31.9	29.6	36.2	39.1	45.5	51.2	42.9	32.6	33.3	-8.2%
Hungary	18.4	26.7	29.0	26.1	21.9	18.8	16.4	15.2	14.7	13.8	15.5	-29.3%
Iceland	1.4	1.6	1.7	1.4	1.6	1.7	1.7	1.8	1.6	1.6	1.7	3.3%
Ireland	12.7	13.9	16.1	11.2	12.1	15.8	23.1	25.3	20.3	17.0	16.9	39.4%
Italy	232.6	244.6	264.5	225.1	244.7	253.0	242.4	227.2	177.6	146.6	145.6	-40.5%
Luxembourg	4.1	3.8	3.0	2.9	4.5	4.8	5.9	8.2	7.4	7.3	6.9	54.5%
Netherlands	65.2	50.4	63.9	42.0	44.6	51.9	52.6	54.9	51.1	48.2	47.0	5.4%
Norway	19.2	19.2	21.2	19.0	19.1	19.2	20.2	22.0	23.1	21.2	20.6	8.1%
Poland	21.4	32.8	41.6	37.8	33.4	39.4	49.7	56.6	65.3	56.7	56.4	68.6%
Portugal	11.9	16.4	22.1	21.0	27.1	33.0	37.9	38.7	29.8	24.4	23.8	-12.2%
Slovak Republic	12.0	14.4	17.9	13.8	11.6	6.6	5.4	8.4	9.1	8.7	8.0	-30.7%
Slovenia	..	..	..	..	5.1	6.8	6.8	7.2	7.5	6.8	6.6	30.8%
Spain	80.2	115.1	134.0	97.7	117.1	137.3	160.1	184.2	157.3	130.6	129.7	10.7%
Sweden	76.5	72.0	67.3	46.9	39.5	44.8	40.7	35.4	31.8	25.8	26.4	-33.0%
Switzerland	37.0	34.8	36.0	35.9	33.2	32.9	32.6	33.4	32.0	30.2	27.1	-18.4%
Turkey	25.3	38.4	43.9	48.8	61.2	77.3	80.7	74.9	68.9	77.3	81.3	32.8%
United Kingdom	246.4	228.3	205.8	195.3	197.8	188.9	178.7	181.0	164.0	154.0	153.2	-22.6%
OECD Europe [3]	**1 718.9**	**1 799.4**	**1 855.0**	**1 523.2**	**1 581.9**	**1 664.5**	**1 676.6**	**1 683.9**	**1 498.8**	**1 367.6**	**1 346.3**	**-14.9%**
European Union - 28	*..*	*..*	*..*	*..*	*1 590.4*	*1 610.9*	*1 607.4*	*1 624.2*	*1 437.3*	*1 296.7*	*1 276.7*	*-19.7%*
G7	*3 861.7*	*4 066.2*	*4 068.1*	*3 551.2*	*3 743.7*	*3 797.7*	*3 973.3*	*4 048.4*	*3 563.5*	*3 485.1*	*3 467.6*	*-7.4%*
G8	*..*	*..*	*..*	*..*	*4 362.2*	*4 138.6*	*4 291.3*	*4 342.3*	*3 861.0*	*3 800.1*	*3 803.6*	*-12.8%*
G20	*..*	*..*	*..*	*..*	*6 348.6*	*6 548.7*	*7 081.3*	*7 498.3*	*7 421.8*	*7 603.2*	*7 695.3*	*21.2%*

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

CO_2 emissions from fuel combustion - oil

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**1 489.3**	**2 077.1**	**2 674.7**	**2 735.1**	**3 034.4**	**2 995.8**	**3 343.3**	**3 833.1**	**4 513.6**	**4 988.3**	**5 129.6**	**69.1%**
Albania	2.4	2.2	3.5	2.4	2.8	1.7	3.0	3.7	3.4	3.3	3.7	34.7%
Armenia	..	..	..	..	10.5	0.7	0.8	1.0	1.0	0.9	0.9	-91.4%
Azerbaijan	..	..	..	..	20.9	16.8	16.9	11.9	7.4	10.0	10.0	-52.2%
Belarus	..	..	..	..	65.6	27.7	17.3	15.7	18.1	18.1	17.6	-73.2%
Bosnia and Herzegovina	..	..	..	..	5.4	1.5	3.2	3.2	4.5	4.1	4.2	-21.9%
Bulgaria	29.2	35.1	38.7	28.0	25.8	13.3	10.1	11.8	10.9	9.6	10.4	-59.6%
Croatia	..	..	..	..	12.7	10.6	11.0	12.6	10.4	9.0	8.9	-30.0%
Cyprus [2]	1.7	1.7	2.6	2.6	3.6	5.0	6.2	6.9	7.1	5.6	5.7	57.0%
FYR of Macedonia	..	..	..	..	3.0	2.3	2.7	2.6	2.6	2.6	2.6	-11.7%
Georgia	..	..	..	..	19.3	5.9	2.4	2.1	2.8	2.7	2.9	-85.1%
Gibraltar	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.5	0.5	0.5	275.9%
Kazakhstan	..	..	..	..	53.6	32.6	22.0	25.6	29.7	46.6	33.4	-37.7%
Kosovo	..	..	..	..	..	..	1.0	1.4	1.6	1.7	1.6	..
Kyrgyzstan	..	..	..	..	9.0	1.4	1.2	1.4	2.7	4.8	3.7	-58.3%
Latvia	..	..	..	..	10.4	5.5	3.8	4.0	4.1	3.6	3.7	-64.3%
Lithuania	..	..	..	..	19.7	8.9	6.4	7.1	6.8	6.4	6.7	-66.1%
Malta	0.7	0.7	1.0	0.7	1.6	2.3	2.1	2.7	2.6	2.4	2.3	48.2%
Republic of Moldova	..	..	..	..	15.0	3.1	1.2	1.9	2.2	2.2	2.2	-85.4%
Montenegro	..	..	..	..	..	..	..	0.8	0.8	0.7	0.7	..
Romania	29.8	38.1	50.5	40.2	49.8	32.0	26.6	27.1	22.3	22.9	23.4	-53.1%
Russian Federation	..	..	..	..	618.5	340.8	318.0	293.9	297.5	315.0	336.0	-45.7%
Serbia	..	..	..	..	13.7	4.8	4.1	11.5	9.6	8.3	8.4	-39.2%
Tajikistan	..	..	..	..	5.2	1.2	0.7	0.9	1.6	2.0	2.5	-52.4%
Turkmenistan	..	..	..	..	14.7	6.9	11.1	14.6	16.2	18.0	18.8	28.2%
Ukraine	..	..	..	..	185.1	72.5	31.9	35.8	37.3	35.9	31.0	-83.3%
Uzbekistan	..	..	..	..	24.9	18.5	17.8	13.3	10.2	7.9	7.4	-70.3%
Former Soviet Union [3]	635.5	937.1	1 119.7	1 102.5	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	23.8	29.9	35.6	34.5	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**723.1**	**1 044.7**	**1 251.7**	**1 211.1**	**1 190.8**	**616.3**	**521.6**	**514.0**	**513.8**	**544.8**	**549.3**	**-53.9%**
Algeria	5.8	8.6	14.1	19.2	23.7	22.7	24.9	31.4	43.7	52.1	54.0	128.0%
Angola	1.5	1.8	2.5	2.6	2.9	2.8	3.5	4.9	13.7	17.3	18.7	548.3%
Benin	0.3	0.5	0.4	0.5	0.3	0.2	1.4	2.7	4.6	5.2	5.6	+
Botswana	..	..	..	0.5	1.0	1.2	1.7	2.0	2.6	2.9	3.0	203.9%
Cameroon	0.7	1.0	1.7	2.4	2.6	2.5	2.8	2.9	4.6	5.1	5.0	89.1%
Congo	0.6	0.6	0.7	0.8	0.6	0.5	0.5	0.8	1.6	2.1	2.2	240.8%
Côte d'Ivoire	2.4	3.0	3.4	3.0	2.7	3.2	3.4	2.9	3.1	4.8	5.5	102.3%
Dem. Rep. of the Congo	1.6	1.8	2.3	2.4	2.1	1.1	0.9	1.3	1.8	3.5	4.7	123.2%
Egypt	18.5	23.2	35.8	54.9	61.6	57.7	66.8	78.5	100.8	89.6	86.1	39.7%
Eritrea	..	..	..	..	..	0.8	0.6	0.6	0.5	0.6	0.6	..
Ethiopia	1.3	1.2	1.4	1.4	2.2	2.3	3.2	4.5	5.8	7.8	8.3	284.4%
Gabon	0.5	0.8	1.3	1.6	0.7	1.1	1.2	1.4	2.0	2.8	2.8	305.7%
Ghana	1.9	2.3	2.2	2.1	2.5	3.2	5.0	6.4	9.6	13.0	11.9	369.4%
Kenya	3.0	3.3	4.4	4.4	5.1	5.3	7.5	7.1	10.6	10.9	11.0	114.7%
Libya	1.6	6.2	12.3	15.0	17.7	26.0	29.9	34.6	37.9	35.6	36.7	107.1%
Mauritius	0.3	0.4	0.6	0.5	1.0	1.4	1.8	2.1	2.0	2.1	2.1	109.1%
Morocco	5.3	7.8	11.9	13.4	15.3	19.2	18.9	25.6	33.6	36.3	34.8	126.7%
Mozambique	1.5	1.2	1.7	1.3	0.9	1.0	1.3	1.5	2.2	2.6	2.9	205.9%
Namibia	..	..	..	..	..	1.8	1.9	2.4	3.0	3.4	3.6	..
Niger	..	..	..	..	..	..	0.5	0.5	1.1	1.5	1.6	..
Nigeria	4.8	9.1	22.0	24.6	21.0	23.5	29.1	37.7	36.4	35.3	31.7	51.1%
Senegal	1.2	1.6	2.0	2.1	2.1	2.4	3.5	4.2	4.7	5.1	5.3	150.2%
South Africa	27.8	34.4	33.9	36.9	43.1	48.2	49.1	57.4	62.6	72.6	69.1	60.3%
South Sudan	..	..	..	..	..	..	..	..	..	1.5	1.5	..
Sudan	3.2	3.2	3.7	4.0	5.3	4.3	5.5	9.9	15.0	13.5	13.3	152.0%
United Rep. of Tanzania	1.4	1.4	1.5	1.4	1.7	2.4	2.4	4.2	4.6	8.2	8.0	380.9%
Togo	0.3	0.3	0.4	0.3	0.6	0.6	0.9	1.0	2.1	1.7	1.7	199.5%
Tunisia	3.4	4.0	6.8	7.2	9.0	9.1	10.9	11.7	11.4	11.3	12.7	40.4%
Zambia	1.4	2.4	1.8	1.6	1.7	1.7	1.4	1.8	1.6	2.5	2.8	67.2%
Zimbabwe	1.5	2.0	1.7	2.0	2.6	3.6	3.0	2.1	1.9	4.2	3.7	45.7%
Other Africa	8.3	9.4	11.7	10.2	11.8	13.6	14.9	17.8	22.1	26.5	27.6	134.2%
Africa	**100.1**	**131.5**	**182.0**	**216.2**	**241.9**	**263.2**	**298.3**	**361.7**	**447.1**	**481.3**	**478.6**	**97.9%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
3. Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions from fuel combustion - oil

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Bangladesh	2.2	3.3	4.6	4.4	4.9	7.1	7.9	11.0	10.9	14.9	16.2	228.3%
Brunei Darussalam	0.2	0.2	0.5	0.6	0.7	1.1	1.2	1.3	1.7	1.9	1.9	156.5%
Cambodia	..	..	..	..	..	1.5	2.0	2.6	4.6	5.0	5.2	..
DPR of Korea	2.6	4.3	8.1	7.5	8.0	4.0	3.1	2.9	2.6	2.7	2.6	-67.1%
India	52.8	58.9	80.0	109.9	151.1	201.3	276.9	307.7	395.9	446.4	468.2	209.9%
Indonesia	24.6	36.8	61.6	70.4	91.4	130.3	157.4	180.1	197.2	207.5	213.1	133.2%
Malaysia	12.7	16.1	23.3	26.9	37.6	48.8	56.7	64.6	68.2	83.3	86.9	131.4%
Mongolia	..	..	..	2.2	2.4	1.1	1.3	1.7	2.5	3.7	3.5	44.5%
Myanmar	3.8	3.0	3.9	3.5	2.1	4.0	5.4	6.2	3.3	8.1	12.3	499.0%
Nepal	0.2	0.2	0.3	0.5	0.7	1.5	2.1	2.1	2.9	3.5	4.0	450.4%
Pakistan	8.4	10.5	12.7	20.7	30.7	45.6	58.2	49.5	62.5	69.9	73.2	138.0%
Philippines	22.9	28.8	31.8	22.9	33.0	50.3	48.2	42.1	40.1	40.2	43.1	30.7%
Singapore	6.0	8.4	12.5	16.4	28.6	34.0	38.9	23.8	26.5	23.0	20.5	-28.2%
Sri Lanka	2.8	2.6	3.6	3.5	3.7	5.4	10.5	13.1	12.1	11.6	12.7	247.0%
Chinese Taipei	18.0	30.0	53.2	41.1	65.4	82.2	89.3	83.3	68.7	59.9	59.9	-8.4%
Thailand	15.8	20.6	31.8	28.5	52.8	89.5	79.4	91.5	83.2	94.8	95.6	81.2%
Viet Nam	10.6	6.7	5.5	5.8	8.2	13.3	23.6	34.1	46.8	39.2	43.6	429.8%
Other Asia	5.6	7.4	8.6	8.0	8.9	8.3	9.5	13.3	16.9	33.3	35.3	296.8%
Asia (excl. China)	**189.2**	**237.6**	**342.1**	**372.8**	**530.1**	**729.2**	**871.5**	**930.9**	**1 046.5**	**1 149.0**	**1 197.8**	**126.0%**
People's Rep. of China	113.4	193.5	234.2	225.0	278.1	400.4	530.4	768.4	1 007.1	1 152.2	1 186.9	326.7%
Hong Kong, China	9.1	10.8	14.4	9.3	8.4	11.6	16.5	8.4	8.8	8.7	8.7	4.0%
China	**122.5**	**204.3**	**248.6**	**234.3**	**286.5**	**412.0**	**546.9**	**776.8**	**1 016.0**	**1 160.9**	**1 195.7**	**317.3%**
Argentina	67.0	64.6	70.3	53.7	52.4	60.2	64.4	66.4	80.3	81.3	87.6	67.1%
Bolivia	2.0	2.9	3.7	3.3	3.7	4.5	4.7	5.7	8.0	10.0	10.8	191.0%
Brazil	80.9	121.6	151.1	126.1	150.9	187.4	229.5	227.8	266.5	317.1	330.1	118.7%
Colombia	18.0	18.4	20.2	21.9	26.0	32.1	29.2	28.7	30.9	38.5	39.2	50.9%
Costa Rica	1.3	1.7	2.2	1.9	2.6	4.4	4.5	5.3	6.3	6.8	6.9	164.4%
Cuba	20.3	23.6	29.9	31.5	33.4	22.0	26.1	23.5	30.6	27.4	27.2	-18.6%
Curaçao [1]	14.5	10.2	8.7	4.5	2.7	2.6	5.6	6.0	4.4	4.4	4.7	78.2%
Dominican Republic	3.5	5.2	6.3	5.7	7.4	11.0	18.1	15.2	14.6	14.2	13.2	79.6%
Ecuador	3.5	5.9	10.4	11.7	13.3	16.7	18.1	23.3	31.1	34.5	37.3	180.3%
El Salvador	1.3	1.9	1.6	1.6	2.1	4.6	5.2	6.2	5.8	5.7	5.9	179.0%
Guatemala	2.3	3.0	4.2	3.2	3.2	5.9	8.1	9.6	9.1	10.8	14.4	348.8%
Haiti	0.4	0.4	0.6	0.6	0.9	0.9	1.4	2.0	2.1	2.2	2.8	205.3%
Honduras	1.1	1.3	1.7	1.7	2.2	3.6	4.2	6.6	6.9	7.7	8.3	279.6%
Jamaica	5.5	7.4	6.5	4.7	7.1	8.3	9.7	10.1	6.8	7.1	7.0	-2.1%
Nicaragua	1.5	1.8	1.8	1.8	1.8	2.5	3.5	4.0	4.3	4.3	4.5	147.1%
Panama	2.5	3.1	2.9	2.6	2.5	4.0	4.7	6.8	8.8	9.1	9.8	292.9%
Paraguay	0.6	0.7	1.3	1.4	1.9	3.5	3.3	3.5	4.7	4.9	5.2	168.9%
Peru	14.2	16.8	18.7	16.0	17.5	21.3	22.8	21.1	24.6	26.6	25.9	47.9%
Suriname	..	..	..	..	..	..	1.5	1.7	1.7	2.0	2.0	..
Trinidad and Tobago	2.6	2.3	2.5	2.2	2.1	2.2	2.6	3.9	4.8	4.6	4.4	116.2%
Uruguay	5.0	5.3	5.3	3.0	3.6	4.4	5.0	5.0	5.8	7.0	6.2	72.1%
Venezuela	28.4	35.3	56.2	53.1	54.1	58.7	63.9	83.4	111.0	105.4	106.3	96.6%
Other Non-OECD Americas	8.1	10.8	10.1	9.2	12.3	13.2	12.9	12.8	14.9	18.2	18.5	50.5%
Non-OECD Americas	**284.4**	**344.5**	**416.2**	**361.4**	**403.6**	**474.0**	**548.8**	**578.7**	**684.0**	**749.9**	**778.1**	**92.8%**
Bahrain	1.1	1.1	1.5	1.6	2.0	2.3	2.4	3.5	3.8	3.9	4.0	103.3%
Islamic Republic of Iran	33.0	57.8	77.9	126.5	136.2	166.4	190.8	223.3	221.5	249.2	232.6	70.8%
Iraq	8.5	12.4	23.8	36.3	48.6	89.1	64.4	69.7	93.7	123.0	128.6	164.6%
Jordan	1.4	2.2	4.3	7.5	9.1	11.8	13.9	14.9	13.5	19.4	21.9	141.7%
Kuwait	4.1	5.2	13.2	27.0	16.2	14.5	27.9	41.1	49.1	48.6	50.6	211.8%
Lebanon	4.6	5.7	6.6	6.6	5.5	12.3	13.5	13.9	17.1	20.1	21.7	293.9%
Oman	0.3	0.7	1.5	3.5	5.2	7.9	8.7	9.9	11.3	16.1	17.6	237.4%
Qatar	0.3	0.7	1.4	1.6	1.9	2.4	2.8	6.6	14.1	14.7	17.1	800.6%
Saudi Arabia	10.0	17.1	78.5	89.0	107.9	137.0	167.8	196.5	288.2	325.0	354.0	228.2%
Syrian Arab Republic	5.4	8.2	12.2	19.2	24.0	27.1	29.6	44.5	40.2	20.9	19.2	-19.8%
United Arab Emirates	0.4	1.6	9.5	15.7	18.6	20.9	21.0	28.3	33.5	39.9	44.2	137.7%
Yemen	1.2	1.8	3.5	4.9	6.3	9.4	13.3	18.8	20.0	21.4	18.7	196.9%
Middle East	**70.1**	**114.4**	**234.0**	**339.3**	**381.4**	**501.0**	**556.1**	**671.0**	**806.2**	**902.4**	**930.2**	**143.9%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

CO_2 emissions from fuel combustion - natural gas

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World [1]	**2 043.6**	**2 249.4**	**2 709.2**	**3 070.1**	**3 676.6**	**3 982.7**	**4 550.4**	**5 205.1**	**6 026.5**	**6 355.6**	**6 362.8**	**73.1%**
Annex I Parties	*..*	*..*	*..*	*..*	*2 995.7*	*3 115.8*	*3 400.4*	*3 566.3*	*3 788.2*	*3 850.6*	*3 750.1*	*25.2%*
Annex II Parties	*1 443.2*	*1 500.2*	*1 652.2*	*1 600.4*	*1 757.0*	*2 088.6*	*2 385.1*	*2 457.3*	*2 657.9*	*2 701.3*	*2 664.2*	*51.6%*
North America	*1 263.7*	*1 149.2*	*1 181.6*	*1 057.5*	*1 113.6*	*1 287.1*	*1 396.3*	*1 347.2*	*1 458.8*	*1 588.9*	*1 634.0*	*46.7%*
Europe	*166.6*	*322.5*	*401.0*	*431.9*	*489.8*	*620.3*	*770.7*	*874.6*	*908.6*	*774.2*	*688.9*	*40.6%*
Asia Oceania	*12.8*	*28.6*	*69.6*	*110.9*	*153.5*	*181.2*	*218.1*	*235.4*	*290.5*	*338.3*	*341.3*	*122.3%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 232.5*	*1 015.0*	*986.4*	*1 056.7*	*1 057.1*	*1 061.5*	*992.2*	*-19.5%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*680.9*	*866.9*	*1 150.0*	*1 638.8*	*2 238.3*	*2 505.0*	*2 612.7*	*283.7%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*942.0*	*986.9*	*1 120.9*	*1 260.4*	*1 283.5*	*1 129.9*	*1 026.4*	*9.0%*
Intl. marine bunkers	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Intl. aviation bunkers	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Non-OECD Total [2]	**558.7**	**695.0**	**973.0**	**1 368.2**	**1 795.6**	**1 740.9**	**1 935.4**	**2 424.8**	**2 971.5**	**3 218.6**	**3 278.4**	**82.6%**
OECD Total [3]	**1 484.9**	**1 554.5**	**1 736.2**	**1 701.9**	**1 881.1**	**2 241.8**	**2 615.1**	**2 780.3**	**3 055.0**	**3 137.0**	**3 084.4**	**64.0%**
Canada	68.2	87.8	96.5	108.6	119.1	143.3	162.5	167.0	172.1	203.6	213.9	79.6%
Chile	1.3	1.1	1.4	1.6	0.9	1.0	6.7	10.6	8.7	9.2	7.8	732.6%
Mexico	19.6	24.5	40.4	50.5	48.4	56.3	82.0	109.1	135.1	140.6	137.4	184.0%
United States	1 195.5	1 061.4	1 085.1	949.0	994.6	1 143.8	1 233.8	1 180.2	1 286.6	1 385.2	1 420.1	42.8%
OECD Americas	**1 284.6**	**1 174.7**	**1 223.5**	**1 109.7**	**1 163.0**	**1 344.4**	**1 485.0**	**1 466.9**	**1 602.6**	**1 738.7**	**1 779.2**	**53.0%**
Australia	4.0	8.6	16.3	23.8	32.3	37.4	43.6	54.0	66.6	72.1	73.6	128.1%
Israel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	10.2	15.7	16.8	+
Japan	8.6	19.3	51.5	81.9	114.7	137.4	165.8	174.5	216.4	258.8	260.2	126.8%
Korea	-	-	-	-	6.4	19.5	40.1	64.1	91.2	110.7	99.8	+
New Zealand	0.2	0.6	1.9	5.3	6.6	6.4	8.7	6.9	7.5	7.4	7.5	14.7%
OECD Asia Oceania	**12.9**	**28.6**	**69.6**	**110.9**	**159.9**	**200.7**	**258.3**	**302.7**	**391.9**	**464.6**	**457.9**	**186.3%**
Austria	5.4	7.1	8.3	9.5	11.4	14.4	14.6	18.3	18.1	15.5	14.0	23.1%
Belgium	11.3	17.4	19.6	16.2	18.3	23.6	29.7	32.0	37.7	31.6	27.5	50.2%
Czech Republic	1.9	3.1	5.6	9.2	11.5	14.6	17.1	17.9	17.3	15.8	14.0	21.7%
Denmark	-	0.0	0.0	1.5	4.2	7.4	10.4	10.5	10.3	7.7	6.6	59.2%
Estonia	..	..	..	..	2.4	1.1	1.3	1.6	1.3	1.1	1.0	-58.1%
Finland	-	1.5	1.7	1.9	5.1	6.6	8.0	8.4	8.3	6.0	5.4	5.8%
France	17.7	30.7	44.2	51.1	53.3	62.8	77.9	90.1	94.0	88.1	73.5	37.8%
Germany	38.4	84.1	111.2	101.1	115.2	144.9	155.8	168.4	176.6	163.8	147.4	27.9%
Greece	-	-	-	0.0	0.1	0.1	3.7	5.2	6.7	6.8	5.0	+
Hungary	6.0	9.7	16.2	18.0	19.0	19.8	21.2	26.6	21.8	17.2	15.3	-19.8%
Iceland	-	-	-	-	-	-	-	-	-	-	-	-
Ireland	-	-	1.7	4.5	3.3	4.4	7.1	8.0	10.8	8.7	8.4	154.5%
Italy	24.1	41.0	46.3	57.0	87.0	101.8	133.1	162.4	157.3	132.7	117.2	34.7%
Luxembourg	0.0	0.8	1.0	0.7	1.0	1.3	1.6	2.8	2.8	2.1	2.0	97.3%
Netherlands	47.3	69.1	67.0	72.3	67.0	76.7	77.0	78.3	87.1	72.8	63.0	-6.0%
Norway	-	0.4	2.0	2.8	4.6	8.1	7.4	9.3	11.3	10.2	10.8	132.4%
Poland	10.3	11.5	15.2	15.6	15.5	15.4	17.8	23.2	25.5	26.5	25.2	62.2%
Portugal	-	-	-	-	-	-	4.6	8.7	10.5	8.0	7.6	x
Slovak Republic	2.7	4.4	4.9	6.4	11.7	11.8	13.2	12.6	10.9	9.4	7.8	-33.8%
Slovenia	..	..	..	..	1.8	1.5	1.6	1.9	1.8	1.6	1.5	-19.0%
Spain	0.7	1.8	3.1	4.5	10.0	16.9	34.1	66.8	71.6	59.1	54.1	441.4%
Sweden	-	-	-	0.2	1.3	1.6	1.6	1.7	3.0	2.0	1.7	37.1%
Switzerland	0.0	1.0	1.9	2.9	3.8	5.1	5.7	6.5	7.1	7.3	6.3	64.9%
Turkey	-	-	-	0.1	6.3	12.2	28.9	52.3	73.3	87.8	93.6	+
United Kingdom	21.7	67.5	92.8	105.7	104.1	144.5	198.3	197.2	195.4	151.9	138.2	32.8%
OECD Europe [3]	**187.4**	**351.2**	**443.0**	**481.3**	**558.2**	**696.7**	**871.8**	**1 010.7**	**1 060.5**	**933.7**	**847.2**	**51.8%**
European Union - 28	*..*	*..*	*..*	*..*	*641.3*	*732.0*	*875.3*	*989.1*	*1 009.4*	*864.6*	*770.1*	*20.1%*
G7	*1 374.2*	*1 391.8*	*1 527.7*	*1 454.3*	*1 588.0*	*1 878.6*	*2 127.3*	*2 139.8*	*2 298.6*	*2 384.1*	*2 370.5*	*49.3%*
G8	*..*	*..*	*..*	*..*	*2 425.4*	*2 587.9*	*2 822.4*	*2 893.4*	*3 101.1*	*3 218.7*	*3 158.9*	*30.2%*
G20	*..*	*..*	*..*	*..*	*2 950.6*	*3 206.0*	*3 604.9*	*3 942.9*	*4 485.8*	*4 713.1*	*4 660.2*	*57.9%*

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

CO_2 emissions from fuel combustion - natural gas

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**558.7**	**695.0**	**973.0**	**1 368.2**	**1 795.6**	**1 740.9**	**1 935.4**	**2 424.8**	**2 971.5**	**3 218.6**	**3 278.4**	**82.6%**
Albania	0.2	0.6	0.8	0.8	0.5	0.1	0.0	0.0	0.0	0.0	0.1	-87.8%
Armenia	..	..	..	..	8.4	2.7	2.6	3.1	3.0	4.4	4.3	-48.5%
Azerbaijan	..	..	..	..	32.2	15.5	10.4	17.1	16.1	19.4	20.7	-35.8%
Belarus	..	..	..	..	24.7	23.7	30.9	36.8	39.4	36.8	36.3	47.4%
Bosnia and Herzegovina	..	..	..	..	0.9	0.3	0.5	0.7	0.5	0.4	0.4	-62.1%
Bulgaria	0.6	2.3	7.5	10.8	11.0	9.2	6.0	5.7	4.8	5.0	4.9	-55.2%
Croatia	..	..	..	..	4.2	3.4	4.0	4.5	5.1	4.2	3.5	-15.1%
Cyprus [2]	-	-	-	-	-	-	-	-	-	-	-	-
FYR of Macedonia	..	..	..	..	-	-	0.1	0.1	0.2	0.3	0.3	x
Georgia	..	..	..	..	10.7	2.2	2.2	1.9	2.1	2.7	3.6	-66.1%
Gibraltar	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan	..	..	..	..	24.9	23.6	15.3	28.6	53.8	56.8	60.1	140.9%
Kosovo	..	..	..	..	..	..	-	-	-	-	-	..
Kyrgyzstan	..	..	..	..	3.6	1.7	1.3	1.2	0.5	0.6	0.5	-86.8%
Latvia	..	..	..	..	5.6	2.3	2.5	3.2	3.4	2.8	2.5	-55.1%
Lithuania	..	..	..	..	9.4	3.5	3.5	4.4	4.6	3.2	2.6	-71.7%
Malta	-	-	-	-	-	-	-	-	-	-	-	-
Republic of Moldova	..	..	..	..	7.6	6.5	4.8	5.5	5.3	3.9	4.7	-38.7%
Montenegro	..	..	..	..	..	..	..	-	-	-	-	..
Romania	52.3	62.9	76.0	75.0	67.7	42.3	29.5	28.7	22.6	21.1	19.9	-70.6%
Russian Federation	..	..	..	..	837.4	709.4	695.1	753.6	802.5	834.6	788.4	-5.9%
Serbia	..	..	..	..	6.1	2.8	3.2	4.0	3.8	4.1	3.3	-45.9%
Tajikistan	..	..	..	..	3.3	1.2	1.5	1.3	0.4	0.6	0.6	-80.8%
Turkmenistan	..	..	..	..	28.8	26.3	25.6	33.5	40.7	47.5	48.2	67.4%
Ukraine	..	..	..	..	210.4	156.9	142.7	136.1	96.0	82.2	69.2	-67.1%
Uzbekistan	..	..	..	..	75.9	71.6	90.9	89.2	81.4	82.3	84.0	10.6%
Former Soviet Union [3]	421.4	503.7	677.7	988.6	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	1.3	2.1	4.9	11.0	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**475.8**	**571.6**	**766.9**	**1 086.2**	**1 373.2**	**1 105.2**	**1 072.7**	**1 159.2**	**1 186.2**	**1 212.7**	**1 158.0**	**-15.7%**
Algeria	2.4	4.6	13.5	21.8	26.2	31.2	35.9	44.9	51.3	61.4	68.7	162.3%
Angola	0.1	0.1	0.2	0.2	1.0	1.1	1.1	1.2	1.4	0.8	0.6	-42.6%
Benin	-	-	-	-	-	-	-	-	-	-	-	-
Botswana	..	..	..	-	-	-	-	-	-	-	-	-
Cameroon	-	-	-	-	-	-	-	-	0.5	0.7	1.0	x
Congo	0.0	0.0	-	0.0	-	-	-	0.0	0.2	0.4	0.5	x
Côte d'Ivoire	-	-	-	-	-	0.1	3.0	2.9	3.1	3.8	3.9	x
Dem. Rep. of the Congo	-	-	-	-	-	-	-	-	0.0	-	0.0	x
Egypt	0.2	0.1	2.8	6.6	13.4	20.8	29.8	62.8	73.8	83.7	85.6	539.3%
Eritrea	..	..	..	..	..	-	-	-	-	-	-	..
Ethiopia	-	-	-	-	-	-	-	-	-	-	-	-
Gabon	-	-	0.0	0.1	0.2	0.3	0.2	0.3	0.6	0.6	0.6	210.8%
Ghana	-	-	-	-	-	-	-	-	0.8	0.6	1.2	x
Kenya	-	-	-	-	-	-	-	-	-	-	-	-
Libya	2.1	2.5	5.3	6.2	8.1	7.0	6.9	8.4	10.2	12.6	11.2	37.9%
Mauritius	-	-	-	-	-	-	-	-	-	-	-	-
Morocco	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.9	1.3	2.3	2.4	+
Mozambique	-	-	-	-	-	0.0	0.0	0.0	0.2	0.3	0.9	x
Namibia	..	..	..	..	..	-	-	-	-	-	-	..
Niger	..	..	..	..	..	..	-	-	-	-	-	..
Nigeria	0.4	1.0	2.9	7.0	6.9	9.3	14.7	18.7	19.3	26.4	28.4	310.6%
Senegal	-	-	-	-	0.0	0.1	0.0	0.0	0.0	0.1	0.1	514.3%
South Africa	-	-	-	-	-	-	-	-	1.9	4.0	4.0	x
South Sudan	..	..	..	..	..	..	..	..	..	-	-	..
Sudan	-	-	-	-	-	-	-	-	-	-	-	-
United Rep. of Tanzania	-	-	-	-	-	-	-	0.8	1.5	1.9	1.8	x
Togo	-	-	-	-	-	-	-	-	-	-	-	-
Tunisia	0.0	0.5	0.8	2.2	2.8	4.6	6.4	7.8	11.9	12.4	12.3	338.1%
Zambia	-	-	-	-	-	-	-	-	-	-	-	-
Zimbabwe	-	-	-	-	-	-	-	-	-	-	-	-
Other Africa	-	-	-	-	-	-	0.0	0.1	0.9	0.9	0.9	x
Africa	**5.3**	**9.0**	**25.6**	**44.3**	**58.8**	**74.4**	**98.0**	**148.9**	**179.0**	**213.1**	**224.1**	**281.3%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
3. Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

CO_2 emissions from fuel combustion - natural gas

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Bangladesh	0.3	0.6	1.5	3.1	5.4	8.1	11.7	19.0	35.8	40.9	43.0	699.4%
Brunei Darussalam	0.2	1.2	2.1	2.3	2.5	3.4	3.2	3.5	5.1	4.9	4.8	90.5%
Cambodia	..	..	..	..	..	-	-	-	-	-	-	..
DPR of Korea	-	-	-	-	-	-	-	-	-	-	-	-
India	1.0	1.3	1.8	4.7	13.1	25.0	36.2	54.3	95.7	59.9	57.3	337.1%
Indonesia	0.1	0.5	5.4	8.7	24.3	47.3	45.4	50.9	71.3	76.2	78.1	220.9%
Malaysia	0.0	0.1	0.2	4.6	6.8	24.1	48.5	63.9	63.1	66.1	72.7	975.3%
Mongolia	..	..	..	-	-	-	-	-	-	-	-	-
Myanmar	0.1	0.3	0.6	1.6	1.6	2.7	2.6	3.0	3.0	3.9	5.6	253.1%
Nepal	-	-	-	-	-	-	-	-	-	-	-	-
Pakistan	4.9	7.2	8.9	10.8	17.9	25.6	30.9	52.6	52.5	51.4	51.0	185.2%
Philippines	-	-	-	-	-	0.0	0.0	6.7	7.2	6.8	7.2	x
Singapore	0.0	0.1	0.1	0.1	0.1	3.2	2.9	13.3	16.7	20.9	22.0	+
Sri Lanka	-	-	-	-	-	-	-	-	-	-	-	-
Chinese Taipei	1.6	2.2	3.3	1.5	3.0	7.4	12.9	20.8	30.6	32.4	34.0	+
Thailand	-	-	-	6.9	11.7	20.5	40.8	60.9	74.7	83.7	83.2	609.3%
Viet Nam	-	-	-	0.1	0.0	0.4	2.6	11.0	19.1	20.0	21.0	+
Other Asia	0.5	0.5	0.2	1.2	0.6	0.5	0.5	0.5	0.9	0.6	0.7	24.4%
Asia (excl. China)	**8.7**	**14.0**	**24.2**	**45.7**	**87.1**	**168.2**	**238.2**	**360.5**	**475.4**	**467.9**	**480.7**	**452.0%**
People's Rep. of China	7.4	17.4	28.1	16.2	19.8	26.8	35.8	71.5	187.7	298.9	330.8	+
Hong Kong, China	0.1	0.1	0.2	0.4	0.8	1.2	7.1	6.5	8.0	5.7	5.5	628.8%
China	**7.4**	**17.5**	**28.3**	**16.6**	**20.6**	**28.0**	**42.9**	**78.0**	**195.6**	**304.6**	**336.3**	**+**
Argentina	12.1	17.1	21.7	30.4	43.3	52.2	70.2	77.1	87.3	93.9	97.2	124.3%
Bolivia	0.1	0.3	0.6	0.8	1.5	2.3	2.4	3.4	5.7	6.9	7.5	419.0%
Brazil	0.5	1.0	1.6	3.7	5.7	7.5	16.4	37.1	49.9	70.4	77.7	+
Colombia	2.6	3.3	5.7	7.4	7.6	8.4	12.8	14.4	18.5	19.6	19.6	159.7%
Costa Rica	-	-	-	-	-	-	-	-	-	-	-	-
Cuba	0.1	0.2	0.1	0.1	0.1	0.2	1.1	1.4	2.0	2.0	2.3	+
Curaçao [1]	-	-	-	-	-	-	-	-	-	-	-	-
Dominican Republic	-	-	-	-	-	-	-	0.4	1.5	2.1	2.1	x
Ecuador	-	-	-	-	-	-	-	0.7	1.0	1.4	1.4	x
El Salvador	-	-	-	-	-	-	-	-	-	-	-	-
Guatemala	-	-	-	-	-	-	-	-	-	-	-	-
Haiti	-	-	-	-	-	-	-	-	-	-	-	-
Honduras	-	-	-	-	-	-	-	-	-	-	-	-
Jamaica	-	-	-	-	-	-	-	-	-	-	-	-
Nicaragua	-	-	-	-	-	-	-	-	-	-	-	-
Panama	-	-	-	-	-	-	-	-	-	-	-	-
Paraguay	-	-	-	-	-	-	-	-	-	-	-	-
Peru	0.6	0.8	1.0	1.3	1.0	0.6	1.1	3.9	12.9	14.6	18.3	+
Suriname	..	..	..	..	..	..	-	-	-	-	-	..
Trinidad and Tobago	2.8	2.3	3.9	4.5	5.8	6.0	7.5	13.6	17.6	18.3	18.8	221.2%
Uruguay	-	-	-	-	-	-	0.1	0.2	0.1	0.1	0.1	x
Venezuela	16.9	19.7	26.5	31.2	37.6	47.3	51.7	53.6	59.6	49.8	47.9	27.4%
Other Non-OECD Americas	0.0	-	0.0	0.1	0.0	0.0	0.7	1.4	1.6	1.5	1.6	+
Non-OECD Americas	**35.8**	**44.7**	**61.1**	**79.5**	**102.7**	**124.6**	**164.0**	**207.1**	**257.8**	**280.6**	**294.4**	**186.8%**
Bahrain	1.8	4.1	5.7	7.5	8.7	11.2	13.4	17.1	21.7	24.4	25.7	194.9%
Islamic Republic of Iran	5.5	8.1	8.6	16.9	33.8	76.2	118.0	189.6	274.2	282.3	319.2	845.1%
Iraq	1.8	3.2	2.5	1.6	3.8	6.1	6.0	3.5	9.8	12.2	12.4	227.7%
Jordan	-	-	-	-	0.2	0.5	0.5	3.2	5.4	2.1	0.7	196.1%
Kuwait	10.0	9.9	13.2	9.7	11.6	17.8	18.4	23.6	27.8	35.5	35.5	206.7%
Lebanon	-	-	-	-	-	-	-	-	0.5	-	-	-
Oman	-	-	0.7	2.1	4.9	6.8	11.7	14.8	31.1	40.4	42.3	755.8%
Qatar	1.9	4.2	5.6	9.1	10.5	14.4	18.5	26.6	43.0	58.1	60.5	474.8%
Saudi Arabia	2.7	5.4	20.9	28.8	43.2	54.6	66.8	101.5	130.8	146.0	152.5	253.1%
Syrian Arab Republic	-	-	0.1	0.3	3.2	4.0	7.4	8.9	15.7	9.0	8.3	158.8%
United Arab Emirates	2.1	3.3	9.7	19.9	33.3	48.8	58.8	82.2	115.4	127.8	125.5	276.9%
Yemen	-	-	-	-	-	-	-	-	1.9	2.1	2.2	x
Middle East	**25.7**	**38.2**	**67.0**	**96.0**	**153.3**	**240.4**	**319.5**	**471.1**	**677.4**	**739.8**	**784.9**	**412.1%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

CO_2 emissions from international marine bunkers

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World	**353.78**	**341.07**	**357.33**	**306.76**	**371.50**	**427.75**	**498.37**	**575.67**	**668.62**	**615.80**	**626.10**	**68.5%**
Annex I Parties	*..*	*..*	*..*	*..*	*236.45*	*230.61*	*252.85*	*271.72*	*268.84*	*227.24*	*246.61*	*4.3%*
Annex II Parties	*205.15*	*219.47*	*237.59*	*173.40*	*225.92*	*227.07*	*247.08*	*262.19*	*254.54*	*200.16*	*188.73*	*-16.5%*
North America	*26.68*	*36.49*	*94.86*	*57.00*	*94.49*	*94.63*	*93.17*	*85.44*	*85.67*	*52.76*	*47.36*	*-49.9%*
Europe	*121.84*	*111.91*	*98.45*	*89.11*	*110.32*	*110.34*	*133.01*	*152.95*	*150.63*	*131.48*	*126.69*	*14.8%*
Asia Oceania	*56.64*	*71.08*	*44.28*	*27.29*	*21.11*	*22.10*	*20.90*	*23.79*	*18.24*	*15.92*	*14.69*	*-30.4%*
Annex I EIT	*..*	*..*	*..*	*..*	*9.88*	*2.60*	*1.82*	*3.17*	*7.91*	*19.68*	*50.05*	*406.7%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*135.05*	*197.14*	*245.51*	*303.95*	*399.78*	*388.56*	*379.49*	*181.0%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*116.71*	*116.12*	*140.51*	*161.91*	*161.11*	*141.46*	*136.59*	*17.0%*
Non-OECD Total [1]	**144.31**	**118.14**	**115.91**	**127.96**	**137.09**	**173.45**	**211.60**	**268.22**	**377.54**	**379.94**	**401.59**	**192.9%**
OECD Total [2]	**209.48**	**222.92**	**241.43**	**178.80**	**234.41**	**254.31**	**286.77**	**307.45**	**291.08**	**235.86**	**224.52**	**-4.2%**
Canada	3.10	2.61	4.76	1.19	2.90	3.20	3.37	2.86	2.20	1.40	1.18	-59.1%
Chile	0.61	0.37	0.27	0.09	0.58	1.13	1.96	3.33	1.30	0.67	0.64	10.9%
Mexico	0.26	0.39	1.01	1.34	..	2.58	3.87	2.73	2.53	2.53	2.56	..
United States	23.58	33.88	90.10	55.82	91.60	91.43	89.80	82.58	83.47	51.35	46.17	-49.6%
OECD Americas	**27.54**	**37.25**	**96.15**	**58.44**	**95.07**	**98.33**	**99.01**	**91.50**	**89.49**	**55.96**	**50.56**	**-46.8%**
Australia	5.15	5.08	3.71	2.31	2.16	2.82	2.99	2.76	2.18	2.02	2.33	7.9%
Israel	..	..	..	0.35	0.38	0.65	0.59	0.81	1.07	0.78	0.38	-0.4%
Japan	50.44	64.91	39.38	24.24	17.90	18.15	17.14	20.02	14.98	12.92	11.44	-36.1%
Korea	1.54	0.17	0.31	1.71	5.32	21.57	30.77	33.58	29.04	26.88	27.33	413.5%
New Zealand	1.05	1.09	1.19	0.74	1.05	1.14	0.76	1.00	1.08	0.98	0.93	-12.1%
OECD Asia Oceania	**58.18**	**71.25**	**44.60**	**29.35**	**26.81**	**44.32**	**52.25**	**58.18**	**48.35**	**43.58**	**42.40**	**58.1%**
Austria	-	-	-	-	0.05	0.06	0.07	0.08	0.07	0.07	0.06	25.0%
Belgium	8.16	8.76	7.63	7.41	13.04	12.43	17.19	24.64	24.54	19.87	17.34	33.1%
Czech Republic	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	2.11	1.69	1.34	1.36	3.05	5.01	4.08	2.43	2.19	1.99	2.34	-23.4%
Estonia	..	..	..	..	0.57	0.28	0.33	0.38	0.70	1.34	1.03	78.8%
Finland	0.24	0.31	1.86	1.47	1.80	1.05	2.12	1.61	0.67	0.41	0.31	-83.0%
France	12.89	14.71	12.72	7.65	7.86	6.78	8.99	8.25	7.41	6.86	5.84	-25.7%
Germany	13.13	10.71	11.22	11.05	7.95	6.57	6.98	7.93	8.84	7.31	7.32	-7.9%
Greece	1.90	2.82	2.66	3.54	8.11	11.34	11.45	9.15	8.73	6.83	6.00	-26.0%
Hungary	-	-	-	-	-	-	-	-	-	-	-	-
Iceland	..	..	..	0.02	0.10	0.14	0.21	0.20	0.18	0.08	0.07	-26.3%
Ireland	0.24	0.21	0.24	0.09	0.06	0.37	0.47	0.33	0.26	0.41	0.40	610.3%
Italy	23.10	18.22	13.29	10.93	8.52	7.75	5.30	7.23	9.59	7.04	6.17	-27.6%
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	28.61	33.28	29.78	27.82	34.79	33.91	41.42	49.20	43.64	41.37	40.74	17.1%
Norway	1.94	1.52	0.88	1.04	1.41	2.22	2.59	2.18	1.22	1.13	0.46	-67.6%
Poland	1.65	2.23	2.24	1.65	1.25	0.44	0.91	1.02	0.69	0.44	0.46	-63.1%
Portugal	2.34	2.02	1.36	1.50	1.93	1.53	2.10	1.84	1.48	2.07	1.95	1.1%
Slovak Republic	-	-	-	-	-	-	-	-	-	-	-	-
Slovenia	..	..	..	..	..	..	..	0.07	0.06	0.19	0.18	..
Spain	6.00	3.47	5.12	6.83	11.57	10.10	19.16	25.25	26.79	23.01	24.88	115.0%
Sweden	3.62	3.48	2.69	1.77	2.11	3.33	4.33	6.18	6.25	5.09	5.47	158.8%
Switzerland	-	-	-	-	0.06	0.05	0.03	0.04	0.03	0.02	0.02	-72.2%
Turkey	0.27	0.29	..	0.25	0.38	0.58	1.26	3.34	1.16	2.87	3.20	751.7%
United Kingdom	17.54	10.70	7.65	6.63	7.92	7.70	6.50	6.41	8.75	7.94	7.32	-7.6%
OECD Europe [2]	**123.75**	**114.43**	**100.68**	**91.01**	**112.53**	**111.65**	**135.51**	**157.77**	**153.24**	**136.32**	**131.56**	**16.9%**
European Union - 28	*..*	*..*	*..*	*..*	*112.99*	*110.89*	*134.68*	*156.72*	*157.49*	*138.21*	*133.71*	18.3%
G7	*143.78*	*155.73*	*179.12*	*117.50*	*144.64*	*141.58*	*138.08*	*135.29*	*135.24*	*94.82*	*85.45*	-40.9%
G8	*..*	*..*	*..*	*..*	*150.56*	*141.58*	*138.08*	*135.29*	*140.07*	*111.07*	*132.55*	-12.0%
G20	*..*	*..*	*..*	*..*	*266.92*	*292.23*	*332.75*	*371.41*	*404.05*	*349.77*	*361.74*	35.5%

1. Includes Estonia and Slovenia prior to 1990.
2. 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	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**144.31**	**118.14**	**115.91**	**127.96**	**137.09**	**173.45**	**211.60**	**268.22**	**377.54**	**379.94**	**401.59**	**192.9%**
Albania	..	..	..	..	..	..	..	..	..	0.06	0.06	..
Armenia	..	..	..	..	-	-	-	-	-	-	-	-
Azerbaijan	..	..	..	..	..	..	..	..	0.23	0.25	0.23	..
Belarus	..	..	..	..	-	-	-	-	-	-	-	-
Bosnia and Herzegovina	..	..	..	..	-	-	-	-	-	-	-	-
Bulgaria	..	..	..	0.72	0.18	0.85	0.20	0.35	0.31	0.29	0.26	40.8%
Croatia	..	..	..	..	0.15	0.10	0.06	0.08	0.02	..	..	..
Cyprus [2]	0.01	0.07	0.05	0.11	0.18	0.21	0.60	0.91	0.58	0.75	0.73	301.2%
FYR of Macedonia	-	-	-	-	-	-	-	-	-	-	-	-
Georgia	..	..	..	..	..	0.16	..	..	..	..	..	..
Gibraltar	3.54	3.85	4.20	4.67	5.51	5.97	8.41	12.67	13.28	12.20	9.08	64.8%
Kazakhstan	..	..	..	..	..	..	..	..	..	..	..	..
Kosovo	..	..	..	..	..	..	-	-	-	-	-	..
Kyrgyzstan	..	..	..	..	-	-	-	-	-	-	-	-
Latvia	..	..	..	..	1.50	0.48	0.03	0.82	0.80	0.76	0.73	-50.9%
Lithuania	..	..	..	..	0.30	0.45	0.29	0.46	0.45	0.28	0.03	-88.5%
Malta	0.19	0.08	0.09	0.06	0.09	0.14	2.09	2.11	4.65	3.78	3.90	+
Republic of Moldova	..	..	..	..	-	-	-	-	-	-	-	-
Montenegro	..	..	..	..	..	..	..	..	..	..	..	..
Romania	..	..	..	..	..	..	..	..	0.05	0.13	0.25	..
Russian Federation	..	..	..	..	5.93	..	..	..	4.84	16.26	47.11	695.0%
Serbia	..	..	..	..	..	..	..	..	..	0.03	0.05	..
Tajikistan	..	..	..	..	-	-	-	-	-	-	-	-
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Ukraine	..	..	..	..	..	..	..	..	..	..	..	..
Uzbekistan	..	..	..	..	-	-	-	-	-	-	-	-
Former Soviet Union [3]	13.31	14.24	14.24	13.93	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	..	..	..	..	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**17.04**	**18.23**	**18.58**	**19.49**	**13.83**	**8.36**	**11.68**	**17.39**	**25.21**	**34.79**	**62.43**	**351.3%**
Algeria	0.61	0.77	1.30	1.17	1.37	1.18	0.77	1.18	1.02	0.88	0.83	-39.6%
Angola	0.78	0.49	0.84	0.11	0.02	0.03	..	0.34	0.56	0.74	1.15	+
Benin	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	..	..	..	-	-	-	-	-	-	-	-	-
Cameroon	..	..	0.12	0.03	0.04	0.09	0.06	0.04	0.14	0.16	0.17	299.1%
Congo	..	..	..	..	..	..	..	..	..	..	..	..
Côte d'Ivoire	0.06	0.01	1.36	0.73	0.12	0.27	0.29	0.36	0.06	0.05	0.15	20.1%
Dem. Rep. of the Congo	0.41	0.22	0.08	0.09	0.11	0.01	..	..	..	..	..	..
Egypt	0.06	1.11	3.27	4.83	5.38	7.92	8.78	8.37	7.05	5.23	5.00	-7.2%
Eritrea	..	..	..	..	..	0.43	..	..	..	..	..	..
Ethiopia	0.07	0.02	0.01	0.03	0.03	0.03	..	..	..	..	..	..
Gabon	0.20	0.14	0.20	0.23	0.08	0.44	0.61	0.61	0.66	0.58	0.58	622.8%
Ghana	0.16	0.14	0.10	..	..	..	0.16	0.12	0.13	0.04	..	..
Kenya	1.49	1.07	0.57	0.45	0.56	0.17	0.21	0.22	0.12	0.12	0.12	-77.6%
Libya	0.01	0.01	0.02	0.04	0.25	0.28	0.86	1.16	1.17	0.75	0.30	18.7%
Mauritius	0.05	0.11	0.17	0.22	0.19	0.27	0.69	0.60	0.74	0.85	0.91	376.7%
Morocco	0.24	0.18	0.21	0.04	0.06	0.04	0.05	0.07	0.43	0.43	0.43	568.8%
Mozambique	0.76	0.36	0.27	0.10	0.09	0.01	0.00	0.01	..	..	..	..
Namibia	..	..	..	..	..	..	..	..	..	..	..	..
Niger	..	..	..	..	..	..	-	-	-	-	-	..
Nigeria	0.02	0.11	0.25	0.35	0.59	1.43	1.21	1.29	1.32	1.17	1.18	101.8%
Senegal	3.02	2.11	0.85	0.33	0.11	0.09	0.30	0.36	0.21	0.22	0.23	98.0%
South Africa	10.92	7.22	5.31	3.44	6.01	10.41	8.60	8.60	9.82	10.84	8.34	38.6%
South Sudan	..	..	..	..	..	..	..	..	..	-	-	..
Sudan	..	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.06	0.06	0.06	185.7%
United Rep. of Tanzania	0.05	0.05	0.12	0.08	0.08	0.07	0.08	0.11	0.14	0.18	0.19	134.3%
Togo	..	..	..	..	..	..	0.01	0.01	0.05	0.05	0.05	..
Tunisia	0.06	0.02	0.02	0.01	0.07	0.06	0.06	0.05	0.04	0.04	0.05	-30.2%
Zambia	-	-	-	-	-	-	-	-	-	-	-	-
Zimbabwe	-	-	-	-	-	-	-	-	-	-	-	-
Other Africa	3.23	1.88	1.58	1.72	1.47	1.10	0.79	0.76	0.77	0.61	0.63	-57.0%
Africa	**22.20**	**16.03**	**16.66**	**14.02**	**16.66**	**24.35**	**23.58**	**24.30**	**24.48**	**22.97**	**20.36**	**22.2%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
3. 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	2010	2013	2014	% change 90-14
Bangladesh	0.07	0.05	0.19	0.07	0.06	0.11	0.14	0.18	0.25	0.29	0.31	396.1%
Brunei Darussalam	..	..	0.00	..	0.12	0.21	0.22	0.27	0.28	0.25	0.22	94.6%
Cambodia	..	..	..	..	..	..	..	..	..	..	..	..
DPR of Korea	..	..	..	..	..	..	..	..	..	..	..	..
India	0.72	0.58	0.73	0.34	1.38	1.71	2.19	3.09	4.17	4.04	4.22	206.6%
Indonesia	0.71	1.10	0.80	0.69	1.70	1.30	0.36	0.43	0.56	0.67	0.70	-58.6%
Malaysia	0.11	0.22	0.19	0.31	0.30	0.54	0.70	0.19	0.19	1.13	0.67	127.3%
Mongolia	..	..	..	-	-	-	-	-	-	-	-	-
Myanmar	0.01	0.00	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	x
Nepal	-	-	-	-	-	-	-	-	-	-	-	-
Pakistan	0.29	0.22	0.47	0.08	0.11	0.05	0.08	0.26	0.56	0.30	0.32	193.9%
Philippines	1.31	0.45	0.59	0.50	0.21	0.36	0.68	0.38	0.59	0.52	0.29	38.1%
Singapore	8.98	10.53	15.11	15.29	34.21	35.63	58.16	79.39	127.21	132.88	132.05	286.0%
Sri Lanka	1.20	1.30	1.12	1.02	1.22	1.10	0.51	0.54	0.66	1.02	1.36	11.3%
Chinese Taipei	0.39	0.33	0.67	1.64	4.90	7.63	11.11	7.56	5.50	3.79	3.63	-25.9%
Thailand	0.21	0.26	0.51	0.66	1.72	3.05	2.49	5.23	4.46	2.50	3.33	94.0%
Viet Nam	..	..	..	0.07	0.09	0.22	0.46	0.80	1.03	0.34	0.35	303.7%
Other Asia	0.57	0.54	0.47	0.20	0.21	0.30	0.33	0.44	0.41	0.32	0.34	63.6%
Asia (excl. China)	**14.56**	**15.58**	**20.83**	**20.87**	**46.21**	**52.22**	**77.45**	**98.78**	**145.88**	**148.06**	**147.80**	**219.8%**
People's Rep. of China	2.41	2.82	3.32	3.95	4.34	8.95	9.57	16.30	27.90	24.95	23.14	433.7%
Hong Kong, China	2.00	1.72	2.88	3.14	4.57	7.24	10.72	17.97	38.98	27.64	24.17	429.1%
China	**4.40**	**4.53**	**6.20**	**7.09**	**8.90**	**16.19**	**20.29**	**34.28**	**66.88**	**52.59**	**47.32**	**431.4%**
Argentina	0.66	0.29	1.34	2.02	2.24	1.72	1.50	2.22	3.80	5.68	4.99	122.2%
Bolivia	-	-	-	-	-	-	-	-	-	-	-	-
Brazil	1.01	1.18	1.43	1.73	1.73	3.67	9.25	11.03	12.74	10.86	11.12	541.6%
Colombia	0.96	0.49	0.31	0.22	0.33	0.58	0.75	1.15	2.04	2.77	2.81	747.1%
Costa Rica	0.10	..	0.13	0.14	0.24	0.37	0.34	0.36	0.09	0.01	0.00	-98.7%
Cuba	..	..	..	0.12	0.06	0.04	0.05	0.06	2.44	1.45	2.30	+
Curaçao [1]	7.79	7.41	7.35	6.19	5.23	5.37	6.35	6.78	7.26	5.00	5.09	-2.7%
Dominican Republic	..	..	..	..	..	..	..	..	..	..	..	..
Ecuador	0.28	..	0.35	0.12	0.50	1.00	0.88	2.10	1.72	1.28	1.40	180.9%
El Salvador	..	..	..	..	..	..	..	..	..	..	..	..
Guatemala	0.18	0.27	0.41	0.38	0.43	0.53	0.64	0.75	0.90	1.00	1.04	142.5%
Haiti	..	..	..	..	..	..	..	..	..	..	..	..
Honduras	..	..	..	..	..	..	..	..	0.00	0.00	..	..
Jamaica	0.16	0.27	0.10	0.04	0.10	0.12	0.12	0.26	0.27	0.68	0.63	519.5%
Nicaragua	..	..	..	..	..	..	..	..	..	..	..	..
Panama	1.72	3.44	3.13	4.07	5.00	6.49	8.15	7.37	9.56	10.35	9.96	99.1%
Paraguay	-	-	-	-	-	-	-	-	-	-	-	-
Peru	0.10	0.13	0.48	0.63	0.12	0.53	0.31	1.01	0.77	0.17	0.00	-97.3%
Suriname	..	..	..	..	..	..	0.07	0.11	0.13	0.15	0.15	..
Trinidad and Tobago	5.17	3.58	1.44	0.31	0.11	0.16	1.21	1.49	1.07	1.76	1.44	+
Uruguay	0.28	0.20	0.25	0.33	0.37	1.22	0.93	1.14	1.43	0.73	0.68	81.8%
Venezuela	9.22	4.87	2.01	1.78	2.53	2.32	2.08	2.35	2.77	3.03	2.94	16.4%
Other Non-OECD Americas	3.25	2.21	2.82	1.88	0.87	0.72	0.80	0.64	0.59	1.63	1.66	91.1%
Non-OECD Americas	**30.88**	**24.34**	**21.53**	**19.97**	**19.87**	**24.85**	**33.42**	**38.81**	**47.57**	**46.55**	**46.21**	**132.6%**
Bahrain	0.56	0.56	0.61	0.48	0.25	0.26	0.25	0.24	0.25	0.26	0.26	2.5%
Islamic Republic of Iran	1.05	1.28	1.26	0.93	1.27	1.90	2.26	2.95	7.38	9.63	11.47	806.4%
Iraq	0.26	0.30	0.37	0.47	0.40	0.02	0.49	0.33	0.44	0.56	0.58	44.6%
Jordan	..	..	..	..	..	0.03	0.13	0.25	0.05	0.03	0.01	..
Kuwait	6.36	6.38	5.66	2.40	0.56	1.84	1.44	2.17	1.70	3.56	3.57	539.0%
Lebanon	0.72	0.03	..	..	..	0.04	0.05	0.06	0.09	0.09	0.10	..
Oman	3.89	2.57	0.72	0.35	0.06	0.08	0.20	0.12	3.62	2.75	3.67	+
Qatar	..	..	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	40.46	26.13	13.76	28.30	5.79	6.02	6.67	7.16	8.18	10.65	10.03	73.1%
Syrian Arab Republic	0.78	1.27	1.99	2.56	2.85	3.47	3.71	3.20	3.46	1.21	0.77	-73.0%
United Arab Emirates	..	..	5.59	9.78	19.19	33.50	29.68	37.81	42.01	45.95	46.73	143.6%
Yemen	1.14	0.92	2.16	1.25	1.25	0.31	0.31	0.36	0.34	0.29	0.28	-77.6%
Middle East	**55.22**	**39.43**	**32.11**	**46.52**	**31.62**	**47.46**	**45.18**	**54.66**	**67.53**	**74.97**	**77.47**	**145.0%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

CO_2 emissions from international aviation bunkers

million tonnes of CO_2

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World	**169.22**	**173.87**	**202.13**	**224.90**	**258.73**	**290.34**	**354.15**	**420.97**	**457.44**	**489.53**	**504.34**	**94.9%**
Annex I Parties	*..*	*..*	*..*	*..*	*171.02*	*181.74*	*226.55*	*257.14*	*254.64*	*260.45*	*266.61*	*55.9%*
Annex II Parties	*59.17*	*62.37*	*71.49*	*82.30*	*132.22*	*161.20*	*206.43*	*231.69*	*225.18*	*231.49*	*234.66*	*77.5%*
North America	*16.77*	*17.70*	*21.39*	*22.05*	*41.92*	*49.03*	*60.81*	*71.41*	*68.72*	*67.62*	*69.39*	*65.5%*
Europe	*36.32*	*38.05*	*43.13*	*49.09*	*71.19*	*87.98*	*116.82*	*128.31*	*127.38*	*130.79*	*131.86*	*85.2%*
Asia Oceania	*6.07*	*6.61*	*6.96*	*11.16*	*19.12*	*24.20*	*28.80*	*31.97*	*29.08*	*33.08*	*33.41*	*74.8%*
Annex I EIT	*..*	*..*	*..*	*..*	*37.32*	*18.73*	*17.37*	*21.04*	*24.69*	*23.91*	*23.10*	*-38.1%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*87.70*	*108.60*	*127.60*	*163.83*	*202.80*	*229.08*	*237.73*	*171.1%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*89.86*	*100.19*	*129.44*	*143.73*	*145.35*	*148.92*	*151.46*	*68.6%*
Non-OECD Total [1]	**104.93**	**105.00**	**120.73**	**131.85**	**115.66**	**114.51**	**130.64**	**162.78**	**201.01**	**223.63**	**230.53**	**99.3%**
OECD Total [2]	**64.29**	**68.87**	**81.40**	**93.05**	**143.06**	**175.83**	**223.51**	**258.19**	**256.43**	**265.90**	**273.81**	**91.4%**
Canada	1.27	1.95	1.36	1.23	2.73	2.61	3.12	2.51	3.41	2.47	2.20	-19.6%
Chile	0.44	0.35	0.55	0.50	0.57	0.65	1.06	1.07	1.54	1.88	1.96	243.6%
Mexico	1.40	2.42	4.28	4.58	5.29	6.83	8.13	8.60	8.16	9.09	9.71	83.8%
United States	15.51	15.76	20.03	20.82	39.19	46.42	57.69	68.90	65.31	65.15	67.19	71.5%
OECD Americas	**18.62**	**20.48**	**26.22**	**27.12**	**47.77**	**56.50**	**70.00**	**81.07**	**78.42**	**78.59**	**81.06**	**69.7%**
Australia	1.59	1.91	2.43	2.79	4.34	5.80	7.22	8.16	10.19	10.86	11.72	170.2%
Israel	1.81	1.90	2.23	2.01	1.60	2.15	2.40	3.24	2.43	3.42	3.38	111.4%
Japan	3.83	4.36	3.96	7.71	13.45	16.78	19.77	21.58	16.55	19.62	19.17	42.6%
Korea	-	0.37	0.83	1.71	0.85	2.07	1.71	7.32	12.01	12.80	12.83	+
New Zealand	0.65	0.34	0.58	0.66	1.33	1.61	1.81	2.23	2.33	2.60	2.52	88.8%
OECD Asia Oceania	**7.88**	**8.88**	**10.03**	**14.89**	**21.57**	**28.41**	**32.92**	**42.53**	**43.52**	**49.30**	**49.62**	**130.1%**
Austria	0.28	0.25	0.39	0.65	0.86	1.29	1.65	1.91	2.00	1.93	1.93	123.1%
Belgium	1.23	1.06	1.24	1.64	2.84	2.63	4.42	3.83	4.12	3.81	3.98	40.0%
Czech Republic	0.70	0.59	0.86	0.64	0.66	0.57	0.48	0.95	0.93	0.84	0.87	32.2%
Denmark	1.94	1.57	1.61	1.57	1.72	1.85	2.34	2.58	2.42	2.46	2.67	55.0%
Estonia	..	..	..	..	0.10	0.05	0.06	0.14	0.11	0.09	0.12	17.6%
Finland	0.18	0.40	0.46	0.49	0.98	0.87	1.03	1.25	1.60	1.89	1.86	89.4%
France	4.62	5.77	5.67	6.50	9.42	11.56	15.22	16.27	16.49	16.71	16.86	79.0%
Germany	7.65	8.24	8.30	9.55	13.31	15.64	19.33	22.39	23.90	25.06	24.06	80.8%
Greece	1.31	1.33	2.25	2.36	2.36	2.55	2.44	2.33	2.04	2.02	2.33	-1.6%
Hungary	0.15	0.21	0.37	0.45	0.49	0.54	0.70	0.80	0.70	0.50	0.53	6.9%
Iceland	0.22	0.14	0.09	0.18	0.22	0.20	0.40	0.40	0.37	0.49	0.54	149.3%
Ireland	0.97	0.74	0.61	0.57	1.04	1.12	1.74	2.38	2.16	1.87	2.16	107.7%
Italy	3.50	2.46	4.19	4.38	4.54	5.86	8.46	8.97	9.48	8.98	9.21	102.8%
Luxembourg	0.11	0.15	0.19	0.22	0.39	0.57	0.96	1.29	1.29	1.12	1.21	207.8%
Netherlands	2.03	2.29	2.75	3.50	4.34	7.52	9.77	10.79	10.09	10.31	10.70	146.7%
Norway	0.70	0.51	0.68	0.93	1.26	1.10	1.06	1.05	1.29	1.47	1.51	20.0%
Poland	0.53	0.53	0.68	0.68	0.66	0.81	0.82	0.96	1.52	1.57	1.75	164.7%
Portugal	0.71	0.81	0.89	1.28	1.38	1.56	1.94	2.18	2.63	2.79	2.95	114.5%
Slovak Republic	-	-	-	-	-	0.12	0.08	0.12	0.12	0.12	0.10	x
Slovenia	..	..	..	..	0.08	0.06	0.07	0.07	0.08	0.08	0.08	-3.8%
Spain	1.76	2.80	2.60	2.69	3.35	6.07	8.11	9.28	9.11	10.74	10.93	225.9%
Sweden	0.33	0.34	0.49	0.51	1.09	1.77	2.08	1.89	2.06	2.38	2.16	99.2%
Switzerland	1.64	1.81	2.04	2.44	3.03	3.66	4.61	3.52	4.20	4.61	4.70	55.2%
Turkey	0.09	0.14	0.12	0.18	0.54	0.79	1.56	3.25	3.64	4.02	7.81	+
United Kingdom	7.15	7.39	8.68	9.63	19.05	22.14	31.24	36.01	32.13	32.14	32.08	68.4%
OECD Europe [2]	**37.79**	**39.51**	**45.16**	**51.03**	**73.72**	**90.91**	**120.60**	**134.59**	**134.49**	**138.01**	**143.12**	**94.1%**
European Union - 28	*..*	*..*	*..*	*..*	*72.14*	*88.16*	*115.12*	*128.99*	*127.85*	*130.30*	*131.56*	*82.4%*
G7	*43.52*	*45.93*	*52.20*	*59.80*	*101.68*	*121.01*	*154.84*	*176.63*	*167.27*	*170.14*	*170.77*	*68.0%*
G8	*..*	*..*	*..*	*..*	*128.31*	*135.14*	*168.24*	*192.06*	*185.94*	*188.32*	*187.72*	*46.3%*
G20	*..*	*..*	*..*	*..*	*184.22*	*211.95*	*260.19*	*311.76*	*327.45*	*342.61*	*353.71*	*92.0%*

1. Includes Estonia and Slovenia prior to 1990.
2. 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	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**104.93**	**105.00**	**120.73**	**131.85**	**115.66**	**114.51**	**130.64**	**162.78**	**201.01**	**223.63**	**230.53**	**99.3%**
Albania	-	-	-	-	-	-	0.12	0.18	0.05	0.06	0.02	x
Armenia	..	..	..	..	0.60	0.10	0.19	0.14	0.13	0.14	0.13	-78.4%
Azerbaijan	..	..	..	..	1.05	0.31	0.30	1.11	1.21	1.17	1.07	2.1%
Belarus	..	..	..	..	-	-	-	-	-	0.31	0.34	x
Bosnia and Herzegovina	..	..	..	..	0.08	0.11	0.03	0.02	0.02	0.01	0.01	-84.0%
Bulgaria	0.61	0.61	0.92	1.13	0.71	0.99	0.24	0.56	0.50	0.48	0.51	-28.9%
Croatia	..	..	..	..	0.49	0.24	0.20	0.25	0.29	0.35	0.35	-27.2%
Cyprus [2]	0.15	0.02	0.23	0.44	0.73	0.80	0.82	0.89	0.83	0.72	0.71	-2.1%
FYR of Macedonia	..	..	..	..	0.02	0.09	0.09	0.02	0.02	0.02	0.03	120.0%
Georgia	..	..	..	..	0.61	0.01	0.05	0.11	0.12	0.26	0.25	-59.4%
Gibraltar	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	-
Kazakhstan	..	..	..	..	2.70	0.79	0.23	0.49	0.62	0.50	0.69	-74.3%
Kosovo	..	..	..	..	..	..	-	-	0.04	0.05	0.01	..
Kyrgyzstan	..	..	..	..	0.26	0.19	0.12	0.39	0.83	0.15	0.01	-95.3%
Latvia	..	..	..	..	0.22	0.08	0.08	0.18	0.35	0.37	0.33	49.3%
Lithuania	..	..	..	..	0.40	0.12	0.07	0.14	0.14	0.21	0.23	-42.7%
Malta	0.18	0.18	0.23	0.14	0.22	0.22	0.37	0.26	0.30	0.31	0.33	54.3%
Republic of Moldova	..	..	..	..	0.22	0.03	0.06	0.04	0.06	0.06	0.08	-65.3%
Montenegro	..	..	..	..	..	..	..	0.04	0.01	0.04	0.05	..
Romania	0.06	0.05	-	-	0.70	0.55	0.38	0.33	0.43	0.43	0.55	-21.6%
Russian Federation	..	..	..	..	26.63	14.13	13.40	15.43	18.67	18.18	16.95	-36.4%
Serbia	..	..	..	..	0.43	0.11	0.09	0.15	0.13	0.13	0.21	-52.1%
Tajikistan	..	..	..	..	0.05	0.02	0.01	0.03	0.09	0.11	0.19	306.7%
Turkmenistan	..	..	..	..	0.76	0.62	0.98	1.35	1.63	1.40	1.45	90.3%
Ukraine	..	..	..	..	6.18	0.48	0.78	1.12	0.83	0.38	0.40	-93.6%
Uzbekistan	..	..	..	..	-	-	-	-	-	-	-	-
Former Soviet Union [3]	67.33	62.72	71.33	77.48	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	0.65	0.89	1.01	1.00	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**69.00**	**64.50**	**73.74**	**80.20**	**43.05**	**20.01**	**18.63**	**23.24**	**27.32**	**25.87**	**24.91**	**-42.2%**
Algeria	0.29	0.67	0.94	1.32	1.10	0.97	1.18	1.17	1.44	1.67	1.32	20.3%
Angola	0.23	0.31	0.26	1.00	1.04	1.18	1.43	0.57	0.64	0.64	0.72	-31.0%
Benin	0.02	0.01	0.03	0.06	0.05	0.07	0.07	0.03	0.48	0.55	0.58	+
Botswana	..	..	..	0.01	0.04	0.02	0.02	0.03	0.04	0.04	0.03	-9.1%
Cameroon	0.17	0.10	0.15	0.15	0.15	0.17	0.18	0.20	0.21	0.24	0.25	64.6%
Congo	-	0.05	0.11	0.09	0.08	0.05	0.08	0.11	0.14	0.14	0.13	66.7%
Côte d'Ivoire	0.13	0.21	0.26	0.29	0.27	0.26	0.37	0.28	0.18	0.18	0.21	-21.4%
Dem. Rep. of the Congo	0.28	0.25	0.38	0.40	0.32	0.35	0.24	0.51	0.47	0.48	0.72	121.9%
Egypt	0.21	0.28	0.52	0.13	0.46	0.82	1.77	2.31	2.64	2.35	2.24	390.7%
Eritrea	..	..	..	..	..	0.02	0.03	0.03	0.00	0.00	0.00	..
Ethiopia	0.14	0.16	0.20	0.34	0.54	0.17	0.21	0.40	0.87	1.12	1.23	129.9%
Gabon	0.03	0.04	0.07	0.09	0.20	0.20	0.24	0.22	0.26	0.24	0.20	1.3%
Ghana	0.13	0.15	0.12	0.10	0.14	0.18	0.33	0.40	0.36	0.45	0.39	177.4%
Kenya	0.58	0.90	1.11	0.83	0.84	1.38	1.38	1.78	1.72	1.76	1.69	101.1%
Libya	0.27	0.54	0.90	1.06	0.64	0.92	1.34	0.52	0.62	0.50	0.38	-40.5%
Mauritius	0.06	0.10	0.14	0.18	0.21	0.21	0.61	0.73	0.73	0.72	0.76	256.7%
Morocco	0.35	0.44	0.78	0.70	0.79	0.74	0.91	1.17	1.79	1.84	2.01	153.0%
Mozambique	0.12	0.05	0.08	0.10	0.13	0.06	0.13	0.14	0.20	0.22	0.38	192.7%
Namibia	..	..	..	..	..	0.10	0.13	0.03	0.12	0.14	0.15	..
Niger	..	..	..	..	..	..	0.05	0.04	0.04	0.07	0.10	..
Nigeria	0.25	0.71	1.15	1.35	0.96	1.26	0.59	0.71	0.52	1.08	0.96	-
Senegal	0.30	0.37	0.59	0.43	0.46	0.46	0.76	0.75	0.69	0.79	0.82	79.3%
South Africa	0.53	0.74	0.88	0.94	1.11	1.59	2.82	2.18	2.43	2.54	2.47	123.6%
South Sudan	..	..	..	..	..	..	..	..	..	0.11	0.12	..
Sudan	0.34	0.15	0.20	0.22	0.10	0.11	0.33	0.98	0.85	0.78	0.78	714.2%
United Rep. of Tanzania	0.09	0.20	0.18	0.13	0.22	0.19	0.18	0.26	0.34	0.41	0.44	97.4%
Togo	-	-	-	-	0.11	0.12	0.04	0.15	0.22	0.24	0.25	136.4%
Tunisia	0.39	0.38	0.57	0.31	0.57	0.75	0.86	0.66	0.76	0.88	0.82	42.5%
Zambia	0.04	0.14	0.23	0.12	0.20	0.10	0.13	0.17	0.09	0.15	0.12	-38.1%
Zimbabwe	0.09	0.19	0.21	0.33	0.25	0.35	0.36	0.03	0.03	0.03	0.03	-86.1%
Other Africa	0.40	0.64	0.74	0.72	0.79	0.81	1.17	1.36	1.48	2.24	2.34	196.2%
Africa	**5.44**	**7.76**	**10.82**	**11.40**	**11.75**	**13.60**	**17.92**	**17.92**	**20.34**	**22.58**	**22.65**	**92.7%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
3. 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	2010	2013	2014	% change 90-14
Bangladesh	0.06	0.09	0.15	0.22	0.27	0.30	0.38	0.81	0.92	1.01	1.03	275.6%
Brunei Darussalam	0.00	0.06	0.07	0.05	0.11	0.21	0.21	0.25	0.33	0.26	0.23	97.2%
Cambodia	..	..	..	..	..	0.03	0.04	0.05	0.11	0.19	0.23	..
DPR of Korea	-	-	-	-	-	-	-	-	-	-	-	-
India	1.69	2.00	2.51	3.24	3.74	4.65	5.02	7.36	11.34	12.29	12.45	232.6%
Indonesia	0.17	0.33	0.73	0.66	0.97	1.18	1.22	1.54	2.04	2.42	2.54	161.3%
Malaysia	0.42	0.75	0.76	0.86	1.51	2.78	3.77	4.81	5.70	7.18	7.56	401.5%
Mongolia	..	..	..	-	0.01	0.06	0.06	0.06	0.05	0.12	0.08	550.0%
Myanmar	0.03	0.02	0.03	0.03	0.02	0.02	0.05	0.03	0.06	0.12	0.13	566.6%
Nepal	0.01	0.02	0.04	0.06	0.05	0.11	0.17	0.19	0.26	0.31	0.36	613.3%
Pakistan	1.14	1.09	1.71	1.42	1.41	1.72	0.36	0.64	0.49	0.62	0.64	-54.3%
Philippines	0.71	0.83	0.66	1.03	1.02	1.17	1.43	2.14	2.96	3.28	3.11	206.5%
Singapore	0.70	1.33	2.73	3.23	5.69	7.89	12.01	13.59	17.19	21.45	21.60	279.6%
Sri Lanka	-	0.00	0.00	-	-	-	0.32	0.94	0.35	1.09	1.44	x
Chinese Taipei	1.49	1.64	1.67	0.92	1.81	4.13	5.42	6.51	6.30	7.01	7.65	322.2%
Thailand	1.27	2.19	2.41	3.16	5.64	7.59	8.35	10.27	10.00	11.63	11.60	105.6%
Viet Nam	6.98	2.63	-	-	-	0.12	0.30	0.95	2.03	2.39	2.41	x
Other Asia	0.40	0.28	0.33	0.47	0.52	0.33	0.62	0.84	0.91	1.39	1.47	182.8%
Asia (excl. China)	**15.07**	**13.26**	**13.83**	**15.35**	**22.78**	**32.29**	**39.73**	**50.98**	**61.03**	**72.78**	**74.53**	**227.2%**
People's Rep. of China	-	-	0.10	0.85	1.30	2.22	4.22	10.07	15.56	19.71	21.47	+
Hong Kong, China	1.43	1.85	2.27	2.58	5.68	9.31	8.39	14.86	16.35	17.55	18.22	220.8%
China	**1.43**	**1.85**	**2.37**	**3.43**	**6.98**	**11.53**	**12.61**	**24.93**	**31.91**	**37.26**	**39.68**	**468.2%**
Argentina	-	-	-	-	-	1.59	2.86	2.17	1.87	2.68	2.65	x
Bolivia	-	-	-	-	-	-	0.14	0.15	0.14	0.17	0.19	x
Brazil	-	-	0.61	0.75	1.43	2.08	2.02	3.34	5.83	6.98	7.45	422.1%
Colombia	0.60	0.93	1.32	1.32	1.58	2.17	1.91	1.85	2.36	2.82	3.26	106.8%
Costa Rica	-	-	-	-	0.01	0.32	0.37	0.57	0.50	0.48	0.49	+
Cuba	0.27	0.44	0.66	0.90	0.99	0.54	0.65	0.54	0.44	0.35	0.36	-63.3%
Curaçao [1]	0.16	0.13	0.17	0.13	0.12	0.20	0.24	0.26	0.28	0.19	0.19	64.8%
Dominican Republic	0.08	0.10	0.17	0.17	0.11	0.18	1.30	1.34	1.23	1.36	1.47	+
Ecuador	0.27	0.14	0.45	0.45	0.39	0.55	0.49	0.97	1.04	1.15	1.16	195.9%
El Salvador	0.04	0.05	0.06	0.11	0.11	0.16	0.22	0.24	0.34	0.46	0.48	322.2%
Guatemala	0.15	0.11	0.13	0.12	0.13	0.14	0.15	0.23	0.20	0.13	0.06	-51.2%
Haiti	0.02	0.03	0.05	0.04	0.07	0.07	0.09	0.07	0.06	0.28	0.11	47.8%
Honduras	0.02	0.03	0.06	0.12	0.09	0.07	0.11	0.07	0.15	0.13	0.21	131.0%
Jamaica	0.42	0.33	0.30	0.40	0.47	0.53	0.54	0.61	0.59	0.55	0.59	25.2%
Nicaragua	0.05	0.06	0.06	0.04	0.08	0.06	0.08	0.05	0.06	0.06	0.07	-15.2%
Panama	0.44	1.12	0.42	0.26	0.20	0.32	0.55	0.57	1.08	1.63	1.89	828.1%
Paraguay	0.03	0.04	0.06	0.06	0.03	0.03	0.04	0.05	0.07	0.09	0.11	261.0%
Peru	0.52	0.75	0.92	0.72	0.65	1.11	1.07	0.97	1.95	2.24	2.47	280.4%
Suriname	..	..	..	..	..	..	-	-	-	-	-	..
Trinidad and Tobago	0.21	0.12	0.17	0.22	0.20	0.18	0.33	1.21	0.85	0.86	0.68	241.9%
Uruguay	-	-	-	-	-	-	0.12	0.12	0.23	0.22	0.24	x
Venezuela	0.33	0.32	1.03	0.81	1.03	1.01	0.95	2.05	1.90	1.92	1.95	88.2%
Other Non-OECD Americas	1.01	0.50	0.91	0.87	1.03	1.07	1.81	1.40	1.53	1.76	1.80	75.2%
Non-OECD Americas	**4.63**	**5.20**	**7.56**	**7.50**	**8.73**	**12.37**	**16.03**	**18.83**	**22.71**	**26.53**	**27.90**	**219.4%**
Bahrain	0.43	0.85	1.55	1.22	1.44	1.16	1.13	1.74	1.97	1.26	1.23	-14.6%
Islamic Republic of Iran	7.10	7.08	2.17	1.66	1.50	1.99	2.73	2.71	3.84	3.67	3.98	165.5%
Iraq	0.24	0.82	1.06	0.59	0.99	1.28	1.64	2.00	2.52	1.26	1.68	69.5%
Jordan	0.12	0.18	0.57	0.62	0.67	0.76	0.75	0.98	1.09	1.11	1.02	51.6%
Kuwait	0.35	0.35	1.06	0.98	0.52	1.14	1.16	1.84	2.26	1.95	2.26	337.1%
Lebanon	0.29	0.24	0.15	0.32	0.16	0.66	0.40	0.47	0.71	0.83	0.73	358.0%
Oman	0.01	0.15	0.38	0.58	0.94	0.47	0.65	0.69	1.30	1.48	1.62	71.3%
Qatar	-	0.16	0.23	0.24	0.35	0.43	0.57	1.45	3.61	6.34	4.00	+
Saudi Arabia	0.48	1.42	3.49	4.61	4.84	5.74	5.91	5.50	6.23	5.96	7.32	51.1%
Syrian Arab Republic	0.24	0.66	0.72	0.88	0.88	0.63	0.42	0.33	0.10	0.06	0.05	-94.2%
United Arab Emirates	0.02	0.34	0.81	1.82	9.89	10.19	9.97	8.81	13.71	14.38	16.69	68.7%
Yemen	0.09	0.18	0.22	0.47	0.18	0.28	0.38	0.36	0.37	0.33	0.29	65.5%
Middle East	**9.36**	**12.43**	**12.42**	**13.98**	**22.36**	**24.72**	**25.72**	**26.87**	**37.70**	**38.62**	**40.86**	**82.8%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

CO_2 emissions by sector in 2014 [1]

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy ind. own use [2]	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
World [3]	**32 381.0**	**13 625.0**	**1 683.1**	**6 230.1**	**7 547.3**	**5 659.8**	**3 295.5**	**1 858.8**
Annex I Parties	*12 628.4*	*5 266.6*	*708.8*	*1 496.6*	*3 460.6*	*2 985.5*	*1 695.8*	*989.8*
Annex II Parties	*9 933.7*	*3 856.2*	*599.8*	*1 131.0*	*2 998.9*	*2 628.3*	*1 348.0*	*752.0*
North America	*5 731.0*	*2 222.9*	*372.5*	*514.9*	*1 905.1*	*1 611.8*	*715.6*	*384.9*
Europe	*2 609.0*	*868.1*	*135.8*	*338.4*	*778.7*	*738.8*	*488.1*	*302.9*
Asia Oceania	*1 593.6*	*765.2*	*91.4*	*277.7*	*315.0*	*277.7*	*144.3*	*64.1*
Annex I EIT	*2 379.5*	*1 273.9*	*97.8*	*320.0*	*398.6*	*299.7*	*289.2*	*209.4*
Non-Annex I Parties	*18 622.2*	*8 358.4*	*974.3*	*4 733.6*	*2 956.2*	*2 674.3*	*1 599.8*	*869.0*
Annex B Kyoto Parties	*4 126.5*	*1 593.8*	*249.0*	*563.2*	*1 047.3*	*980.2*	*673.3*	*421.8*
Non-OECD Total	**19 395.0**	**8 892.8**	**952.2**	**4 843.5**	**2 988.3**	**2 620.3**	**1 718.2**	**976.4**
OECD Total	**11 855.6**	**4 732.2**	**730.9**	**1 386.7**	**3 428.5**	**3 039.5**	**1 577.3**	**882.4**
Canada	554.8	97.5	117.3	66.8	176.4	141.6	96.7	43.0
Chile	75.8	29.6	3.0	14.2	23.6	21.4	5.5	3.4
Mexico	430.9	137.8	52.1	58.0	151.2	146.9	31.9	18.1
United States	5 176.2	2 125.4	255.2	448.0	1 728.8	1 470.1	618.9	341.9
OECD Americas	**6 237.8**	**2 390.3**	**427.6**	**587.0**	**2 079.9**	**1 780.0**	**753.0**	**406.4**
Australia	373.8	182.4	35.7	42.9	92.5	77.9	20.2	9.0
Israel	64.7	39.5	4.5	2.9	16.9	16.9	0.9	0.4
Japan	1 188.6	577.1	54.0	228.0	208.4	187.0	121.1	54.5
Korea	567.8	298.7	44.8	77.5	92.4	88.5	54.4	30.8
New Zealand	31.2	5.7	1.7	6.8	14.0	12.7	3.0	0.5
OECD Asia Oceania	**2 226.2**	**1 103.4**	**140.6**	**358.2**	**424.3**	**383.1**	**199.6**	**95.3**
Austria	60.8	12.7	7.1	10.7	22.3	21.5	8.0	5.2
Belgium	87.4	16.4	6.2	18.1	25.0	24.2	21.7	14.2
Czech Republic	96.6	54.2	2.4	13.5	16.4	16.0	10.0	6.0
Denmark	34.5	13.5	2.1	3.4	11.4	10.5	4.1	2.0
Estonia	17.5	13.5	0.1	0.8	2.2	2.1	0.8	0.2
Finland	45.3	19.7	3.2	7.6	10.8	10.1	4.0	1.2
France	285.7	28.9	10.5	44.8	121.2	116.9	80.3	44.7
Germany	723.3	327.6	22.9	90.0	154.5	149.4	128.2	82.5
Greece	65.9	34.0	4.3	6.0	16.3	14.2	5.3	3.8
Hungary	40.3	11.1	1.4	6.3	10.9	10.7	10.5	6.0
Iceland	2.0	0.0	-	0.6	0.8	0.8	0.6	0.0
Ireland	33.9	11.1	0.3	3.6	10.9	10.7	8.0	5.8
Italy	319.7	103.4	10.3	35.8	105.4	99.8	64.9	42.0
Luxembourg	9.2	0.8	-	0.9	6.2	6.2	1.4	1.0
Netherlands	148.3	58.3	9.7	21.8	29.5	28.4	29.1	15.1
Norway	35.3	1.9	10.9	5.7	14.0	10.6	2.7	0.3
Poland	279.0	148.3	6.9	28.7	43.7	42.5	51.5	34.2
Portugal	42.8	15.4	2.2	5.5	15.7	15.0	4.0	1.9
Slovak Republic	29.3	6.6	4.7	7.2	6.1	5.8	4.7	2.5
Slovenia	12.8	4.5	0.0	1.7	5.3	5.3	1.2	0.7
Spain	232.0	70.2	16.6	33.1	81.9	75.1	30.2	15.5
Sweden	37.4	6.3	2.8	6.5	19.9	19.4	1.9	0.2
Switzerland	37.7	2.6	0.9	5.1	16.9	16.6	12.2	7.9
Turkey	307.1	132.1	11.2	44.9	60.9	55.2	57.9	28.1
United Kingdom	407.8	145.3	25.7	39.1	116.0	109.4	81.6	59.7
OECD Europe	**3 391.6**	**1 238.4**	**162.7**	**441.5**	**924.3**	**876.4**	**624.7**	**380.7**
European Union - 28	*3 160.0*	*1 168.6*	*147.2*	*406.0*	*870.6*	*830.4*	*567.6*	*353.8*
G7	*8 656.1*	*3 405.2*	*496.0*	*952.6*	*2 610.7*	*2 274.3*	*1 191.7*	*668.4*
G8	*10 123.7*	*4 236.1*	*561.9*	*1 133.4*	*2 849.1*	*2 425.7*	*1 343.2*	*785.7*
G20	*26 430.3*	*11 804.9*	*1 327.4*	*5 364.3*	*5 217.4*	*4 532.8*	*2 716.3*	*1 507.7*

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 97-99.
2. Includes emissions from own use in petroleum refining, the manufacture of solid fuels, coal mining, oil and gas extraction and other energy-producing industries.
3. World includes international bunkers in the transport sector.

CO_2 emissions by sector in 2014

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy ind. own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Non-OECD Total	**19 395.0**	**8 892.8**	**952.2**	**4 843.5**	**2 988.3**	**2 620.3**	**1 718.2**	**976.4**
Albania	4.1	-	0.1	0.9	2.5	2.4	0.6	0.2
Armenia	5.2	1.6	-	0.6	1.5	1.5	1.6	1.2
Azerbaijan	30.8	12.2	2.0	2.3	7.5	6.9	6.7	5.2
Belarus	57.4	29.3	3.5	5.4	11.8	10.0	7.5	4.5
Bosnia and Herzegovina	21.6	14.6	0.7	2.1	3.0	3.0	1.2	0.6
Bulgaria	42.1	28.2	0.9	3.4	8.2	7.8	1.4	0.7
Croatia	15.1	3.3	1.5	2.3	5.5	5.3	2.5	1.4
Cyprus [1]	5.8	2.9	0.0	0.7	1.7	1.7	0.5	0.3
FYR of Macedonia	7.4	4.4	0.0	1.1	1.6	1.6	0.3	0.0
Georgia	7.7	1.1	0.0	1.6	3.3	3.2	1.7	1.2
Gibraltar	0.5	0.1	-	-	0.4	0.4	-	-
Kazakhstan	223.7	95.9	45.6	41.9	13.7	12.8	26.6	17.4
Kosovo	7.4	5.6	-	0.4	1.0	1.0	0.4	0.1
Kyrgyzstan	8.4	2.2	0.0	1.6	2.3	2.3	2.2	1.4
Latvia	6.7	1.8	-	0.8	2.9	2.7	1.2	0.4
Lithuania	10.3	1.8	1.4	1.2	4.8	4.5	1.2	0.6
Malta	2.3	1.6	-	0.0	0.5	0.5	0.2	0.0
Republic of Moldova	7.2	3.3	-	0.9	1.8	1.8	1.3	0.8
Montenegro	2.2	1.5	-	0.1	0.5	0.5	0.1	0.0
Romania	68.2	27.3	3.8	12.4	15.3	14.8	9.4	5.9
Russian Federation	1 467.6	830.9	65.9	180.8	238.4	151.4	151.5	117.3
Serbia	38.1	25.9	0.6	3.6	5.9	5.8	2.2	1.2
Tajikistan	4.7	0.2	0.0	0.1	1.6	1.6	2.8	-
Turkmenistan	67.0	18.8	5.2	2.4	11.8	7.9	28.9	0.5
Ukraine	236.5	113.1	5.1	55.5	27.0	21.1	35.8	28.8
Uzbekistan	97.9	38.5	3.1	13.4	6.7	3.7	36.3	27.4
Non-OECD Europe and Eurasia	**2 446.1**	**1 265.8**	**139.6**	**335.6**	**381.1**	**275.9**	**324.0**	**217.4**
Algeria	122.9	32.6	15.1	10.2	43.4	41.5	21.6	18.7
Angola	19.3	3.4	0.3	1.5	8.5	7.6	5.6	1.9
Benin	5.7	0.1	-	0.3	3.9	3.9	1.4	1.4
Botswana	6.9	3.8	-	0.7	2.2	2.2	0.2	0.1
Cameroon	6.0	1.2	0.7	0.4	3.3	3.1	0.4	0.4
Congo	2.6	0.5	-	0.1	2.0	1.6	0.1	0.1
Côte d'Ivoire	9.4	3.8	0.2	1.4	2.9	2.6	1.1	0.5
Dem. Rep. of the Congo	4.7	0.0	-	0.1	4.5	3.8	0.0	0.0
Egypt	173.3	72.4	14.8	26.3	39.1	36.7	20.7	14.6
Eritrea	0.6	0.3	-	0.0	0.2	0.2	0.1	0.0
Ethiopia	9.1	0.0	-	3.1	4.3	4.1	1.7	0.8
Gabon	3.5	1.1	0.0	1.2	0.8	0.8	0.4	0.2
Ghana	13.1	3.1	0.0	1.7	7.3	6.7	1.0	0.7
Kenya	12.4	1.6	0.1	2.9	6.5	6.5	1.2	1.0
Libya	47.9	24.9	0.6	2.0	18.8	18.8	1.6	1.6
Mauritius	4.0	2.4	-	0.3	1.0	1.0	0.2	0.1
Morocco	53.1	20.3	1.2	7.2	15.3	15.3	9.0	6.1
Mozambique	3.9	0.7	0.0	0.6	2.2	2.0	0.3	0.2
Namibia	3.6	0.0	-	0.3	2.0	1.9	1.3	0.0
Niger	2.0	0.5	-	0.3	1.2	1.2	0.1	0.1
Nigeria	60.2	12.6	10.9	7.3	21.3	21.3	8.0	1.6
Senegal	6.3	2.3	0.0	1.2	2.4	2.3	0.3	0.3
South Africa	437.4	251.8	43.3	55.0	52.7	49.2	34.5	16.1
South Sudan	1.5	0.4	0.0	0.0	1.0	1.0	0.1	0.0
Sudan	13.3	2.0	0.2	1.7	7.9	7.8	1.5	0.5
United Rep. of Tanzania	10.4	2.4	-	1.6	6.0	6.0	0.4	0.3
Togo	1.7	0.0	-	0.2	1.3	1.3	0.2	0.2
Tunisia	25.0	9.0	0.7	5.3	6.3	6.1	3.6	1.9
Zambia	3.2	0.3	0.0	1.5	1.1	1.1	0.3	0.0
Zimbabwe	11.5	6.8	0.1	1.0	2.6	2.4	1.1	0.2
Other Africa	31.0	8.2	0.9	4.1	14.3	13.6	3.4	1.5
Africa	**1 105.3**	**468.7**	**89.3**	**139.8**	**286.3**	**273.3**	**121.3**	**71.1**

1. Please refer to the chapter *Geographical Coverage*.

CO_2 emissions by sector in 2014

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy ind. own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Bangladesh	62.3	32.8	0.1	10.2	8.8	6.8	10.4	6.6
Brunei Darussalam	6.7	2.8	2.0	0.3	1.4	1.4	0.2	0.1
Cambodia	6.1	1.2	-	0.2	3.9	3.2	0.8	0.3
DPR of Korea	37.8	6.1	0.0	23.2	1.3	1.3	7.1	0.1
India	2 019.7	1 046.4	36.2	533.4	231.8	214.9	171.8	85.5
Indonesia	436.5	168.3	24.9	80.3	134.5	118.0	28.6	19.6
Malaysia	220.5	98.2	21.0	28.6	65.5	63.4	7.2	1.7
Mongolia	18.2	11.6	0.0	2.2	2.0	1.4	2.4	1.2
Myanmar	19.6	4.0	0.8	4.8	7.2	5.9	2.9	0.0
Nepal	5.9	0.1	-	1.9	2.6	2.6	1.3	0.5
Pakistan	137.4	44.8	1.5	32.8	39.8	36.9	18.6	15.0
Philippines	95.7	46.7	1.3	13.9	26.6	22.8	7.2	2.3
Singapore	45.3	21.8	4.8	11.3	6.9	6.6	0.6	0.2
Sri Lanka	16.7	6.8	0.0	1.0	8.0	7.9	0.9	0.4
Chinese Taipei	249.7	149.2	15.1	40.0	35.7	34.9	9.6	4.3
Thailand	243.5	92.3	21.2	50.9	60.2	58.0	19.0	4.6
Viet Nam	143.3	50.0	-	48.4	31.9	31.2	13.0	7.4
Other Asia	42.1	8.8	-	6.3	25.0	23.4	2.0	0.8
Asia (excl. China)	**3 807.0**	**1 791.7**	**129.1**	**889.5**	**693.1**	**640.6**	**303.5**	**150.7**
People's Rep. of China	9 087.0	4 384.0	364.2	2 882.0	781.4	632.3	675.4	343.1
Hong Kong, China	47.9	31.7	-	8.0	6.6	6.6	1.6	0.8
China	**9 134.9**	**4 415.7**	**364.2**	**2 890.0**	**787.9**	**638.8**	**677.0**	**343.9**
Argentina	192.4	55.6	17.5	32.5	46.5	41.8	40.3	24.0
Bolivia	18.3	3.6	0.9	2.1	7.5	7.1	4.2	1.4
Brazil	476.0	94.7	30.5	98.1	213.0	192.1	39.7	18.0
Colombia	72.5	13.0	6.5	13.3	29.9	28.7	9.8	4.1
Costa Rica	7.2	0.7	0.0	1.0	4.9	4.9	0.5	0.2
Cuba	29.4	14.9	0.6	8.8	1.3	1.2	3.8	0.6
Curaçao	4.7	0.6	2.5	0.4	1.1	1.1	0.1	0.1
Dominican Republic	19.3	10.2	0.2	2.2	5.1	4.0	1.6	1.3
Ecuador	38.7	8.6	1.7	5.1	16.1	15.3	7.2	2.4
El Salvador	5.9	1.6	-	0.7	2.8	2.8	0.7	0.6
Guatemala	16.1	3.3	0.1	5.5	6.5	6.4	0.8	0.7
Haiti	2.8	0.8	-	0.7	1.2	1.2	0.1	0.1
Honduras	8.7	3.6	-	0.8	3.5	3.5	0.9	0.4
Jamaica	7.2	2.5	-	2.6	1.7	1.7	0.3	0.1
Nicaragua	4.5	1.5	0.1	0.6	1.9	1.7	0.5	0.1
Panama	10.6	3.3	-	2.6	3.9	3.9	0.9	0.5
Paraguay	5.2	0.0	-	0.1	4.8	4.8	0.2	0.2
Peru	47.8	11.6	4.9	8.4	19.3	17.1	3.7	2.2
Suriname	2.0	0.8	0.0	0.1	0.7	0.4	0.4	0.0
Trinidad and Tobago	23.2	6.1	8.3	5.2	3.2	2.8	0.4	0.4
Uruguay	6.3	0.6	0.4	0.8	3.5	3.4	1.0	0.4
Venezuela	155.0	31.1	24.0	42.8	50.1	50.1	7.0	5.2
Other Non-OECD Americas	20.1	10.6	0.0	0.6	6.0	5.7	2.9	0.8
Non-OECD Americas	**1 173.9**	**279.4**	**98.3**	**234.9**	**434.3**	**401.9**	**127.0**	**63.9**
Bahrain	29.7	20.5	3.3	2.2	3.4	3.3	0.2	0.2
Islamic Rep. of Iran	556.1	155.8	35.2	92.6	138.6	126.4	133.9	104.2
Iraq	141.0	79.8	12.0	11.1	29.0	29.0	9.1	9.1
Jordan	24.1	12.0	0.7	2.4	7.0	7.0	2.1	1.3
Kuwait	86.1	45.7	12.3	14.4	13.1	13.1	0.5	0.5
Lebanon	22.4	12.8	-	1.1	5.5	5.5	3.0	3.0
Oman	59.9	16.0	7.1	22.4	12.4	12.4	2.0	0.5
Qatar	77.6	19.2	30.1	13.8	14.2	14.2	0.3	0.3
Saudi Arabia	506.6	221.7	27.3	122.1	131.3	128.9	4.2	4.2
Syrian Arab Republic	27.6	11.7	0.6	3.7	6.6	6.5	5.0	2.4
United Arab Emirates	175.4	70.8	2.1	64.8	36.9	36.1	0.9	0.9
Yemen	21.3	5.6	1.1	3.2	7.4	7.4	4.1	2.7
Middle East	**1 727.8**	**671.6**	**131.7**	**353.7**	**405.5**	**389.7**	**165.3**	**129.4**

CO_2 emissions with electricity and heat allocated to consuming sectors [1] in 2014

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Other energy ind. own use [2]	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
World [3]	**32 381.0**	**2 256.9**	**12 129.0**	**7 701.0**	**5 660.9**	**10 294.1**	**5 387.9**
Annex I Parties	*12 628.4*	*963.9*	*3 060.0*	*3 537.0*	*2 986.6*	*5 067.6*	*2 687.7*
Annex II Parties	*9 933.7*	*720.5*	*2 204.0*	*3 033.6*	*2 629.2*	*3 975.7*	*1 995.5*
North America	*5 731.0*	*443.3*	*1 016.4*	*1 910.1*	*1 612.5*	*2 361.2*	*1 172.3*
Europe	*2 609.0*	*166.7*	*666.7*	*794.0*	*739.0*	*981.7*	*546.5*
Asia Oceania	*1 593.6*	*110.6*	*520.8*	*329.5*	*277.7*	*632.7*	*276.7*
Annex I EIT	*2 379.5*	*231.0*	*741.4*	*439.7*	*300.0*	*967.4*	*635.8*
Non-Annex I Parties	*18 622.2*	*1 293.0*	*9 069.0*	*3 033.6*	*2 674.4*	*5 226.5*	*2 700.2*
Annex B Kyoto Parties	*4 126.5*	*328.3*	*1 141.1*	*1 076.5*	*980.6*	*1 580.6*	*889.0*
Non-OECD Total	**19 395.0**	**1 377.8**	**9 267.9**	**3 101.0**	**2 620.5**	**5 648.3**	**3 062.2**
OECD Total	**11 855.6**	**879.1**	**2 861.0**	**3 469.6**	**3 040.5**	**4 645.9**	**2 325.6**
Canada	554.8	122.8	101.9	177.3	141.9	152.8	72.8
Chile	75.8	3.3	32.8	24.0	21.4	15.7	8.4
Mexico	430.9	54.5	134.3	151.8	146.9	90.2	47.0
United States	5 176.2	320.5	914.5	1 732.8	1 470.6	2 208.4	1 099.6
OECD Americas	**6 237.8**	**501.1**	**1 183.5**	**2 086.0**	**1 780.7**	**2 467.2**	**1 227.8**
Australia	373.8	46.8	108.4	96.4	77.9	122.2	56.8
Israel	64.7	5.1	14.4	16.9	16.9	28.3	12.5
Japan	1 188.6	62.0	403.6	219.0	187.0	504.0	217.5
Korea	567.8	51.6	233.7	93.5	88.5	189.0	75.7
New Zealand	31.2	1.8	8.8	14.1	12.7	6.6	2.3
OECD Asia Oceania	**2 226.2**	**167.3**	**768.9**	**439.9**	**383.1**	**850.0**	**364.8**
Austria	60.8	7.4	15.3	22.7	21.5	15.3	9.0
Belgium	87.4	6.6	25.9	25.3	24.2	29.5	17.7
Czech Republic	96.6	6.1	32.3	17.4	16.1	40.7	22.7
Denmark	34.5	2.3	5.5	11.4	10.5	15.2	8.4
Estonia	17.5	0.7	3.5	2.3	2.1	11.0	5.8
Finland	45.3	3.5	15.8	10.9	10.1	15.1	7.4
France	285.7	11.5	51.9	122.0	116.9	100.3	55.0
Germany	723.3	31.3	232.9	160.5	149.5	298.6	171.3
Greece	65.9	5.4	14.4	16.6	14.2	29.5	15.4
Hungary	40.3	1.8	10.7	11.2	10.7	16.6	9.7
Iceland	2.0	0.0	0.6	0.8	0.8	0.6	0.0
Ireland	33.9	0.4	7.9	10.9	10.7	14.7	9.3
Italy	319.7	17.1	78.4	108.5	99.8	115.7	63.9
Luxembourg	9.2	-	1.2	6.2	6.2	1.8	1.1
Netherlands	148.3	13.8	45.5	30.2	28.4	58.8	25.8
Norway	35.3	11.0	6.4	14.0	10.6	3.8	0.9
Poland	279.0	17.9	68.3	45.9	42.5	146.9	87.4
Portugal	42.8	3.3	10.9	15.8	15.0	12.8	5.4
Slovak Republic	29.3	5.1	10.0	6.2	5.8	8.1	4.5
Slovenia	12.8	0.0	3.8	5.3	5.3	3.6	1.9
Spain	232.0	18.5	54.7	83.2	75.1	75.7	36.7
Sweden	37.4	2.9	8.5	20.0	19.4	5.9	2.5
Switzerland	37.7	0.9	6.0	17.0	16.6	13.8	8.8
Turkey	307.1	12.4	113.2	61.4	55.2	120.1	54.5
United Kingdom	407.8	30.4	84.9	117.9	109.4	174.6	107.9
OECD Europe	**3 391.6**	**210.7**	**908.5**	**943.7**	**876.6**	**1 328.7**	**733.1**
European Union - 28	*3 160.0*	*198.5*	*825.2*	*890.1*	*830.7*	*1 246.2*	*701.7*
G7	*8 656.1*	*595.7*	*1 868.1*	*2 638.0*	*2 275.1*	*3 554.3*	*1 788.0*
G8	*10 123.7*	*766.3*	*2 327.1*	*2 909.0*	*2 426.5*	*4 121.3*	*2 178.7*
G20	*26 430.3*	*1 863.5*	*10 611.6*	*5 358.9*	*4 533.9*	*8 596.3*	*4 452.6*

1. 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 94-96.
2. Includes emissions from own use in petroleum refining, the manufacture of solid fuels, coal mining, oil and gas extraction and other energy-producing industries.
3. World includes international bunkers in the transport sector.

CO_2 emissions with electricity and heat allocated to consuming sectors in 2014

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Other energy ind. own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Non-OECD Total	**19 395.0**	**1 377.8**	**9 267.9**	**3 101.0**	**2 620.5**	**5 648.3**	**3 062.2**
Albania	4.1	0.1	0.9	2.5	2.4	0.6	0.2
Armenia	5.2	-	1.0	1.5	1.5	2.7	1.8
Azerbaijan	30.8	3.8	4.1	7.8	6.9	15.0	10.0
Belarus	57.4	6.0	14.5	12.2	10.0	24.8	14.2
Bosnia and Herzegovina	21.6	1.2	6.7	3.1	3.0	10.6	7.2
Bulgaria	42.1	3.0	13.2	8.4	7.8	17.5	10.4
Croatia	15.1	1.6	3.0	5.6	5.3	5.0	2.7
Cyprus [1]	5.8	0.0	1.0	1.7	1.7	3.0	1.3
FYR of Macedonia	7.4	0.1	2.5	1.6	1.6	3.2	2.1
Georgia	7.7	0.0	1.9	3.3	3.2	2.5	1.5
Gibraltar	0.5	-	-	0.4	0.4	0.1	-
Kazakhstan	223.7	54.4	82.2	15.1	12.8	71.9	38.7
Kosovo	7.4	0.0	2.0	1.0	1.0	4.4	3.1
Kyrgyzstan	8.4	0.0	1.9	2.4	2.3	4.1	2.8
Latvia	6.7	-	1.1	2.9	2.7	2.7	1.3
Lithuania	10.3	1.4	1.7	4.8	4.5	2.4	1.4
Malta	2.3	-	0.4	0.5	0.5	1.4	0.5
Republic of Moldova	7.2	0.0	2.0	1.8	1.8	3.5	2.3
Montenegro	2.2	-	0.6	0.5	0.5	1.1	0.7
Romania	68.2	6.1	22.5	15.8	14.8	23.8	15.3
Russian Federation	1 467.6	170.6	458.9	271.0	151.4	567.0	390.7
Serbia	38.1	1.6	10.6	6.1	5.8	19.8	14.5
Tajikistan	4.7	0.0	0.1	1.6	1.6	2.9	0.0
Turkmenistan	67.0	7.6	7.1	12.1	7.9	40.2	3.2
Ukraine	236.5	10.6	97.9	30.7	21.1	97.3	67.9
Uzbekistan	97.9	3.9	22.4	7.5	3.7	64.1	31.7
Non-OECD Europe and Eurasia	**2 446.1**	**272.2**	**760.2**	**422.0**	**276.0**	**991.8**	**625.6**
Algeria	122.9	15.6	21.5	44.0	41.5	41.8	31.0
Angola	19.3	0.3	2.7	8.5	7.6	7.9	4.2
Benin	5.7	-	0.4	3.9	3.9	1.5	1.4
Botswana	6.9	-	2.3	2.2	2.2	2.4	1.1
Cameroon	6.0	0.7	1.1	3.3	3.1	1.0	0.6
Congo	2.6	-	0.3	2.0	1.6	0.3	0.3
Côte d'Ivoire	9.4	0.2	2.5	2.9	2.6	3.8	1.8
Dem. Rep. of the Congo	4.7	-	0.1	4.5	3.8	0.0	0.0
Egypt	173.3	14.8	46.9	39.3	36.7	72.2	45.5
Eritrea	0.6	-	0.1	0.2	0.2	0.3	0.2
Ethiopia	9.1	-	3.1	4.3	4.1	1.7	0.9
Gabon	3.5	0.1	1.5	0.8	0.8	1.1	0.7
Ghana	13.1	0.0	3.2	7.3	6.7	2.6	1.7
Kenya	12.4	0.1	3.8	6.5	6.5	2.0	1.5
Libya	47.9	0.6	5.5	18.8	18.8	22.9	11.4
Mauritius	4.0	0.0	1.2	1.0	1.0	1.7	0.9
Morocco	53.1	1.9	14.4	15.6	15.3	21.3	12.6
Mozambique	3.9	0.0	1.2	2.2	2.0	0.4	0.3
Namibia	3.6	-	0.3	2.0	1.9	1.3	0.0
Niger	2.0	-	0.4	1.2	1.2	0.4	0.3
Nigeria	60.2	11.0	9.4	21.3	21.3	18.5	8.8
Senegal	6.3	0.0	1.8	2.4	2.3	2.0	1.1
South Africa	437.4	58.2	198.9	57.2	49.2	123.1	61.3
South Sudan	1.5	0.0	0.0	1.0	1.0	0.5	0.2
Sudan	13.3	0.2	2.1	7.9	7.8	3.2	1.6
United Rep. of Tanzania	10.4	0.0	2.2	6.0	6.0	2.2	1.4
Togo	1.7	-	0.2	1.3	1.3	0.2	0.2
Tunisia	25.0	0.8	8.5	6.4	6.1	9.3	4.5
Zambia	3.2	0.0	1.6	1.1	1.1	0.4	0.1
Zimbabwe	11.5	0.1	3.8	2.6	2.4	5.0	2.4
Other Africa	31.0	0.9	6.7	14.4	13.6	9.1	4.0
Africa	**1 105.3**	**105.7**	**347.7**	**292.0**	**273.4**	**359.9**	**202.0**

1. Please refer to the chapter *Geographical Coverage*.

CO_2 emissions with electricity and heat allocated to consuming sectors in 2014

million tonnes of CO_2

	Total CO_2 emissions from fuel combustion	Other energy ind. own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Bangladesh	62.3	0.1	28.0	8.8	6.8	25.3	18.2
Brunei Darussalam	6.7	2.3	0.5	1.4	1.4	2.5	1.1
Cambodia	6.1	-	0.4	3.9	3.2	1.8	1.0
DPR of Korea	37.8	0.0	26.3	1.3	1.3	10.1	0.1
India	2 019.7	44.2	959.8	250.2	214.9	765.5	333.1
Indonesia	436.5	24.9	136.2	134.5	118.0	141.0	88.8
Malaysia	220.5	21.0	75.4	65.7	63.4	58.4	21.9
Mongolia	18.2	0.0	6.3	2.0	1.4	9.8	5.5
Myanmar	19.6	0.8	5.5	7.2	5.9	6.1	1.6
Nepal	5.9	-	2.0	2.6	2.6	1.3	0.5
Pakistan	137.4	1.5	46.0	39.8	36.9	50.2	35.9
Philippines	95.7	1.3	29.7	26.7	22.8	38.0	17.8
Singapore	45.3	4.8	20.0	8.0	6.6	12.5	3.4
Sri Lanka	16.7	0.0	3.3	8.0	7.9	5.4	3.1
Chinese Taipei	249.7	17.5	125.5	36.6	34.9	70.1	32.9
Thailand	243.5	21.2	91.2	60.3	58.0	70.8	25.9
Viet Nam	143.3	-	74.9	31.9	31.2	36.5	25.5
Other Asia	42.1	-	9.8	25.0	23.4	7.3	3.0
Asia (excl. China)	**3 807.0**	**139.7**	**1 640.7**	**713.9**	**640.6**	**1 312.7**	**619.3**
People's Rep. of China	9 087.0	608.8	5 662.0	825.3	632.3	1 990.9	1 048.0
Hong Kong, China	47.9	-	10.3	6.6	6.6	31.1	9.5
China	**9 134.9**	**608.8**	**5 672.3**	**831.9**	**638.8**	**2 021.9**	**1 057.5**
Argentina	192.4	17.5	55.2	46.8	41.8	72.9	43.2
Bolivia	18.3	0.9	3.1	7.5	7.1	6.9	2.8
Brazil	476.0	34.4	135.4	213.5	192.1	92.7	41.9
Colombia	72.5	6.5	17.4	29.9	28.7	18.6	9.7
Costa Rica	7.2	0.0	1.1	4.9	4.9	1.1	0.5
Cuba	29.4	0.6	12.4	1.6	1.2	14.9	8.4
Curaçao	4.7	2.5	0.7	1.1	1.1	0.4	0.1
Dominican Republic	19.3	0.2	5.9	5.1	4.0	8.1	4.8
Ecuador	38.7	1.7	8.5	16.1	15.4	12.4	4.9
El Salvador	5.9	-	1.4	2.8	2.8	1.7	1.0
Guatemala	16.1	0.1	6.8	6.5	6.4	2.7	1.8
Haiti	2.8	-	1.0	1.2	1.2	0.6	0.5
Honduras	8.7	-	1.8	3.5	3.5	3.4	1.8
Jamaica	7.2	-	3.5	1.7	1.7	1.9	0.9
Nicaragua	4.5	0.1	1.0	1.9	1.7	1.5	0.6
Panama	10.6	-	3.0	3.9	3.9	3.8	1.6
Paraguay	5.2	-	0.1	4.8	4.8	0.2	0.2
Peru	47.8	4.9	14.7	19.3	17.1	8.9	4.8
Suriname	2.0	0.0	0.5	0.7	0.4	0.8	0.3
Trinidad and Tobago	23.2	8.3	8.9	3.2	2.8	2.8	2.1
Uruguay	6.3	0.4	1.0	3.5	3.4	1.4	0.6
Venezuela	155.0	24.7	55.9	50.2	50.1	24.2	14.8
Other Non-OECD Americas	20.1	0.0	5.4	6.0	5.7	8.6	4.8
Non-OECD Americas	**1 173.9**	**102.9**	**344.9**	**435.6**	**401.9**	**290.5**	**152.2**
Bahrain	29.7	3.3	12.9	3.4	3.3	10.1	5.7
Islamic Rep. of Iran	556.1	37.0	145.3	138.9	126.4	235.0	153.7
Iraq	141.0	12.0	29.4	29.0	29.0	70.6	37.8
Jordan	24.1	0.8	5.2	7.0	7.0	11.1	6.4
Kuwait	86.1	18.6	14.4	13.1	13.1	39.9	25.8
Lebanon	22.4	-	4.4	5.5	5.5	12.5	7.9
Oman	59.9	7.1	25.0	12.4	12.4	15.3	8.0
Qatar	77.6	30.1	20.4	14.2	14.2	13.0	8.2
Saudi Arabia	506.6	35.9	160.0	131.3	128.9	179.4	110.6
Syrian Arab Republic	27.6	0.6	7.7	6.6	6.5	12.7	7.7
United Arab Emirates	175.4	2.1	74.1	36.9	36.1	62.3	27.2
Yemen	21.3	1.1	3.4	7.4	7.4	9.5	6.5
Middle East	**1 727.8**	**148.5**	**502.2**	**405.8**	**389.7**	**671.3**	**405.7**

Total primary energy supply

petajoules

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World [1]	**231 235**	**258 865**	**301 655**	**323 470**	**367 278**	**386 328**	**420 224**	**482 863**	**542 270**	**567 274**	**573 555**	**56.2%**
Annex I Parties	*..*	*..*	*..*	*..*	*233 887*	*229 741*	*241 705*	*250 983*	*245 782*	*240 135*	*237 564*	*1.6%*
Annex II Parties	*130 357*	*138 416*	*153 270*	*154 071*	*168 004*	*180 514*	*195 058*	*201 318*	*194 141*	*187 700*	*186 305*	*10.9%*
North America	*72 382*	*76 179*	*83 594*	*82 355*	*89 025*	*96 344*	*105 799*	*108 452*	*103 836*	*102 755*	*104 505*	*17.4%*
Europe	*44 326*	*46 580*	*51 961*	*53 017*	*56 457*	*58 994*	*62 330*	*65 671*	*63 316*	*59 803*	*57 200*	*1.3%*
Asia Oceania	*13 648*	*15 658*	*17 715*	*18 699*	*22 521*	*25 176*	*26 929*	*27 195*	*26 989*	*25 143*	*24 599*	*9.2%*
Annex I EIT	*..*	*..*	*..*	*..*	*63 590*	*46 548*	*43 348*	*46 009*	*47 039*	*47 425*	*46 055*	*-27.6%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*124 926*	*146 952*	*167 074*	*218 503*	*281 396*	*312 293*	*320 785*	*156.8%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*90 016*	*85 056*	*85 889*	*91 406*	*89 908*	*85 536*	*82 060*	*-8.8%*
Intl. marine bunkers	**4 597**	**4 433**	**4 647**	**3 993**	**4 846**	**5 574**	**6 492**	**7 489**	**8 694**	**8 000**	**8 153**	**68.2%**
Intl. aviation bunkers	**2 368**	**2 432**	**2 827**	**3 146**	**3 619**	**4 061**	**4 954**	**5 888**	**6 398**	**6 847**	**7 054**	**94.9%**
Non-OECD Total [2]	**83 081**	**100 545**	**123 876**	**143 727**	**169 329**	**172 404**	**186 881**	**238 194**	**300 096**	**330 118**	**337 567**	**99.4%**
OECD Total [3]	**141 189**	**151 455**	**170 305**	**172 604**	**189 485**	**204 289**	**221 898**	**231 291**	**227 082**	**222 309**	**220 781**	**16.5%**
Canada	5 918	6 948	8 036	8 080	8 846	9 790	10 619	11 370	11 089	11 374	11 718	32.5%
Chile	364	320	397	401	587	768	1 054	1 188	1 292	1 620	1 512	157.7%
Mexico	1 799	2 476	3 982	4 547	5 178	5 517	6 280	7 479	7 317	8 043	7 870	52.0%
United States	66 464	69 231	75 558	74 275	80 179	86 554	95 180	97 082	92 747	91 380	92 787	15.7%
OECD Americas	**74 546**	**78 974**	**87 973**	**87 304**	**94 790**	**102 630**	**113 133**	**117 118**	**112 444**	**112 418**	**113 887**	**20.1%**
Australia	2 161	2 528	2 914	3 037	3 616	3 881	4 526	4 751	5 344	5 295	5 243	45.0%
Israel	240	294	328	317	480	649	763	772	971	968	950	97.9%
Japan	11 201	12 772	14 424	15 194	18 367	20 671	21 688	21 735	20 876	19 036	18 495	0.7%
Korea	711	1 024	1 727	2 225	3 890	6 061	7 878	8 804	10 468	11 046	11 238	188.9%
New Zealand	286	358	376	469	537	623	716	709	770	811	861	60.2%
OECD Asia Oceania	**14 599**	**16 976**	**19 770**	**21 241**	**26 891**	**31 886**	**35 571**	**36 772**	**38 428**	**37 157**	**36 787**	**36.8%**
Austria	788	842	969	967	1 042	1 123	1 198	1 407	1 419	1 391	1 347	29.3%
Belgium	1 660	1 772	1 958	1 847	2 007	2 236	2 433	2 437	2 527	2 335	2 210	10.1%
Czech Republic	1 900	1 829	1 966	2 062	2 075	1 738	1 712	1 881	1 858	1 756	1 725	-16.9%
Denmark	775	732	801	808	727	812	780	791	815	735	679	-6.6%
Estonia	..	..	..	..	409	218	197	218	235	255	253	-38.3%
Finland	761	825	1 030	1 082	1 188	1 211	1 357	1 441	1 533	1 393	1 421	19.6%
France	6 639	6 907	8 029	8 534	9 379	9 925	10 547	11 340	10 936	10 593	10 159	8.3%
Germany	12 772	13 126	14 954	14 955	14 704	14 088	14 092	14 110	13 685	13 302	12 815	-12.9%
Greece	364	492	627	735	898	949	1 134	1 266	1 156	977	969	7.9%
Hungary	797	959	1 187	1 246	1 205	1 082	1 047	1 153	1 076	941	956	-20.7%
Iceland	38	46	63	74	95	92	131	131	227	246	246	158.4%
Ireland	281	278	345	361	415	446	578	610	602	545	535	28.8%
Italy	4 413	4 889	5 478	5 414	6 136	6 662	7 181	7 802	7 273	6 505	6 145	0.1%
Luxembourg	170	158	149	128	142	132	140	184	177	166	160	12.6%
Netherlands	2 130	2 471	2 695	2 539	2 751	3 094	3 160	3 409	3 496	3 237	3 054	11.0%
Norway	558	613	768	837	882	984	1 095	1 123	1 420	1 365	1 204	36.5%
Poland	3 606	4 314	5 301	5 221	4 317	4 165	3 717	3 858	4 205	4 086	3 936	-8.8%
Portugal	263	322	418	459	703	845	1 030	1 108	984	901	886	26.1%
Slovak Republic	597	702	831	868	893	744	743	788	746	710	668	-25.2%
Slovenia	..	..	..	..	239	254	269	305	307	287	279	16.9%
Spain	1 784	2 407	2 834	2 969	3 771	4 220	5 102	5 942	5 349	4 903	4 796	27.2%
Sweden	1 509	1 634	1 695	1 977	1 976	2 107	1 991	2 159	2 131	2 069	2 016	2.0%
Switzerland	686	719	839	924	1 020	1 009	1 047	1 086	1 097	1 119	1 049	2.9%
Turkey	818	1 120	1 317	1 646	2 207	2 578	3 180	3 526	4 466	4 896	5 089	130.6%
United Kingdom	8 737	8 347	8 308	8 407	8 622	9 058	9 335	9 322	8 490	8 022	7 512	-12.9%
OECD Europe [3]	**52 045**	**55 505**	**62 562**	**64 059**	**67 803**	**69 773**	**73 195**	**77 401**	**76 210**	**72 735**	**70 107**	**3.4%**
European Union - 28	*..*	*..*	*..*	*..*	*68 871*	*69 013*	*70 965*	*75 082*	*72 230*	*68 093*	*65 522*	*-4.9%*
G7	*116 144*	*122 219*	*134 788*	*134 859*	*146 234*	*156 750*	*168 641*	*172 762*	*165 096*	*160 213*	*159 631*	*9.2%*
G8	*..*	*..*	*..*	*..*	*183 043*	*183 404*	*194 569*	*200 048*	*193 918*	*190 727*	*189 394*	*3.5%*
G20	*..*	*..*	*..*	*..*	*295 745*	*312 791*	*338 401*	*385 170*	*429 441*	*447 335*	*451 472*	*52.7%*

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

Total primary energy supply

petajoules

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**83 081**	**100 545**	**123 876**	**143 727**	**169 329**	**172 404**	**186 881**	**238 194**	**300 096**	**330 118**	**337 567**	**99.4%**
Albania	72	83	129	114	112	56	75	91	89	97	98	-12.6%
Armenia	..	..	..	..	323	69	84	105	104	121	124	-61.6%
Azerbaijan	..	..	..	..	949	582	473	562	485	581	600	-36.8%
Belarus	..	..	..	..	1 905	1 036	1 029	1 120	1 152	1 142	1 162	-39.0%
Bosnia and Herzegovina	..	..	..	..	294	63	182	211	271	270	328	11.5%
Bulgaria	797	973	1 189	1 283	1 182	967	779	833	748	708	749	-36.6%
Croatia	..	..	..	..	396	327	351	408	393	353	337	-15.0%
Cyprus [2]	25	24	36	39	57	71	89	93	102	81	83	44.5%
FYR of Macedonia	..	..	..	..	104	105	112	117	121	113	110	5.9%
Georgia	..	..	..	..	520	156	120	119	131	163	184	-64.6%
Gibraltar	1	1	1	2	2	4	5	6	7	8	8	240.7%
Kazakhstan	..	..	..	..	3 075	2 187	1 494	2 130	2 894	3 414	3 210	4.4%
Kosovo	..	..	..	..	..	..	65	81	104	99	93	..
Kyrgyzstan	..	..	..	..	313	100	97	108	115	165	159	-49.3%
Latvia	..	..	..	..	329	192	160	190	189	182	182	-44.7%
Lithuania	..	..	..	..	673	365	299	370	295	292	293	-56.4%
Malta	9	9	13	14	29	30	28	37	35	32	32	11.4%
Republic of Moldova	..	..	..	..	414	198	121	146	147	129	138	-66.6%
Montenegro	..	..	..	..	..	..	..	45	49	41	40	..
Romania	1 764	2 169	2 731	2 719	2 606	1 951	1 517	1 616	1 467	1 335	1 327	-49.1%
Russian Federation	..	..	..	..	36 809	26 655	25 927	27 286	28 822	30 514	29 763	-19.1%
Serbia	..	..	..	..	825	577	575	673	654	624	555	-32.7%
Tajikistan	..	..	..	..	222	93	90	98	91	109	117	-47.2%
Turkmenistan	..	..	..	..	733	573	623	803	950	1 097	1 120	52.7%
Ukraine	..	..	..	..	10 551	6 854	5 602	5 982	5 545	4 863	4 425	-58.1%
Uzbekistan	..	..	..	..	1 941	1 790	2 130	1 971	1 809	1 799	1 829	-5.8%
Former Soviet Union [3]	32 169	39 351	46 453	52 248	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	918	1 068	1 411	1 722	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**35 753**	**43 678**	**51 963**	**58 141**	**64 366**	**44 999**	**42 027**	**45 202**	**46 769**	**48 333**	**47 064**	**-26.9%**
Algeria	145	231	469	743	929	1 015	1 130	1 357	1 678	1 992	2 163	132.9%
Angola	161	173	191	209	246	266	301	353	509	581	614	149.4%
Benin	46	52	57	65	70	77	83	105	153	170	180	158.1%
Botswana	..	..	..	36	51	61	75	78	90	104	114	123.0%
Cameroon	113	127	153	187	209	232	264	295	292	305	318	52.6%
Congo	21	23	26	32	33	34	30	46	70	110	110	233.8%
Côte d'Ivoire	103	124	150	155	182	216	284	403	425	566	581	219.3%
Dem. Rep. of the Congo	280	313	354	417	494	537	582	698	831	1 151	1 202	143.4%
Egypt	327	410	632	1 074	1 350	1 471	1 699	2 574	3 037	3 141	3 133	132.0%
Eritrea	..	..	..	..	..	42	30	32	31	33	34	..
Ethiopia	582	644	699	806	960	1 142	1 327	1 544	1 786	1 965	2 025	110.9%
Gabon	45	54	58	57	49	56	62	126	213	222	212	329.6%
Ghana	125	153	168	182	222	271	263	246	310	375	378	70.7%
Kenya	222	253	309	364	448	509	586	670	817	893	989	120.6%
Libya	66	153	295	424	468	586	663	744	870	813	748	60.0%
Mauritius	15	17	18	19	28	33	42	49	55	58	59	110.3%
Morocco	124	166	226	259	319	391	461	621	715	785	795	149.2%
Mozambique	289	280	281	267	248	263	300	355	417	458	487	96.5%
Namibia	..	..	..	..	..	39	43	56	64	73	76	..
Niger	..	..	..	..	..	..	62	73	93	120	121	..
Nigeria	1 389	1 614	2 046	2 390	2 781	3 085	3 602	4 409	5 019	5 610	5 640	102.8%
Senegal	52	58	65	65	71	78	100	117	160	155	166	134.7%
South Africa	1 902	2 260	2 737	3 617	3 808	4 335	4 565	5 370	5 936	5 851	6 156	61.6%
South Sudan	..	..	..	..	..	..	..	..	..	28	29	..
Sudan	294	313	350	396	445	502	557	627	700	612	627	41.0%
United Rep. of Tanzania	317	321	336	367	408	461	564	722	865	1 006	1 040	155.1%
Togo	30	33	37	41	53	66	88	99	130	134	138	161.3%
Tunisia	69	91	137	174	207	243	306	348	430	436	440	112.6%
Zambia	147	163	190	208	227	244	265	310	353	405	421	85.7%
Zimbabwe	228	248	272	310	389	412	419	403	402	455	463	18.9%
Other Africa	945	1 032	1 173	1 298	1 757	1 923	1 995	2 274	2 595	2 776	2 865	63.1%
Africa	**8 037**	**9 305**	**11 429**	**14 162**	**16 451**	**18 589**	**20 749**	**25 102**	**29 050**	**31 385**	**32 325**	**96.5%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
3. Prior to 1990, data for individual countries are not available separately; FSU includes Estonia and Former Yugoslavia includes Slovenia.

Total primary energy supply

petajoules

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Bangladesh	238	282	352	417	533	666	765	954	1 278	1 420	1 483	178.1%
Brunei Darussalam	7	31	57	75	72	94	100	93	136	127	149	105.8%
Cambodia	..	..	..	..	..	119	143	144	222	250	267	..
DPR of Korea	813	932	1 271	1 507	1 391	920	826	893	792	454	499	-64.1%
India	6 356	7 198	8 374	10 341	12 800	15 541	18 459	21 610	29 024	32 486	34 530	169.8%
Indonesia	1 467	1 722	2 332	2 756	4 130	5 478	6 517	7 526	8 880	9 107	9 442	128.6%
Malaysia	253	302	498	651	914	1 447	2 047	2 752	3 072	3 676	3 756	310.8%
Mongolia	..	..	..	131	143	113	100	125	165	220	225	57.7%
Myanmar	331	351	394	460	447	494	538	624	587	696	808	80.8%
Nepal	153	169	191	213	242	281	339	382	427	470	489	101.9%
Pakistan	713	852	1 037	1 351	1 796	2 242	2 682	3 203	3 560	3 716	3 763	109.5%
Philippines	642	764	938	995	1 202	1 408	1 674	1 627	1 691	1 875	1 996	66.1%
Singapore	114	155	215	283	483	789	782	903	1 064	1 103	1 173	143.0%
Sri Lanka	159	172	190	209	231	251	349	377	408	420	448	94.2%
Chinese Taipei	419	599	1 168	1 390	1 999	2 660	3 552	4 286	4 666	4 531	4 615	130.9%
Thailand	573	726	921	1 036	1 756	2 593	3 026	4 145	4 934	5 682	5 642	221.3%
Viet Nam	554	582	603	668	748	916	1 203	1 727	2 467	2 583	2 789	272.9%
Other Asia	237	272	324	269	289	289	345	398	514	777	822	184.7%
Asia (excl. China)	**13 030**	**15 110**	**18 865**	**22 752**	**29 176**	**36 301**	**43 447**	**51 771**	**63 887**	**69 596**	**72 897**	**149.8%**
People's Rep. of China	16 373	20 238	25 038	28 945	36 454	43 727	47 524	76 073	109 478	125 810	127 760	250.5%
Hong Kong, China	126	152	194	276	361	443	569	526	572	584	596	65.3%
China	**16 498**	**20 390**	**25 232**	**29 220**	**36 814**	**44 171**	**48 093**	**76 600**	**110 051**	**126 394**	**128 357**	**248.7%**
Argentina	1 409	1 505	1 751	1 731	1 929	2 263	2 577	2 802	3 294	3 476	3 626	88.0%
Bolivia	43	62	102	106	109	158	205	217	268	327	349	219.1%
Brazil	2 922	3 814	4 767	5 416	5 870	6 745	7 848	9 016	11 132	12 298	12 696	116.3%
Colombia	580	646	741	837	1 014	1 156	1 081	1 134	1 306	1 409	1 424	40.4%
Costa Rica	34	42	53	53	70	99	120	162	195	203	205	192.5%
Cuba	439	491	613	640	729	455	533	447	517	483	490	-32.8%
Curaçao [1]	229	161	164	75	61	55	88	87	85	76	83	35.2%
Dominican Republic	98	129	144	142	168	220	302	290	315	320	320	90.3%
Ecuador	94	132	209	235	265	330	369	391	493	555	594	124.0%
El Salvador	73	95	105	110	103	141	166	189	178	167	170	64.7%
Guatemala	114	140	159	158	185	223	295	327	427	504	553	199.7%
Haiti	63	72	87	79	65	71	84	143	159	172	174	166.1%
Honduras	58	64	78	84	100	118	125	172	191	218	224	125.0%
Jamaica	84	112	95	72	117	134	160	155	112	120	118	0.9%
Nicaragua	51	62	64	81	85	95	105	120	124	147	153	81.4%
Panama	69	71	59	65	62	84	108	122	151	166	176	182.6%
Paraguay	57	62	87	95	129	164	161	166	201	207	216	68.2%
Peru	382	434	471	443	408	459	512	571	782	853	996	144.3%
Suriname	..	..	..	..	..	..	26	26	30	29	29	..
Trinidad and Tobago	110	97	160	213	251	257	412	675	840	821	819	226.8%
Uruguay	101	102	111	84	94	108	129	124	171	193	197	109.4%
Venezuela	748	965	1 368	1 521	1 658	1 961	2 147	2 357	3 030	2 879	2 826	70.5%
Other Non-OECD Americas	203	252	242	151	213	210	210	213	255	297	304	42.7%
Non-OECD Americas	**7 962**	**9 508**	**11 632**	**12 390**	**13 684**	**15 503**	**17 764**	**19 905**	**24 255**	**25 917**	**26 743**	**95.4%**
Bahrain	59	89	117	174	219	269	334	435	530	574	593	170.5%
Islamic Republic of Iran	695	1 115	1 593	2 252	2 903	4 238	5 151	7 229	8 553	9 251	9 926	242.0%
Iraq	168	255	407	616	839	1 406	1 087	1 107	1 571	2 066	2 072	146.9%
Jordan	21	32	64	110	137	180	204	280	297	324	342	149.8%
Kuwait	256	271	438	587	381	619	784	1 100	1 343	1 463	1 418	271.9%
Lebanon	77	91	104	98	82	185	205	211	267	296	314	283.5%
Oman	4	10	48	88	177	255	317	415	784	1 023	1 019	476.6%
Qatar	39	85	139	236	273	341	457	698	1 157	1 689	1 845	575.3%
Saudi Arabia	308	367	1 302	1 926	2 429	3 538	4 097	5 131	7 766	8 046	8 939	268.1%
Syrian Arab Republic	100	128	187	328	438	507	646	871	907	487	452	3.2%
United Arab Emirates	42	81	303	574	855	1 159	1 320	1 863	2 583	2 929	2 951	245.1%
Yemen	31	29	53	73	105	143	199	276	327	345	311	195.4%
Middle East	**1 800**	**2 553**	**4 755**	**7 062**	**8 838**	**12 840**	**14 800**	**19 614**	**26 085**	**28 493**	**30 182**	**241.5%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

Total primary energy supply

million tonnes of oil equivalent

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World [1]	**5 523.0**	**6 182.9**	**7 204.9**	**7 725.9**	**8 772.3**	**9 227.3**	**10 036.9**	**11 533.0**	**12 951.9**	**13 549.1**	**13 699.1**	**56.2%**
Annex I Parties	*..*	*..*	*..*	*..*	*5 586.3*	*5 487.3*	*5 773.0*	*5 994.6*	*5 870.4*	*5 735.5*	*5 674.1*	*1.6%*
Annex II Parties	*3 113.5*	*3 306.0*	*3 660.8*	*3 679.9*	*4 012.7*	*4 311.5*	*4 658.9*	*4 808.4*	*4 637.0*	*4 483.1*	*4 449.8*	*10.9%*
North America	*1 728.8*	*1 819.5*	*1 996.6*	*1 967.0*	*2 126.3*	*2 301.1*	*2 527.0*	*2 590.3*	*2 480.1*	*2 454.3*	*2 496.1*	*17.4%*
Europe	*1 058.7*	*1 112.5*	*1 241.1*	*1 266.3*	*1 348.4*	*1 409.0*	*1 488.7*	*1 568.5*	*1 512.3*	*1 428.4*	*1 366.2*	*1.3%*
Asia Oceania	*326.0*	*374.0*	*423.1*	*446.6*	*537.9*	*601.3*	*643.2*	*649.5*	*644.6*	*600.5*	*587.5*	*9.2%*
Annex I EIT	*..*	*..*	*..*	*..*	*1 518.8*	*1 111.8*	*1 035.4*	*1 098.9*	*1 123.5*	*1 132.7*	*1 100.0*	*-27.6%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*2 983.8*	*3 509.9*	*3 990.5*	*5 218.8*	*6 721.0*	*7 459.0*	*7 661.8*	*156.8%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*2 150.0*	*2 031.5*	*2 051.4*	*2 183.2*	*2 147.4*	*2 043.0*	*1 960.0*	*-8.8%*
Intl. marine bunkers	**109.8**	**105.9**	**111.0**	**95.4**	**115.7**	**133.1**	**155.1**	**178.9**	**207.7**	**191.1**	**194.7**	**68.2%**
Intl. aviation bunkers	**56.6**	**58.1**	**67.5**	**75.1**	**86.4**	**97.0**	**118.3**	**140.6**	**152.8**	**163.5**	**168.5**	**94.9%**
Non-OECD Total [2]	**1 984.4**	**2 401.5**	**2 958.7**	**3 432.9**	**4 044.4**	**4 117.8**	**4 463.6**	**5 689.2**	**7 167.7**	**7 884.7**	**8 062.7**	**99.4%**
OECD Total [3]	**3 372.2**	**3 617.4**	**4 067.7**	**4 122.6**	**4 525.8**	**4 879.4**	**5 299.9**	**5 524.3**	**5 423.8**	**5 309.8**	**5 273.3**	**16.5%**
Canada	141.4	165.9	191.9	193.0	211.3	233.8	253.6	271.6	264.8	271.7	279.9	32.5%
Chile	8.7	7.6	9.5	9.6	14.0	18.3	25.2	28.4	30.8	38.7	36.1	157.7%
Mexico	43.0	59.1	95.1	108.6	123.7	131.8	150.0	178.6	174.8	192.1	188.0	52.0%
United States	1 587.5	1 653.5	1 804.7	1 774.0	1 915.1	2 067.3	2 273.3	2 318.8	2 215.2	2 182.6	2 216.2	15.7%
OECD Americas	**1 780.5**	**1 886.3**	**2 101.2**	**2 085.2**	**2 264.0**	**2 451.3**	**2 702.1**	**2 797.3**	**2 685.7**	**2 685.0**	**2 720.1**	**20.1%**
Australia	51.6	60.4	69.6	72.5	86.4	92.7	108.1	113.5	127.6	126.5	125.2	45.0%
Israel	5.7	7.0	7.8	7.6	11.5	15.5	18.2	18.4	23.2	23.1	22.7	97.9%
Japan	267.5	305.1	344.5	362.9	438.7	493.7	518.0	519.1	498.6	454.7	441.7	0.7%
Korea	17.0	24.5	41.3	53.1	92.9	144.8	188.2	210.3	250.0	263.8	268.4	188.9%
New Zealand	6.8	8.5	9.0	11.2	12.8	14.9	17.1	16.9	18.4	19.4	20.6	60.2%
OECD Asia Oceania	**348.7**	**405.5**	**472.2**	**507.3**	**642.3**	**761.6**	**849.6**	**878.3**	**917.8**	**887.5**	**878.7**	**36.8%**
Austria	18.8	20.1	23.2	23.1	24.9	26.8	28.6	33.6	33.9	33.2	32.2	29.3%
Belgium	39.7	42.3	46.8	44.1	47.9	53.4	58.1	58.2	60.4	55.8	52.8	10.1%
Czech Republic	45.4	43.7	47.0	49.2	49.6	41.5	40.9	44.9	44.4	42.0	41.2	-16.9%
Denmark	18.5	17.5	19.1	19.3	17.4	19.4	18.6	18.9	19.5	17.5	16.2	-6.6%
Estonia	..	..	..	..	9.8	5.2	4.7	5.2	5.6	6.1	6.0	-38.3%
Finland	18.2	19.7	24.6	25.8	28.4	28.9	32.4	34.4	36.6	33.3	33.9	19.6%
France	158.6	165.0	191.8	203.8	224.0	237.1	251.9	270.9	261.2	253.0	242.6	8.3%
Germany	305.0	313.5	357.2	357.2	351.2	336.5	336.6	337.0	326.9	317.7	306.1	-12.9%
Greece	8.7	11.7	15.0	17.6	21.4	22.7	27.1	30.2	27.6	23.3	23.1	7.9%
Hungary	19.0	22.9	28.3	29.8	28.8	25.9	25.0	27.5	25.7	22.5	22.8	-20.7%
Iceland	0.9	1.1	1.5	1.8	2.3	2.2	3.1	3.1	5.4	5.9	5.9	158.4%
Ireland	6.7	6.6	8.2	8.6	9.9	10.7	13.8	14.6	14.4	13.0	12.8	28.8%
Italy	105.4	116.8	130.8	129.3	146.6	159.1	171.5	186.4	173.7	155.4	146.8	0.1%
Luxembourg	4.1	3.8	3.6	3.1	3.4	3.1	3.3	4.4	4.2	4.0	3.8	12.6%
Netherlands	50.9	59.0	64.4	60.6	65.7	73.9	75.5	81.4	83.5	77.3	73.0	11.0%
Norway	13.3	14.6	18.4	20.0	21.1	23.5	26.2	26.8	33.9	32.6	28.7	36.5%
Poland	86.1	103.0	126.6	124.7	103.1	99.5	88.8	92.1	100.4	97.6	94.0	-8.8%
Portugal	6.3	7.7	10.0	11.0	16.8	20.2	24.6	26.5	23.5	21.5	21.2	26.1%
Slovak Republic	14.3	16.8	19.8	20.7	21.3	17.8	17.7	18.8	17.8	16.9	15.9	-25.2%
Slovenia	..	..	..	..	5.7	6.1	6.4	7.3	7.3	6.9	6.7	16.9%
Spain	42.6	57.5	67.7	70.9	90.1	100.8	121.9	141.9	127.8	117.1	114.6	27.2%
Sweden	36.0	39.0	40.5	47.2	47.2	50.3	47.6	51.6	50.9	49.4	48.2	2.0%
Switzerland	16.4	17.2	20.0	22.1	24.4	24.1	25.0	25.9	26.2	26.7	25.1	2.9%
Turkey	19.5	26.8	31.4	39.3	52.7	61.6	76.0	84.2	106.7	116.9	121.5	130.6%
United Kingdom	208.7	199.4	198.4	200.8	205.9	216.4	223.0	222.7	202.8	191.6	179.4	-12.9%
OECD Europe [3]	**1 243.1**	**1 325.7**	**1 494.3**	**1 530.0**	**1 619.4**	**1 666.5**	**1 748.2**	**1 848.7**	**1 820.2**	**1 737.2**	**1 674.5**	**3.4%**
European Union - 28	*..*	*..*	*..*	*..*	*1 645.0*	*1 648.4*	*1 695.0*	*1 793.3*	*1 725.2*	*1 626.4*	*1 565.0*	*-4.9%*
G7	*2 774.0*	*2 919.2*	*3 219.3*	*3 221.0*	*3 492.7*	*3 743.9*	*4 027.9*	*4 126.4*	*3 943.3*	*3 826.6*	*3 812.7*	*9.2%*
G8	*..*	*..*	*..*	*..*	*4 371.9*	*4 380.5*	*4 647.2*	*4 778.1*	*4 631.6*	*4 555.4*	*4 523.6*	*3.5%*
G20	*..*	*..*	*..*	*..*	*7 063.7*	*7 470.9*	*8 082.6*	*9 199.6*	*10 257.0*	*10 684.4*	*10 783.2*	*52.7%*

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

Total primary energy supply

million tonnes of oil equivalent

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**1 984.4**	**2 401.5**	**2 958.7**	**3 432.9**	**4 044.4**	**4 117.8**	**4 463.6**	**5 689.2**	**7 167.7**	**7 884.7**	**8 062.7**	**99.4%**
Albania	1.7	2.0	3.1	2.7	2.7	1.3	1.8	2.2	2.1	2.3	2.3	-12.6%
Armenia	..	..	..	..	7.7	1.6	2.0	2.5	2.5	2.9	3.0	-61.6%
Azerbaijan	..	..	..	..	22.7	13.9	11.3	13.4	11.6	13.9	14.3	-36.8%
Belarus	..	..	..	..	45.5	24.7	24.6	26.8	27.5	27.3	27.7	-39.0%
Bosnia and Herzegovina	..	..	..	..	7.0	1.5	4.3	5.0	6.5	6.5	7.8	11.5%
Bulgaria	19.0	23.2	28.4	30.6	28.2	23.1	18.6	19.9	17.9	16.9	17.9	-36.6%
Croatia	..	..	..	..	9.5	7.8	8.4	9.7	9.4	8.4	8.0	-15.0%
Cyprus [2]	0.6	0.6	0.9	0.9	1.4	1.7	2.1	2.2	2.4	1.9	2.0	44.5%
FYR of Macedonia	..	..	..	..	2.5	2.5	2.7	2.8	2.9	2.7	2.6	5.9%
Georgia	..	..	..	..	12.4	3.7	2.9	2.8	3.1	3.9	4.4	-64.6%
Gibraltar	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	240.9%
Kazakhstan	..	..	..	..	73.4	52.2	35.7	50.9	69.1	81.5	76.7	4.4%
Kosovo	..	..	..	..	..	..	1.5	1.9	2.5	2.4	2.2	..
Kyrgyzstan	..	..	..	..	7.5	2.4	2.3	2.6	2.8	3.9	3.8	-49.3%
Latvia	..	..	..	..	7.9	4.6	3.8	4.5	4.5	4.3	4.3	-44.7%
Lithuania	..	..	..	..	16.1	8.7	7.1	8.8	7.0	7.0	7.0	-56.4%
Malta	0.2	0.2	0.3	0.3	0.7	0.7	0.7	0.9	0.8	0.8	0.8	11.4%
Republic of Moldova	..	..	..	..	9.9	4.7	2.9	3.5	3.5	3.1	3.3	-66.6%
Montenegro	..	..	..	..	..	..	..	1.1	1.2	1.0	1.0	..
Romania	42.1	51.8	65.2	64.9	62.3	46.6	36.2	38.6	35.0	31.9	31.7	-49.1%
Russian Federation	..	..	..	..	879.2	636.6	619.3	651.7	688.4	728.8	710.9	-19.1%
Serbia	..	..	..	..	19.7	13.8	13.7	16.1	15.6	14.9	13.3	-32.7%
Tajikistan	..	..	..	..	5.3	2.2	2.1	2.3	2.2	2.6	2.8	-47.2%
Turkmenistan	..	..	..	..	17.5	13.7	14.9	19.2	22.7	26.2	26.7	52.7%
Ukraine	..	..	..	..	252.0	163.7	133.8	142.9	132.4	116.1	105.7	-58.1%
Uzbekistan	..	..	..	..	46.4	42.7	50.9	47.1	43.2	43.0	43.7	-5.8%
Former Soviet Union [3]	768.3	939.9	1 109.5	1 247.9	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	21.9	25.5	33.7	41.1	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**853.9**	**1 043.2**	**1 241.1**	**1 388.7**	**1 537.4**	**1 074.8**	**1 003.8**	**1 079.6**	**1 117.1**	**1 154.4**	**1 124.1**	**-26.9%**
Algeria	3.5	5.5	11.2	17.7	22.2	24.2	27.0	32.4	40.1	47.6	51.7	132.9%
Angola	3.9	4.1	4.6	5.0	5.9	6.4	7.2	8.4	12.2	13.9	14.7	149.4%
Benin	1.1	1.2	1.4	1.5	1.7	1.8	2.0	2.5	3.7	4.1	4.3	158.1%
Botswana	..	..	..	0.9	1.2	1.4	1.8	1.9	2.2	2.5	2.7	123.0%
Cameroon	2.7	3.0	3.7	4.5	5.0	5.5	6.3	7.1	7.0	7.3	7.6	52.6%
Congo	0.5	0.6	0.6	0.8	0.8	0.8	0.7	1.1	1.7	2.6	2.6	233.8%
Côte d'Ivoire	2.5	3.0	3.6	3.7	4.3	5.2	6.8	9.6	10.2	13.5	13.9	219.3%
Dem. Rep. of the Congo	6.7	7.5	8.5	10.0	11.8	12.8	13.9	16.7	19.8	27.5	28.7	143.4%
Egypt	7.8	9.8	15.1	25.7	32.3	35.1	40.6	61.5	72.5	75.0	74.8	132.0%
Eritrea	..	..	..	..	..	1.0	0.7	0.8	0.7	0.8	0.8	..
Ethiopia	13.9	15.4	16.7	19.2	22.9	27.3	31.7	36.9	42.7	46.9	48.4	110.9%
Gabon	1.1	1.3	1.4	1.4	1.2	1.3	1.5	3.0	5.1	5.3	5.1	329.6%
Ghana	3.0	3.7	4.0	4.4	5.3	6.5	6.3	5.9	7.4	9.0	9.0	70.7%
Kenya	5.3	6.0	7.4	8.7	10.7	12.2	14.0	16.0	19.5	21.3	23.6	120.6%
Libya	1.6	3.7	7.0	10.1	11.2	14.0	15.8	17.8	20.8	19.4	17.9	60.0%
Mauritius	0.4	0.4	0.4	0.4	0.7	0.8	1.0	1.2	1.3	1.4	1.4	110.3%
Morocco	3.0	4.0	5.4	6.2	7.6	9.3	11.0	14.8	17.1	18.7	19.0	149.2%
Mozambique	6.9	6.7	6.7	6.4	5.9	6.3	7.2	8.5	10.0	10.9	11.6	96.5%
Namibia	..	..	..	..	..	0.9	1.0	1.3	1.5	1.7	1.8	..
Niger	..	..	..	..	..	..	1.5	1.7	2.2	2.9	2.9	..
Nigeria	33.2	38.6	48.9	57.1	66.4	73.7	86.0	105.3	119.9	134.0	134.7	102.8%
Senegal	1.2	1.4	1.6	1.6	1.7	1.9	2.4	2.8	3.8	3.7	4.0	134.7%
South Africa	45.4	54.0	65.4	86.4	91.0	103.5	109.0	128.3	141.8	139.7	147.0	61.6%
South Sudan	..	..	..	..	..	..	..	..	..	0.7	0.7	..
Sudan	7.0	7.5	8.4	9.5	10.6	12.0	13.3	15.0	16.7	14.6	15.0	41.0%
United Rep. of Tanzania	7.6	7.7	8.0	8.8	9.7	11.0	13.5	17.2	20.7	24.0	24.8	155.1%
Togo	0.7	0.8	0.9	1.0	1.3	1.6	2.1	2.4	3.1	3.2	3.3	161.3%
Tunisia	1.7	2.2	3.3	4.2	4.9	5.8	7.3	8.3	10.3	10.4	10.5	112.6%
Zambia	3.5	3.9	4.5	5.0	5.4	5.8	6.3	7.4	8.4	9.7	10.1	85.7%
Zimbabwe	5.4	5.9	6.5	7.4	9.3	9.8	10.0	9.6	9.6	10.9	11.1	18.9%
Other Africa	22.6	24.7	28.0	31.0	42.0	45.9	47.7	54.3	62.0	66.3	68.4	63.1%
Africa	**192.0**	**222.3**	**273.0**	**338.3**	**392.9**	**444.0**	**495.6**	**599.6**	**693.8**	**749.6**	**772.1**	**96.5%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
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	2010	2013	2014	% change 90-14
Bangladesh	5.7	6.7	8.4	10.0	12.7	15.9	18.3	22.8	30.5	33.9	35.4	178.1%
Brunei Darussalam	0.2	0.7	1.3	1.8	1.7	2.2	2.4	2.2	3.2	3.0	3.6	105.8%
Cambodia	..	..	..	..	..	2.8	3.4	3.4	5.3	6.0	6.4	..
DPR of Korea	19.4	22.3	30.4	36.0	33.2	22.0	19.7	21.3	18.9	10.8	11.9	-64.1%
India	151.8	171.9	200.0	247.0	305.7	371.2	440.9	516.2	693.2	775.9	824.7	169.8%
Indonesia	35.0	41.1	55.7	65.8	98.6	130.9	155.7	179.8	212.1	217.5	225.5	128.6%
Malaysia	6.1	7.2	11.9	15.5	21.8	34.6	48.9	65.7	73.4	87.8	89.7	310.8%
Mongolia	..	..	..	3.1	3.4	2.7	2.4	3.0	3.9	5.3	5.4	57.7%
Myanmar	7.9	8.4	9.4	11.0	10.7	11.8	12.8	14.9	14.0	16.6	19.3	80.8%
Nepal	3.7	4.0	4.6	5.1	5.8	6.7	8.1	9.1	10.2	11.2	11.7	101.9%
Pakistan	17.0	20.3	24.8	32.3	42.9	53.5	64.1	76.5	85.0	88.8	89.9	109.5%
Philippines	15.3	18.3	22.4	23.8	28.7	33.6	40.0	38.9	40.4	44.8	47.7	66.1%
Singapore	2.7	3.7	5.1	6.8	11.5	18.8	18.7	21.6	25.4	26.4	28.0	143.0%
Sri Lanka	3.8	4.1	4.5	5.0	5.5	6.0	8.3	9.0	9.7	10.0	10.7	94.2%
Chinese Taipei	10.0	14.3	27.9	33.2	47.7	63.5	84.8	102.4	111.4	108.2	110.2	130.9%
Thailand	13.7	17.3	22.0	24.7	41.9	61.9	72.3	99.0	117.8	135.7	134.8	221.3%
Viet Nam	13.2	13.9	14.4	16.0	17.9	21.9	28.7	41.3	58.9	61.7	66.6	272.9%
Other Asia	5.7	6.5	7.7	6.4	6.9	6.9	8.2	9.5	12.3	18.6	19.6	184.7%
Asia (excl. China)	**311.2**	**360.9**	**450.6**	**543.4**	**696.9**	**867.0**	**1 037.7**	**1 236.5**	**1 525.9**	**1 662.3**	**1 741.1**	**149.8%**
People's Rep. of China	391.1	483.4	598.0	691.3	870.7	1 044.4	1 135.1	1 817.0	2 614.8	3 004.9	3 051.5	250.5%
Hong Kong, China	3.0	3.6	4.6	6.6	8.6	10.6	13.6	12.6	13.7	14.0	14.2	65.3%
China	**394.1**	**487.0**	**602.6**	**697.9**	**879.3**	**1 055.0**	**1 148.7**	**1 829.6**	**2 628.5**	**3 018.9**	**3 065.7**	**248.7%**
Argentina	33.6	35.9	41.8	41.3	46.1	54.0	61.6	66.9	78.7	83.0	86.6	88.0%
Bolivia	1.0	1.5	2.4	2.5	2.6	3.8	4.9	5.2	6.4	7.8	8.3	219.1%
Brazil	69.8	91.1	113.9	129.4	140.2	161.1	187.4	215.3	265.9	293.7	303.2	116.3%
Colombia	13.9	15.4	17.7	20.0	24.2	27.6	25.8	27.1	31.2	33.7	34.0	40.4%
Costa Rica	0.8	1.0	1.3	1.3	1.7	2.4	2.9	3.9	4.6	4.8	4.9	192.5%
Cuba	10.5	11.7	14.6	15.3	17.4	10.9	12.7	10.7	12.3	11.5	11.7	-32.8%
Curaçao [1]	5.5	3.8	3.9	1.8	1.5	1.3	2.1	2.1	2.0	1.8	2.0	35.2%
Dominican Republic	2.3	3.1	3.4	3.4	4.0	5.2	7.2	6.9	7.5	7.6	7.6	90.3%
Ecuador	2.2	3.1	5.0	5.6	6.3	7.9	8.8	9.3	11.8	13.3	14.2	124.0%
El Salvador	1.8	2.3	2.5	2.6	2.5	3.4	4.0	4.5	4.3	4.0	4.1	64.7%
Guatemala	2.7	3.3	3.8	3.8	4.4	5.3	7.0	7.8	10.2	12.0	13.2	199.7%
Haiti	1.5	1.7	2.1	1.9	1.6	1.7	2.0	3.4	3.8	4.1	4.2	166.1%
Honduras	1.4	1.5	1.9	2.0	2.4	2.8	3.0	4.1	4.6	5.2	5.4	125.0%
Jamaica	2.0	2.7	2.3	1.7	2.8	3.2	3.8	3.7	2.7	2.9	2.8	0.9%
Nicaragua	1.2	1.5	1.5	1.9	2.0	2.3	2.5	2.9	3.0	3.5	3.7	81.4%
Panama	1.7	1.7	1.4	1.6	1.5	2.0	2.6	2.9	3.6	4.0	4.2	182.6%
Paraguay	1.4	1.5	2.1	2.3	3.1	3.9	3.9	4.0	4.8	4.9	5.2	68.2%
Peru	9.1	10.4	11.3	10.6	9.7	11.0	12.2	13.6	18.7	20.4	23.8	144.3%
Suriname	..	..	..	..	..	..	0.6	0.6	0.7	0.7	0.7	..
Trinidad and Tobago	2.6	2.3	3.8	5.1	6.0	6.1	9.8	16.1	20.1	19.6	19.6	226.8%
Uruguay	2.4	2.4	2.6	2.0	2.3	2.6	3.1	3.0	4.1	4.6	4.7	109.4%
Venezuela	17.9	23.0	32.7	36.3	39.6	46.8	51.3	56.3	72.4	68.8	67.5	70.5%
Other Non-OECD Americas	4.9	6.0	5.8	3.6	5.1	5.0	5.0	5.1	6.1	7.1	7.3	42.7%
Non-OECD Americas	**190.2**	**227.1**	**277.8**	**295.9**	**326.8**	**370.3**	**424.3**	**475.4**	**579.3**	**619.0**	**638.7**	**95.4%**
Bahrain	1.4	2.1	2.8	4.2	5.2	6.4	8.0	10.4	12.7	13.7	14.2	170.5%
Islamic Republic of Iran	16.6	26.6	38.1	53.8	69.3	101.2	123.0	172.7	204.3	221.0	237.1	242.0%
Iraq	4.0	6.1	9.7	14.7	20.0	33.6	26.0	26.4	37.5	49.4	49.5	146.9%
Jordan	0.5	0.8	1.5	2.6	3.3	4.3	4.9	6.7	7.1	7.7	8.2	149.8%
Kuwait	6.1	6.5	10.5	14.0	9.1	14.8	18.7	26.3	32.1	34.9	33.9	271.9%
Lebanon	1.8	2.2	2.5	2.3	2.0	4.4	4.9	5.0	6.4	7.1	7.5	283.5%
Oman	0.1	0.2	1.2	2.1	4.2	6.1	7.6	9.9	18.7	24.4	24.3	476.6%
Qatar	0.9	2.0	3.3	5.6	6.5	8.1	10.9	16.7	27.6	40.3	44.1	575.3%
Saudi Arabia	7.4	8.8	31.1	46.0	58.0	84.5	97.9	122.5	185.5	192.2	213.5	268.1%
Syrian Arab Republic	2.4	3.1	4.5	7.8	10.5	12.1	15.4	20.8	21.7	11.6	10.8	3.2%
United Arab Emirates	1.0	1.9	7.2	13.7	20.4	27.7	31.5	44.5	61.7	69.9	70.5	245.1%
Yemen	0.7	0.7	1.3	1.7	2.5	3.4	4.7	6.6	7.8	8.3	7.4	195.4%
Middle East	**43.0**	**61.0**	**113.6**	**168.7**	**211.1**	**306.7**	**353.5**	**468.5**	**623.0**	**680.6**	**720.9**	**241.5%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

CO_2 emissions / TPES

tonnes CO_2 / terajoule

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World [1]	**60.3**	**59.8**	**58.7**	**56.4**	**55.8**	**55.3**	**55.1**	**56.0**	**56.2**	**56.6**	**56.5**	**1.1%**
Annex I Parties	*..*	*..*	*..*	*..*	*58.6*	*56.5*	*56.1*	*55.3*	*53.8*	*53.6*	*53.2*	*-9.4%*
Annex II Parties	*65.8*	*63.9*	*61.4*	*58.9*	*57.5*	*55.5*	*55.5*	*55.1*	*53.6*	*53.7*	*53.3*	*-7.2%*
North America	*63.9*	*62.1*	*60.0*	*59.6*	*58.7*	*57.3*	*58.2*	*57.5*	*56.6*	*55.0*	*54.8*	*-6.5%*
Europe	*68.6*	*65.8*	*63.6*	*57.7*	*55.1*	*52.3*	*50.7*	*49.8*	*47.3*	*46.4*	*45.6*	*-17.2%*
Asia Oceania	*66.5*	*66.8*	*61.7*	*59.1*	*58.7*	*56.3*	*55.9*	*58.2*	*56.8*	*65.4*	*64.8*	*10.4%*
Annex I EIT	*..*	*..*	*..*	*..*	*61.8*	*60.0*	*58.0*	*55.4*	*54.2*	*52.7*	*51.7*	*-16.4%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*49.3*	*52.2*	*52.3*	*55.7*	*57.2*	*58.1*	*58.1*	*17.8%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*59.8*	*56.4*	*54.2*	*53.4*	*51.5*	*51.2*	*50.3*	*-15.8%*
Non-OECD Total [2]	**49.1**	**51.9**	**53.0**	**51.3**	**52.4**	**53.1**	**52.7**	**55.5**	**56.7**	**57.5**	**57.5**	**9.6%**
OECD Total [3]	**66.2**	**64.4**	**62.1**	**59.9**	**58.0**	**56.3**	**56.1**	**55.5**	**54.3**	**54.1**	**53.7**	**-7.5%**
Canada	57.5	54.3	52.5	48.7	47.4	45.9	48.6	47.1	47.4	48.3	47.3	-0.2%
Chile	57.7	53.5	53.9	48.9	50.2	48.3	46.1	45.8	53.1	50.6	50.2	-0.0%
Mexico	52.1	54.3	51.4	53.0	49.6	52.8	57.3	54.9	59.9	55.7	54.8	10.4%
United States	64.5	62.9	60.8	60.8	59.9	58.6	59.3	58.7	57.7	55.8	55.8	-6.9%
OECD Americas	**63.6**	**61.8**	**59.6**	**59.2**	**58.1**	**57.0**	**58.0**	**57.2**	**56.7**	**55.0**	**54.8**	**-5.7%**
Australia	66.3	71.0	70.9	72.5	71.8	73.5	74.0	78.3	72.9	72.4	71.3	-0.7%
Israel	57.3	55.8	57.5	76.7	68.3	69.1	71.8	76.1	70.5	69.9	68.1	-0.4%
Japan	67.0	66.5	60.3	57.0	56.7	53.6	52.6	54.2	53.3	64.6	64.3	13.4%
Korea	74.5	75.9	72.7	70.0	59.6	58.9	54.8	52.0	52.6	51.8	50.5	-15.2%
New Zealand	47.2	45.9	43.8	40.3	40.5	38.4	40.5	47.6	39.4	38.2	36.3	-10.3%
OECD Asia Oceania	**66.7**	**67.1**	**62.6**	**60.5**	**59.0**	**57.0**	**56.0**	**57.1**	**56.0**	**61.5**	**60.5**	**2.6%**
Austria	61.7	58.7	56.1	54.5	54.0	53.1	51.7	53.0	48.4	46.2	45.1	-16.5%
Belgium	71.0	65.2	64.1	54.7	52.9	49.9	46.8	44.0	41.7	40.0	39.5	-25.3%
Czech Republic	80.8	84.8	85.5	85.1	72.4	70.9	70.9	63.0	60.0	57.6	56.0	-22.7%
Denmark	71.5	71.9	78.7	75.5	70.1	71.9	65.1	61.2	57.9	52.6	50.8	-27.5%
Estonia	..	..	..	..	87.9	73.2	73.5	77.1	79.2	73.9	69.3	-21.1%
Finland	52.4	53.5	53.3	44.6	45.3	46.0	40.2	38.0	40.3	35.4	31.9	-29.7%
France	63.7	61.2	56.7	41.2	36.8	34.6	34.6	32.7	31.1	29.9	28.1	-23.7%
Germany	76.6	74.2	70.1	67.2	63.9	60.8	57.7	55.8	55.5	57.4	56.4	-11.7%
Greece	68.9	69.4	72.0	74.2	77.9	80.6	77.6	75.2	72.2	70.5	68.0	-12.7%
Hungary	75.6	73.2	69.6	64.0	54.5	52.0	50.9	47.4	44.2	43.1	42.1	-22.7%
Iceland	37.2	34.9	27.9	22.0	19.9	21.2	16.5	17.1	8.6	8.2	8.3	-58.3%
Ireland	76.9	76.0	75.1	73.2	72.6	73.2	70.7	72.5	65.3	63.1	63.3	-12.7%
Italy	65.6	64.8	64.8	63.2	63.4	60.2	58.5	58.5	53.9	51.9	52.0	-18.0%
Luxembourg	96.7	80.6	83.5	80.6	75.7	62.4	57.4	62.5	60.2	58.8	57.9	-23.6%
Netherlands	59.9	53.4	53.9	54.5	52.7	52.9	51.1	49.0	48.6	48.1	48.6	-7.8%
Norway	41.2	38.5	35.4	31.5	31.1	31.9	29.1	30.7	26.5	25.7	29.3	-5.8%
Poland	79.7	78.6	78.5	80.9	79.9	80.1	77.9	76.8	73.1	71.5	70.9	-11.3%
Portugal	54.7	56.0	56.8	52.1	53.9	55.9	56.2	55.4	48.3	48.5	48.3	-10.4%
Slovak Republic	65.1	61.5	67.2	62.7	61.4	55.4	49.6	47.3	46.3	44.8	43.9	-28.4%
Slovenia	..	..	..	..	56.6	55.4	52.4	50.6	50.3	49.5	45.7	-19.4%
Spain	66.7	64.7	65.7	58.3	53.7	54.1	54.6	56.1	49.0	47.9	48.4	-10.0%
Sweden	54.4	48.3	43.1	29.5	26.3	27.0	26.1	22.7	21.6	18.2	18.6	-29.6%
Switzerland	56.7	51.1	46.8	45.2	40.0	41.1	40.1	40.4	39.3	37.1	36.0	-10.0%
Turkey	51.0	53.2	54.3	57.9	57.6	58.9	63.3	61.3	59.4	58.0	60.4	4.8%
United Kingdom	71.1	69.0	68.7	64.6	63.5	56.7	55.8	57.0	56.2	56.1	54.3	-14.5%
OECD Europe [3]	**69.6**	**67.2**	**65.6**	**60.7**	**57.5**	**54.8**	**53.2**	**52.0**	**49.8**	**49.0**	**48.4**	**-15.9%**
European Union - 28	*..*	*..*	*..*	*..*	*58.4*	*55.2*	*53.4*	*52.2*	*50.0*	*49.2*	*48.2*	-17.5%
G7	*66.2*	*64.4*	*61.7*	*59.4*	*58.0*	*55.8*	*55.8*	*55.3*	*54.2*	*54.6*	*54.2*	-6.5%
G8	*..*	*..*	*..*	*..*	*58.2*	*56.1*	*56.0*	*55.2*	*54.1*	*53.9*	*53.5*	-8.1%
G20	*..*	*..*	*..*	*..*	*56.7*	*56.6*	*56.5*	*57.6*	*57.9*	*58.7*	*58.5*	3.2%

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

CO_2 emissions / TPES

tonnes CO_2 / terajoule

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**49.1**	**51.9**	**53.0**	**51.3**	**52.4**	**53.1**	**52.7**	**55.5**	**56.7**	**57.5**	**57.5**	**9.6%**
Albania	53.7	52.1	53.0	61.0	50.7	33.2	41.1	42.2	44.2	37.5	42.1	-16.9%
Armenia	..	..	..	..	61.5	48.9	40.6	39.3	38.9	43.2	42.1	-31.5%
Azerbaijan	..	..	..	..	56.4	55.6	57.7	51.6	48.5	50.7	51.3	-8.9%
Belarus	..	..	..	..	52.4	55.0	50.7	49.1	52.0	51.0	49.4	-5.7%
Bosnia and Herzegovina	..	..	..	..	81.7	52.5	75.4	75.2	75.5	79.6	66.0	-19.2%
Bulgaria	80.1	75.3	71.6	64.1	63.1	54.6	54.2	55.8	59.3	55.5	56.2	-10.9%
Croatia	..	..	..	..	51.3	45.2	47.8	48.8	46.4	45.0	45.0	-12.3%
Cyprus [2]	70.9	70.1	71.1	71.8	68.1	71.1	70.4	75.8	71.0	69.5	69.8	2.5%
FYR of Macedonia	..	..	..	..	82.9	79.5	76.4	75.9	69.1	69.6	67.7	-18.4%
Georgia	..	..	..	..	64.4	52.2	38.6	34.2	38.2	41.0	42.0	-34.8%
Gibraltar	55.4	47.4	68.8	59.2	59.2	63.9	63.5	64.2	65.4	64.8	65.4	10.3%
Kazakhstan	..	..	..	..	77.1	78.0	75.0	73.7	76.4	73.0	69.7	-9.7%
Kosovo	..	..	..	..	..	..	79.1	81.6	83.4	84.2	80.0	..
Kyrgyzstan	..	..	..	..	72.6	44.7	45.8	45.4	52.4	53.7	52.6	-27.5%
Latvia	..	..	..	..	57.1	46.2	42.6	40.0	42.8	38.0	37.0	-35.2%
Lithuania	..	..	..	..	47.9	36.8	34.2	33.1	41.3	36.8	35.2	-26.5%
Malta	74.2	74.3	74.4	80.3	79.6	80.1	75.3	73.9	73.6	73.5	72.3	-9.1%
Republic of Moldova	..	..	..	..	73.7	60.2	54.1	52.6	53.5	52.1	52.4	-28.9%
Montenegro	..	..	..	..	..	..	..	44.1	51.2	55.3	55.5	..
Romania	65.0	64.8	64.9	64.3	64.6	60.3	56.9	57.3	51.0	51.7	51.4	-20.4%
Russian Federation	..	..	..	..	58.8	58.1	56.9	54.3	53.0	50.3	49.3	-16.1%
Serbia	..	..	..	..	75.1	77.3	74.8	73.7	70.2	72.8	68.7	-8.6%
Tajikistan	..	..	..	..	49.6	26.4	24.2	24.0	25.3	32.4	39.7	-19.9%
Turkmenistan	..	..	..	..	60.9	58.0	58.8	59.9	59.9	59.7	59.8	-1.7%
Ukraine	..	..	..	..	65.2	57.7	52.7	49.1	48.0	54.5	53.5	-18.1%
Uzbekistan	..	..	..	..	59.2	52.8	53.5	54.3	53.6	53.5	53.5	-9.5%
Former Soviet Union [3]	60.4	63.0	63.2	58.9	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	67.4	68.8	59.7	69.5	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**61.2**	**63.5**	**63.4**	**59.6**	**61.2**	**58.6**	**56.6**	**54.7**	**54.2**	**53.1**	**52.0**	**-15.1%**
Algeria	59.2	58.6	59.1	56.6	55.1	54.5	54.4	57.1	57.1	57.2	56.8	3.2%
Angola	10.0	11.3	13.9	13.5	15.9	14.7	15.4	17.4	29.7	31.1	31.4	97.3%
Benin	6.6	8.9	7.0	7.3	3.7	2.9	17.2	25.6	29.7	30.7	32.0	768.2%
Botswana	..	..	..	41.6	55.0	52.6	53.7	54.7	36.3	50.5	60.5	9.9%
Cameroon	6.5	8.0	10.9	12.7	12.7	10.6	10.6	9.9	17.3	19.2	19.0	49.8%
Congo	26.9	26.2	26.7	23.7	19.4	15.9	16.7	18.5	26.1	23.1	24.0	23.8%
Côte d'Ivoire	23.4	24.5	22.7	19.7	14.9	15.1	22.3	14.4	14.6	15.2	16.1	8.3%
Dem. Rep. of the Congo	9.2	8.4	8.9	7.8	6.1	2.1	1.5	1.8	2.2	3.0	3.9	-36.0%
Egypt	61.4	62.4	64.5	60.0	57.6	55.5	58.7	56.2	58.1	55.7	55.3	-4.0%
Eritrea	..	..	..	..	..	18.6	20.7	18.1	15.5	16.5	16.5	..
Ethiopia	2.2	1.8	1.9	1.7	2.3	2.0	2.4	2.9	3.3	4.3	4.5	99.4%
Gabon	10.6	13.9	22.4	29.5	18.4	23.4	23.8	13.8	12.5	15.3	16.4	-10.6%
Ghana	15.3	15.0	13.0	11.5	11.5	11.8	18.9	26.0	33.7	36.4	34.7	202.6%
Kenya	14.6	13.7	14.2	12.6	12.3	11.2	13.2	11.2	13.7	13.1	12.5	1.5%
Libya	56.6	56.5	59.6	50.1	55.3	56.3	55.5	57.8	55.2	59.3	64.0	15.9%
Mauritius	17.1	25.2	31.7	33.0	41.7	47.3	57.5	60.9	66.4	66.3	67.5	61.7%
Morocco	53.2	58.2	60.4	62.9	61.6	66.7	64.0	62.6	64.3	64.3	66.8	8.5%
Mozambique	10.2	8.5	8.3	5.6	4.4	4.4	4.4	4.3	5.7	6.5	8.0	81.8%
Namibia	..	..	..	..	..	45.6	44.6	44.9	47.7	47.2	47.5	..
Niger	..	..	..	..	..	..	10.5	10.1	14.5	14.8	16.3	..
Nigeria	4.1	6.7	12.4	13.3	10.1	10.6	12.1	12.8	11.1	11.0	10.7	5.7%
Senegal	23.4	27.7	31.2	32.5	30.2	31.7	35.1	39.6	34.0	38.6	37.9	25.5%
South Africa	82.6	89.8	76.1	61.6	64.0	59.9	61.4	69.3	68.5	72.4	71.1	11.0%
South Sudan	..	..	..	..	..	..	..	..	..	52.0	51.8	..
Sudan	10.9	10.3	10.5	10.0	11.9	8.6	9.8	15.7	21.4	22.1	21.3	78.7%
United Rep. of Tanzania	4.4	4.4	4.4	4.0	4.1	5.4	4.6	7.0	7.1	10.2	10.0	143.3%
Togo	11.3	9.7	9.9	7.2	10.9	8.8	10.7	9.7	15.9	12.5	12.5	14.6%
Tunisia	53.6	53.2	57.9	55.4	58.9	57.7	57.6	55.9	54.1	54.3	56.8	-3.5%
Zambia	22.9	26.5	17.3	12.9	11.3	8.2	6.2	6.8	4.6	7.0	7.6	-33.0%
Zimbabwe	31.8	28.9	29.3	31.4	41.7	36.6	31.7	25.5	22.9	25.8	24.8	-40.5%
Other Africa	8.9	9.3	11.3	8.4	7.2	7.4	8.2	8.6	9.7	10.7	10.8	50.4%
Africa	**31.0**	**34.8**	**34.8**	**32.9**	**32.2**	**31.0**	**31.7**	**34.1**	**34.3**	**34.2**	**34.2**	**6.3%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
3. 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	2010	2013	2014	% change 90-14
Bangladesh	12.1	15.7	18.7	18.5	21.4	24.8	27.4	33.5	39.0	42.0	42.0	96.1%
Brunei Darussalam	53.6	45.4	46.7	39.5	45.1	47.8	44.3	51.9	50.6	53.8	45.0	-0.2%
Cambodia	..	..	..	..	..	12.4	13.7	18.4	20.8	20.7	22.9	..
DPR of Korea	85.2	84.4	85.0	85.9	84.0	83.1	84.8	84.3	82.8	73.2	75.8	-9.7%
India	28.5	30.2	31.3	36.3	41.4	45.5	48.2	50.0	54.9	57.0	58.5	41.1%
Indonesia	17.2	22.0	29.0	30.4	32.4	37.3	39.2	42.3	42.4	43.9	46.2	42.6%
Malaysia	50.5	53.6	47.6	50.5	54.2	55.0	56.2	56.6	61.8	56.9	58.7	8.2%
Mongolia	..	..	..	90.1	90.1	90.8	89.5	87.7	85.8	84.8	80.7	-10.4%
Myanmar	13.6	11.2	12.9	12.5	8.8	13.6	17.3	16.9	13.5	19.3	24.2	176.4%
Nepal	1.2	1.9	2.7	2.6	3.7	6.3	9.1	8.0	9.6	10.3	12.1	227.9%
Pakistan	22.2	23.4	23.5	27.0	31.2	35.3	35.8	36.4	36.9	36.4	36.5	17.2%
Philippines	35.9	37.9	35.5	28.6	31.6	40.7	40.7	43.9	45.6	47.8	48.0	51.5%
Singapore	53.0	54.3	58.9	58.6	60.0	47.6	53.9	41.9	41.6	41.9	38.6	-35.6%
Sri Lanka	17.3	15.3	19.1	16.7	15.9	21.7	30.2	35.5	30.4	32.7	37.3	134.6%
Chinese Taipei	71.1	68.0	61.1	49.7	55.6	57.9	60.3	59.2	54.9	54.6	54.1	-2.7%
Thailand	28.3	29.1	36.6	40.6	46.1	54.0	50.3	48.3	45.3	43.5	43.2	-6.3%
Viet Nam	29.4	29.1	24.7	26.1	23.2	30.0	36.8	45.8	51.1	50.3	51.4	121.1%
Other Asia	44.6	46.9	51.4	37.9	35.8	32.6	33.0	39.0	43.0	51.0	51.2	43.2%
Asia (excl. China)	**32.0**	**33.8**	**36.4**	**38.4**	**41.5**	**44.6**	**46.5**	**47.9**	**50.2**	**51.0**	**52.2**	**26.0%**
People's Rep. of China	47.7	50.9	54.5	56.2	56.9	66.0	64.9	70.4	70.4	71.4	71.1	24.9%
Hong Kong, China	73.4	71.7	75.3	81.0	92.3	82.4	70.9	78.5	73.3	78.8	80.4	-12.9%
China	**47.8**	**51.0**	**54.6**	**56.4**	**57.3**	**66.2**	**65.0**	**70.5**	**70.4**	**71.4**	**71.2**	**24.2%**
Argentina	58.6	56.6	54.4	50.7	51.5	51.8	54.1	53.3	52.7	52.0	53.1	3.0%
Bolivia	51.1	52.0	41.1	40.9	47.1	43.7	34.6	41.7	51.2	51.7	52.5	11.3%
Brazil	29.9	34.0	35.2	28.8	31.4	33.8	37.2	34.4	33.3	36.7	37.5	19.5%
Colombia	46.0	43.8	46.9	47.2	45.1	47.1	50.1	47.2	46.1	50.3	50.9	12.8%
Costa Rica	37.6	41.7	41.0	36.8	37.1	45.0	37.4	33.6	34.0	35.2	34.9	-5.9%
Cuba	47.4	49.2	49.7	50.2	46.8	49.4	51.3	56.1	63.2	60.9	60.1	28.5%
Curaçao [1]	63.3	63.4	52.8	60.2	43.6	47.8	63.7	68.5	51.3	58.4	57.5	31.8%
Dominican Republic	35.6	40.4	44.0	44.0	44.0	51.1	60.5	59.8	60.8	61.6	60.2	36.7%
Ecuador	37.3	45.1	49.7	49.6	50.2	50.6	49.1	61.2	65.0	64.6	65.2	29.8%
El Salvador	17.8	20.3	15.1	14.9	20.4	32.5	31.1	33.1	32.7	34.3	34.5	69.4%
Guatemala	19.8	21.6	26.5	20.2	17.4	26.3	29.1	32.5	24.2	24.2	29.2	68.1%
Haiti	6.0	5.7	7.1	10.1	14.3	12.7	16.4	13.9	13.2	12.6	15.9	11.1%
Honduras	19.3	20.6	21.6	19.9	21.8	30.2	35.8	41.6	38.4	38.8	39.0	78.6%
Jamaica	65.7	66.3	68.6	64.7	62.1	62.8	61.3	66.1	61.9	60.8	61.0	-1.8%
Nicaragua	29.2	30.0	28.1	22.3	21.7	26.6	33.6	33.6	34.5	28.9	29.6	36.2%
Panama	35.9	43.7	49.2	40.8	41.1	48.9	45.3	55.5	58.5	59.4	60.0	46.2%
Paraguay	10.0	11.4	15.4	15.0	15.0	21.2	20.3	20.9	23.1	23.9	24.0	59.9%
Peru	40.3	42.1	43.3	40.7	47.0	50.7	51.6	50.1	52.6	52.6	48.0	2.2%
Suriname	..	..	..	..	..	..	55.2	62.4	56.4	67.9	68.9	..
Trinidad and Tobago	48.6	47.1	39.7	31.2	31.5	31.7	24.5	26.0	26.6	28.0	28.3	-10.1%
Uruguay	50.4	52.1	48.2	36.0	38.2	40.8	39.3	41.6	34.8	36.9	31.8	-16.8%
Venezuela	61.4	58.1	60.9	55.9	56.4	54.1	54.1	58.2	56.6	54.2	54.8	-2.8%
Other Non-OECD Americas	40.2	43.1	42.4	61.2	58.0	63.4	65.0	66.7	64.6	66.7	66.1	13.9%
Non-OECD Americas	**42.4**	**43.0**	**43.5**	**39.1**	**40.4**	**42.1**	**43.9**	**43.0**	**42.2**	**43.4**	**43.9**	**8.6%**
Bahrain	49.0	58.6	61.6	52.2	48.7	50.0	47.5	47.3	48.2	49.3	50.1	2.8%
Islamic Republic of Iran	56.0	61.0	55.5	64.4	59.0	57.7	60.6	57.8	58.3	57.9	56.0	-5.0%
Iraq	61.4	60.9	64.4	61.6	62.4	67.7	64.8	66.1	65.9	65.4	68.1	9.0%
Jordan	65.5	68.2	67.6	68.2	67.9	68.1	70.8	64.8	63.5	69.4	70.4	3.7%
Kuwait	54.8	55.7	60.4	62.6	72.9	52.2	59.1	58.8	57.3	57.5	60.7	-16.7%
Lebanon	59.2	63.0	64.2	67.8	67.4	69.3	68.1	68.5	68.2	69.7	71.3	5.8%
Oman	72.1	72.2	46.6	63.8	57.5	57.5	64.4	59.5	54.0	55.2	58.8	2.3%
Qatar	57.8	57.6	50.3	45.2	45.5	49.3	46.5	47.6	49.3	43.1	42.1	-7.5%
Saudi Arabia	41.1	61.3	76.3	61.2	62.2	54.2	57.3	58.1	54.0	58.5	56.7	-8.9%
Syrian Arab Republic	54.6	64.6	65.9	59.6	62.1	61.4	57.3	61.4	61.7	61.4	61.0	-1.9%
United Arab Emirates	58.1	60.6	63.5	62.0	60.7	60.1	60.5	59.6	58.8	59.2	59.5	-2.0%
Yemen	39.1	60.6	65.3	66.8	59.8	65.9	67.1	68.3	68.5	69.1	68.6	14.7%
Middle East	**53.5**	**60.6**	**63.7**	**61.9**	**60.6**	**57.9**	**59.4**	**58.5**	**57.1**	**58.0**	**57.2**	**-5.6%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

CO_2 emissions / GDP using exchange rates

kilogrammes CO_2 / US dollar using 2010 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World [1]	**0.70**	**0.67**	**0.63**	**0.57**	**0.54**	**0.51**	**0.47**	**0.47**	**0.46**	**0.45**	**0.44**	**-18.2%**
Annex I Parties	*..*	*..*	*..*	*..*	*0.46*	*0.40*	*0.36*	*0.33*	*0.30*	*0.28*	*0.27*	*-40.6%*
Annex II Parties	*0.58*	*0.53*	*0.47*	*0.40*	*0.36*	*0.34*	*0.31*	*0.29*	*0.26*	*0.24*	*0.24*	*-34.0%*
North America	*0.84*	*0.78*	*0.69*	*0.57*	*0.52*	*0.48*	*0.44*	*0.39*	*0.35*	*0.32*	*0.32*	*-38.3%*
Europe	*0.44*	*0.39*	*0.36*	*0.31*	*0.27*	*0.24*	*0.22*	*0.20*	*0.18*	*0.16*	*0.15*	*-42.4%*
Asia Oceania	*0.38*	*0.37*	*0.32*	*0.26*	*0.25*	*0.25*	*0.24*	*0.24*	*0.22*	*0.23*	*0.22*	*-11.6%*
Annex I EIT	*..*	*..*	*..*	*..*	*1.58*	*1.57*	*1.26*	*0.99*	*0.84*	*0.77*	*0.72*	*-54.0%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*0.79*	*0.78*	*0.72*	*0.77*	*0.74*	*0.72*	*0.70*	*-11.1%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*0.40*	*0.33*	*0.28*	*0.26*	*0.24*	*0.22*	*0.20*	*-48.8%*
Non-OECD Total [2]	**0.98**	**0.99**	**0.99**	**0.99**	**1.04**	**0.96**	**0.85**	**0.86**	**0.80**	**0.77**	**0.75**	**-27.4%**
OECD Total [3]	**0.59**	**0.54**	**0.49**	**0.42**	**0.38**	**0.36**	**0.33**	**0.30**	**0.28**	**0.26**	**0.25**	**-33.2%**
Canada	0.62	0.58	0.54	0.44	0.41	0.41	0.38	0.35	0.33	0.32	0.31	-24.4%
Chile	0.49	0.46	0.41	0.36	0.39	0.32	0.34	0.30	0.32	0.32	0.29	-23.6%
Mexico	0.33	0.36	0.40	0.42	0.42	0.44	0.41	0.43	0.42	0.39	0.37	-11.9%
United States	0.87	0.80	0.70	0.59	0.53	0.49	0.44	0.40	0.36	0.32	0.32	-39.5%
OECD Americas	**0.82**	**0.75**	**0.67**	**0.56**	**0.51**	**0.48**	**0.44**	**0.39**	**0.36**	**0.33**	**0.32**	**-37.0%**
Australia	0.37	0.42	0.41	0.38	0.39	0.36	0.35	0.33	0.30	0.27	0.26	-32.7%
Israel	0.32	0.29	0.29	0.32	0.35	0.34	0.32	0.31	0.29	0.26	0.24	-30.5%
Japan	0.38	0.36	0.30	0.24	0.23	0.23	0.22	0.22	0.20	0.22	0.21	-7.9%
Korea	0.82	0.83	0.89	0.71	0.64	0.66	0.61	0.51	0.50	0.48	0.46	-27.9%
New Zealand	0.23	0.24	0.24	0.23	0.26	0.25	0.26	0.25	0.21	0.20	0.19	-26.6%
OECD Asia Oceania	**0.39**	**0.38**	**0.34**	**0.28**	**0.28**	**0.28**	**0.28**	**0.27**	**0.26**	**0.26**	**0.25**	**-7.5%**
Austria	0.32	0.28	0.26	0.24	0.22	0.21	0.18	0.20	0.18	0.16	0.15	-31.2%
Belgium	0.58	0.50	0.46	0.36	0.32	0.31	0.28	0.24	0.22	0.19	0.17	-45.6%
Czech Republic	1.54	1.36	1.33	1.32	1.04	0.89	0.80	0.65	0.54	0.49	0.46	-56.4%
Denmark	0.36	0.32	0.34	0.29	0.22	0.23	0.17	0.15	0.15	0.12	0.11	-52.5%
Estonia	..	..	..	..	2.41	1.52	1.03	0.85	0.96	0.84	0.76	-68.5%
Finland	0.46	0.42	0.45	0.34	0.32	0.34	0.26	0.23	0.25	0.20	0.18	-43.1%
France	0.38	0.33	0.31	0.22	0.18	0.17	0.16	0.15	0.13	0.12	0.10	-42.2%
Germany	0.62	0.56	0.51	0.46	0.37	0.30	0.26	0.24	0.22	0.21	0.20	-45.5%
Greece	0.20	0.23	0.24	0.29	0.35	0.36	0.35	0.31	0.28	0.28	0.27	-24.2%
Hungary	1.00	0.91	0.89	0.79	0.63	0.61	0.50	0.42	0.37	0.31	0.29	-53.8%
Iceland	0.38	0.37	0.29	0.24	0.24	0.25	0.21	0.18	0.15	0.14	0.14	-41.6%
Ireland	0.59	0.47	0.46	0.41	0.37	0.32	0.25	0.21	0.18	0.15	0.14	-62.3%
Italy	0.30	0.29	0.26	0.23	0.22	0.21	0.20	0.21	0.18	0.17	0.16	-29.4%
Luxembourg	1.37	0.94	0.82	0.60	0.44	0.28	0.20	0.25	0.20	0.18	0.16	-63.5%
Netherlands	0.39	0.36	0.34	0.31	0.27	0.28	0.22	0.21	0.20	0.19	0.18	-35.8%
Norway	0.17	0.15	0.14	0.11	0.11	0.10	0.09	0.08	0.09	0.08	0.08	-28.4%
Poland	1.68	1.55	1.82	1.83	1.52	1.32	0.89	0.78	0.64	0.56	0.52	-65.6%
Portugal	0.18	0.19	0.20	0.19	0.23	0.26	0.26	0.27	0.20	0.20	0.19	-16.0%
Slovak Republic	1.12	1.09	1.26	1.14	1.07	0.88	0.66	0.53	0.39	0.34	0.30	-71.8%
Slovenia	..	..	..	..	0.44	0.47	0.38	0.35	0.32	0.31	0.27	-39.3%
Spain	0.25	0.26	0.28	0.25	0.23	0.24	0.24	0.25	0.18	0.17	0.17	-27.3%
Sweden	0.38	0.33	0.28	0.20	0.16	0.17	0.13	0.11	0.09	0.07	0.07	-55.4%
Switzerland	0.12	0.12	0.11	0.11	0.10	0.10	0.09	0.08	0.07	0.07	0.06	-36.0%
Turkey	0.28	0.32	0.34	0.36	0.36	0.37	0.40	0.35	0.36	0.34	0.35	-3.2%
United Kingdom	0.61	0.53	0.47	0.40	0.34	0.29	0.25	0.23	0.20	0.18	0.16	-53.9%
OECD Europe [3]	**0.48**	**0.44**	**0.42**	**0.36**	**0.31**	**0.28**	**0.25**	**0.23**	**0.21**	**0.19**	**0.18**	**-42.2%**
European Union - 28	*..*	*..*	*..*	*..*	*0.34*	*0.30*	*0.26*	*0.24*	*0.21*	*0.19*	*0.18*	-46.5%
G7	*0.64*	*0.58*	*0.51*	*0.43*	*0.38*	*0.35*	*0.33*	*0.30*	*0.27*	*0.26*	*0.25*	-33.7%
G8	*..*	*..*	*..*	*..*	*0.45*	*0.40*	*0.37*	*0.34*	*0.31*	*0.29*	*0.28*	-37.3%
G20	*..*	*..*	*..*	*..*	*0.50*	*0.48*	*0.43*	*0.44*	*0.44*	*0.43*	*0.42*	-16.3%

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

CO_2 emissions / GDP using exchange rates

kilogrammes CO_2 / US dollar using 2010 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**0.98**	**0.99**	**0.99**	**0.99**	**1.04**	**0.96**	**0.85**	**0.86**	**0.80**	**0.77**	**0.75**	**-27.4%**
Albania	1.17	1.05	1.25	1.15	0.92	0.34	0.44	0.41	0.33	0.29	0.32	-65.0%
Armenia	..	..	..	..	3.12	1.00	0.79	0.54	0.44	0.49	0.47	-85.0%
Azerbaijan	..	..	..	..	2.39	3.46	2.08	1.17	0.44	0.51	0.53	-78.0%
Belarus	..	..	..	..	3.27	2.86	1.93	1.42	1.08	0.97	0.94	-71.2%
Bosnia and Herzegovina	..	..	..	..	4.07	0.99	1.21	1.06	1.19	1.22	1.22	-70.1%
Bulgaria	4.16	3.51	3.02	2.47	2.08	1.68	1.30	1.08	0.89	0.76	0.81	-61.3%
Croatia	..	..	..	..	0.35	0.37	0.36	0.34	0.31	0.28	0.26	-24.7%
Cyprus [2]	0.53	0.43	0.38	0.31	0.31	0.33	0.34	0.31	0.29	0.24	0.25	-19.3%
FYR of Macedonia	..	..	..	..	1.12	1.37	1.22	1.15	0.89	0.80	0.73	-34.9%
Georgia	..	..	..	..	1.98	1.70	0.73	0.45	0.43	0.49	0.54	-72.8%
Gibraltar	0.15	0.12	0.17	0.15	0.20	0.36	0.37	0.39	0.45	0.45	0.47	135.1%
Kazakhstan	..	..	..	..	2.46	2.88	1.68	1.43	1.49	1.41	1.21	-50.9%
Kosovo	..	..	..	..	..	..	1.57	1.40	1.49	1.28	1.13	..
Kyrgyzstan	..	..	..	..	4.73	1.83	1.39	1.27	1.26	1.58	1.43	-69.7%
Latvia	..	..	..	..	0.84	0.70	0.42	0.31	0.34	0.26	0.24	-71.1%
Lithuania	..	..	..	..	0.97	0.70	0.42	0.35	0.33	0.25	0.24	-75.5%
Malta	0.58	0.40	0.35	0.38	0.56	0.44	0.31	0.37	0.31	0.27	0.27	-52.3%
Republic of Moldova	..	..	..	..	3.09	3.00	1.86	1.55	1.35	1.00	1.03	-66.6%
Montenegro	..	..	..	..	..	..	..	0.59	0.61	0.53	0.51	..
Romania	2.17	1.76	1.54	1.29	1.36	1.06	0.78	0.64	0.45	0.39	0.37	-72.4%
Russian Federation	..	..	..	..	1.53	1.76	1.55	1.16	1.00	0.92	0.88	-42.8%
Serbia	..	..	..	..	1.33	1.93	1.67	1.48	1.24	1.20	1.01	-24.2%
Tajikistan	..	..	..	..	1.63	0.96	0.85	0.57	0.41	0.50	0.62	-61.7%
Turkmenistan	..	..	..	..	3.33	3.92	3.48	3.56	2.57	2.11	1.95	-41.3%
Ukraine	..	..	..	..	3.34	3.99	3.29	2.27	1.95	1.84	1.76	-47.1%
Uzbekistan	..	..	..	..	5.62	5.70	5.68	4.11	2.47	1.93	1.82	-67.6%
Former Soviet Union [3]	1.82	1.86	1.80	1.70	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	0.59	0.57	0.49	0.68	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**1.75**	**1.76**	**1.68**	**1.59**	**1.79**	**1.91**	**1.57**	**1.20**	**1.03**	**0.95**	**0.89**	**-49.9%**
Algeria	0.25	0.26	0.39	0.47	0.55	0.59	0.56	0.54	0.59	0.65	0.67	21.5%
Angola	0.08	0.10	0.13	0.13	0.15	0.19	0.16	0.13	0.18	0.19	0.20	32.1%
Benin	0.18	0.26	0.18	0.17	0.08	0.06	0.30	0.46	0.65	0.65	0.67	694.8%
Botswana	..	..	..	0.49	0.53	0.48	0.47	0.42	0.26	0.34	0.42	-19.7%
Cameroon	0.12	0.13	0.16	0.14	0.18	0.18	0.16	0.14	0.21	0.22	0.21	18.3%
Congo	0.24	0.19	0.17	0.11	0.10	0.08	0.07	0.09	0.15	0.19	0.19	92.1%
Côte d'Ivoire	0.22	0.23	0.20	0.18	0.15	0.17	0.28	0.26	0.25	0.30	0.30	96.7%
Dem. Rep. of the Congo	0.12	0.11	0.15	0.14	0.13	0.07	0.07	0.08	0.09	0.14	0.17	29.6%
Egypt	0.70	0.78	0.77	0.88	0.87	0.77	0.73	0.89	0.81	0.75	0.73	-16.1%
Eritrea	..	..	..	..	..	0.47	0.32	0.26	0.23	0.22	0.22	..
Ethiopia	0.17	0.15	0.16	0.18	0.22	0.22	0.24	0.25	0.20	0.21	0.21	-5.0%
Gabon	0.10	0.08	0.15	0.17	0.09	0.11	0.12	0.13	0.19	0.20	0.20	124.3%
Ghana	0.19	0.25	0.22	0.22	0.21	0.22	0.27	0.27	0.32	0.32	0.29	39.1%
Kenya	0.39	0.32	0.30	0.28	0.25	0.24	0.30	0.24	0.28	0.25	0.25	-1.3%
Libya	0.07	0.19	0.24	0.41	0.55	0.73	0.77	0.70	0.64	0.96	1.26	128.4%
Mauritius	0.20	0.24	0.26	0.22	0.29	0.31	0.36	0.38	0.38	0.36	0.36	21.9%
Morocco	0.37	0.45	0.49	0.48	0.45	0.55	0.51	0.53	0.49	0.48	0.49	8.6%
Mozambique	1.12	1.08	1.04	0.86	0.47	0.43	0.28	0.21	0.23	0.24	0.29	-38.9%
Namibia	..	..	..	..	..	0.30	0.27	0.28	0.27	0.26	0.26	..
Niger	..	..	..	..	..	..	0.18	0.17	0.24	0.26	0.27	..
Nigeria	0.06	0.09	0.18	0.26	0.21	0.24	0.28	0.22	0.15	0.15	0.13	-37.9%
Senegal	0.29	0.34	0.41	0.37	0.33	0.35	0.41	0.43	0.42	0.42	0.42	26.3%
South Africa	1.09	1.23	1.09	1.09	1.09	1.12	1.05	1.16	1.08	1.05	1.06	-2.7%
South Sudan	..	..	..	..	..	..	..	..	..	0.25	0.25	..
Sudan	0.29	0.23	0.24	0.25	0.27	0.17	0.16	0.21	0.23	0.21	0.20	-25.5%
United Rep. of Tanzania	0.22	0.18	0.17	0.16	0.14	0.19	0.16	0.22	0.20	0.27	0.25	85.8%
Togo	0.28	0.22	0.20	0.16	0.28	0.28	0.37	0.36	0.65	0.45	0.44	57.9%
Tunisia	0.53	0.51	0.61	0.61	0.66	0.63	0.61	0.55	0.53	0.51	0.53	-20.8%
Zambia	0.51	0.58	0.43	0.35	0.31	0.24	0.17	0.16	0.08	0.12	0.12	-59.9%
Zimbabwe	1.08	0.92	0.95	0.95	1.26	1.11	0.87	0.99	0.98	0.97	0.91	-28.1%
Other Africa	0.21	0.22	0.27	0.21	0.22	0.26	0.24	0.21	0.20	0.21	0.21	-3.3%
Africa	**0.44**	**0.50**	**0.50**	**0.56**	**0.57**	**0.59**	**0.57**	**0.57**	**0.51**	**0.50**	**0.50**	**-13.4%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
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 exchange rates

kilogrammes CO_2 / US dollar using 2010 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Bangladesh	0.12	0.19	0.23	0.22	0.27	0.31	0.31	0.37	0.43	0.43	0.42	57.4%
Brunei Darussalam	0.08	0.22	0.25	0.34	0.38	0.45	0.41	0.40	0.55	0.54	0.54	43.5%
Cambodia	..	..	..	..	..	0.40	0.38	0.33	0.41	0.37	0.41	..
DPR of Korea	7.69	5.57	4.44	3.32	2.52	2.10	2.16	2.40	2.25	0.99	0.99	-60.6%
India	0.85	0.90	0.94	1.04	1.10	1.15	1.08	0.94	0.93	0.91	0.92	-16.6%
Indonesia	0.31	0.34	0.42	0.39	0.45	0.47	0.56	0.56	0.50	0.45	0.46	3.7%
Malaysia	0.56	0.53	0.52	0.56	0.61	0.62	0.71	0.76	0.74	0.70	0.70	15.7%
Mongolia	..	..	..	3.67	3.34	3.06	2.34	2.09	1.97	1.77	1.59	-52.3%
Myanmar	0.83	0.65	0.62	0.55	0.42	0.54	0.50	0.31	0.16	0.22	0.30	-29.5%
Nepal	0.06	0.08	0.12	0.10	0.13	0.20	0.28	0.24	0.26	0.27	0.31	133.1%
Pakistan	0.57	0.62	0.56	0.61	0.70	0.79	0.82	0.78	0.74	0.69	0.67	-4.9%
Philippines	0.49	0.49	0.42	0.38	0.40	0.54	0.54	0.46	0.39	0.38	0.38	-5.2%
Singapore	0.40	0.40	0.39	0.37	0.43	0.37	0.31	0.22	0.19	0.17	0.16	-62.1%
Sri Lanka	0.31	0.25	0.26	0.20	0.18	0.20	0.31	0.32	0.22	0.20	0.23	29.5%
Chinese Taipei	1.02	0.91	0.93	0.66	0.69	0.68	0.73	0.73	0.60	0.54	0.52	-24.8%
Thailand	0.45	0.47	0.51	0.49	0.57	0.67	0.70	0.71	0.66	0.65	0.64	11.4%
Viet Nam	1.03	1.06	0.88	0.75	0.59	0.63	0.72	0.93	1.09	0.95	0.99	67.7%
Other Asia	0.48	0.52	0.58	0.33	0.30	0.23	0.26	0.27	0.26	0.37	0.39	29.9%
Asia (excl. China)	**0.74**	**0.74**	**0.75**	**0.74**	**0.75**	**0.75**	**0.77**	**0.73**	**0.70**	**0.66**	**0.67**	**-10.9%**
People's Rep. of China	3.95	4.18	4.03	2.89	2.52	1.96	1.39	1.51	1.28	1.17	1.10	-56.2%
Hong Kong, China	0.37	0.35	0.27	0.31	0.32	0.27	0.26	0.22	0.18	0.18	0.19	-41.8%
China	**3.55**	**3.75**	**3.51**	**2.60**	**2.27**	**1.82**	**1.32**	**1.45**	**1.24**	**1.14**	**1.08**	**-52.6%**
Argentina	0.44	0.41	0.40	0.42	0.49	0.42	0.44	0.43	0.38	0.35	0.37	-24.6%
Bolivia	0.33	0.39	0.46	0.52	0.55	0.61	0.53	0.58	0.70	0.73	0.75	35.2%
Brazil	0.18	0.18	0.17	0.15	0.15	0.16	0.19	0.17	0.17	0.19	0.20	27.4%
Colombia	0.41	0.35	0.33	0.34	0.31	0.30	0.28	0.23	0.21	0.21	0.21	-32.9%
Costa Rica	0.19	0.20	0.19	0.18	0.18	0.24	0.19	0.19	0.18	0.17	0.17	-8.2%
Cuba	0.98	0.95	1.02	0.71	0.76	0.72	0.71	0.51	0.51	0.42	0.41	-46.7%
Curaçao [1]	13.74	8.53	6.31	3.09	1.55	1.37	2.40	2.39	1.64	2.39	2.53	62.7%
Dominican Republic	0.43	0.46	0.43	0.39	0.40	0.47	0.55	0.44	0.36	0.33	0.30	-24.4%
Ecuador	0.22	0.25	0.35	0.35	0.35	0.38	0.39	0.41	0.46	0.43	0.45	28.7%
El Salvador	0.13	0.16	0.14	0.16	0.19	0.30	0.29	0.31	0.27	0.25	0.25	36.5%
Guatemala	0.20	0.22	0.23	0.18	0.16	0.24	0.29	0.31	0.25	0.27	0.34	108.9%
Haiti	0.08	0.08	0.09	0.12	0.15	0.16	0.21	0.31	0.32	0.29	0.36	143.3%
Honduras	0.30	0.31	0.28	0.25	0.28	0.39	0.42	0.54	0.46	0.48	0.48	69.4%
Jamaica	0.63	0.79	0.82	0.58	0.70	0.67	0.79	0.76	0.53	0.55	0.53	-24.1%
Nicaragua	0.27	0.28	0.33	0.32	0.39	0.49	0.54	0.52	0.49	0.42	0.43	9.6%
Panama	0.40	0.43	0.34	0.26	0.26	0.32	0.31	0.34	0.31	0.26	0.26	-0.6%
Paraguay	0.17	0.16	0.18	0.17	0.17	0.25	0.23	0.22	0.23	0.21	0.21	22.8%
Peru	0.33	0.32	0.31	0.28	0.33	0.31	0.31	0.27	0.28	0.25	0.26	-19.0%
Suriname	..	..	..	..	..	..	0.54	0.47	0.39	0.40	0.40	..
Trinidad and Tobago	0.79	0.60	0.64	0.76	1.01	0.97	0.83	0.98	1.06	1.06	1.06	5.4%
Uruguay	0.32	0.31	0.25	0.17	0.17	0.17	0.17	0.17	0.15	0.15	0.13	-21.7%
Venezuela	0.27	0.29	0.38	0.41	0.40	0.38	0.40	0.42	0.44	0.36	0.37	-7.5%
Other Non-OECD Americas	0.50	0.63	0.46	0.40	0.42	0.43	0.39	0.36	0.41	0.47	0.47	12.6%
Non-OECD Americas	**0.30**	**0.28**	**0.27**	**0.26**	**0.26**	**0.26**	**0.28**	**0.27**	**0.26**	**0.25**	**0.26**	**-0.5%**
Bahrain	1.15	1.12	0.95	1.28	1.20	1.09	1.04	1.05	0.99	0.99	0.99	-17.4%
Islamic Republic of Iran	0.21	0.28	0.54	0.72	0.83	1.03	1.11	1.13	1.07	1.20	1.20	43.9%
Iraq	0.67	0.72	0.57	0.93	0.74	2.03	0.69	0.70	0.75	0.75	0.80	8.3%
Jordan	0.39	0.63	0.60	0.81	1.07	1.00	1.01	0.93	0.71	0.79	0.82	-23.7%
Kuwait	0.19	0.25	0.41	0.73	0.56	0.48	0.63	0.59	0.67	0.63	0.63	12.1%
Lebanon	0.27	0.34	0.47	0.33	0.49	0.64	0.65	0.55	0.48	0.52	0.55	12.0%
Oman	0.04	0.08	0.20	0.24	0.38	0.41	0.48	0.56	0.72	0.87	0.89	136.0%
Qatar	0.12	0.25	0.31	0.56	0.66	0.79	0.59	0.62	0.46	0.47	0.48	-27.1%
Saudi Arabia	0.12	0.12	0.38	0.57	0.62	0.68	0.73	0.73	0.80	0.75	0.78	26.5%
Syrian Arab Republic	0.70	0.63	0.68	0.93	1.21	0.94	1.00	1.13	0.93	0.54	0.51	-58.1%
United Arab Emirates	0.11	0.09	0.16	0.33	0.42	0.47	0.41	0.44	0.53	0.52	0.50	19.6%
Yemen	0.41	0.43	0.48	0.47	0.52	0.58	0.63	0.73	0.72	0.85	0.75	44.3%
Middle East	**0.21**	**0.24**	**0.41**	**0.61**	**0.67**	**0.80**	**0.76**	**0.78**	**0.78**	**0.78**	**0.79**	**18.5%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

CO_2 emissions / GDP using purchasing power parities

kilogrammes CO_2 / US dollar using 2010 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World [1]	**0.60**	**0.56**	**0.53**	**0.48**	**0.45**	**0.42**	**0.38**	**0.37**	**0.34**	**0.33**	**0.32**	**-28.8%**
Annex I Parties	*..*	*..*	*..*	*..*	*0.46*	*0.41*	*0.37*	*0.34*	*0.30*	*0.28*	*0.27*	*-40.2%*
Annex II Parties	*0.63*	*0.57*	*0.51*	*0.43*	*0.39*	*0.37*	*0.34*	*0.31*	*0.28*	*0.26*	*0.26*	*-34.3%*
North America	*0.86*	*0.79*	*0.70*	*0.58*	*0.53*	*0.49*	*0.44*	*0.40*	*0.36*	*0.33*	*0.32*	*-38.3%*
Europe	*0.47*	*0.42*	*0.39*	*0.33*	*0.29*	*0.26*	*0.23*	*0.22*	*0.20*	*0.18*	*0.17*	*-42.2%*
Asia Oceania	*0.48*	*0.47*	*0.40*	*0.33*	*0.32*	*0.31*	*0.31*	*0.30*	*0.28*	*0.29*	*0.28*	*-11.3%*
Annex I EIT	*..*	*..*	*..*	*..*	*0.84*	*0.85*	*0.69*	*0.54*	*0.46*	*0.42*	*0.39*	*-52.8%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*0.39*	*0.39*	*0.36*	*0.38*	*0.36*	*0.35*	*0.34*	*-14.3%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*0.40*	*0.34*	*0.29*	*0.27*	*0.24*	*0.22*	*0.21*	*-48.2%*
Non-OECD Total [2]	**0.49**	**0.50**	**0.51**	**0.50**	**0.50**	**0.46**	**0.41**	**0.41**	**0.38**	**0.36**	**0.35**	**-29.8%**
OECD Total [3]	**0.62**	**0.56**	**0.51**	**0.44**	**0.39**	**0.37**	**0.34**	**0.31**	**0.28**	**0.26**	**0.26**	**-34.7%**
Canada	0.74	0.69	0.64	0.52	0.49	0.48	0.46	0.42	0.39	0.38	0.37	-24.4%
Chile	0.34	0.32	0.28	0.25	0.27	0.22	0.24	0.21	0.22	0.23	0.21	-23.6%
Mexico	0.20	0.22	0.24	0.26	0.25	0.27	0.25	0.26	0.25	0.24	0.22	-11.9%
United States	0.87	0.80	0.70	0.59	0.53	0.49	0.44	0.40	0.36	0.32	0.32	-39.5%
OECD Americas	**0.80**	**0.73**	**0.65**	**0.55**	**0.50**	**0.47**	**0.42**	**0.38**	**0.35**	**0.32**	**0.31**	**-37.3%**
Australia	0.51	0.57	0.57	0.52	0.53	0.50	0.48	0.45	0.42	0.38	0.36	-32.7%
Israel	0.34	0.31	0.31	0.34	0.37	0.36	0.34	0.33	0.31	0.28	0.26	-30.5%
Japan	0.49	0.46	0.38	0.31	0.29	0.29	0.29	0.28	0.26	0.28	0.27	-7.8%
Korea	0.60	0.60	0.65	0.51	0.46	0.48	0.44	0.37	0.37	0.35	0.33	-27.9%
New Zealand	0.25	0.25	0.25	0.25	0.28	0.27	0.28	0.27	0.22	0.21	0.21	-26.6%
OECD Asia Oceania	**0.49**	**0.48**	**0.42**	**0.35**	**0.34**	**0.34**	**0.34**	**0.32**	**0.30**	**0.30**	**0.29**	**-12.4%**
Austria	0.35	0.31	0.29	0.26	0.24	0.23	0.21	0.23	0.20	0.18	0.17	-31.1%
Belgium	0.66	0.56	0.52	0.40	0.36	0.35	0.31	0.27	0.25	0.21	0.20	-45.6%
Czech Republic	1.12	0.99	0.97	0.96	0.76	0.65	0.59	0.47	0.39	0.36	0.33	-56.4%
Denmark	0.50	0.44	0.47	0.39	0.31	0.31	0.23	0.21	0.20	0.17	0.15	-52.5%
Estonia	..	..	..	..	1.67	1.06	0.71	0.59	0.66	0.58	0.53	-68.5%
Finland	0.55	0.51	0.54	0.41	0.39	0.41	0.31	0.28	0.30	0.24	0.22	-43.1%
France	0.44	0.38	0.35	0.25	0.21	0.19	0.18	0.16	0.15	0.13	0.12	-42.2%
Germany	0.65	0.59	0.54	0.49	0.39	0.32	0.27	0.26	0.23	0.23	0.21	-45.5%
Greece	0.18	0.21	0.23	0.27	0.33	0.34	0.32	0.29	0.26	0.26	0.25	-24.2%
Hungary	0.60	0.55	0.54	0.48	0.38	0.37	0.30	0.25	0.22	0.18	0.18	-53.8%
Iceland	0.41	0.39	0.32	0.26	0.26	0.27	0.23	0.19	0.16	0.15	0.15	-41.6%
Ireland	0.65	0.52	0.51	0.46	0.42	0.36	0.28	0.23	0.20	0.17	0.16	-62.3%
Italy	0.31	0.29	0.27	0.24	0.23	0.22	0.21	0.22	0.19	0.17	0.16	-29.4%
Luxembourg	1.67	1.15	1.00	0.74	0.53	0.34	0.25	0.30	0.25	0.21	0.20	-63.5%
Netherlands	0.44	0.40	0.38	0.35	0.31	0.31	0.25	0.24	0.23	0.21	0.20	-35.8%
Norway	0.26	0.22	0.20	0.17	0.16	0.15	0.13	0.13	0.13	0.12	0.11	-28.3%
Poland	1.01	0.93	1.10	1.11	0.92	0.80	0.53	0.47	0.39	0.34	0.31	-65.6%
Portugal	0.15	0.16	0.16	0.16	0.19	0.22	0.22	0.22	0.17	0.16	0.16	-15.9%
Slovak Republic	0.76	0.74	0.85	0.77	0.72	0.60	0.45	0.36	0.26	0.23	0.20	-71.8%
Slovenia	..	..	..	..	0.37	0.40	0.32	0.30	0.27	0.26	0.23	-39.3%
Spain	0.24	0.25	0.27	0.23	0.22	0.23	0.23	0.23	0.17	0.16	0.16	-27.3%
Sweden	0.48	0.41	0.35	0.26	0.20	0.21	0.16	0.14	0.12	0.09	0.09	-55.4%
Switzerland	0.18	0.17	0.16	0.16	0.14	0.14	0.13	0.12	0.11	0.10	0.09	-36.0%
Turkey	0.18	0.20	0.21	0.22	0.23	0.23	0.25	0.22	0.23	0.21	0.22	-3.2%
United Kingdom	0.65	0.57	0.50	0.43	0.36	0.31	0.27	0.24	0.21	0.19	0.17	-53.9%
OECD Europe [3]	**0.50**	**0.45**	**0.43**	**0.37**	**0.32**	**0.29**	**0.25**	**0.24**	**0.21**	**0.19**	**0.18**	**-43.2%**
European Union - 28	*..*	*..*	*..*	*..*	*0.34*	*0.31*	*0.26*	*0.25*	*0.22*	*0.20*	*0.18*	-46.8%
G7	*0.68*	*0.62*	*0.55*	*0.46*	*0.41*	*0.38*	*0.35*	*0.32*	*0.29*	*0.28*	*0.27*	-34.3%
G8	*..*	*..*	*..*	*..*	*0.45*	*0.42*	*0.38*	*0.35*	*0.31*	*0.29*	*0.28*	-37.1%
G20	*..*	*..*	*..*	*..*	*0.45*	*0.42*	*0.38*	*0.37*	*0.35*	*0.33*	*0.33*	-27.6%

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

CO_2 emissions / GDP using purchasing power parities

kilogrammes CO_2 / US dollar using 2010 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**0.49**	**0.50**	**0.51**	**0.50**	**0.50**	**0.46**	**0.41**	**0.41**	**0.38**	**0.36**	**0.35**	**-29.8%**
Albania	0.52	0.46	0.55	0.51	0.40	0.15	0.19	0.18	0.15	0.13	0.14	-65.0%
Armenia	..	..	..	..	1.53	0.49	0.39	0.26	0.21	0.24	0.23	-84.9%
Azerbaijan	..	..	..	..	0.90	1.29	0.78	0.44	0.17	0.19	0.20	-78.0%
Belarus	..	..	..	..	1.24	1.08	0.73	0.54	0.41	0.37	0.36	-71.2%
Bosnia and Herzegovina	..	..	..	..	2.04	0.49	0.61	0.53	0.60	0.61	0.61	-70.1%
Bulgaria	1.86	1.57	1.35	1.11	0.93	0.75	0.58	0.49	0.40	0.34	0.36	-61.3%
Croatia	..	..	..	..	0.25	0.27	0.26	0.24	0.22	0.20	0.19	-24.7%
Cyprus [2]	0.48	0.38	0.34	0.28	0.28	0.29	0.30	0.28	0.26	0.22	0.23	-19.3%
FYR of Macedonia	..	..	..	..	0.44	0.54	0.47	0.45	0.35	0.31	0.28	-34.9%
Georgia	..	..	..	..	0.89	0.76	0.33	0.20	0.19	0.22	0.24	-72.8%
Gibraltar	0.18	0.15	0.21	0.18	0.25	0.45	0.44	0.45	0.52	0.52	0.55	122.8%
Kazakhstan	..	..	..	..	1.16	1.36	0.79	0.68	0.71	0.66	0.57	-50.9%
Kosovo	..	..	..	..	..	..	0.66	0.59	0.63	0.54	0.48	..
Kyrgyzstan	..	..	..	..	1.52	0.59	0.45	0.41	0.41	0.51	0.46	-69.7%
Latvia	..	..	..	..	0.55	0.45	0.27	0.20	0.22	0.17	0.16	-71.1%
Lithuania	..	..	..	..	0.58	0.41	0.25	0.21	0.20	0.15	0.14	-75.5%
Malta	0.43	0.29	0.26	0.28	0.41	0.32	0.23	0.28	0.23	0.20	0.20	-52.3%
Republic of Moldova	..	..	..	..	1.31	1.27	0.79	0.66	0.57	0.42	0.44	-66.6%
Montenegro	..	..	..	..	..	..	..	0.30	0.30	0.26	0.25	..
Romania	1.08	0.88	0.77	0.64	0.68	0.53	0.39	0.32	0.22	0.20	0.19	-72.4%
Russian Federation	..	..	..	..	0.80	0.92	0.81	0.60	0.52	0.48	0.46	-42.8%
Serbia	..	..	..	..	0.61	0.89	0.76	0.68	0.57	0.55	0.46	-24.2%
Tajikistan	..	..	..	..	0.58	0.34	0.30	0.20	0.15	0.18	0.22	-61.7%
Turkmenistan	..	..	..	..	1.49	1.75	1.55	1.59	1.15	0.94	0.87	-41.3%
Ukraine	..	..	..	..	1.29	1.55	1.27	0.88	0.76	0.71	0.68	-47.1%
Uzbekistan	..	..	..	..	1.89	1.91	1.91	1.38	0.83	0.65	0.61	-67.6%
Former Soviet Union [3]	1.01	1.03	1.00	0.94	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	0.37	0.36	0.30	0.43	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**0.97**	**0.98**	**0.93**	**0.88**	**0.88**	**0.95**	**0.79**	**0.60**	**0.51**	**0.47**	**0.44**	**-50.0%**
Algeria	0.09	0.09	0.14	0.17	0.20	0.21	0.20	0.19	0.21	0.23	0.24	21.5%
Angola	0.06	0.07	0.09	0.09	0.11	0.14	0.12	0.10	0.13	0.14	0.14	32.1%
Benin	0.08	0.11	0.08	0.07	0.04	0.03	0.13	0.20	0.28	0.28	0.29	695.5%
Botswana	..	..	..	0.24	0.26	0.23	0.23	0.20	0.12	0.16	0.21	-19.7%
Cameroon	0.06	0.06	0.07	0.06	0.08	0.08	0.07	0.07	0.10	0.10	0.10	18.3%
Congo	0.13	0.10	0.09	0.06	0.05	0.04	0.04	0.05	0.08	0.10	0.10	92.1%
Côte d'Ivoire	0.10	0.10	0.09	0.08	0.07	0.08	0.13	0.12	0.12	0.14	0.14	96.9%
Dem. Rep. of the Congo	0.06	0.06	0.08	0.07	0.07	0.04	0.03	0.04	0.05	0.07	0.09	29.7%
Egypt	0.19	0.21	0.21	0.24	0.23	0.21	0.20	0.24	0.22	0.20	0.20	-16.1%
Eritrea	..	..	..	..	..	0.16	0.11	0.09	0.08	0.08	0.08	..
Ethiopia	0.05	0.05	0.05	0.06	0.07	0.07	0.08	0.08	0.06	0.07	0.07	-5.1%
Gabon	0.06	0.05	0.09	0.10	0.05	0.06	0.07	0.08	0.11	0.12	0.11	124.2%
Ghana	0.08	0.11	0.10	0.10	0.09	0.09	0.12	0.12	0.14	0.14	0.13	39.0%
Kenya	0.16	0.13	0.12	0.11	0.10	0.10	0.12	0.10	0.11	0.10	0.10	-1.4%
Libya	0.03	0.08	0.10	0.17	0.23	0.30	0.32	0.29	0.27	0.40	0.52	128.3%
Mauritius	0.10	0.12	0.13	0.11	0.15	0.16	0.18	0.19	0.19	0.18	0.18	21.9%
Morocco	0.17	0.20	0.22	0.22	0.20	0.25	0.23	0.24	0.22	0.21	0.22	8.6%
Mozambique	0.52	0.50	0.48	0.40	0.22	0.20	0.13	0.10	0.11	0.11	0.13	-38.9%
Namibia	..	..	..	..	..	0.19	0.17	0.17	0.17	0.16	0.16	..
Niger	..	..	..	..	..	..	0.08	0.07	0.10	0.11	0.12	..
Nigeria	0.03	0.04	0.08	0.12	0.10	0.11	0.13	0.10	0.07	0.07	0.06	-37.9%
Senegal	0.14	0.16	0.19	0.17	0.16	0.16	0.19	0.20	0.20	0.20	0.20	26.4%
South Africa	0.68	0.77	0.68	0.68	0.68	0.70	0.66	0.72	0.68	0.65	0.66	-2.7%
South Sudan	..	..	..	..	..	..	..	..	..	0.07	0.07	..
Sudan	0.13	0.10	0.11	0.11	0.12	0.08	0.07	0.10	0.10	0.09	0.09	-25.5%
United Rep. of Tanzania	0.07	0.06	0.06	0.05	0.05	0.06	0.05	0.07	0.07	0.09	0.09	85.7%
Togo	0.12	0.09	0.08	0.07	0.11	0.12	0.15	0.15	0.27	0.19	0.18	57.8%
Tunisia	0.21	0.21	0.25	0.25	0.27	0.26	0.24	0.22	0.21	0.21	0.21	-20.8%
Zambia	0.23	0.26	0.20	0.16	0.14	0.11	0.08	0.07	0.04	0.05	0.06	-59.8%
Zimbabwe	0.54	0.46	0.47	0.47	0.63	0.55	0.43	0.49	0.49	0.48	0.45	-28.1%
Other Africa	0.08	0.09	0.11	0.09	0.09	0.11	0.10	0.09	0.09	0.09	0.09	-3.3%
Africa	**0.20**	**0.23**	**0.23**	**0.25**	**0.25**	**0.26**	**0.25**	**0.25**	**0.22**	**0.22**	**0.22**	**-14.8%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
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 2010 prices

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Bangladesh	0.04	0.06	0.07	0.07	0.09	0.10	0.10	0.12	0.14	0.14	0.13	57.4%
Brunei Darussalam	0.03	0.10	0.11	0.15	0.17	0.20	0.18	0.18	0.25	0.24	0.24	43.5%
Cambodia	..	..	..	..	..	0.13	0.12	0.10	0.13	0.12	0.13	..
DPR of Korea	2.05	1.48	1.18	0.89	0.67	0.56	0.58	0.64	0.60	0.26	0.26	-60.6%
India	0.27	0.29	0.30	0.33	0.35	0.37	0.34	0.30	0.30	0.29	0.29	-16.6%
Indonesia	0.12	0.13	0.16	0.15	0.17	0.18	0.21	0.21	0.19	0.17	0.17	3.7%
Malaysia	0.25	0.23	0.23	0.25	0.27	0.27	0.31	0.33	0.33	0.31	0.31	15.7%
Mongolia	..	..	..	1.29	1.17	1.07	0.82	0.73	0.69	0.62	0.56	-52.4%
Myanmar	0.24	0.19	0.18	0.16	0.12	0.16	0.14	0.09	0.05	0.06	0.08	-29.5%
Nepal	0.02	0.03	0.04	0.03	0.04	0.06	0.09	0.07	0.08	0.08	0.09	132.9%
Pakistan	0.14	0.15	0.14	0.15	0.17	0.20	0.20	0.19	0.18	0.17	0.17	-4.9%
Philippines	0.19	0.19	0.16	0.15	0.16	0.21	0.21	0.18	0.15	0.15	0.15	-5.2%
Singapore	0.26	0.26	0.26	0.25	0.28	0.24	0.21	0.15	0.12	0.11	0.11	-62.1%
Sri Lanka	0.10	0.08	0.09	0.07	0.06	0.07	0.10	0.11	0.07	0.07	0.08	29.5%
Chinese Taipei	0.52	0.47	0.48	0.34	0.36	0.35	0.37	0.37	0.31	0.27	0.27	-24.7%
Thailand	0.17	0.18	0.19	0.19	0.22	0.26	0.27	0.27	0.25	0.25	0.24	11.4%
Viet Nam	0.31	0.32	0.27	0.23	0.18	0.19	0.22	0.28	0.33	0.29	0.30	67.7%
Other Asia	0.24	0.26	0.29	0.17	0.16	0.13	0.14	0.14	0.13	0.18	0.19	22.1%
Asia (excl. China)	**0.26**	**0.26**	**0.27**	**0.27**	**0.27**	**0.27**	**0.28**	**0.26**	**0.25**	**0.24**	**0.24**	**-11.5%**
People's Rep. of China	1.93	2.04	1.97	1.41	1.23	0.96	0.68	0.74	0.62	0.57	0.54	-56.2%
Hong Kong, China	0.26	0.24	0.19	0.21	0.22	0.19	0.18	0.15	0.13	0.13	0.13	-41.8%
China	**1.79**	**1.89**	**1.79**	**1.31**	**1.15**	**0.91**	**0.66**	**0.72**	**0.61**	**0.56**	**0.53**	**-53.8%**
Argentina	0.29	0.27	0.26	0.27	0.32	0.27	0.28	0.28	0.24	0.22	0.24	-24.6%
Bolivia	0.12	0.15	0.17	0.19	0.21	0.23	0.20	0.22	0.26	0.27	0.28	35.1%
Brazil	0.14	0.14	0.13	0.12	0.12	0.13	0.15	0.14	0.13	0.15	0.16	27.5%
Colombia	0.24	0.21	0.20	0.20	0.18	0.18	0.16	0.14	0.12	0.12	0.12	-32.9%
Costa Rica	0.12	0.13	0.13	0.11	0.12	0.15	0.12	0.12	0.12	0.11	0.11	-8.2%
Cuba	0.31	0.30	0.32	0.22	0.24	0.23	0.22	0.16	0.16	0.13	0.13	-46.7%
Curaçao [1]	15.32	9.51	7.03	3.45	1.73	1.53	2.67	2.67	1.82	2.66	2.82	62.8%
Dominican Republic	0.21	0.23	0.21	0.19	0.20	0.23	0.27	0.22	0.18	0.16	0.15	-24.4%
Ecuador	0.11	0.13	0.18	0.18	0.18	0.19	0.20	0.21	0.23	0.22	0.23	28.7%
El Salvador	0.06	0.08	0.07	0.08	0.09	0.15	0.14	0.15	0.13	0.12	0.12	36.4%
Guatemala	0.09	0.09	0.10	0.08	0.07	0.10	0.12	0.13	0.11	0.11	0.14	109.1%
Haiti	0.04	0.04	0.04	0.06	0.07	0.07	0.09	0.14	0.14	0.13	0.16	143.4%
Honduras	0.15	0.15	0.14	0.13	0.14	0.20	0.21	0.27	0.23	0.24	0.24	69.4%
Jamaica	0.38	0.47	0.49	0.34	0.42	0.40	0.47	0.45	0.31	0.33	0.32	-24.1%
Nicaragua	0.11	0.11	0.13	0.12	0.15	0.19	0.21	0.20	0.19	0.16	0.16	9.6%
Panama	0.21	0.23	0.18	0.14	0.14	0.17	0.16	0.18	0.16	0.14	0.14	-0.6%
Paraguay	0.08	0.07	0.08	0.08	0.08	0.11	0.10	0.10	0.11	0.09	0.10	22.7%
Peru	0.17	0.17	0.16	0.15	0.17	0.16	0.16	0.14	0.14	0.13	0.14	-19.0%
Suriname	..	..	..	..	..	..	0.32	0.28	0.23	0.24	0.24	..
Trinidad and Tobago	0.43	0.32	0.34	0.41	0.54	0.52	0.45	0.53	0.57	0.57	0.57	5.4%
Uruguay	0.23	0.22	0.18	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.09	-21.8%
Venezuela	0.23	0.24	0.32	0.34	0.33	0.32	0.34	0.35	0.36	0.30	0.31	-7.5%
Other Non-OECD Americas	0.47	0.60	0.44	0.39	0.41	0.41	0.40	0.37	0.41	0.47	0.49	20.3%
Non-OECD Americas	**0.21**	**0.19**	**0.19**	**0.18**	**0.18**	**0.18**	**0.20**	**0.19**	**0.18**	**0.17**	**0.18**	**-1.9%**
Bahrain	0.59	0.58	0.49	0.66	0.62	0.56	0.54	0.54	0.51	0.51	0.51	-17.4%
Islamic Republic of Iran	0.08	0.10	0.20	0.26	0.31	0.38	0.41	0.42	0.39	0.44	0.44	43.9%
Iraq	0.24	0.26	0.21	0.34	0.27	0.73	0.25	0.25	0.27	0.27	0.29	8.3%
Jordan	0.15	0.25	0.24	0.32	0.42	0.40	0.40	0.37	0.28	0.31	0.32	-23.7%
Kuwait	0.10	0.13	0.21	0.38	0.29	0.25	0.33	0.31	0.35	0.32	0.34	13.8%
Lebanon	0.15	0.19	0.26	0.18	0.27	0.35	0.36	0.30	0.26	0.28	0.30	12.0%
Oman	0.02	0.04	0.09	0.11	0.16	0.18	0.21	0.24	0.31	0.38	0.39	139.8%
Qatar	0.07	0.14	0.17	0.32	0.37	0.45	0.33	0.35	0.26	0.27	0.27	-27.1%
Saudi Arabia	0.05	0.05	0.16	0.25	0.27	0.29	0.32	0.32	0.34	0.33	0.34	26.5%
Syrian Arab Republic	0.32	0.28	0.31	0.42	0.55	0.43	0.45	0.51	0.42	0.24	0.23	-58.1%
United Arab Emirates	0.07	0.05	0.10	0.20	0.26	0.28	0.25	0.27	0.32	0.32	0.31	19.6%
Yemen	0.13	0.13	0.15	0.14	0.16	0.18	0.19	0.22	0.22	0.26	0.23	44.3%
Middle East	**0.09**	**0.10**	**0.18**	**0.26**	**0.29**	**0.35**	**0.33**	**0.34**	**0.34**	**0.34**	**0.35**	**21.6%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

CO_2 emissions / population

tonnes CO_2 / capita

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
World [1]	**3.71**	**3.81**	**3.99**	**3.77**	**3.88**	**3.75**	**3.79**	**4.16**	**4.40**	**4.49**	**4.47**	**15.0%**
Annex I Parties	*..*	*..*	*..*	*..*	*11.66*	*10.74*	*11.00*	*11.04*	*10.28*	*9.88*	*9.66*	*-17.1%*
Annex II Parties	*12.16*	*12.12*	*12.47*	*11.69*	*12.07*	*12.12*	*12.70*	*12.60*	*11.44*	*10.93*	*10.72*	*-11.2%*
North America	*20.15*	*19.79*	*19.89*	*18.56*	*18.79*	*18.66*	*19.67*	*19.00*	*17.08*	*16.06*	*16.16*	*-14.0%*
Europe	*8.58*	*8.48*	*8.99*	*8.23*	*8.23*	*8.03*	*8.12*	*8.18*	*7.29*	*6.69*	*6.26*	*-23.9%*
Asia Oceania	*7.50*	*8.12*	*8.10*	*7.88*	*9.17*	*9.63*	*10.05*	*10.40*	*9.91*	*10.60*	*10.27*	*12.0%*
Annex I EIT	*..*	*..*	*..*	*..*	*12.24*	*8.73*	*8.00*	*8.31*	*8.40*	*8.26*	*7.86*	*-35.8%*
Non-Annex I Parties	*..*	*..*	*..*	*..*	*1.50*	*1.71*	*1.79*	*2.32*	*2.86*	*3.10*	*3.13*	*108.8%*
Annex B Kyoto Parties	*..*	*..*	*..*	*..*	*9.20*	*8.12*	*7.86*	*8.14*	*7.59*	*7.12*	*6.68*	*-27.3%*
Non-OECD Total [2]	**1.43**	**1.67**	**1.90**	**1.93**	**2.11**	**2.00**	**1.99**	**2.49**	**3.00**	**3.22**	**3.24**	**53.7%**
OECD Total [3]	**10.40**	**10.39**	**10.74**	**10.08**	**10.27**	**10.31**	**10.79**	**10.74**	**9.95**	**9.55**	**9.36**	**-8.9%**
Canada	15.49	16.29	17.22	15.24	15.15	15.32	16.82	16.60	15.46	15.64	15.61	3.0%
Chile	2.16	1.64	1.92	1.62	2.23	2.57	3.16	3.35	4.01	4.65	4.25	90.4%
Mexico	1.75	2.21	2.91	3.06	2.95	3.08	3.56	3.83	3.83	3.78	3.60	22.0%
United States	20.65	20.16	20.18	18.92	19.20	19.03	19.98	19.26	17.26	16.11	16.22	-15.5%
OECD Americas	**16.20**	**15.74**	**15.71**	**14.55**	**14.57**	**14.45**	**15.29**	**14.84**	**13.43**	**12.67**	**12.67**	**-13.0%**
Australia	10.86	12.85	13.96	13.85	15.13	15.77	17.51	18.34	17.59	16.46	15.81	4.5%
Israel	4.52	4.75	4.86	5.74	7.04	8.09	8.70	8.45	8.98	8.40	7.88	11.9%
Japan	7.15	7.60	7.43	7.15	8.42	8.83	9.00	9.22	8.68	9.66	9.35	11.1%
Korea	1.61	2.20	3.29	3.82	5.41	7.92	9.18	9.50	11.15	11.39	11.26	108.3%
New Zealand	4.71	5.32	5.24	5.78	6.45	6.48	7.50	8.13	6.96	6.94	7.01	8.7%
OECD Asia Oceania	**6.21**	**6.80**	**6.99**	**6.94**	**8.28**	**9.19**	**9.80**	**10.13**	**10.17**	**10.70**	**10.41**	**25.8%**
Austria	6.48	6.53	7.20	6.96	7.33	7.50	7.72	9.06	8.21	7.58	7.11	-2.9%
Belgium	12.21	11.81	12.73	10.24	10.66	11.01	11.12	10.24	9.68	8.41	7.83	-26.5%
Czech Republic	15.62	15.41	16.28	16.97	14.51	11.93	11.81	11.58	10.60	9.63	9.17	-36.8%
Denmark	11.16	10.40	12.30	11.93	9.92	11.16	9.51	8.94	8.51	6.88	6.12	-38.3%
Estonia	..	..	..	..	22.67	11.02	10.36	12.37	13.99	14.29	13.31	-41.3%
Finland	8.64	9.38	11.47	9.85	10.79	10.90	10.54	10.45	11.53	9.08	8.28	-23.3%
France	8.07	7.84	8.25	6.21	5.93	5.77	5.99	5.87	5.23	4.81	4.32	-27.2%
Germany	12.49	12.37	13.39	12.93	11.85	10.54	9.97	9.67	9.45	9.47	8.93	-24.6%
Greece	2.81	3.73	4.64	5.43	6.81	7.25	8.14	8.67	7.50	6.28	6.03	-11.5%
Hungary	5.82	6.66	7.72	7.54	6.34	5.45	5.22	5.43	4.76	4.10	4.08	-35.6%
Iceland	6.81	7.40	7.66	6.75	7.43	7.35	7.69	7.55	6.13	6.26	6.25	-15.9%
Ireland	7.27	6.65	7.61	7.47	8.59	9.06	10.73	10.63	8.62	7.48	7.34	-14.5%
Italy	5.35	5.72	6.29	6.04	6.86	7.05	7.38	7.84	6.55	5.56	5.26	-23.4%
Luxembourg	48.10	35.45	34.18	28.14	28.11	20.05	18.44	24.63	20.96	17.93	16.57	-41.1%
Netherlands	9.67	9.66	10.27	9.55	9.69	10.58	10.14	10.24	10.23	9.27	8.80	-9.2%
Norway	5.89	5.89	6.66	6.36	6.47	7.20	7.10	7.46	7.69	6.91	6.87	6.2%
Poland	8.76	9.96	11.69	11.36	9.07	8.71	7.57	7.77	7.99	7.59	7.25	-20.0%
Portugal	1.65	1.96	2.41	2.37	3.79	4.71	5.62	5.84	4.50	4.18	4.12	8.6%
Slovak Republic	8.53	9.11	11.21	10.55	10.35	7.69	6.83	6.92	6.37	5.87	5.41	-47.7%
Slovenia	..	..	..	..	6.78	7.07	7.07	7.72	7.54	6.90	6.19	-8.7%
Spain	3.44	4.33	4.90	4.45	5.15	5.74	6.87	7.64	5.63	5.05	4.99	-3.0%
Sweden	10.13	9.64	8.80	6.99	6.08	6.45	5.86	5.44	4.91	3.92	3.86	-36.6%
Switzerland	6.13	5.74	6.15	6.39	6.00	5.84	5.79	5.87	5.49	5.14	4.61	-23.2%
Turkey	1.15	1.49	1.61	1.90	2.31	2.54	3.13	3.15	3.64	3.75	4.01	73.8%
United Kingdom	11.10	10.24	10.13	9.61	9.57	8.85	8.85	8.79	7.60	7.02	6.31	-34.0%
OECD Europe [3]	**8.08**	**8.09**	**8.65**	**8.01**	**7.80**	**7.47**	**7.47**	**7.52**	**6.88**	**6.38**	**6.05**	**-22.4%**
European Union - 28	*..*	*..*	*..*	*..*	*8.42*	*7.89*	*7.77*	*7.92*	*7.17*	*6.60*	*6.22*	-26.1%
G7	*13.37*	*13.22*	*13.51*	*12.66*	*12.99*	*12.92*	*13.49*	*13.29*	*12.10*	*11.66*	*11.47*	-11.7%
G8	*..*	*..*	*..*	*..*	*13.29*	*12.47*	*12.90*	*12.80*	*11.88*	*11.50*	*11.27*	-15.2%
G20	*..*	*..*	*..*	*..*	*4.59*	*4.55*	*4.64*	*5.14*	*5.51*	*5.68*	*5.67*	23.7%

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

CO_2 emissions / population

tonnes CO_2 / capita

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	% change 90-14
Non-OECD Total [1]	**1.43**	**1.67**	**1.90**	**1.93**	**2.11**	**2.00**	**1.99**	**2.49**	**3.00**	**3.22**	**3.24**	**53.7%**
Albania	1.77	1.80	2.55	2.34	1.73	0.58	1.00	1.27	1.35	1.26	1.42	-17.5%
Armenia	..	..	..	..	5.60	1.04	1.11	1.37	1.37	1.75	1.74	-69.0%
Azerbaijan	..	..	..	..	7.47	4.21	3.39	3.46	2.60	3.13	3.23	-56.8%
Belarus	..	..	..	..	9.80	5.59	5.21	5.69	6.31	6.15	6.06	-38.1%
Bosnia and Herzegovina	..	..	..	..	5.30	0.85	3.62	4.14	5.34	5.63	5.66	6.8%
Bulgaria	7.48	8.41	9.60	9.18	8.55	6.27	5.16	6.01	6.00	5.42	5.83	-31.8%
Croatia	..	..	..	..	4.25	3.17	3.79	4.48	4.13	3.74	3.57	-15.9%
Cyprus [2]	2.83	3.28	5.09	5.14	6.79	7.82	9.13	9.61	8.86	6.49	6.72	-1.1%
FYR of Macedonia	..	..	..	..	4.31	4.26	4.24	4.36	4.04	3.80	3.58	-16.9%
Georgia	..	..	..	..	6.97	1.72	1.05	0.93	1.12	1.49	1.71	-75.4%
Gibraltar	2.63	2.39	3.34	3.22	5.10	9.68	11.72	13.08	15.29	15.12	16.25	218.9%
Kazakhstan	..	..	..	..	14.51	10.78	7.53	10.36	13.55	14.63	12.94	-10.8%
Kosovo	..	..	..	..	..	..	3.01	3.90	4.90	4.57	4.06	..
Kyrgyzstan	..	..	..	..	5.18	0.98	0.91	0.95	1.11	1.55	1.43	-72.4%
Latvia	..	..	..	..	7.05	3.58	2.89	3.38	3.85	3.43	3.38	-52.1%
Lithuania	..	..	..	..	8.71	3.70	2.92	3.69	3.94	3.63	3.52	-59.6%
Malta	2.16	2.14	3.13	3.45	6.54	6.43	5.59	6.74	6.19	5.59	5.49	-16.0%
Republic of Moldova	..	..	..	..	8.26	3.24	1.80	2.14	2.20	1.88	2.04	-75.3%
Montenegro	..	..	..	..	..	..	..	3.23	4.08	3.66	3.57	..
Romania	5.60	6.60	7.97	7.68	7.25	5.19	3.84	4.35	3.69	3.45	3.42	-52.8%
Russian Federation	..	..	..	..	14.59	10.43	10.06	10.32	10.70	10.69	10.20	-30.0%
Serbia	..	..	..	..	6.16	4.35	5.30	6.66	6.29	6.34	5.35	-13.3%
Tajikistan	..	..	..	..	2.08	0.43	0.35	0.34	0.30	0.44	0.56	-73.0%
Turkmenistan	..	..	..	..	12.17	7.94	8.14	10.13	11.29	12.50	12.62	3.7%
Ukraine	..	..	..	..	13.27	7.68	6.00	6.24	5.80	5.83	5.21	-60.7%
Uzbekistan	..	..	..	..	5.60	4.15	4.62	4.09	3.40	3.18	3.18	-43.2%
Former Soviet Union [3]	7.98	9.82	11.12	11.15	..	..	..	..	..	..	..	..
Former Yugoslavia [3]	3.02	3.47	3.81	5.21	..	..	..	..	..	..	..	..
Non-OECD Europe and Eurasia [1]	**7.40**	**9.04**	**10.26**	**10.36**	**11.46**	**7.64**	**6.97**	**7.34**	**7.50**	**7.52**	**7.14**	**-37.7%**
Algeria	0.57	0.81	1.43	1.86	1.97	1.91	1.97	2.33	2.66	2.98	3.16	59.9%
Angola	0.25	0.28	0.32	0.29	0.35	0.30	0.31	0.34	0.71	0.77	0.80	126.1%
Benin	0.10	0.14	0.11	0.11	0.05	0.04	0.20	0.33	0.48	0.51	0.54	956.3%
Botswana	..	..	..	1.27	2.03	2.02	2.32	2.30	1.60	2.41	3.10	52.3%
Cameroon	0.11	0.13	0.19	0.23	0.22	0.18	0.18	0.16	0.25	0.26	0.27	21.2%
Congo	0.42	0.39	0.38	0.36	0.27	0.20	0.16	0.24	0.45	0.58	0.59	118.8%
Côte d'Ivoire	0.44	0.46	0.41	0.30	0.22	0.23	0.38	0.32	0.31	0.40	0.42	89.8%
Dem. Rep. of the Congo	0.13	0.11	0.12	0.11	0.09	0.03	0.02	0.02	0.03	0.05	0.06	-27.3%
Egypt	0.56	0.66	0.94	1.31	1.38	1.31	1.46	1.93	2.15	2.00	1.93	40.1%
Eritrea	..	..	..	..	..	0.25	0.17	0.14	0.10	0.11	0.11	..
Ethiopia	0.04	0.04	0.04	0.03	0.05	0.04	0.05	0.06	0.07	0.09	0.09	108.2%
Gabon	0.79	1.16	1.77	2.03	0.96	1.21	1.19	1.26	1.72	2.06	2.07	116.5%
Ghana	0.22	0.23	0.20	0.16	0.17	0.19	0.26	0.30	0.43	0.52	0.49	182.2%
Kenya	0.28	0.26	0.27	0.23	0.24	0.21	0.25	0.21	0.28	0.27	0.28	17.0%
Libya	1.68	3.31	5.51	5.53	5.87	6.75	6.89	7.41	7.67	7.69	7.65	30.3%
Mauritius	0.31	0.47	0.59	0.60	1.10	1.38	2.05	2.41	2.93	3.04	3.14	185.7%
Morocco	0.40	0.54	0.68	0.72	0.79	0.96	1.02	1.28	1.43	1.51	1.57	98.8%
Mozambique	0.31	0.23	0.20	0.11	0.08	0.07	0.07	0.07	0.10	0.11	0.14	75.5%
Namibia	..	..	..	..	..	1.08	1.00	1.23	1.40	1.46	1.50	..
Niger	..	..	..	..	..	..	0.06	0.05	0.08	0.10	0.10	..
Nigeria	0.10	0.17	0.34	0.38	0.29	0.30	0.36	0.40	0.35	0.36	0.34	15.5%
Senegal	0.28	0.33	0.37	0.33	0.28	0.28	0.36	0.41	0.42	0.42	0.43	50.9%
South Africa	6.95	8.21	7.56	7.12	6.93	6.64	6.38	7.86	8.01	7.96	8.10	16.9%
South Sudan	..	..	..	..	..	..	..	..	..	0.13	0.13	..
Sudan	0.22	0.20	0.19	0.18	0.21	0.14	0.16	0.25	0.32	0.35	0.34	65.0%
United Rep. of Tanzania	0.10	0.09	0.08	0.07	0.07	0.08	0.08	0.13	0.13	0.20	0.20	205.0%
Togo	0.16	0.13	0.13	0.09	0.15	0.14	0.19	0.17	0.32	0.24	0.24	59.4%
Tunisia	0.71	0.86	1.24	1.33	1.50	1.57	1.85	1.94	2.21	2.17	2.27	52.1%
Zambia	0.78	0.87	0.55	0.38	0.31	0.22	0.16	0.18	0.12	0.19	0.20	-35.5%
Zimbabwe	1.35	1.16	1.09	1.10	1.55	1.29	1.06	0.79	0.66	0.79	0.75	-51.4%
Other Africa	0.12	0.13	0.15	0.11	0.11	0.11	0.12	0.13	0.14	0.15	0.15	38.6%
Africa	**0.67**	**0.78**	**0.84**	**0.85**	**0.84**	**0.80**	**0.81**	**0.93**	**0.96**	**0.95**	**0.96**	**13.3%**

1. Includes Estonia and Slovenia prior to 1990.
2. Please refer to the chapter *Geographical Coverage*.
3. 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	2010	2013	2014	% change 90-14
Bangladesh	0.04	0.06	0.08	0.08	0.11	0.14	0.16	0.22	0.33	0.38	0.39	263.1%
Brunei Darussalam	2.93	8.74	13.67	13.21	12.68	15.26	13.37	13.32	17.46	16.67	16.06	26.6%
Cambodia	..	..	..	..	..	0.14	0.16	0.20	0.32	0.34	0.40	..
DPR of Korea	4.67	4.83	6.22	6.89	5.79	3.52	3.06	3.16	2.68	1.34	1.51	-73.9%
India	0.32	0.35	0.38	0.48	0.61	0.74	0.85	0.94	1.30	1.45	1.56	155.9%
Indonesia	0.21	0.29	0.46	0.51	0.74	1.04	1.21	1.41	1.56	1.59	1.72	132.5%
Malaysia	1.14	1.32	1.71	2.09	2.72	3.84	4.91	6.04	6.75	7.09	7.37	170.8%
Mongolia	..	..	..	6.13	5.89	4.46	3.75	4.35	5.22	6.53	6.24	6.0%
Myanmar	0.16	0.13	0.15	0.15	0.09	0.15	0.19	0.21	0.15	0.25	0.37	292.7%
Nepal	0.02	0.02	0.03	0.03	0.05	0.08	0.13	0.12	0.15	0.17	0.21	340.9%
Pakistan	0.27	0.30	0.31	0.40	0.52	0.65	0.69	0.76	0.77	0.75	0.74	42.8%
Philippines	0.62	0.70	0.70	0.52	0.61	0.82	0.87	0.83	0.83	0.92	0.97	57.2%
Singapore	2.87	3.73	5.24	6.07	9.50	10.66	10.46	8.87	8.72	8.57	8.29	-12.8%
Sri Lanka	0.22	0.20	0.25	0.22	0.22	0.30	0.55	0.68	0.60	0.67	0.81	275.5%
Chinese Taipei	2.00	2.53	4.01	3.59	5.49	7.28	9.77	11.16	11.07	10.61	10.68	94.5%
Thailand	0.43	0.50	0.71	0.81	1.43	2.36	2.43	3.04	3.35	3.67	3.60	151.5%
Viet Nam	0.37	0.35	0.28	0.30	0.26	0.38	0.57	0.96	1.45	1.45	1.58	499.9%
Other Asia	0.38	0.42	0.54	0.34	0.31	0.31	0.33	0.38	0.48	0.79	0.82	163.4%
Asia (excl. China)	**0.40**	**0.44**	**0.53**	**0.60**	**0.74**	**0.90**	**1.03**	**1.16**	**1.40**	**1.49**	**1.58**	**112.5%**
People's Rep. of China	0.93	1.12	1.39	1.55	1.83	2.40	2.44	4.11	5.76	6.62	6.66	264.2%
Hong Kong, China	2.28	2.44	2.88	4.09	5.84	5.93	6.05	6.07	5.98	6.41	6.62	13.4%
China	**0.93**	**1.13**	**1.40**	**1.56**	**1.85**	**2.41**	**2.46**	**4.12**	**5.76**	**6.61**	**6.66**	**260.3%**
Argentina	3.39	3.27	3.39	2.89	3.04	3.35	3.76	3.82	4.21	4.25	4.48	47.4%
Bolivia	0.47	0.64	0.75	0.69	0.75	0.91	0.85	0.99	1.38	1.63	1.73	130.6%
Brazil	0.89	1.20	1.37	1.14	1.23	1.40	1.66	1.65	1.87	2.21	2.31	88.5%
Colombia	1.18	1.14	1.25	1.27	1.34	1.45	1.34	1.24	1.31	1.50	1.52	13.6%
Costa Rica	0.67	0.83	0.90	0.71	0.84	1.27	1.15	1.28	1.46	1.52	1.51	79.1%
Cuba	2.35	2.56	3.10	3.19	3.22	2.06	2.46	2.22	2.89	2.59	2.59	-19.7%
Curaçao [1]	90.11	60.30	50.13	24.57	14.09	13.23	26.73	27.22	19.13	28.65	30.43	115.9%
Dominican Republic	0.75	1.01	1.09	0.96	1.03	1.42	2.13	1.87	1.94	1.92	1.85	79.7%
Ecuador	0.56	0.85	1.30	1.29	1.30	1.46	1.44	1.74	2.15	2.29	2.44	86.8%
El Salvador	0.35	0.46	0.35	0.33	0.40	0.82	0.89	1.05	0.96	0.94	0.96	139.9%
Guatemala	0.41	0.48	0.59	0.39	0.35	0.57	0.73	0.81	0.70	0.78	1.01	188.0%
Haiti	0.08	0.08	0.11	0.12	0.13	0.12	0.16	0.21	0.21	0.21	0.26	98.6%
Honduras	0.41	0.43	0.47	0.39	0.44	0.64	0.72	1.04	0.98	1.08	1.10	147.5%
Jamaica	2.92	3.70	3.07	2.02	3.03	3.39	3.78	3.89	2.57	2.70	2.64	-13.0%
Nicaragua	0.60	0.66	0.56	0.49	0.44	0.54	0.70	0.75	0.75	0.72	0.76	70.3%
Panama	1.59	1.77	1.47	1.20	1.04	1.49	1.61	2.04	2.44	2.59	2.74	163.9%
Paraguay	0.23	0.25	0.42	0.39	0.46	0.73	0.62	0.60	0.75	0.76	0.79	72.9%
Peru	1.12	1.20	1.17	0.92	0.88	0.97	1.02	1.04	1.40	1.47	1.54	75.9%
Suriname	..	..	..	..	..	..	3.03	3.36	3.27	3.69	3.70	..
Trinidad and Tobago	5.61	4.52	5.87	5.68	6.46	6.50	7.97	13.52	16.83	17.02	17.15	165.2%
Uruguay	1.81	1.88	1.83	1.00	1.16	1.36	1.53	1.55	1.77	2.09	1.83	58.4%
Venezuela	3.84	4.20	5.43	4.86	4.71	4.78	4.75	5.12	5.91	5.15	5.05	7.2%
Other Non-OECD Americas	3.14	4.04	3.65	3.18	4.11	4.15	4.65	4.59	5.05	5.79	5.82	41.8%
Non-OECD Americas	**1.47**	**1.63**	**1.80**	**1.55**	**1.61**	**1.74**	**1.93**	**1.97**	**2.22**	**2.37**	**2.44**	**52.1%**
Bahrain	13.09	19.58	20.10	21.71	21.53	23.85	23.75	23.71	20.26	20.97	21.80	1.3%
Islamic Republic of Iran	1.33	2.08	2.29	3.07	3.05	4.05	4.74	5.96	6.71	6.94	7.12	133.5%
Iraq	1.01	1.33	1.92	2.44	3.00	4.71	2.99	2.71	3.35	4.00	4.05	35.1%
Jordan	0.86	1.19	1.98	2.83	2.93	2.92	3.01	3.35	3.12	3.48	3.65	24.3%
Kuwait	17.37	14.37	19.09	21.18	13.50	19.76	24.00	28.59	25.16	23.40	22.94	69.9%
Lebanon	1.95	2.22	2.55	2.47	2.04	4.22	4.32	3.63	4.20	4.59	4.92	141.2%
Oman	0.34	0.82	1.95	3.76	5.61	6.70	9.12	9.84	14.39	14.46	14.14	152.2%
Qatar	18.82	30.04	31.16	28.79	26.11	33.59	35.84	39.67	32.33	34.64	35.73	36.9%
Saudi Arabia	2.08	3.03	10.03	8.81	9.23	10.16	10.97	12.04	14.92	15.60	16.40	77.6%
Syrian Arab Republic	0.82	1.09	1.38	1.83	2.19	2.17	2.26	2.95	2.70	1.37	1.24	-43.1%
United Arab Emirates	8.95	9.26	18.90	26.39	28.64	29.63	26.17	24.79	18.22	19.19	19.31	-32.6%
Yemen	0.19	0.26	0.43	0.50	0.53	0.62	0.75	0.92	0.95	0.94	0.81	54.8%
Middle East	**1.49**	**2.11**	**3.44**	**4.07**	**4.22**	**5.18**	**5.45**	**6.35**	**7.26**	**7.54**	**7.72**	**82.8%**

1. Prior to 2012, Curaçao includes the entire territory of the former Netherlands Antilles.

Per capita emissions by sector in 2014 [1]

kilogrammes CO_2 / capita

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy ind. own use [2]	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
World [3]	**4 467**	**1 880**	**232**	**859**	**1 041**	**781**	**455**	**256**
Annex I Parties	*9 662*	*4 030*	*542*	*1 145*	*2 648*	*2 284*	*1 297*	*757*
Annex II Parties	*10 722*	*4 162*	*647*	*1 221*	*3 237*	*2 837*	*1 455*	*812*
North America	*16 157*	*6 267*	*1 050*	*1 451*	*5 371*	*4 544*	*2 017*	*1 085*
Europe	*6 264*	*2 084*	*326*	*812*	*1 870*	*1 774*	*1 172*	*727*
Asia Oceania	*10 267*	*4 930*	*589*	*1 789*	*2 029*	*1 789*	*930*	*413*
Annex I EIT	*7 863*	*4 210*	*323*	*1 058*	*1 317*	*990*	*956*	*692*
Non-Annex I Parties	*3 134*	*1 407*	*164*	*797*	*498*	*450*	*269*	*146*
Annex B Kyoto Parties	*6 682*	*2 581*	*403*	*912*	*1 696*	*1 587*	*1 090*	*683*
Non-OECD Total	**3 242**	**1 487**	**159**	**810**	**500**	**438**	**287**	**163**
OECD Total	**9 358**	**3 735**	**577**	**1 094**	**2 706**	**2 399**	**1 245**	**696**
Canada	15 609	2 744	3 301	1 880	4 963	3 984	2 721	1 211
Chile	4 251	1 662	166	794	1 321	1 199	308	192
Mexico	3 600	1 151	435	484	1 263	1 227	266	151
United States	16 218	6 659	799	1 404	5 416	4 606	1 939	1 071
OECD Americas	**12 672**	**4 856**	**869**	**1 192**	**4 225**	**3 616**	**1 530**	**826**
Australia	15 812	7 717	1 511	1 817	3 913	3 297	856	382
Israel	7 878	4 812	544	353	2 056	2 056	113	44
Japan	9 350	4 540	425	1 793	1 640	1 471	952	429
Korea	11 261	5 923	888	1 538	1 833	1 756	1 079	611
New Zealand	7 007	1 281	379	1 524	3 150	2 854	672	122
OECD Asia Oceania	**10 410**	**5 160**	**658**	**1 675**	**1 984**	**1 792**	**933**	**445**
Austria	7 114	1 491	826	1 258	2 605	2 519	933	603
Belgium	7 830	1 472	552	1 619	2 242	2 172	1 946	1 272
Czech Republic	9 174	5 146	229	1 287	1 562	1 522	950	574
Denmark	6 116	2 395	369	610	2 013	1 853	730	363
Estonia	13 310	10 294	99	644	1 686	1 617	587	137
Finland	8 283	3 603	592	1 383	1 977	1 852	728	222
France	4 317	437	159	678	1 831	1 767	1 213	676
Germany	8 931	4 046	283	1 111	1 908	1 845	1 583	1 019
Greece	6 029	3 109	394	548	1 496	1 302	482	346
Hungary	4 083	1 127	145	637	1 109	1 082	1 066	612
Iceland	6 250	10	-	1 823	2 501	2 321	1 917	28
Ireland	7 338	2 399	75	775	2 358	2 315	1 730	1 246
Italy	5 259	1 700	170	589	1 733	1 642	1 067	691
Luxembourg	16 570	1 380	-	1 533	11 075	11 053	2 582	1 766
Netherlands	8 796	3 459	574	1 294	1 746	1 683	1 723	897
Norway	6 874	379	2 127	1 105	2 732	2 063	531	60
Poland	7 251	3 853	179	745	1 136	1 104	1 337	889
Portugal	4 116	1 480	212	531	1 511	1 445	381	180
Slovak Republic	5 413	1 216	876	1 332	1 118	1 062	872	466
Slovenia	6 188	2 199	3	819	2 572	2 550	596	319
Spain	4 993	1 510	358	713	1 763	1 616	650	333
Sweden	3 859	647	289	672	2 056	2 002	195	17
Switzerland	4 608	314	114	629	2 066	2 032	1 486	969
Turkey	4 008	1 725	147	586	795	720	756	367
United Kingdom	6 314	2 249	398	606	1 796	1 693	1 264	924
OECD Europe	**6 048**	**2 208**	**290**	**787**	**1 648**	**1 563**	**1 114**	**679**
European Union - 28	*6 219*	*2 300*	*290*	*799*	*1 713*	*1 634*	*1 117*	*696*
G7	*11 474*	*4 514*	*657*	*1 263*	*3 461*	*3 015*	*1 580*	*886*
G8	*11 271*	*4 716*	*626*	*1 262*	*3 172*	*2 701*	*1 495*	*875*
G20	*5 672*	*2 534*	*285*	*1 151*	*1 120*	*973*	*583*	*324*

1. This table shows per capita emissions for the same sectors which are present throughout this publication. In particular, the emissions from electricity and and heat production are shown separately and not reallocated to end use sectors.
2. Includes emissions from own use in petroleum refining, the manufacture of solid fuels, coal mining, oil and gas extraction and other energy-producing industries.
3. World includes international bunkers in the transport sector.

Per capita emissions by sector in 2014

kilogrammes CO_2 / capita

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy ind. own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Non-OECD Total	**3 242**	**1 487**	**159**	**810**	**500**	**438**	**287**	**163**
Albania	1 424	-	42	316	853	813	214	80
Armenia	1 736	516	-	192	483	483	545	407
Azerbaijan	3 228	1 284	207	241	791	725	705	545
Belarus	6 064	3 091	375	567	1 244	1 051	788	471
Bosnia and Herzegovina	5 664	3 811	195	554	778	778	326	151
Bulgaria	5 832	3 901	125	471	1 137	1 074	197	97
Croatia	3 573	771	366	533	1 307	1 252	597	330
Cyprus [1]	6 717	3 334	7	787	2 036	2 036	553	347
FYR of Macedonia	3 580	2 140	6	539	773	767	123	19
Georgia	1 714	250	-	360	723	714	380	271
Gibraltar	16 255	4 501	-	-	11 753	11 753	-	-
Kazakhstan	12 938	5 546	2 639	2 425	790	739	1 537	1 008
Kosovo	4 061	3 050	-	242	567	565	203	52
Kyrgyzstan	1 433	369	1	282	397	390	384	247
Latvia	3 379	898	-	425	1 449	1 333	607	226
Lithuania	3 521	621	468	393	1 625	1 536	415	220
Malta	5 488	3 747	-	79	1 268	1 187	394	75
Republic of Moldova	2 038	917	-	258	502	496	359	236
Montenegro	3 571	2 393	-	236	844	829	98	24
Romania	3 423	1 371	190	624	768	742	470	298
Russian Federation	10 204	5 778	458	1 257	1 658	1 052	1 053	816
Serbia	5 346	3 627	84	499	828	820	308	163
Tajikistan	562	22	3	9	188	188	340	-
Turkmenistan	12 624	3 537	986	443	2 217	1 483	5 442	87
Ukraine	5 214	2 493	113	1 223	595	465	790	636
Uzbekistan	3 183	1 251	100	435	218	119	1 179	891
Non-OECD Europe and Eurasia	**7 137**	**3 693**	**407**	**979**	**1 112**	**805**	**946**	**634**
Algeria	3 157	838	388	263	1 114	1 066	554	479
Angola	796	142	11	62	350	315	232	80
Benin	542	12	-	33	366	366	131	130
Botswana	3 099	1 690	-	313	995	978	101	49
Cameroon	265	53	33	19	143	137	18	17
Congo	586	103	-	16	448	362	19	19
Côte d'Ivoire	422	170	7	63	131	117	51	24
Dem. Rep. of the Congo	62	-	-	2	60	50	-	-
Egypt	1 934	808	166	294	436	410	231	163
Eritrea	110	62	-	4	34	34	10	9
Ethiopia	94	-	-	32	44	42	18	9
Gabon	2 069	645	27	691	489	489	217	108
Ghana	490	118	1	62	271	252	38	26
Kenya	275	35	2	65	146	144	28	23
Libya	7 653	3 976	96	316	3 008	3 007	257	257
Mauritius	3 139	1 926	-	262	799	757	152	114
Morocco	1 566	600	36	213	452	451	266	179
Mozambique	142	27	2	22	81	74	11	6
Namibia	1 495	6	-	135	826	780	528	3
Niger	103	24	-	15	61	61	3	3
Nigeria	339	71	61	41	120	120	45	9
Senegal	428	156	3	79	167	158	24	21
South Africa	8 099	4 663	803	1 019	976	910	639	298
South Sudan	128	35	4	1	83	81	5	1
Sudan	339	51	5	44	201	199	38	13
United Rep. of Tanzania	200	47	-	31	115	115	7	6
Togo	242	3	-	23	187	187	30	30
Tunisia	2 274	823	59	485	576	551	332	169
Zambia	203	17	2	95	71	68	18	2
Zimbabwe	753	444	5	68	168	155	69	11
Other Africa	153	41	4	21	71	67	17	7
Africa	**956**	**406**	**77**	**121**	**248**	**237**	**105**	**62**

1. Please refer to the chapter *Geographical Coverage*.

Per capita emissions by sector in 2014

kilogrammes CO_2 / capita

	Total CO_2 emissions from fuel combustion	Electricity and heat production	Other energy ind. own use	Manufacturing industries and construction	Transport	*of which: road*	Other sectors	*of which: residential*
Bangladesh	391	206	1	64	56	43	65	42
Brunei Darussalam	16 056	6 760	4 825	811	3 239	3 239	421	213
Cambodia	398	79	-	11	253	210	55	23
DPR of Korea	1 510	243	2	928	54	54	284	5
India	1 559	808	28	412	179	166	133	66
Indonesia	1 716	661	98	316	529	464	112	77
Malaysia	7 375	3 283	702	957	2 191	2 122	242	57
Mongolia	6 239	3 974	9	739	695	481	822	420
Myanmar	366	74	15	90	134	111	54	-
Nepal	210	4	-	69	93	93	45	17
Pakistan	743	242	8	177	215	199	101	81
Philippines	965	471	13	140	269	230	72	23
Singapore	8 286	3 980	877	2 061	1 257	1 215	110	36
Sri Lanka	811	329	2	48	387	381	44	22
Chinese Taipei	10 677	6 383	645	1 710	1 528	1 493	412	182
Thailand	3 596	1 362	314	751	889	856	280	68
Viet Nam	1 580	551	-	533	352	344	143	82
Other Asia	818	171	-	122	486	455	39	15
Asia (excl. China)	**1 581**	**744**	**54**	**369**	**288**	**266**	**126**	**63**
People's Rep. of China	6 661	3 213	267	2 112	573	463	495	252
Hong Kong, China	6 620	4 381	-	1 108	907	905	223	110
China	**6 660**	**3 220**	**266**	**2 107**	**574**	**466**	**494**	**251**
Argentina	4 477	1 294	408	755	1 082	973	937	558
Bolivia	1 733	343	84	199	705	671	401	133
Brazil	2 310	460	148	476	1 034	932	193	87
Colombia	1 517	271	137	278	625	601	206	87
Costa Rica	1 506	156	7	207	1 035	1 032	102	35
Cuba	2 588	1 310	57	774	111	106	336	54
Curaçao	30 426	3 928	16 077	2 592	6 988	6 988	841	841
Dominican Republic	1 851	978	15	215	488	385	155	124
Ecuador	2 435	539	105	323	1 015	965	453	152
El Salvador	962	269	-	115	463	463	114	93
Guatemala	1 008	205	7	345	403	402	48	47
Haiti	261	76	-	64	110	110	11	10
Honduras	1 099	450	-	107	434	434	107	52
Jamaica	2 636	932	-	942	640	640	122	37
Nicaragua	755	244	14	92	315	283	89	20
Panama	2 737	845	-	667	997	996	227	139
Paraguay	792	-	-	23	737	732	32	32
Peru	1 543	374	157	270	622	552	120	71
Suriname	3 702	1 518	35	136	1 245	762	769	72
Trinidad and Tobago	17 145	4 528	6 124	3 842	2 362	2 087	289	273
Uruguay	1 833	164	119	234	1 014	999	302	118
Venezuela	5 050	1 013	782	1 395	1 633	1 632	227	169
Other Non-OECD Americas	5 823	3 070	2	173	1 750	1 665	828	246
Non-OECD Americas	**2 444**	**582**	**205**	**489**	**904**	**837**	**265**	**133**
Bahrain	21 797	15 088	2 450	1 583	2 494	2 398	182	182
Islamic Rep. of Iran	7 116	1 993	451	1 185	1 774	1 617	1 713	1 334
Iraq	4 051	2 291	344	320	834	834	262	262
Jordan	3 648	1 809	104	358	1 066	1 060	312	192
Kuwait	22 936	12 179	3 276	3 833	3 501	3 501	146	146
Lebanon	4 919	2 816	-	239	1 201	1 201	664	664
Oman	14 140	3 773	1 677	5 283	2 938	2 938	468	107
Qatar	35 733	8 855	13 851	6 355	6 518	6 518	155	155
Saudi Arabia	16 402	7 179	884	3 953	4 251	4 172	135	135
Syrian Arab Republic	1 244	527	26	168	298	294	224	108
United Arab Emirates	19 308	7 787	229	7 129	4 062	3 972	101	101
Yemen	815	215	42	121	282	282	155	103
Middle East	**7 715**	**2 999**	**588**	**1 579**	**1 811**	**1 740**	**738**	**578**

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
World [3]												
CO_2 emissions	68	76	86	89	100	104	113	132	149	157	158	1.9%
Population	71	77	84	92	100	108	116	123	131	136	137	1.3%
GDP per population (GDP per capita)	72	78	87	91	100	103	115	131	148	158	162	2.0%
Energy intensity (TPES/GDP)	123	117	112	105	100	94	86	82	76	72	70	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	108	107	105	101	100	99	99	100	101	101	101	0.0%
Annex I Parties												
CO_2 emissions	..	..	..	..	100	95	99	101	96	94	92	-0.3%
Population	..	..	..	..	100	103	105	107	109	111	111	0.4%
GDP per population (GDP per capita)	..	..	..	..	100	101	116	129	133	137	139	1.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	94	85	78	72	68	66	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	96	96	94	92	91	91	-0.4%
Annex II Parties												
CO_2 emissions	89	92	98	94	100	104	112	115	108	104	103	0.1%
Population	88	91	94	97	100	103	107	110	114	115	116	0.6%
GDP per population (GDP per capita)	62	68	78	87	100	107	121	130	131	134	135	1.3%
Energy intensity (TPES/GDP)	141	133	124	109	100	97	90	84	78	72	71	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	115	111	107	102	100	97	97	96	93	93	93	-0.3%
Annex II North America												
CO_2 emissions	89	91	96	94	100	106	118	119	112	108	110	0.4%
Population	83	86	91	95	100	106	113	118	124	127	128	1.0%
GDP per population (GDP per capita)	66	70	80	89	100	106	124	134	133	137	139	1.4%
Energy intensity (TPES/GDP)	149	141	130	109	100	96	85	77	71	66	66	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	109	106	102	102	100	98	99	98	96	94	93	-0.3%
Annex II Europe												
CO_2 emissions	98	99	106	98	100	99	102	105	96	89	84	-0.7%
Population	94	96	97	98	100	102	103	106	109	110	110	0.4%
GDP per population (GDP per capita)	63	70	80	86	100	107	121	129	131	131	132	1.2%
Energy intensity (TPES/GDP)	132	123	118	111	100	96	88	85	79	74	70	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	125	120	116	105	100	95	92	91	86	84	83	-0.8%
Annex II Asia Oceania												
CO_2 emissions	69	79	83	84	100	107	114	120	116	124	121	0.8%
Population	84	89	94	97	100	102	104	106	107	108	108	0.3%
GDP per population (GDP per capita)	54	60	70	82	100	106	111	119	121	126	126	1.0%
Energy intensity (TPES/GDP)	134	130	121	104	100	103	103	96	92	83	80	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	113	114	105	101	100	96	95	99	97	111	110	0.4%
Annex I EIT												
CO_2 emissions	..	..	..	..	100	71	64	65	65	64	61	-2.1%
Population	..	..	..	..	100	100	98	95	94	94	94	-0.2%
GDP per population (GDP per capita)	..	..	..	..	100	70	79	106	125	135	136	1.3%
Energy intensity (TPES/GDP)	..	..	..	..	100	105	89	72	63	59	56	-2.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	97	94	90	88	85	84	-0.7%
Non-Annex I Parties												
CO_2 emissions	..	..	..	..	100	125	142	198	262	295	303	4.7%
Population	..	..	..	..	100	110	119	128	137	143	145	1.6%
GDP per population (GDP per capita)	..	..	..	..	100	114	132	162	209	235	243	3.8%
Energy intensity (TPES/GDP)	..	..	..	..	100	94	85	85	79	74	73	-1.3%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	106	106	113	116	118	118	0.7%
Annex B Kyoto Parties												
CO_2 emissions	..	..	..	..	100	89	87	91	86	81	77	-1.1%
Population	..	..	..	..	100	101	101	103	104	105	106	0.2%
GDP per population (GDP per capita)	..	..	..	..	100	103	118	131	137	139	140	1.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	91	80	76	70	65	62	-2.0%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	94	91	89	86	86	84	-0.7%

1. For methodological notes, please see the chapter *Indicator sources and methods.*
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. Total World includes non-OECD total, OECD total as well as international marine bunkers and international aviation bunkers.

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Non-OECD Total												
CO_2 emissions	46	59	74	83	100	103	111	149	192	214	218	3.3%
Population	68	74	82	91	100	109	118	126	135	140	142	1.5%
GDP per population (GDP per capita)	68	79	89	92	100	103	116	145	188	212	219	3.3%
Energy intensity (TPES/GDP)	105	102	100	102	100	91	81	77	70	66	64	-1.8%
Carbon intensity: ESCII (CO_2/TPES)	94	99	101	98	100	101	100	106	108	110	110	0.4%
OECD Total												
CO_2 emissions	85	89	96	94	100	105	113	117	112	109	108	0.3%
Population	84	88	92	96	100	104	108	112	116	118	118	0.7%
GDP per population (GDP per capita)	64	70	80	88	100	107	122	132	134	138	139	1.4%
Energy intensity (TPES/GDP)	138	129	122	108	100	97	89	83	77	72	71	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	114	111	107	103	100	97	97	96	94	93	93	-0.3%
Canada												
CO_2 emissions	81	90	101	94	100	107	123	128	125	131	132	1.2%
Population	79	84	89	93	100	106	111	116	123	127	128	1.0%
GDP per population (GDP per capita)	68	77	87	94	100	103	119	129	130	134	136	1.3%
Energy intensity (TPES/GDP)	124	122	118	104	100	102	91	85	79	75	76	-1.2%
Carbon intensity: ESCII (CO_2/TPES)	121	114	111	103	100	97	103	99	100	102	100	-0.0%
Chile												
CO_2 emissions	71	58	73	67	100	126	165	185	233	279	258	4.0%
Population	74	79	85	92	100	109	117	123	130	134	135	1.3%
GDP per population (GDP per capita)	77	62	82	79	100	139	163	192	220	247	249	3.9%
Energy intensity (TPES/GDP)	109	112	98	95	100	86	95	85	77	83	76	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	115	107	107	97	100	96	92	91	106	101	100	-0.0%
Mexico												
CO_2 emissions	36	52	80	94	100	113	140	160	170	174	168	2.2%
Population	61	70	81	90	100	109	116	123	131	136	137	1.3%
GDP per population (GDP per capita)	75	87	103	102	100	99	121	125	129	137	139	1.4%
Energy intensity (TPES/GDP)	76	79	92	95	100	99	86	94	83	83	80	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	105	110	104	107	100	106	115	111	121	112	110	0.4%
United States												
CO_2 emissions	89	91	96	94	100	106	117	119	111	106	108	0.3%
Population	83	86	91	95	100	107	113	118	124	127	128	1.0%
GDP per population (GDP per capita)	66	70	79	89	100	107	124	134	133	137	140	1.4%
Energy intensity (TPES/GDP)	152	144	131	109	100	95	85	76	70	65	65	-1.8%
Carbon intensity: ESCII (CO_2/TPES)	108	105	102	101	100	98	99	98	96	93	93	-0.3%
OECD Americas												
CO_2 emissions	86	89	95	94	100	106	119	122	116	112	113	0.5%
Population	77	82	88	94	100	107	114	119	126	129	130	1.1%
GDP per population (GDP per capita)	69	74	83	91	100	106	123	133	132	137	139	1.4%
Energy intensity (TPES/GDP)	147	138	126	108	100	96	85	78	71	67	66	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	109	106	103	102	100	98	100	98	98	95	94	-0.2%
Australia												
CO_2 emissions	55	69	80	85	100	110	129	143	150	148	144	1.5%
Population	77	81	86	93	100	105	111	118	129	136	138	1.3%
GDP per population (GDP per capita)	75	79	86	93	100	111	127	142	149	154	155	1.8%
Energy intensity (TPES/GDP)	103	109	108	98	100	91	88	78	77	70	68	-1.6%
Carbon intensity: ESCII (CO_2/TPES)	92	99	99	101	100	102	103	109	101	101	99	-0.0%
Israel												
CO_2 emissions	42	50	57	74	100	137	167	179	209	206	197	2.9%
Population	65	74	83	91	100	119	135	149	164	173	176	2.4%
GDP per population (GDP per capita)	70	81	83	89	100	116	133	134	152	160	161	2.0%
Energy intensity (TPES/GDP)	109	102	99	82	100	98	88	80	82	73	70	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	84	82	84	112	100	101	105	111	103	102	100	-0.0%

1. For methodological notes, please see the chapter *Indicator sources and methods.*
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Japan												
CO_2 emissions	72	82	84	83	100	106	110	113	107	118	114	0.6%
Population	85	90	95	98	100	101	103	103	104	103	103	0.1%
GDP per population (GDP per capita)	51	57	67	80	100	106	109	115	117	120	121	0.8%
Energy intensity (TPES/GDP)	142	136	124	106	100	105	106	100	94	84	81	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	118	117	106	101	100	95	93	96	94	114	113	0.5%
Korea												
CO_2 emissions	23	34	54	67	100	154	186	197	238	247	245	3.8%
Population	77	82	89	95	100	105	110	112	115	117	118	0.7%
GDP per population (GDP per capita)	23	31	44	64	100	142	178	220	262	281	289	4.5%
Energy intensity (TPES/GDP)	103	102	114	94	100	104	104	92	89	86	85	-0.7%
Carbon intensity: ESCII (CO_2/TPES)	125	127	122	117	100	99	92	87	88	87	85	-0.7%
New Zealand												
CO_2 emissions	62	76	76	87	100	110	133	155	140	142	144	1.5%
Population	85	92	93	97	100	109	115	123	129	132	132	1.2%
GDP per population (GDP per capita)	84	92	91	101	100	107	118	133	137	143	148	1.6%
Energy intensity (TPES/GDP)	75	79	83	89	100	99	99	80	81	80	82	-0.8%
Carbon intensity: ESCII (CO_2/TPES)	117	113	108	100	100	95	100	118	97	94	90	-0.5%
OECD Asia Oceania												
CO_2 emissions	61	72	78	81	100	115	126	132	136	144	140	1.4%
Population	82	87	92	97	100	103	106	108	110	111	112	0.5%
GDP per population (GDP per capita)	52	58	68	80	100	110	118	129	136	142	144	1.5%
Energy intensity (TPES/GDP)	128	125	118	102	100	104	105	98	95	87	85	-0.7%
Carbon intensity: ESCII (CO_2/TPES)	113	114	106	103	100	97	95	97	95	104	103	0.1%
Austria												
CO_2 emissions	86	88	97	94	100	106	110	132	122	114	108	0.3%
Population	98	99	98	99	100	104	104	107	109	110	111	0.4%
GDP per population (GDP per capita)	60	69	81	87	100	108	124	132	138	142	141	1.4%
Energy intensity (TPES/GDP)	128	119	116	108	100	97	89	96	91	85	82	-0.8%
Carbon intensity: ESCII (CO_2/TPES)	114	109	104	101	100	98	96	98	90	85	84	-0.7%
Belgium												
CO_2 emissions	111	109	118	95	100	105	107	101	99	88	82	-0.8%
Population	97	98	99	99	100	102	103	105	109	111	112	0.5%
GDP per population (GDP per capita)	63	71	83	87	100	106	121	130	134	134	135	1.3%
Energy intensity (TPES/GDP)	136	126	119	107	100	103	97	89	86	78	73	-1.3%
Carbon intensity: ESCII (CO_2/TPES)	134	123	121	103	100	94	88	83	79	76	75	-1.2%
Czech Republic												
CO_2 emissions	102	103	112	117	100	82	81	79	74	67	64	-1.8%
Population	95	97	100	100	100	100	99	99	101	101	102	0.1%
GDP per population (GDP per capita)	73	81	88	93	100	96	106	129	142	142	145	1.6%
Energy intensity (TPES/GDP)	132	111	108	107	100	87	79	71	62	59	56	-2.4%
Carbon intensity: ESCII (CO_2/TPES)	112	117	118	117	100	98	98	87	83	80	77	-1.1%
Denmark												
CO_2 emissions	109	103	124	120	100	115	100	95	93	76	68	-1.6%
Population	97	98	100	99	100	102	104	105	108	109	110	0.4%
GDP per population (GDP per capita)	70	72	82	94	100	110	125	132	129	129	130	1.1%
Energy intensity (TPES/GDP)	159	141	135	119	100	100	82	78	80	72	66	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	102	103	112	108	100	102	93	87	83	75	73	-1.3%
Estonia												
CO_2 emissions	..	..	..	..	100	44	40	47	52	52	49	-3.0%
Population	..	..	..	..	100	91	88	86	84	83	83	-0.8%
GDP per population (GDP per capita)	..	..	..	..	100	77	107	155	156	180	186	2.6%
Energy intensity (TPES/GDP)	..	..	..	..	100	76	51	40	44	42	40	-3.8%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	83	84	88	90	84	79	-1.0%

1. For methodological notes, please see the chapter *Indicator sources and methods.*
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Finland												
CO_2 emissions	74	82	102	90	100	103	101	102	115	92	84	-0.7%
Population	92	94	96	98	100	102	104	105	108	109	110	0.4%
GDP per population (GDP per capita)	56	66	77	86	100	95	121	135	138	136	135	1.3%
Energy intensity (TPES/GDP)	123	111	118	108	100	104	91	85	87	79	81	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	116	118	118	99	100	102	89	84	89	78	70	-1.5%
France												
CO_2 emissions	122	122	132	102	100	99	106	107	98	92	83	-0.8%
Population	90	93	95	97	100	102	105	108	112	113	114	0.5%
GDP per population (GDP per capita)	64	72	83	87	100	104	118	123	124	126	126	1.0%
Energy intensity (TPES/GDP)	123	111	109	107	100	99	91	91	84	79	76	-1.2%
Carbon intensity: ESCII (CO_2/TPES)	173	166	154	112	100	94	94	89	84	81	76	-1.1%
Germany												
CO_2 emissions	104	104	111	107	100	91	86	84	81	81	77	-1.1%
Population	99	99	99	98	100	102	103	102	101	102	102	0.1%
GDP per population (GDP per capita)	62	68	81	87	100	108	118	122	132	137	138	1.4%
Energy intensity (TPES/GDP)	141	133	128	120	100	87	79	77	70	65	62	-2.0%
Carbon intensity: ESCII (CO_2/TPES)	120	116	110	105	100	95	90	87	87	90	88	-0.5%
Greece												
CO_2 emissions	36	49	65	78	100	109	126	136	119	99	94	-0.2%
Population	87	89	95	98	100	103	105	107	108	107	106	0.3%
GDP per population (GDP per capita)	74	86	98	96	100	103	121	144	140	116	117	0.6%
Energy intensity (TPES/GDP)	63	72	75	87	100	99	99	92	85	88	87	-0.6%
Carbon intensity: ESCII (CO_2/TPES)	88	89	93	95	100	104	100	97	93	91	87	-0.6%
Hungary [3]												
CO_2 emissions	76	89	105	101	83	71	67	69	60	51	51	-2.4%
Population	98	100	102	100	98	98	97	96	95	94	94	-0.2%
GDP per population (GDP per capita)	60	75	88	97	102	91	106	133	133	137	142	1.3%
Energy intensity (TPES/GDP)	108	102	105	101	96	97	81	72	68	58	57	-2.0%
Carbon intensity: ESCII (CO_2/TPES)	120	116	111	102	87	83	81	75	70	69	67	-1.4%
Iceland												
CO_2 emissions	74	85	92	86	100	104	114	118	103	107	108	0.3%
Population	81	85	89	95	100	105	110	116	125	127	128	1.0%
GDP per population (GDP per capita)	58	66	85	91	100	97	117	137	136	143	144	1.5%
Energy intensity (TPES/GDP)	85	87	86	91	100	96	106	87	141	143	140	1.4%
Carbon intensity: ESCII (CO_2/TPES)	186	175	140	110	100	107	83	86	43	41	42	-3.6%
Ireland												
CO_2 emissions	72	70	86	88	100	108	136	147	131	114	112	0.5%
Population	85	91	97	101	100	103	109	119	130	131	132	1.2%
GDP per population (GDP per capita)	54	62	72	79	100	122	187	221	209	216	227	3.5%
Energy intensity (TPES/GDP)	149	120	119	110	100	86	69	56	53	46	43	-3.4%
Carbon intensity: ESCII (CO_2/TPES)	106	105	103	101	100	101	97	100	90	87	87	-0.6%
Italy												
CO_2 emissions	74	81	91	88	100	103	108	117	101	87	82	-0.8%
Population	95	98	99	100	100	100	100	103	105	107	107	0.3%
GDP per population (GDP per capita)	58	65	79	86	100	106	117	120	115	109	108	0.3%
Energy intensity (TPES/GDP)	130	126	113	103	100	102	99	103	98	91	86	-0.6%
Carbon intensity: ESCII (CO_2/TPES)	103	102	102	100	100	95	92	92	85	82	82	-0.8%
Luxembourg												
CO_2 emissions	153	119	116	96	100	77	75	107	99	91	86	-0.6%
Population	90	94	95	96	100	107	114	122	133	143	146	1.6%
GDP per population (GDP per capita)	55	59	65	73	100	113	143	155	161	159	161	2.0%
Energy intensity (TPES/GDP)	244	202	170	130	100	77	60	68	58	52	48	-3.0%
Carbon intensity: ESCII (CO_2/TPES)	128	107	110	106	100	82	76	83	80	78	76	-1.1%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. The reference year for Hungary corresponds to its base year under the Convention (the average of 1985-1987).

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Netherlands												
CO_2 emissions	88	91	100	96	100	113	111	115	117	108	102	0.1%
Population	88	91	95	97	100	103	107	109	111	112	113	0.5%
GDP per population (GDP per capita)	70	76	85	88	100	108	130	136	142	140	141	1.5%
Energy intensity (TPES/GDP)	126	129	122	109	100	100	83	84	81	75	70	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	114	101	102	103	100	100	97	93	92	91	92	-0.3%
Norway												
CO_2 emissions	84	86	99	96	100	114	116	126	137	128	129	1.1%
Population	92	94	96	98	100	103	106	109	115	120	121	0.8%
GDP per population (GDP per capita)	56	66	81	94	100	117	136	147	145	147	148	1.7%
Energy intensity (TPES/GDP)	122	112	112	103	100	93	87	80	96	88	76	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	132	124	114	101	100	103	93	99	85	83	94	-0.2%
Poland [3]												
CO_2 emissions	66	78	96	98	80	77	67	69	71	67	64	-1.7%
Population	87	90	94	98	100	101	101	101	102	102	102	0.1%
GDP per population (GDP per capita)	78	96	96	92	89	98	127	149	186	201	207	2.8%
Energy intensity (TPES/GDP)	96	90	106	104	87	76	52	46	40	36	34	-4.1%
Carbon intensity: ESCII (CO_2/TPES)	102	101	100	104	102	102	100	98	94	91	91	-0.4%
Portugal												
CO_2 emissions	38	48	63	63	100	125	153	162	126	115	113	0.5%
Population	87	92	99	101	100	100	103	105	106	105	104	0.2%
GDP per population (GDP per capita)	56	62	74	75	100	108	129	132	135	127	129	1.1%
Energy intensity (TPES/GDP)	77	81	82	86	100	111	110	114	98	96	94	-0.3%
Carbon intensity: ESCII (CO_2/TPES)	102	104	105	97	100	104	104	103	90	90	90	-0.5%
Slovak Republic												
CO_2 emissions	71	79	102	99	100	75	67	68	63	58	54	-2.6%
Population	86	89	94	97	100	101	102	102	102	102	102	0.1%
GDP per population (GDP per capita)	79	87	92	96	100	90	107	136	170	181	185	2.6%
Energy intensity (TPES/GDP)	98	101	108	104	100	91	77	64	48	43	39	-3.8%
Carbon intensity: ESCII (CO_2/TPES)	106	100	109	102	100	90	81	77	75	73	72	-1.4%
Slovenia [4]												
CO_2 emissions	..	..	..	..	92	96	96	105	105	97	87	-0.5%
Population	..	..	..	..	101	100	100	101	103	104	104	0.1%
GDP per population (GDP per capita)	..	..	..	..	112	109	135	160	170	164	169	1.9%
Energy intensity (TPES/GDP)	..	..	..	..	86	94	81	77	71	69	65	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	95	93	87	85	84	83	76	-1.0%
Spain												
CO_2 emissions	59	77	92	85	100	113	137	165	129	116	115	0.6%
Population	88	91	97	99	100	101	103	111	118	118	118	0.7%
GDP per population (GDP per capita)	62	74	78	81	100	107	128	140	139	131	133	1.2%
Energy intensity (TPES/GDP)	86	94	100	98	100	104	103	101	87	84	81	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	124	120	122	108	100	101	102	105	91	89	90	-0.4%
Sweden												
CO_2 emissions	158	152	140	112	100	109	100	94	88	72	72	-1.4%
Population	95	96	97	98	100	103	104	106	110	112	113	0.5%
GDP per population (GDP per capita)	71	79	83	91	100	100	119	133	139	141	142	1.5%
Energy intensity (TPES/GDP)	114	110	107	113	100	103	82	78	71	66	63	-1.9%
Carbon intensity: ESCII (CO_2/TPES)	206	184	164	112	100	103	99	86	82	69	70	-1.4%
Switzerland												
CO_2 emissions	95	90	96	102	100	102	103	108	106	102	93	-0.3%
Population	93	94	94	96	100	104	107	110	116	119	120	0.8%
GDP per population (GDP per capita)	79	78	85	90	100	96	106	110	117	119	120	0.8%
Energy intensity (TPES/GDP)	91	96	102	105	100	98	91	88	79	77	71	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	142	128	117	113	100	103	100	101	98	93	90	-0.4%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. The reference year for Poland corresponds to its base year under the Convention (1988).
4. The reference year for Slovenia corresponds to its base year under the Convention (1986).

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Turkey												
CO_2 emissions	33	47	56	75	100	119	158	170	209	223	242	3.7%
Population	66	73	81	91	100	108	117	124	132	137	139	1.4%
GDP per population (GDP per capita)	65	74	75	84	100	108	123	144	158	176	180	2.5%
Energy intensity (TPES/GDP)	87	95	99	98	100	100	101	89	97	91	92	-0.3%
Carbon intensity: ESCII (CO_2/TPES)	89	92	94	101	100	102	110	106	103	101	105	0.2%
United Kingdom												
CO_2 emissions	113	105	104	99	100	94	95	97	87	82	74	-1.2%
Population	98	98	98	99	100	101	103	106	110	112	113	0.5%
GDP per population (GDP per capita)	64	68	76	85	100	107	124	138	136	140	143	1.5%
Energy intensity (TPES/GDP)	161	144	129	116	100	97	85	74	66	59	54	-2.5%
Carbon intensity: ESCII (CO_2/TPES)	112	109	108	102	100	89	88	90	88	88	85	-0.7%
OECD Europe												
CO_2 emissions	93	96	105	100	100	98	100	103	97	91	87	-0.6%
Population	90	92	95	97	100	102	104	107	110	112	112	0.5%
GDP per population (GDP per capita)	66	73	82	88	100	106	121	130	134	135	137	1.3%
Energy intensity (TPES/GDP)	130	122	118	111	100	95	86	82	76	71	68	-1.6%
Carbon intensity: ESCII (CO_2/TPES)	121	117	114	105	100	95	92	90	87	85	84	-0.7%
European Union - 28												
CO_2 emissions	..	..	..	..	100	95	94	97	90	83	79	-1.0%
Population	..	..	..	..	100	101	102	104	105	106	106	0.3%
GDP per population (GDP per capita)	..	..	..	..	100	105	121	132	136	137	139	1.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	94	84	80	73	68	64	-1.8%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	95	91	89	86	84	83	-0.8%
Albania												
CO_2 emissions	68	76	120	122	100	33	54	67	69	64	73	-1.3%
Population	67	73	81	90	100	97	94	92	89	88	88	-0.5%
GDP per population (GDP per capita)	80	91	108	108	100	91	120	164	218	230	236	3.6%
Energy intensity (TPES/GDP)	121	111	130	104	100	57	59	54	41	43	42	-3.5%
Carbon intensity: ESCII (CO_2/TPES)	106	103	104	120	100	65	81	83	87	74	83	-0.8%
Armenia												
CO_2 emissions	..	..	..	..	100	17	17	21	20	26	26	-5.4%
Population	..	..	..	..	100	91	87	85	84	84	85	-0.7%
GDP per population (GDP per capita)	..	..	..	..	100	58	78	142	174	200	206	3.1%
Energy intensity (TPES/GDP)	..	..	..	..	100	40	39	27	22	22	22	-6.1%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	80	66	64	63	70	69	-1.6%
Azerbaijan												
CO_2 emissions	..	..	..	..	100	61	51	54	44	55	58	-2.3%
Population	..	..	..	..	100	107	112	117	126	132	133	1.2%
GDP per population (GDP per capita)	..	..	..	..	100	39	52	95	187	195	196	2.8%
Energy intensity (TPES/GDP)	..	..	..	..	100	147	85	53	22	24	24	-5.7%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	99	102	92	86	90	91	-0.4%
Belarus												
CO_2 emissions	..	..	..	..	100	57	52	55	60	58	58	-2.3%
Population	..	..	..	..	100	100	98	95	93	93	93	-0.3%
GDP per population (GDP per capita)	..	..	..	..	100	65	90	134	194	211	215	3.2%
Energy intensity (TPES/GDP)	..	..	..	..	100	83	61	46	33	31	31	-4.8%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	105	97	94	99	97	94	-0.2%
Bosnia and Herzegovina												
CO_2 emissions	..	..	..	..	100	14	57	66	85	90	90	-0.4%
Population	..	..	..	..	100	86	84	85	85	84	84	-0.7%
GDP per population (GDP per capita)	..	..	..	..	100	66	229	299	344	353	357	5.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	38	32	28	32	31	37	-4.1%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	64	92	92	92	97	81	-0.9%

1. For methodological notes, please see the chapter *Indicator sources and methods.*
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Bulgaria [3]												
CO_2 emissions	77	88	102	99	90	63	51	56	53	47	51	-2.6%
Population	95	97	99	100	97	94	91	86	82	81	80	-0.8%
GDP per population (GDP per capita)	40	53	70	82	91	82	87	122	149	156	160	1.8%
Energy intensity (TPES/GDP)	161	145	131	120	102	96	75	60	47	43	45	-3.1%
Carbon intensity: ESCII (CO_2/TPES)	126	119	113	101	100	86	85	88	94	88	89	-0.5%
Croatia												
CO_2 emissions	..	..	..	..	100	73	83	98	90	78	75	-1.2%
Population	..	..	..	..	100	98	93	93	92	89	89	-0.5%
GDP per population (GDP per capita)	..	..	..	..	100	70	87	108	111	112	112	0.5%
Energy intensity (TPES/GDP)	..	..	..	..	100	121	110	102	96	90	86	-0.6%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	88	93	95	91	88	88	-0.5%
Cyprus [4]												
CO_2 emissions	45	43	66	71	100	130	162	181	187	144	148	1.7%
Population	108	88	88	94	100	113	120	128	143	151	150	1.7%
GDP per population (GDP per capita)	24	35	62	76	100	111	125	141	142	124	123	0.9%
Energy intensity (TPES/GDP)	164	133	116	94	100	100	104	90	88	75	79	-1.0%
Carbon intensity: ESCII (CO_2/TPES)	104	103	104	105	100	104	104	111	104	102	103	0.1%
FYR of Macedonia												
CO_2 emissions	..	..	..	..	100	97	99	104	97	91	86	-0.6%
Population	..	..	..	..	100	98	101	102	103	104	104	0.2%
GDP per population (GDP per capita)	..	..	..	..	100	80	90	98	118	123	128	1.0%
Energy intensity (TPES/GDP)	..	..	..	..	100	128	118	112	95	85	80	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	96	92	92	83	84	82	-0.8%
Georgia												
CO_2 emissions	..	..	..	..	100	24	14	12	15	20	23	-5.9%
Population	..	..	..	..	100	99	92	91	93	93	94	-0.3%
GDP per population (GDP per capita)	..	..	..	..	100	29	41	59	74	86	90	-0.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	106	62	43	37	39	42	-3.6%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	81	60	53	59	64	65	-1.8%
Gibraltar												
CO_2 emissions	48	43	66	63	100	197	238	284	332	350	376	5.7%
Population	93	93	100	100	100	104	104	111	111	118	118	0.7%
GDP per population (GDP per capita)	69	75	76	85	100	105	129	139	142	140	143	1.5%
Energy intensity (TPES/GDP)	80	78	74	74	100	168	167	171	191	193	202	3.0%
Carbon intensity: ESCII (CO_2/TPES)	94	80	116	100	100	108	107	108	110	109	110	0.4%
Kazakhstan												
CO_2 emissions	..	..	..	..	100	72	47	66	93	105	94	-0.2%
Population	..	..	..	..	100	97	91	93	100	104	106	0.2%
GDP per population (GDP per capita)	..	..	..	..	100	63	76	123	154	177	182	2.5%
Energy intensity (TPES/GDP)	..	..	..	..	100	116	70	61	61	60	54	-2.5%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	101	97	95	99	95	90	-0.4%
Kosovo [5]												
CO_2 emissions	..	..	..	..	..	..	100	130	170	163	145	2.7%
Population	..	..	..	..	..	..	100	100	104	107	107	0.5%
GDP per population (GDP per capita)	..	..	..	..	..	..	100	145	171	186	188	4.6%
Energy intensity (TPES/GDP)	..	..	..	..	..	..	100	87	90	77	71	-2.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	..	100	103	105	106	101	0.1%
Kyrgyzstan												
CO_2 emissions	..	..	..	..	100	20	20	21	27	39	37	-4.1%
Population	..	..	..	..	100	104	112	118	124	130	133	1.2%
GDP per population (GDP per capita)	..	..	..	..	100	49	60	68	80	90	91	-0.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	63	47	43	37	45	42	-3.6%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	61	63	63	72	74	72	-1.3%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. The reference year for Bulgaria corresponds to its base year under the Convention (1988).
4. Please refer to the chapter *Geographical Coverage*.
5. Serbia includes Kosovo from 1990 to 1999 and Montenegro from 1990 to 2004. The reference year for Kosovo is the first year of available data (2000).

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Latvia												
CO_2 emissions	..	..	..	..	100	47	36	40	43	37	36	-4.2%
Population	..	..	..	..	100	93	89	84	79	76	75	-1.2%
GDP per population (GDP per capita)	..	..	..	..	100	61	82	129	135	160	166	2.1%
Energy intensity (TPES/GDP)	..	..	..	..	100	103	67	53	54	46	45	-3.3%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	81	75	70	75	67	65	-1.8%
Lithuania												
CO_2 emissions	..	..	..	..	100	42	32	38	38	33	32	-4.6%
Population	..	..	..	..	100	98	95	90	84	80	79	-1.0%
GDP per population (GDP per capita)	..	..	..	..	100	59	77	117	133	159	165	2.1%
Energy intensity (TPES/GDP)	..	..	..	..	100	94	61	52	39	34	33	-4.5%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	77	71	69	86	77	73	-1.3%
Malta												
CO_2 emissions	28	28	43	50	100	103	92	118	111	102	101	0.1%
Population	86	86	90	95	100	105	108	114	117	119	121	0.8%
GDP per population (GDP per capita)	32	46	76	78	100	125	156	154	168	174	176	2.4%
Energy intensity (TPES/GDP)	111	76	67	67	100	78	58	72	61	53	53	-2.6%
Carbon intensity: ESCII (CO_2/TPES)	93	93	94	101	100	101	95	93	93	92	91	-0.4%
Republic of Moldova												
CO_2 emissions	..	..	..	..	100	39	21	25	26	22	24	-5.8%
Population	..	..	..	..	100	99	98	97	96	96	96	-0.2%
GDP per population (GDP per capita)	..	..	..	..	100	40	36	52	61	71	74	-1.3%
Energy intensity (TPES/GDP)	..	..	..	..	100	119	82	71	60	46	47	-3.1%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	82	73	71	73	71	71	-1.4%
Montenegro [3]												
CO_2 emissions	..	..	..	..	..	..	..	100	127	115	112	1.3%
Population	..	..	..	..	..	..	..	100	101	101	101	0.1%
GDP per population (GDP per capita)	..	..	..	..	..	..	..	100	123	128	130	2.9%
Energy intensity (TPES/GDP)	..	..	..	..	..	..	..	100	88	71	68	-4.2%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	..	..	100	116	125	126	2.6%
Romania [4]												
CO_2 emissions	60	74	93	92	89	62	45	49	39	36	36	-4.0%
Population	88	92	96	98	100	98	97	92	87	86	86	-0.6%
GDP per population (GDP per capita)	46	66	91	105	94	87	86	120	146	156	161	1.9%
Energy intensity (TPES/GDP)	151	123	107	91	95	79	63	50	40	34	33	-4.3%
Carbon intensity: ESCII (CO_2/TPES)	99	99	99	98	99	92	87	87	78	79	78	-1.0%
Russian Federation												
CO_2 emissions	..	..	..	..	100	72	68	68	71	71	68	-1.6%
Population	..	..	..	..	100	100	99	97	96	97	97	-0.1%
GDP per population (GDP per capita)	..	..	..	..	100	62	68	94	112	122	122	0.8%
Energy intensity (TPES/GDP)	..	..	..	..	100	117	105	82	73	70	68	-1.6%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	99	97	92	90	86	84	-0.7%
Serbia [3]												
CO_2 emissions	..	..	..	..	100	72	69	80	74	73	61	-2.0%
Population	..	..	..	..	100	102	81	74	73	71	71	-1.4%
GDP per population (GDP per capita)	..	..	..	..	100	49	69	97	110	114	114	0.6%
Energy intensity (TPES/GDP)	..	..	..	..	100	141	125	113	100	93	83	-0.8%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	103	100	98	93	97	91	-0.4%
Tajikistan												
CO_2 emissions	..	..	..	..	100	22	20	21	21	32	42	-3.5%
Population	..	..	..	..	100	109	117	128	143	153	157	1.9%
GDP per population (GDP per capita)	..	..	..	..	100	35	33	47	58	68	71	-1.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	110	106	73	49	47	48	-3.0%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	53	49	48	51	65	80	-0.9%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. Serbia includes Kosovo from 1990 to 1999 & Montenegro from 1990 to 2004. The reference year for Montenegro is the first year of available data (2005).
4. The reference year for Romania corresponds to its base year under the Convention (1989).

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Turkmenistan												
CO_2 emissions	..	..	..	..	100	74	82	108	127	147	150	1.7%
Population	..	..	..	..	100	114	123	129	137	143	145	1.6%
GDP per population (GDP per capita)	..	..	..	..	100	55	64	78	120	162	177	2.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	124	108	109	78	65	60	-2.1%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	95	97	98	98	98	98	-0.1%
Ukraine												
CO_2 emissions	..	..	..	..	100	57	43	43	39	39	34	-4.4%
Population	..	..	..	..	100	99	95	91	88	88	87	-0.6%
GDP per population (GDP per capita)	..	..	..	..	100	48	46	69	75	79	74	-1.2%
Energy intensity (TPES/GDP)	..	..	..	..	100	135	122	90	79	66	65	-1.8%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	88	81	75	74	84	82	-0.8%
Uzbekistan												
CO_2 emissions	..	..	..	..	100	82	99	93	84	84	85	-0.7%
Population	..	..	..	..	100	111	120	128	139	147	150	1.7%
GDP per population (GDP per capita)	..	..	..	..	100	73	82	100	138	165	175	2.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	114	112	80	48	38	36	-4.2%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	89	90	92	91	90	90	-0.4%
Non-OECD Europe and Eurasia												
CO_2 emissions	56	70	84	88	100	67	60	63	64	65	62	-2.0%
Population	86	89	93	97	100	100	99	98	98	99	100	-0.0%
GDP per population (GDP per capita)	59	71	85	91	100	62	68	95	114	124	124	0.9%
Energy intensity (TPES/GDP)	110	106	102	102	100	113	97	76	65	61	59	-2.2%
Carbon intensity: ESCII (CO_2/TPES)	100	104	104	97	100	96	92	89	89	87	85	-0.7%
Algeria												
CO_2 emissions	17	26	54	82	100	108	120	151	187	223	240	3.7%
Population	58	64	75	87	100	112	120	128	139	147	150	1.7%
GDP per population (GDP per capita)	65	87	102	111	100	91	98	120	125	129	132	1.2%
Energy intensity (TPES/GDP)	41	44	66	83	100	108	103	95	104	113	118	0.7%
Carbon intensity: ESCII (CO_2/TPES)	108	106	107	103	100	99	99	104	104	104	103	0.1%
Angola												
CO_2 emissions	41	50	68	72	100	100	118	157	386	461	492	6.9%
Population	58	64	74	88	100	117	135	161	191	211	218	3.3%
GDP per population (GDP per capita)	133	122	106	97	100	68	80	110	165	170	171	2.3%
Energy intensity (TPES/GDP)	85	90	99	99	100	136	113	81	66	66	67	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	63	71	87	85	100	92	97	109	187	195	197	2.9%
Benin												
CO_2 emissions	119	180	154	184	100	86	556	1044	1775	2040	2241	13.8%
Population	59	65	74	86	100	120	139	164	190	206	212	3.2%
GDP per population (GDP per capita)	92	91	98	106	100	103	113	116	121	128	133	1.2%
Energy intensity (TPES/GDP)	121	126	112	102	100	90	76	79	96	92	92	-0.4%
Carbon intensity: ESCII (CO_2/TPES)	179	241	189	199	100	78	466	694	807	834	868	9.4%
Botswana												
CO_2 emissions	..	..	..	53	100	114	144	152	117	187	245	3.8%
Population	..	..	..	86	100	114	126	135	148	158	161	2.0%
GDP per population (GDP per capita)	..	..	..	67	100	109	128	142	162	185	190	2.7%
Energy intensity (TPES/GDP)	..	..	..	123	100	95	92	80	74	70	73	-1.3%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	76	100	96	98	99	66	92	110	0.4%
Cameroon												
CO_2 emissions	28	39	63	90	100	93	105	111	191	222	229	3.5%
Population	58	64	74	86	100	115	132	150	171	184	189	2.7%
GDP per population (GDP per capita)	69	82	97	131	100	79	87	92	93	99	102	0.1%
Energy intensity (TPES/GDP)	136	115	102	79	100	122	111	103	88	80	79	-1.0%
Carbon intensity: ESCII (CO_2/TPES)	51	63	86	101	100	84	83	78	137	152	150	1.7%

1. For methodological notes, please see the chapter *Indicator sources and methods.*
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Congo												
CO_2 emissions	90	95	108	119	100	84	78	132	287	397	413	6.1%
Population	58	65	76	87	100	114	130	147	170	184	189	2.7%
GDP per population (GDP per capita)	63	76	83	116	100	90	88	96	106	109	114	0.5%
Energy intensity (TPES/GDP)	178	142	126	96	100	100	78	98	117	166	155	1.8%
Carbon intensity: ESCII (CO_2/TPES)	139	135	138	122	100	82	86	96	135	119	124	0.9%
Côte d'Ivoire												
CO_2 emissions	89	112	125	113	100	121	234	215	230	319	346	5.3%
Population	45	54	68	83	100	118	136	149	165	178	182	2.5%
GDP per population (GDP per capita)	135	140	137	113	100	91	92	84	85	91	97	-0.1%
Energy intensity (TPES/GDP)	93	90	88	90	100	110	124	176	167	192	182	2.5%
Carbon intensity: ESCII (CO_2/TPES)	157	165	152	132	100	102	150	97	98	103	108	0.3%
Dem. Rep. of the Congo												
CO_2 emissions	86	88	106	109	100	38	29	43	63	116	156	1.9%
Population	59	66	75	86	100	121	137	160	189	208	214	3.2%
GDP per population (GDP per capita)	158	151	122	117	100	57	41	42	47	53	56	-2.4%
Energy intensity (TPES/GDP)	61	64	78	84	100	159	210	208	190	211	203	3.0%
Carbon intensity: ESCII (CO_2/TPES)	152	138	148	129	100	35	24	30	37	50	64	-1.8%
Egypt												
CO_2 emissions	26	33	52	83	100	105	128	186	227	225	223	3.4%
Population	63	68	77	88	100	111	121	133	145	155	159	1.9%
GDP per population (GDP per capita)	51	54	76	93	100	107	126	136	168	167	167	2.2%
Energy intensity (TPES/GDP)	75	83	80	98	100	92	83	105	92	90	87	-0.6%
Carbon intensity: ESCII (CO_2/TPES)	106	108	112	104	100	96	102	97	101	97	96	-0.2%
Eritrea [3]												
CO_2 emissions	..	..	..	..	..	178	141	133	110	127	129	1.2%
Population	..	..	..	..	..	100	112	133	148	158	162	2.2%
GDP per population (GDP per capita)	..	..	..	..	..	141	147	141	121	134	134	1.3%
Energy intensity (TPES/GDP)	..	..	..	..	..	80	49	47	47	43	43	-3.8%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	157	175	153	130	139	139	1.5%
Ethiopia [3]												
CO_2 emissions	60	54	62	64	100	107	147	207	274	392	421	6.2%
Population	61	68	73	85	100	119	138	159	182	197	202	3.0%
GDP per population (GDP per capita)	129	119	113	92	100	88	95	112	165	204	219	3.3%
Energy intensity (TPES/GDP)	77	83	88	108	100	113	105	90	62	51	48	-3.0%
Carbon intensity: ESCII (CO_2/TPES)	99	81	86	76	100	90	107	129	148	191	199	2.9%
Gabon												
CO_2 emissions	52	83	142	185	100	145	161	190	292	373	384	5.8%
Population	63	68	77	87	100	114	129	145	162	173	177	2.4%
GDP per population (GDP per capita)	70	132	109	108	100	102	91	89	85	95	97	-0.1%
Energy intensity (TPES/GDP)	205	122	139	122	100	98	106	198	312	273	251	3.9%
Carbon intensity: ESCII (CO_2/TPES)	58	76	122	161	100	127	129	75	68	83	89	-0.5%
Ghana												
CO_2 emissions	75	91	86	83	100	126	196	252	412	538	517	7.1%
Population	60	67	74	87	100	115	129	146	166	179	183	2.6%
GDP per population (GDP per capita)	136	115	109	91	100	108	118	133	161	200	203	3.0%
Energy intensity (TPES/GDP)	69	90	94	104	100	99	78	57	52	47	46	-3.2%
Carbon intensity: ESCII (CO_2/TPES)	133	131	113	100	100	103	165	227	294	318	303	4.7%
Kenya												
CO_2 emissions	59	63	80	83	100	104	141	136	203	212	224	3.4%
Population	50	58	69	84	100	117	133	151	172	186	191	2.7%
GDP per population (GDP per capita)	76	86	97	91	100	93	91	95	107	116	119	0.7%
Energy intensity (TPES/GDP)	130	114	103	107	100	105	109	104	99	92	97	-0.1%
Carbon intensity: ESCII (CO_2/TPES)	119	111	116	103	100	91	108	91	111	107	102	0.1%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. Data for Ethiopia include Eritrea until 1991. The reference year for Eritrea is the first year of available data (1992).

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Libya												
CO_2 emissions	14	34	68	82	100	128	142	166	186	187	185	2.6%
Population	50	60	73	87	100	111	121	132	142	142	142	1.5%
GDP per population (GDP per capita)	242	165	214	127	100	87	84	100	112	75	57	-2.3%
Energy intensity (TPES/GDP)	12	33	41	82	100	130	138	121	117	163	197	2.9%
Carbon intensity: ESCII (CO_2/TPES)	102	102	108	91	100	102	100	105	100	107	116	0.6%
Mauritius												
CO_2 emissions	22	36	49	53	100	133	209	254	315	329	340	5.2%
Population	79	84	91	96	100	106	112	116	118	119	119	0.7%
GDP per population (GDP per capita)	41	52	61	73	100	120	150	168	206	227	234	3.6%
Energy intensity (TPES/GDP)	167	137	116	95	100	92	90	89	81	77	75	-1.2%
Carbon intensity: ESCII (CO_2/TPES)	41	60	76	79	100	114	138	146	159	159	162	2.0%
Morocco												
CO_2 emissions	33	49	70	83	100	133	150	198	234	257	270	4.2%
Population	66	72	80	91	100	109	116	122	129	134	136	1.3%
GDP per population (GDP per capita)	62	68	79	86	100	99	114	139	166	181	183	2.6%
Energy intensity (TPES/GDP)	96	107	111	104	100	114	109	115	105	101	100	0.0%
Carbon intensity: ESCII (CO_2/TPES)	86	95	98	102	100	108	104	102	104	104	108	0.3%
Mozambique												
CO_2 emissions	270	219	216	139	100	106	121	140	219	272	357	5.4%
Population	71	78	89	98	100	119	137	158	182	198	204	3.0%
GDP per population (GDP per capita)	161	124	110	78	100	99	148	196	244	276	287	4.5%
Energy intensity (TPES/GDP)	102	117	115	140	100	90	60	46	38	34	34	-4.4%
Carbon intensity: ESCII (CO_2/TPES)	232	194	190	129	100	100	100	97	130	148	182	2.5%
Namibia [3]												
CO_2 emissions	..	..	..	..	..	158	168	220	271	303	317	5.1%
Population	..	..	..	..	..	113	129	138	150	160	164	2.2%
GDP per population (GDP per capita)	..	..	..	..	..	99	102	122	140	153	159	2.0%
Energy intensity (TPES/GDP)	..	..	..	..	..	121	111	113	105	102	100	-0.0%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	117	114	115	122	121	122	0.9%
Niger [4]												
CO_2 emissions	..	..	..	..	..	..	100	113	209	274	303	4.7%
Population	..	..	..	..	..	..	100	120	145	164	170	2.2%
GDP per population (GDP per capita)	..	..	..	..	..	..	100	101	108	114	117	0.7%
Energy intensity (TPES/GDP)	..	..	..	..	..	..	100	97	97	104	98	-0.1%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	..	100	96	138	140	154	1.8%
Nigeria												
CO_2 emissions	20	39	90	113	100	117	156	201	199	220	214	3.2%
Population	60	66	77	88	100	113	129	146	167	181	186	2.6%
GDP per population (GDP per capita)	131	136	142	108	100	90	94	136	169	180	186	2.6%
Energy intensity (TPES/GDP)	63	64	67	90	100	108	108	80	64	62	59	-2.2%
Carbon intensity: ESCII (CO_2/TPES)	41	66	123	132	100	105	120	127	110	109	106	0.2%
Senegal												
CO_2 emissions	57	75	96	100	100	116	165	217	256	281	295	4.6%
Population	58	65	74	86	100	116	131	150	172	189	195	2.8%
GDP per population (GDP per capita)	113	113	105	104	100	96	103	113	117	118	119	0.7%
Energy intensity (TPES/GDP)	113	112	119	104	100	100	105	97	112	99	101	0.0%
Carbon intensity: ESCII (CO_2/TPES)	77	92	103	108	100	105	116	131	113	128	126	1.0%
South Africa												
CO_2 emissions	64	83	85	91	100	107	115	153	167	174	179	2.5%
Population	64	70	78	89	100	111	125	135	144	151	153	1.8%
GDP per population (GDP per capita)	100	105	110	104	100	94	96	107	117	120	120	0.8%
Energy intensity (TPES/GDP)	78	80	84	103	100	109	100	98	93	85	88	-0.5%
Carbon intensity: ESCII (CO_2/TPES)	129	140	119	96	100	94	96	108	107	113	111	0.4%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. The reference year for Namibia is the first year of available data (1991).
4. Other Africa includes Niger until 1999. The reference year for Niger is the first year of available data (2000).

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
South Sudan [3]												
CO_2 emissions	..	..	..	..	..	..	..	..	..	103	106	0.2%
Population	..	..	..	..	..	..	..	..	..	104	108	0.3%
GDP per population (GDP per capita)	..	..	..	..	..	..	..	..	..	108	108	0.3%
Energy intensity (TPES/GDP)	..	..	..	..	..	..	..	..	..	93	93	-0.3%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	..	..	..	..	98	97	-0.1%
Sudan [3]												
CO_2 emissions	61	61	69	75	100	81	104	186	283	256	252	3.9%
Population	55	63	74	87	100	117	135	156	179	149	153	1.8%
GDP per population (GDP per capita)	102	111	105	93	100	110	127	151	185	219	221	3.4%
Energy intensity (TPES/GDP)	117	101	101	110	100	88	73	60	47	42	42	-3.6%
Carbon intensity: ESCII (CO_2/TPES)	92	86	88	84	100	72	83	132	180	186	179	2.4%
United Rep. of Tanzania												
CO_2 emissions	84	84	89	88	100	149	156	303	367	615	621	7.9%
Population	55	63	73	86	100	117	134	153	179	197	204	3.0%
GDP per population (GDP per capita)	95	100	98	88	100	93	101	125	143	158	164	2.1%
Energy intensity (TPES/GDP)	148	126	114	119	100	104	102	93	83	79	76	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	108	107	108	97	100	132	113	171	173	249	243	3.8%
Togo												
CO_2 emissions	60	55	64	52	100	101	165	167	361	291	299	4.7%
Population	58	64	72	86	100	113	129	147	169	183	188	2.7%
GDP per population (GDP per capita)	103	112	125	103	100	89	96	89	91	98	101	0.0%
Energy intensity (TPES/GDP)	97	86	78	88	100	123	135	143	160	141	138	1.3%
Carbon intensity: ESCII (CO_2/TPES)	104	90	91	66	100	81	99	89	146	115	115	0.6%
Tunisia												
CO_2 emissions	31	40	65	79	100	115	145	160	191	194	205	3.0%
Population	64	69	78	89	100	110	117	123	129	134	135	1.3%
GDP per population (GDP per capita)	60	75	90	97	100	110	136	156	186	189	192	2.8%
Energy intensity (TPES/GDP)	87	85	94	97	100	97	93	87	87	83	82	-0.8%
Carbon intensity: ESCII (CO_2/TPES)	91	90	98	94	100	98	98	95	92	92	97	-0.1%
Zambia												
CO_2 emissions	132	169	128	105	100	78	65	83	64	111	125	0.9%
Population	53	61	73	86	100	114	130	148	171	187	193	2.8%
GDP per population (GDP per capita)	148	145	124	107	100	87	91	108	141	156	161	2.0%
Energy intensity (TPES/GDP)	82	81	93	99	100	109	99	86	64	61	60	-2.1%
Carbon intensity: ESCII (CO_2/TPES)	203	235	153	115	100	73	55	61	41	62	67	-1.7%
Zimbabwe												
CO_2 emissions	45	44	49	60	100	93	82	63	57	72	71	-1.4%
Population	51	59	70	85	100	111	119	124	133	142	145	1.6%
GDP per population (GDP per capita)	101	103	93	95	100	95	100	65	55	67	68	-1.6%
Energy intensity (TPES/GDP)	113	105	107	100	100	100	90	128	141	124	121	0.8%
Carbon intensity: ESCII (CO_2/TPES)	76	69	70	75	100	88	76	61	55	62	59	-2.1%
Other Africa												
CO_2 emissions	67	76	105	86	100	112	129	155	200	236	245	3.8%
Population	61	67	77	86	100	110	118	136	158	172	177	2.4%
GDP per population (GDP per capita)	122	117	114	106	100	91	102	121	136	141	143	1.5%
Energy intensity (TPES/GDP)	73	75	76	80	100	110	95	78	69	65	64	-1.8%
Carbon intensity: ESCII (CO_2/TPES)	124	129	158	116	100	103	114	120	135	149	150	1.7%
Africa												
CO_2 emissions	47	61	75	88	100	109	124	162	188	203	209	3.1%
Population	59	66	76	87	100	115	130	147	166	180	184	2.6%
GDP per population (GDP per capita)	99	102	111	104	100	93	98	113	129	132	133	1.2%
Energy intensity (TPES/GDP)	83	84	83	95	100	106	99	92	82	80	80	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	96	108	108	102	100	96	99	106	107	106	106	0.3%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. Data for Sudan include South Sudan until 2011. The reference year for South Sudan is the first year of available data (2012).

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Bangladesh												
CO_2 emissions	25	39	58	67	100	144	183	280	437	522	545	9.3%
Population	63	67	77	88	100	112	124	135	143	148	150	2.2%
GDP per population (GDP per capita)	94	82	88	95	100	112	128	150	190	220	231	4.5%
Energy intensity (TPES/GDP)	76	96	98	94	100	100	91	88	88	82	80	-1.2%
Carbon intensity: ESCII (CO_2/TPES)	56	73	87	86	100	116	128	156	182	196	196	3.6%
Brunei Darussalam												
CO_2 emissions	12	43	81	90	100	138	136	148	210	210	205	3.0%
Population	53	63	75	87	100	115	129	141	153	160	162	2.0%
GDP per population (GDP per capita)	114	118	160	115	100	102	97	98	93	92	88	-0.5%
Energy intensity (TPES/GDP)	17	58	65	104	100	111	111	93	131	120	144	1.5%
Carbon intensity: ESCII (CO_2/TPES)	119	101	104	88	100	106	98	115	112	119	100	-0.0%
Cambodia [3]												
CO_2 emissions	..	..	..	..	..	100	133	180	314	352	415	6.1%
Population	..	..	..	..	..	100	114	125	134	141	143	1.5%
GDP per population (GDP per capita)	..	..	..	..	..	100	125	179	229	269	283	4.4%
Energy intensity (TPES/GDP)	..	..	..	..	..	100	85	54	61	55	55	-2.4%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	100	111	149	168	167	185	2.6%
DPR of Korea												
CO_2 emissions	59	67	93	111	100	66	60	64	56	28	32	-4.6%
Population	73	81	86	93	100	108	113	118	121	123	124	0.9%
GDP per population (GDP per capita)	26	38	61	90	100	73	62	57	52	59	66	-1.7%
Energy intensity (TPES/GDP)	301	220	174	129	100	84	85	95	91	45	44	-3.4%
Carbon intensity: ESCII (CO_2/TPES)	101	100	101	102	100	99	101	100	99	87	90	-0.4%
India												
CO_2 emissions	34	41	49	71	100	133	168	204	301	349	381	5.7%
Population	65	71	80	90	100	110	121	131	141	147	149	1.7%
GDP per population (GDP per capita)	68	70	73	83	100	116	142	181	251	289	307	4.8%
Energy intensity (TPES/GDP)	113	113	112	108	100	95	84	71	64	60	59	-2.2%
Carbon intensity: ESCII (CO_2/TPES)	69	73	76	88	100	110	116	121	133	138	141	1.4%
Indonesia												
CO_2 emissions	19	28	50	63	100	152	191	238	281	298	326	5.0%
Population	65	72	81	91	100	109	117	125	133	138	140	1.4%
GDP per population (GDP per capita)	42	51	66	78	100	135	130	153	189	216	224	3.4%
Energy intensity (TPES/GDP)	131	113	105	94	100	91	104	96	85	74	73	-1.3%
Carbon intensity: ESCII (CO_2/TPES)	53	68	89	94	100	115	121	131	131	135	143	1.5%
Malaysia												
CO_2 emissions	26	33	48	66	100	160	232	314	383	422	445	6.4%
Population	61	68	76	87	100	114	129	142	154	162	164	2.1%
GDP per population (GDP per capita)	45	55	74	83	100	138	154	177	202	224	234	3.6%
Energy intensity (TPES/GDP)	100	89	97	99	100	101	113	120	108	111	107	0.3%
Carbon intensity: ESCII (CO_2/TPES)	93	99	88	93	100	101	104	104	114	105	108	0.3%
Mongolia												
CO_2 emissions	..	..	..	92	100	80	70	86	110	145	141	1.4%
Population	..	..	..	88	100	105	110	116	124	131	133	1.2%
GDP per population (GDP per capita)	..	..	..	95	100	83	91	118	150	210	222	3.4%
Energy intensity (TPES/GDP)	..	..	..	110	100	91	70	64	62	56	53	-2.6%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	100	100	101	99	97	95	94	90	-0.5%
Myanmar												
CO_2 emissions	115	100	130	147	100	172	237	270	202	343	500	6.9%
Population	66	73	82	92	100	106	113	119	123	126	127	1.0%
GDP per population (GDP per capita)	88	89	107	122	100	125	176	307	431	518	557	7.4%
Energy intensity (TPES/GDP)	127	121	100	92	100	83	60	38	25	24	26	-5.5%
Carbon intensity: ESCII (CO_2/TPES)	156	128	147	142	100	155	197	194	154	221	276	4.3%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. The reference year for Cambodia is the first year of available data (1995).

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Nepal												
CO_2 emissions	21	36	58	62	100	197	346	343	460	543	662	8.2%
Population	65	71	79	89	100	114	127	136	143	149	150	1.7%
GDP per population (GDP per capita)	78	79	79	90	100	113	128	141	167	182	189	2.7%
Energy intensity (TPES/GDP)	125	124	125	110	100	90	86	82	74	72	71	-1.4%
Carbon intensity: ESCII (CO_2/TPES)	34	51	74	70	100	170	247	218	261	280	328	5.1%
Pakistan												
CO_2 emissions	28	36	43	65	100	142	171	209	235	242	246	3.8%
Population	55	62	73	86	100	114	128	143	158	168	172	2.3%
GDP per population (GDP per capita)	62	65	75	88	100	110	115	132	141	146	150	1.7%
Energy intensity (TPES/GDP)	115	118	106	100	100	100	101	95	89	84	81	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	71	75	75	87	100	113	115	117	118	117	117	0.7%
Philippines												
CO_2 emissions	60	76	88	75	100	150	179	188	203	236	252	3.9%
Population	59	67	77	88	100	113	126	139	150	158	160	2.0%
GDP per population (GDP per capita)	84	95	111	90	100	99	105	119	141	159	166	2.1%
Energy intensity (TPES/GDP)	106	101	92	104	100	105	105	82	67	62	63	-1.9%
Carbon intensity: ESCII (CO_2/TPES)	113	120	112	91	100	128	129	139	144	151	152	1.7%
Singapore												
CO_2 emissions	21	29	44	57	100	130	145	131	153	160	157	1.9%
Population	69	74	79	90	100	116	132	140	167	177	180	2.5%
GDP per population (GDP per capita)	32	42	60	74	100	131	151	180	210	226	230	3.5%
Energy intensity (TPES/GDP)	106	102	94	89	100	108	81	74	63	57	59	-2.2%
Carbon intensity: ESCII (CO_2/TPES)	88	90	98	98	100	79	90	70	69	70	64	-1.8%
Sri Lanka												
CO_2 emissions	75	72	99	95	100	148	286	364	338	374	456	6.5%
Population	75	79	87	93	100	107	112	115	121	120	121	0.8%
GDP per population (GDP per capita)	59	65	77	91	100	122	148	175	227	280	290	4.5%
Energy intensity (TPES/GDP)	158	145	124	107	100	84	91	81	64	54	55	-2.4%
Carbon intensity: ESCII (CO_2/TPES)	109	96	120	105	100	136	190	223	191	206	235	3.6%
Chinese Taipei												
CO_2 emissions	27	37	64	62	100	139	193	228	231	223	225	3.4%
Population	74	79	88	95	100	105	108	112	114	115	116	0.6%
GDP per population (GDP per capita)	25	35	54	69	100	136	169	194	234	250	258	4.0%
Energy intensity (TPES/GDP)	114	108	122	106	100	94	97	98	87	79	77	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	128	122	110	89	100	104	109	106	99	98	97	-0.1%
Thailand												
CO_2 emissions	20	26	42	52	100	173	188	247	276	306	301	4.7%
Population	67	75	84	92	100	105	111	116	118	119	120	0.8%
GDP per population (GDP per capita)	38	43	56	67	100	142	139	172	204	225	226	3.5%
Energy intensity (TPES/GDP)	129	129	112	96	100	100	112	118	117	121	119	0.7%
Carbon intensity: ESCII (CO_2/TPES)	62	63	80	88	100	117	109	105	98	95	94	-0.3%
Uzbekistan												
CO_2 emissions	..	..	..	..	100	82	99	93	84	84	85	-0.7%
Population	..	..	..	..	100	111	120	128	139	147	150	1.7%
GDP per population (GDP per capita)	..	..	..	..	100	73	82	100	138	165	175	2.4%
Energy intensity (TPES/GDP)	..	..	..	..	100	114	112	80	48	38	36	-4.2%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	89	90	92	91	90	90	-0.4%
Other Asia												
CO_2 emissions	102	124	161	99	100	91	110	150	214	384	408	6.0%
Population	84	91	94	91	100	92	105	124	139	151	155	1.8%
GDP per population (GDP per capita)	81	82	94	99	100	122	115	136	181	216	216	3.3%
Energy intensity (TPES/GDP)	122	127	128	104	100	90	99	82	70	83	85	-0.7%
Carbon intensity: ESCII (CO_2/TPES)	125	131	144	106	100	91	92	109	120	143	143	1.5%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Asia (excl. China)												
CO_2 emissions	34	42	57	72	100	134	167	205	265	294	315	4.9%
Population	65	71	80	90	100	110	121	131	141	146	148	1.7%
GDP per population (GDP per capita)	56	61	72	82	100	120	133	161	204	230	240	3.7%
Energy intensity (TPES/GDP)	123	119	112	106	100	94	92	84	77	71	70	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	77	82	88	93	100	108	112	116	121	123	126	1.0%
People's Rep. of China												
CO_2 emissions	38	50	66	78	100	139	149	258	371	433	438	6.3%
Population	74	81	86	93	100	106	111	115	118	120	120	0.8%
GDP per population (GDP per capita)	32	37	47	74	100	168	243	374	622	779	831	9.2%
Energy intensity (TPES/GDP)	187	186	167	116	100	67	48	49	41	37	35	-4.3%
Carbon intensity: ESCII (CO_2/TPES)	84	89	96	99	100	116	114	124	124	125	125	0.9%
Hong Kong, China												
CO_2 emissions	28	33	44	67	100	110	121	124	126	138	144	1.5%
Population	71	78	89	96	100	108	117	119	123	126	127	1.0%
GDP per population (GDP per capita)	33	39	59	72	100	120	126	152	178	192	195	2.8%
Energy intensity (TPES/GDP)	147	139	103	111	100	95	107	80	72	67	67	-1.7%
Carbon intensity: ESCII (CO_2/TPES)	80	78	82	88	100	89	77	85	79	85	87	-0.6%
China (incl. Hong Kong, China)												
CO_2 emissions	37	49	65	78	100	139	148	256	367	428	433	6.3%
Population	74	81	86	93	100	106	111	115	118	120	120	0.8%
GDP per population (GDP per capita)	32	37	49	74	100	164	233	356	586	731	779	8.9%
Energy intensity (TPES/GDP)	187	185	163	116	100	69	50	51	43	39	37	-4.0%
Carbon intensity: ESCII (CO_2/TPES)	84	89	95	98	100	116	113	123	123	125	124	0.9%
Argentina												
CO_2 emissions	83	86	96	88	100	118	140	150	175	182	194	2.8%
Population	74	80	86	93	100	107	113	120	126	130	131	1.1%
GDP per population (GDP per capita)	124	127	136	110	100	128	138	144	181	197	196	2.8%
Energy intensity (TPES/GDP)	79	77	78	88	100	85	86	84	75	70	73	-1.3%
Carbon intensity: ESCII (CO_2/TPES)	114	110	106	98	100	101	105	103	102	101	103	0.1%
Bolivia												
CO_2 emissions	42	63	82	84	100	134	138	176	266	328	355	5.4%
Population	67	73	82	91	100	110	122	133	145	152	154	1.8%
GDP per population (GDP per capita)	106	122	121	99	100	111	119	127	146	164	171	2.3%
Energy intensity (TPES/GDP)	55	64	95	108	100	118	130	118	116	120	121	0.8%
Carbon intensity: ESCII (CO_2/TPES)	108	110	87	87	100	93	73	88	109	110	111	0.4%
Brazil												
CO_2 emissions	47	70	91	85	100	124	159	169	201	245	258	4.0%
Population	65	72	81	91	100	108	117	125	132	136	137	1.3%
GDP per population (GDP per capita)	64	85	104	98	100	107	110	119	141	149	148	1.6%
Energy intensity (TPES/GDP)	119	106	96	103	100	99	104	103	102	103	107	0.3%
Carbon intensity: ESCII (CO_2/TPES)	95	108	112	92	100	108	119	110	106	117	119	0.7%
Colombia												
CO_2 emissions	58	62	76	86	100	119	118	117	132	155	158	1.9%
Population	66	72	81	90	100	109	118	126	134	138	139	1.4%
GDP per population (GDP per capita)	66	75	87	87	100	112	110	123	145	163	169	2.2%
Energy intensity (TPES/GDP)	131	118	104	105	100	93	82	72	66	62	60	-2.1%
Carbon intensity: ESCII (CO_2/TPES)	102	97	104	104	100	104	111	105	102	111	113	0.5%
Costa Rica												
CO_2 emissions	49	67	83	75	100	171	173	209	254	274	275	4.3%
Population	61	68	77	88	100	113	127	137	147	152	154	1.8%
GDP per population (GDP per capita)	79	89	101	89	100	115	131	148	174	191	195	2.8%
Energy intensity (TPES/GDP)	100	98	96	97	100	107	103	113	109	100	98	-0.1%
Carbon intensity: ESCII (CO_2/TPES)	102	113	111	99	100	121	101	91	92	95	94	-0.3%

1. For methodological notes, please see the chapter *Indicator sources and methods.*
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Cuba												
CO_2 emissions	61	71	89	94	100	66	80	73	96	86	86	-0.6%
Population	84	89	93	95	100	103	105	106	107	107	108	0.3%
GDP per population (GDP per capita)	57	64	72	106	100	67	82	104	135	146	151	1.7%
Energy intensity (TPES/GDP)	127	118	125	87	100	90	84	55	49	42	41	-3.6%
Carbon intensity: ESCII (CO_2/TPES)	101	105	106	107	100	105	110	120	135	130	128	1.0%
Curaçao [3]												
CO_2 emissions	545	383	326	169	100	99	211	225	164	166	178	2.4%
Population	85	89	92	97	100	105	111	116	121	81	83	-0.8%
GDP per population (GDP per capita)	72	78	88	88	100	106	123	125	129	132	133	1.2%
Energy intensity (TPES/GDP)	610	378	336	144	100	80	106	98	90	115	124	0.9%
Carbon intensity: ESCII (CO_2/TPES)	145	145	121	138	100	110	146	157	118	134	132	1.2%
Dominican Republic												
CO_2 emissions	47	70	85	84	100	152	247	234	259	266	260	4.1%
Population	64	72	81	90	100	110	119	129	138	143	145	1.6%
GDP per population (GDP per capita)	68	85	98	96	100	118	151	167	211	224	238	3.7%
Energy intensity (TPES/GDP)	132	125	108	97	100	101	100	80	65	59	55	-2.4%
Carbon intensity: ESCII (CO_2/TPES)	81	92	100	100	100	116	137	136	138	140	137	1.3%
Ecuador												
CO_2 emissions	26	45	78	88	100	125	136	180	241	269	291	4.5%
Population	61	68	78	89	100	112	124	134	146	153	156	1.9%
GDP per population (GDP per capita)	69	91	99	99	100	103	99	115	125	142	145	1.6%
Energy intensity (TPES/GDP)	84	80	102	102	100	107	114	95	102	96	99	-0.0%
Carbon intensity: ESCII (CO_2/TPES)	74	90	99	99	100	101	98	122	129	129	130	1.1%
El Salvador												
CO_2 emissions	62	91	76	78	100	217	246	297	277	272	279	4.4%
Population	72	79	87	94	100	106	111	113	115	116	116	0.6%
GDP per population (GDP per capita)	120	132	119	96	100	127	142	156	164	173	176	2.4%
Energy intensity (TPES/GDP)	82	88	98	118	100	101	102	104	91	81	81	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	87	100	74	73	100	160	153	163	161	168	169	2.2%
Guatemala												
CO_2 emissions	71	94	131	99	100	183	268	331	322	381	504	7.0%
Population	61	68	78	89	100	113	128	144	161	171	175	2.4%
GDP per population (GDP per capita)	92	102	118	98	100	109	117	121	129	135	138	1.3%
Energy intensity (TPES/GDP)	111	109	94	99	100	98	107	102	111	118	124	0.9%
Carbon intensity: ESCII (CO_2/TPES)	114	124	153	116	100	151	168	187	139	140	168	2.2%
Haiti												
CO_2 emissions	41	44	66	85	100	97	148	212	224	232	296	4.6%
Population	68	72	80	90	100	110	120	130	141	147	149	1.7%
GDP per population (GDP per capita)	109	108	129	113	100	83	86	77	74	81	82	-0.8%
Energy intensity (TPES/GDP)	131	140	129	119	100	119	124	217	233	222	219	3.3%
Carbon intensity: ESCII (CO_2/TPES)	42	40	50	71	100	89	115	97	92	88	111	0.4%
Honduras												
CO_2 emissions	52	61	78	77	100	164	206	329	337	388	402	6.0%
Population	56	63	74	86	100	114	127	140	153	160	162	2.0%
GDP per population (GDP per capita)	86	88	106	99	100	104	109	124	135	144	146	1.6%
Energy intensity (TPES/GDP)	121	116	100	98	100	100	91	100	93	95	95	-0.2%
Carbon intensity: ESCII (CO_2/TPES)	88	94	99	91	100	138	164	190	176	178	179	2.4%
Jamaica												
CO_2 emissions	76	103	90	64	100	116	135	142	96	101	99	-0.0%
Population	79	84	89	97	100	104	108	111	113	114	114	0.5%
GDP per population (GDP per capita)	107	108	86	81	100	117	110	118	113	114	115	0.6%
Energy intensity (TPES/GDP)	85	106	107	79	100	95	115	102	75	80	77	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	106	107	110	104	100	101	99	106	100	98	98	-0.1%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. Please refer to the chapter *Geographical Coverage*.

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Nicaragua												
CO_2 emissions	81	101	98	98	100	137	193	219	233	232	247	3.8%
Population	60	67	78	89	100	111	121	130	138	143	145	1.6%
GDP per population (GDP per capita)	192	210	146	132	100	98	115	126	133	150	155	1.9%
Energy intensity (TPES/GDP)	53	51	66	81	100	102	89	87	79	81	80	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	134	138	129	103	100	122	155	155	159	133	136	1.3%
Panama												
CO_2 emissions	97	121	114	104	100	160	190	264	345	385	413	6.1%
Population	63	71	80	90	100	111	123	134	147	154	157	1.9%
GDP per population (GDP per capita)	101	104	109	115	100	118	134	151	202	254	265	4.2%
Energy intensity (TPES/GDP)	174	155	109	101	100	103	105	97	82	68	68	-1.6%
Carbon intensity: ESCII (CO_2/TPES)	87	106	120	99	100	119	110	135	143	145	146	1.6%
Paraguay												
CO_2 emissions	30	36	70	74	100	181	170	180	241	256	269	4.2%
Population	60	66	75	87	100	113	126	138	147	153	156	1.9%
GDP per population (GDP per capita)	50	60	89	86	100	110	101	101	121	136	141	1.4%
Energy intensity (TPES/GDP)	148	120	101	98	100	103	99	92	88	77	77	-1.1%
Carbon intensity: ESCII (CO_2/TPES)	66	76	103	100	100	142	136	140	154	159	160	2.0%
Peru												
CO_2 emissions	80	95	107	94	100	122	138	150	215	234	250	3.9%
Population	63	70	80	90	100	110	119	126	135	140	142	1.5%
GDP per population (GDP per capita)	125	138	139	123	100	117	124	143	188	215	217	3.3%
Energy intensity (TPES/GDP)	120	111	105	98	100	87	86	78	76	69	79	-1.0%
Carbon intensity: ESCII (CO_2/TPES)	86	90	92	87	100	108	110	107	112	112	102	0.1%
Suriname [3]												
CO_2 emissions	..	..	..	..	..	..	100	113	116	135	137	1.3%
Population	..	..	..	..	..	..	100	102	108	111	112	0.5%
GDP per population (GDP per capita)	..	..	..	..	..	..	100	129	151	164	165	2.1%
Energy intensity (TPES/GDP)	..	..	..	..	..	..	100	76	70	60	59	-2.2%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	..	..	100	113	102	123	125	0.9%
Trinidad and Tobago												
CO_2 emissions	68	58	81	84	100	103	128	222	283	290	294	4.6%
Population	78	83	89	96	100	103	104	106	109	110	111	0.4%
GDP per population (GDP per capita)	110	118	144	117	100	104	150	216	247	251	252	3.9%
Energy intensity (TPES/GDP)	51	40	50	76	100	96	106	118	125	118	117	0.7%
Carbon intensity: ESCII (CO_2/TPES)	154	149	126	99	100	101	78	82	84	89	90	-0.4%
Uruguay												
CO_2 emissions	142	148	148	84	100	122	141	143	166	197	174	2.3%
Population	91	91	94	97	100	104	107	107	108	110	110	0.4%
GDP per population (GDP per capita)	82	88	107	85	100	117	131	132	174	196	202	3.0%
Energy intensity (TPES/GDP)	144	135	117	107	100	94	98	93	96	95	94	-0.3%
Carbon intensity: ESCII (CO_2/TPES)	132	136	126	94	100	107	103	109	91	97	83	-0.8%
Venezuela												
CO_2 emissions	49	60	89	91	100	113	124	147	183	167	166	2.1%
Population	60	67	77	88	100	112	123	135	146	152	155	1.8%
GDP per population (GDP per capita)	119	121	119	100	100	106	100	104	115	122	116	0.6%
Energy intensity (TPES/GDP)	63	71	90	104	100	100	105	102	109	93	95	-0.2%
Carbon intensity: ESCII (CO_2/TPES)	109	103	108	99	100	96	96	103	100	96	97	-0.1%
Other Non-OECD Americas [3]												
CO_2 emissions	66	88	83	75	100	108	110	115	133	160	163	2.0%
Population	86	89	93	97	100	107	97	103	108	114	115	0.6%
GDP per population (GDP per capita)	67	68	82	82	100	101	117	124	123	123	118	0.7%
Energy intensity (TPES/GDP)	164	196	148	90	100	91	86	79	90	99	106	0.2%
Carbon intensity: ESCII (CO_2/TPES)	69	74	73	105	100	109	112	115	111	115	114	0.5%

1. For methodological notes, please see the chapter *Indicator sources and methods*.
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.
3. Other non-OECD Americas includes Suriname until 1999. The reference year for Suriname is the first year of available data (2000).

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Non-OECD Americas												
CO_2 emissions	61	74	92	88	100	118	141	155	185	203	212	3.2%
Population	67	73	82	91	100	109	118	126	134	138	140	1.4%
GDP per population (GDP per capita)	81	95	108	100	100	108	112	121	144	155	155	1.8%
Energy intensity (TPES/GDP)	108	100	97	100	100	96	99	95	92	89	90	-0.4%
Carbon intensity: ESCII (CO_2/TPES)	105	106	108	97	100	104	109	106	104	107	109	0.3%
Bahrain												
CO_2 emissions	27	49	68	85	100	126	148	193	239	265	278	4.4%
Population	45	54	73	84	100	114	134	175	254	272	275	4.3%
GDP per population (GDP per capita)	64	98	118	94	100	122	128	126	114	119	123	0.9%
Energy intensity (TPES/GDP)	95	78	63	100	100	88	89	90	84	81	80	-0.9%
Carbon intensity: ESCII (CO_2/TPES)	101	120	126	107	100	103	97	97	99	101	103	0.1%
Islamic Republic of Iran												
CO_2 emissions	23	40	52	85	100	143	182	244	291	313	325	5.0%
Population	52	58	69	84	100	107	117	125	132	137	139	1.4%
GDP per population (GDP per capita)	172	199	117	116	100	108	117	144	172	157	162	2.0%
Energy intensity (TPES/GDP)	27	33	68	79	100	126	129	139	129	147	151	1.7%
Carbon intensity: ESCII (CO_2/TPES)	95	103	94	109	100	98	103	98	99	98	95	-0.2%
Iraq												
CO_2 emissions	20	30	50	72	100	182	135	140	198	258	269	4.2%
Population	59	67	78	89	100	116	135	155	177	193	199	2.9%
GDP per population (GDP per capita)	37	45	82	64	100	57	106	95	110	131	125	0.9%
Energy intensity (TPES/GDP)	93	100	76	128	100	254	91	90	96	97	99	-0.0%
Carbon intensity: ESCII (CO_2/TPES)	98	98	103	99	100	108	104	106	106	105	109	0.4%
Jordan												
CO_2 emissions	15	23	46	80	100	132	155	195	203	241	259	4.0%
Population	50	57	69	83	100	132	151	171	191	204	208	3.1%
GDP per population (GDP per capita)	81	69	119	127	100	106	109	132	159	162	163	2.1%
Energy intensity (TPES/GDP)	37	58	57	76	100	93	90	91	71	72	74	-1.3%
Carbon intensity: ESCII (CO_2/TPES)	97	100	100	100	100	100	104	95	94	102	104	0.2%
Kuwait												
CO_2 emissions	50	54	95	132	100	116	167	233	277	303	310	4.8%
Population	39	51	67	84	100	80	94	110	149	175	182	2.5%
GDP per population (GDP per capita)	382	243	195	121	100	170	159	201	158	159	149	1.7%
Energy intensity (TPES/GDP)	45	57	88	151	100	120	138	131	150	139	137	1.3%
Carbon intensity: ESCII (CO_2/TPES)	75	76	83	86	100	72	81	81	79	79	83	-0.8%
Lebanon												
CO_2 emissions	83	104	121	120	100	232	254	262	330	374	406	6.0%
Population	87	95	96	99	100	112	120	148	160	166	168	2.2%
GDP per population (GDP per capita)	173	155	130	177	100	158	160	158	210	214	215	3.2%
Energy intensity (TPES/GDP)	63	75	101	68	100	127	132	110	97	102	106	0.2%
Carbon intensity: ESCII (CO_2/TPES)	88	93	95	101	100	103	101	102	101	103	106	0.2%
Oman												
CO_2 emissions	3	7	22	55	100	145	201	243	417	556	590	7.7%
Population	41	49	64	83	100	121	124	138	162	216	234	3.6%
GDP per population (GDP per capita)	60	67	66	104	100	110	127	119	134	111	105	0.2%
Energy intensity (TPES/GDP)	8	17	64	58	100	109	114	143	204	242	234	3.6%
Carbon intensity: ESCII (CO_2/TPES)	125	126	81	111	100	100	112	103	94	96	102	0.1%
Qatar												
CO_2 emissions	18	40	56	86	100	135	171	267	459	586	624	7.9%
Population	25	34	47	78	100	105	125	176	371	441	456	6.5%
GDP per population (GDP per capita)	409	301	256	130	100	107	153	161	178	187	188	2.7%
Energy intensity (TPES/GDP)	14	30	42	85	100	111	88	90	64	75	79	-1.0%
Carbon intensity: ESCII (CO_2/TPES)	127	127	111	99	100	108	102	105	108	95	92	-0.3%

1. For methodological notes, please see the chapter *Indicator sources and methods.*
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.

CO_2 emissions and drivers (Kaya decomposition) [1]

reference year for indices = 1990 unless otherwise specified

	1971	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014	avg. ch. ref-14 [2]
Saudi Arabia												
CO_2 emissions	8	15	66	78	100	127	155	197	277	312	335	5.2%
Population	37	45	61	82	100	115	131	151	172	185	189	2.7%
GDP per population (GDP per capita)	113	170	176	103	100	100	100	110	125	139	140	1.4%
Energy intensity (TPES/GDP)	30	20	50	94	100	126	129	127	149	130	139	1.4%
Carbon intensity: ESCII (CO_2/TPES)	66	99	123	98	100	87	92	93	87	94	91	-0.4%
Syrian Arab Republic												
CO_2 emissions	20	30	45	72	100	114	136	196	206	110	101	0.1%
Population	53	61	72	86	100	115	131	146	166	175	178	2.4%
GDP per population (GDP per capita)	65	96	112	109	100	127	125	143	159	141	136	1.3%
Energy intensity (TPES/GDP)	66	50	53	80	100	79	90	95	78	45	43	-3.5%
Carbon intensity: ESCII (CO_2/TPES)	88	104	106	96	100	99	92	99	99	99	98	-0.1%
United Arab Emirates												
CO_2 emissions	5	9	37	69	100	134	154	214	293	334	338	5.2%
Population	15	29	56	75	100	130	168	247	460	499	502	7.0%
GDP per population (GDP per capita)	116	154	168	118	100	93	94	83	50	54	56	-2.4%
Energy intensity (TPES/GDP)	28	21	38	76	100	113	98	106	131	127	122	0.8%
Carbon intensity: ESCII (CO_2/TPES)	96	100	105	102	100	99	100	98	97	98	98	-0.1%
Yemen												
CO_2 emissions	19	28	55	77	100	150	212	299	355	379	339	5.2%
Population	52	57	67	82	100	128	149	171	197	213	219	3.3%
GDP per population (GDP per capita)	46	60	88	104	100	106	117	124	129	108	107	0.3%
Energy intensity (TPES/GDP)	122	81	85	82	100	101	109	123	122	142	126	1.0%
Carbon intensity: ESCII (CO_2/TPES)	65	101	109	112	100	110	112	114	114	116	115	0.6%
Middle East												
CO_2 emissions	18	29	57	82	100	139	164	214	278	309	322	5.0%
Population	51	58	69	85	100	113	127	142	162	173	176	2.4%
GDP per population (GDP per capita)	114	139	130	105	100	101	112	127	144	149	150	1.7%
Energy intensity (TPES/GDP)	35	36	60	90	100	127	117	123	127	125	129	1.1%
Carbon intensity: ESCII (CO_2/TPES)	88	100	105	102	100	96	98	97	94	96	94	-0.2%
G7												
CO_2 emissions	91	93	98	94	100	103	111	113	106	103	102	0.1%
Population	88	91	94	97	100	104	107	110	113	115	116	0.6%
GDP per population (GDP per capita)	62	67	77	87	100	107	120	129	129	133	134	1.2%
Energy intensity (TPES/GDP)	146	137	126	110	100	97	90	83	77	72	70	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	114	111	106	102	100	96	96	95	93	94	93	-0.3%
G8												
CO_2 emissions	..	..	..	..	100	97	102	104	98	97	95	-0.2%
Population	..	..	..	..	100	103	105	108	110	112	112	0.5%
GDP per population (GDP per capita)	..	..	..	..	100	102	115	126	129	133	135	1.3%
Energy intensity (TPES/GDP)	..	..	..	..	100	96	87	80	75	70	68	-1.6%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	96	96	95	93	93	92	-0.4%
G20												
CO_2 emissions	..	..	..	..	100	106	114	132	148	157	158	1.9%
Population	..	..	..	..	100	106	113	118	123	126	127	1.0%
GDP per population (GDP per capita)	..	..	..	..	100	105	119	136	154	166	171	2.3%
Energy intensity (TPES/GDP)	..	..	..	..	100	94	85	81	76	72	70	-1.5%
Carbon intensity: ESCII (CO_2/TPES)	..	..	..	..	100	100	100	102	102	103	103	0.1%

1. For methodological notes, please see the chapter *Indicator sources and methods.*
2. Average annual percentage change between the reference year and 2014. The reference year is 1990 unless otherwise specified.

6. INDICATOR SOURCES AND METHODS

CO_2 emissions

The estimates of CO_2 emissions in this publication are based on the *2006 IPCC Guidelines* and represent the total emissions from fuel combustion. This is in contrast to estimates presented prior to the 2015 edition of this publication which were based on the *Revised 1996 IPCC Guidelines.* For details on the impact of this change in methodologies see the chapter *IEA estimates: Changes under the 2006 IPCC Guidelines.*

National totals do not include emissions from international marine and aviation bunkers. See the Country Notes in the chapter *Understanding the IEA CO_2 emissions estimates* for further details.

Population

The main source of the 1970 to 2014 population data for the OECD member countries is the *OECD National Accounts Statistics* database [ISSN: 2074-3947 (online)], last published in book format as *National Accounts of OECD Countries, Volume 2015, Issue 1: Main Aggregates*, OECD 2015. Data for 1960 to 1969 have been estimated using the growth rates from the population series published in the *OECD Factbook 2015 (online database version).* Growth rates from the *OECD Factbook 2015* were also used to estimate data for **Chile** (before 1986), **Estonia** (prior to 1993), **Israel** (prior to 1995), the **Slovak Republic** (prior to 1990) and **Slovenia** (prior to 1995).

The main source of the population data for the OECD non-member countries is *World Development Indicators*, World Bank, Washington D.C., 2016. Population data for **Former Soviet Union** (before 1990), **Chinese Taipei, Former Yugoslavia** (before 1990) and for a few countries within the regions[1] **Other Africa**, **Other Non-OECD Americas** and **Other Asia** are based on the CHELEM-CEPII online database, Bureau van Dijk, Paris, 2016. Population data for **Cyprus**[2] are taken from the Eurostat online database. Population data for **Gibraltar** are taken from the Ministry of Gibraltar *Key Indicators* publication available online.

GDP and GDP PPP

For OECD countries, the main source of the 1970 to 2014 GDP series for the is the OECD *National Accounts Statistics* database [ISSN: 2074-3947 (online)], last published in book format as *National Accounts of OECD Countries, Volume 2015, Issue 2: Main Aggregates*, OECD 2015. GDP data for **Australia**, **France**, **Greece, Korea, Sweden** and the **United Kingdom** for 1960 to 1969, and **Denmark** for 1966 to 1969, as well as the **Netherlands** for 1969 were taken from the same source. GDP data for 1960 to 1969 for the other OECD countries have been estimated using the growth rates from the series in the *OECD Economic Outlook No. 98* and other data previously published by the OECD. Growth rates from these sources were also used to estimate data for the **Czech Republic** (prior to 1990), **Hungary** (prior to 1991), **Poland** (prior to 1990) and the **Slovak Republic** (prior to 1992). All data for **Chile** (prior to 1986) and **Estonia** (prior to 1992) are IEA Secretariat estimates based on GDP growth rates from the World Bank.

1. Due to lack of complete time series for Other Non-OECD Americas, figures for GDP do not include British Virgin Islands, Cayman Islands, Falkland Islands (Malvinas), Martinique, Montserrat, Saint Pierre and Miquelon, and Turks and Caicos Islands. Figures for population do not include British Virgin Islands, Falkland Islands (Malvinas), Martinique, and Saint Pierre and Miquelon. Figures for population and GDP of Other Asia do not include Cook Islands.

2. Please refer to the chapter *Geographical coverage*.

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 2010 and then converted to US dollars using the yearly average 2010 exchange rates or purchasing power parities (PPPs).[1]

For the OECD member countries, the PPPs selected to convert the GDP from national currencies to US dollars were aggregated using the Èltetö, Köves and Szulc (EKS) Eurostat-OECD method and rebased on the United States. For a more detailed description of the methodology please see *OECD-Eurostat Methodological Manual on Purchasing Power Parities*, 2012 edition, European Union / OECD, 2012.

The main source of the GDP series for the non-OECD member countries is *World Development Indicators*, World Bank, Washington D.C., 2016.

GDP figures for **Angola**, **Cuba**, **Democratic People's Republic of Korea, Eritrea**, **Gibraltar**, **Kuwait, Myanmar, Oman, Serbia**, **Former Soviet Union** (before 1990), **Syrian Arab Republic** (after 2007), **Chinese Taipei**, **Former Yugoslavia** (before 1990) and a few countries within the regions[1] **Other Africa**, **Other Non-OECD Americas** and **Other Asia** are based on the CHELEM-CEPII online database, Bureau van Dijk, Paris, 2016. For **Curaçao**, GDP figures are based on historical CHELEM-CEPII GDP data for Netherlands Antilles before the country's dissolution, and on Curaçao/Sint Maarten nominal GDP ratios calculated based on information received from Curaçao Central bank. For **South Sudan**, GDP figures are based on data from the International Monetary Fund

The GDP data have been compiled for all individual countries at market prices in 2006 US dollars , and scaled to the price levels of 2010 using current US dollars.

The main source of the GDP PPP data for the non-OECD member countries is *World Development Indicators*, The World Bank, Washington, D.C., 2015. However, this source is only available for GDP PPP (constant 2011 US dollars scaled to the levels of 2010 using current PPP US dollars) from 1980. Therefore, prior to 1980, GDP PPP data have been calculated based on the PPP conversion factor (GDP) to market exchange rate ratio.

GDP PPP figures for **Angola**, **Argentina**, **Cuba**, **Democratic People's Republic of Korea**, **Eritrea**, **Gibraltar**, **Jamaica**, **Kosovo**, **Libya**, **Malta**, **Myanmar**, **Serbia, Former Soviet Union** (before 1990), **Syrian Arab Republic**, **Chinese Taipei**, **Yemen**, **Former Yugoslavia** (before 1990), **Zimbabwe** and a few countries within the regions[1] **Other Africa**, **Other Non-OECD Americas** and **Other Asia** are based on the PPP conversion factor (GDP) to market exchange rate ratio.

For **Gibraltar**, GDP PPP figures are based on historical CHELEM-CEPII GDP PPP data and Ministry of Gibraltar national accounts.

For **Curaçao**, GDP PPP figures are based on historical CHELEM-CEPII GDP data for Netherlands Antilles before its dissolving, and for 2012-2014 GDP PPP is calculated based on historical GDP PPP / GDP ratio.

For **South Sudan**, GDP PPP figures are based on International Monetary Fund data.

GDP PPP figures for **Bosnia and Herzegovina** (up to 1993) and **Croatia** (up to 1994) have been estimated based on the growth rates of the CHELEM-CEPII online databases, Bureau van Dijk, Paris, 2016. The GDP PPP data have been converted from GDP using purchasing power parity rates. These data have been scaled to the price levels of 2010.

The GDP PPP reflect the changes to purchasing power parity rates based on the 2011 International Comparison Program (ICP), published in 2014. The ICP has worked for six years to better estimate the value of the PPP 'basket of goods' for all countries for which the World Bank calculates GDP PPP. For many countries this value has significantly changed in comparison to previous ICP exercises. This leads to significant revisions to GDP PPP for many countries compared to previous publications.

Please note that the regional totals shown for OECD and other regions were calculated by summing individual countries' GDP data. This calculation yields slightly different results to the GDP totals published by OECD in its national accounts which are derived from chained-linked indices. GDP data from the World Bank have also been summed rather than using chain-linked indices.

1. 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.

Electricity output

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

Both **main activity**[1] **producer** and **autoproducer**[2] **plants** have been included where available.

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

CO_2 / TPES

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

CO_2 / TFC

This ratio is expressed in tonnes of CO_2 per terajoule. It has been calculated using the CO_2 fuel combustion emissions and total final consumption (including biofuels and other non-fossil forms of energy).

CO_2 / GDP

This ratio is expressed in kilogrammes of CO_2 per 2010 US dollar. It has been calculated using CO_2 fuel combustion emissions and is shown with both GDP calculated using exchange rates and GDP calculated using purchasing power parities.

1. 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.

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

CO_2 / population

This ratio is expressed in tonnes of CO_2 per capita. It has been calculated using CO_2 fuel combustion 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.

Key categories

It is good practice for each inventory agency to identify its national key source categories in a systematic and objective manner, by performing a quantitative analysis of the relationships between the level and the trend of each source category's emissions and total national emissions.

In this publication, a **Tier 1 Level Assessment** based on CO_2 emissions from fuel combustion is presented in Table 3 for each country and region for the most recent year of data. The contribution of each category to the total national inventory level is calculated as follows:

Category Level Assessment =
Category Estimate / Total Estimate
$\mathbf{L_x = E_x / E}$

Where:

$\mathbf{L_x}$ is the Level Assessment for category x in the most recent year of data

$\mathbf{E_x}$ is the Category estimate - the CO_2 emissions estimate of category x in in the most recent year of data

E is the Total estimate - the total estimated inventory GHG in the most recent year of data.

The value of the source category Level Assessment is calculated separately for each category, and the cumulative sum of all the entries is calculated.

Macroeconomic drivers of CO_2 emissions trends

Tables and graphs for drivers refer to the decomposition of CO_2 emissions into four driving factors (Kaya identity)[1], which is generally presented in the form:

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

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

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

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

where x and y represent for example two different years.

In this publication, the Kaya decomposition is presented as:

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

where:
CO_2 = CO_2 emissions;
P = population;
GDP^2/P = GDP/population;
$TPES/GDP$[42] = Total Primary Energy Supply per GDP;
$CO_2/TPES$ = CO_2 emissions per unit TPES.

Indices of all terms (1990 = 100 unless otherwise specified) are shown for each country and regional aggregate, both in the Summary tables and in the individual country/region pages (Table 1, Key indicators, and Figure 6, CO_2 emissions and drivers). Note that in its index form, CO_2/TPES corresponds to the Energy Sector Carbon Intensity Index (ESCII)[3].

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

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

Drivers of electricity generation emissions trends

In this edition, new graphs present the change in CO_2 emissions from electricity generation over time decomposed into the respective changes of four driving factors[4]:

CO_2 emissions from electricity generation
$C = (C/E)\ (E/ELF)\ (ELF/EL)\ (EL)$

where:
C = CO_2 emissions;
E = fossil fuel inputs to thermal generation;
ELF = electricity output from fossil fuels;
EL = total electricity output;

1. Yamaji, K., Matsuhashi, R., Nagata, Y. Kaya, Y., *An integrated system for CO_2/Energy/GNP analysis: case studies on economic measures for CO_2 reduction in Japan*. Workshop on CO_2 reduction and removal: measures for the next century, March 19, 1991, International Institute for Applied Systems Analysis, Laxenburg, Austria.
2. GDP based on purchasing power parities (PPP).
3. See the IEA publication Tracking Clean Energy Progress 2016.
4. M. Zhang, X. Liu, W. Wang, M. Zhou. *Decomposition analysis of CO2 emissions from electricity generation in China.* Energy Policy, 52 (2013), pp. 159–165.

This can be rewritten as:

CO_2 emissions from electricity generation
C = (CF) (EI) (EFS) (EL)

where:

C = CO_2 emissions;
CF = carbon intensity of the fossil fuel mix;
EI = the reciprocal of fossil fuel based electricity generation efficiency;
EFS = share of electricity from fossil fuels;
EL = total electricity output.

This decomposition expresses, for a given time, CO_2 emissions from electricity generation as the product of the carbon intensity of the fossil fuel mix (CF), the reciprocal of fossil fuel based thermal electricity generation efficiency (1/EF), the share of electricity from fossil fuels (EFS) and total electricity output (EL).

However, due to non-linear interactions between terms, if a simple decomposition is used, the sum of the percentage changes of the four factors, e.g. $(CF_y\text{-}CF_x)/CF_x$ may not perfectly match the percentage change of total CO_2 emissions $(C_y\text{-}C_x)/C_x$. To avoid this, a more complex decomposition method is required. In this case, the logarithmic mean divisia (LMDI) method proposed by Ang (2004)[1] has been used.

Using this method, the change in total CO_2 emissions from electricity generation (ΔC_{TOT})between year *t* and a base year *0*, can be computed as the sum of the changes in each of the individual factors as follows:

$$C_{TOT} = \Delta C_{CF} + \Delta C_{EI} + \Delta C_{EFS} + \Delta C_{EL}$$

where:

$$C_{CF} = L(C^t, C^0) ln\left(\frac{CF^t}{CF^0}\right)$$

$$C_{EI} = L(C^t, C^0) ln\left(\frac{EI^t}{EI^0}\right)$$

$$C_{EFS} = L(C^t, C^0) ln\left(\frac{EFS^t}{EFS^0}\right)$$

$$C_{EL} = L(C^t, C^0) ln\left(\frac{EL^t}{EL^0}\right)$$

and:

$$L(x, y) = (y - x)/(ln\, y - ln\, x)$$

This decomposition can be useful when analysing the trends in CO_2 emissions from electricity generation. For instance, it shows that globally, since 1990, the main driver of increased CO_2 emissions from electricity generation has been increased electricity output, with improvements in the overall thermal efficiency, and the CO_2 intensity of the electricity generation mix being offset by an increase in the share of electricity derived from fossil fuel sources.

However, as is the case with the Kaya decomposition, it should be noted that the four terms on the right-hand side of equation should be considered neither as fundamental driving forces in themselves, nor as generally independent from each other. For instance, substituting coal with gas as a source of electricity generation would likely affect both the CO_2 intensity of the electricity generation mix and the thermal efficiency of generation.

CO_2 emissions per kWh

The indicator: definition

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

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

- Coal includes primary and secondary coal, and coal gases. Peat and oil shale have also been aggregated with coal, where applicable.
- Oil includes oil products (and crude oil for some countries).
- Gas represents natural gas.

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

Methodological choices: electricity-only versus combined electricity and heat

In previous editions of this publication, the IEA had published a combined electricity and heat CO_2 emissions per kWh indicator. The indicator was useful as an overall carbon intensity measure of a country's electricity and heat generating sectors, and it was easy to calculate. However, there were a number of drawbacks. As the efficiency of heat generation is almost always higher than electricity generation, countries

1. B. W. Ang, Decomposition analysis for policymaking in energy: which is the preferred method?, Energy Policy, 32 (9) (2004), pp. 1131–1139.

with large amounts of district heating (generally colder countries) tended to have a higher efficiency (therefore lower CO_2 intensity) than warmer countries with less district heating. Further, the applications of a combined indicator for electricity and heat are limited; many users have been searching for an electricity-only CO_2 emissions per kWh indicator.

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

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

Electricity-only indicator: allocation of emissions from CHP plants

To allocate the CHP input to electricity and heat separately, the simplest method would be a **proportionality approach,** allocating inputs based on the proportion of electricity and heat in the output, also used by the IEA electricity questionnaire. This is equivalent to fixing the efficiency of electricity and

Fixed-heat-efficiency approach

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

where:

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

and:

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

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

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

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

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

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

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

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

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

CHPinputs = energy inputs to CHP plants in ktoe

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

heat to be equal. With the advantage of simplicity and transparency, the proportionality approach however tends to overstate electricity efficiency and to understate heat efficiency. For example, for CHP generation in OECD countries, total efficiency is around 60%. However, total electricity-only plant efficiency is around 41% in OECD countries. Similarly, 60% is quite low for heat generation (given typical heat-only plant efficiencies of 80-95%).

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

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

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

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

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

Comparison between electricity-only and combined electricity and heat ratios

For the majority of OECD countries, the electricity-only indicator is not significantly different from the combined electricity and heat indicator, shown in previous editions of this publication and in the online database. For the OECD total in 2014, the electricity-only indicator is 4% higher, while 19 of the OECD's 34 countries saw a difference of 5% or less. Of the 15 countries with differences of more than 5%,

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

Average implied carbon emission factors from electricity generation by product are presented below, for selected products.

The values below represent the average amount of CO_2 per kWh of electricity produced in OECD member countries between 2010 and 2014. As they are very sensitive to the quality of underlying data, including net calorific values, and of reported input/output efficiencies, they should be taken as indicative; actual values may vary considerably.

Product	**gCO_2 / kWh**
Anthracite*	875
Coking coal*	820
Other bituminous coal	870
Sub-bituminous coal	940
Lignite	1030
Gas works gas*	335
Coke oven gas*	390
Blast furnace gas*	2425
Other recovered gases*	1590
Oil shale*	1155
Peat*	765
Natural gas	405
Crude oil*	590
Refinery gas*	450
Liquefied petroleum gases*	525
Kerosene*	625
Gas/diesel oil*	715
Fuel oil	670
Petroleum coke*	930
Municipal waste (non-renew.)*	1200

* The electricity output from these products represents less than 1% of electricity output in the average of OECD member countries for the years 2010-2014. Values will be less reliable and should be used with caution.

7 countries had large amounts of non-emitting electricity generation, giving them a small ratio to begin with (thus more prone to change). In addition, non-emitting generation is generally electricity-only, and so when the heat-only and heat CHP emissions are removed from the calculation, greater weight is attached to the non-emitting generation, with a lower level for the final indicator.

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

Specific country examples

The country with the largest difference between the two ratios within the OECD was **Sweden**; in 2014, the electricity only indicator was 64% lower than the combined electricity and heat indicator. This is due to the high share of non-emitting sources such as hydro (42%) and nuclear (also 42%) in Sweden's electricity generation mix.

Similarly, the electricity only indicator for **Norway** in 2013 was 36% lower than the combined indicator, as the vast majority of the electricity output (96%) is from non-emitting hydroelectric generation.

Conversely, for **Estonia** in 2014 the electricity-only indicator was 36% higher than the combined electricity and heat indicator. This can be explained by the fact that the majority of electricity-only generation comes from oil shale, a fuel with a relatively high carbon emission factor, while heat plants (with a relatively large share of output) are largely fuelled by natural gas and primary solid biofuels.

Another OECD country with a higher electricity-only ratio was **Denmark** (25% higher in 2014). The majority of fossil generation in Denmark is from CHP and the output from these plants is approximately half electricity and half heat. In addition, CHP plants in Denmark have efficiencies of 60-70%. When the heat part of CHP is set to be 90%, the efficiency of the electricity generation is lowered and the indicator is increased.

In many non-member countries, heat data are either zero or not available, which leads to changes of less than 1% in almost 80% of the non-member countries in 2013. The majority of countries which do change are the European and former Soviet Union countries (where district heating is often present).

As **China** has no (reported) CHP generation, the current IEA energy balance shows electricity-only and heat-only plants, not CHP plants. Heat-only plants are in general much more efficient per unit of energy than electricity-only plants and this explains why the electricity-only ratio is 4% higher in 2014.

In the **Russian Federation**, a large amount (25-35% of total power output) comes from heat-only plants, whose relatively efficient generation is excluded from the new ratio. The large amount of heat output generated by CHP plants also explains why the electricity-only ratio is 19% higher in 2014.

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

7. IEA ESTIMATES: CHANGES UNDER THE 2006 IPCC GUIDELINES

The 2006 IPCC Guidelines methodology: key concepts

This section briefly presents the Tier 1 methodology to estimate CO_2 emissions from fuel combustion based on the *2006 GLs*, outlining the main differences with the *1996 GLs* - used for previous editions of this publication. The focus is on the key points relevant to the IEA estimation. For the complete methodology, the reader should refer to the full IPCC documents.[1]

Generally, the Tier 1 estimation of CO_2 emissions from fuel combustion for a given fuel can be summarised as follows:

CO_2 emissions from fuel combustion
CO_2 = AD * NCV * CC * COF

where:

CO_2 = CO_2 emissions from fuel combustion;
AD = Activity data;
NCV = Net calorific value;
CC = Carbon content;
COF = Carbon oxidation factor.

Emissions are then summed over all fuels.

While the basic concept of the calculation - the conservation of carbon - is unchanged, the *2006 GLs* differ from the 1996 *GLs* in the:

- default **net calorific values** by product;
- default **carbon content** by product;
- default carbon oxidation factors;
- treatment of fuels used for **non-energy** purposes;
- **allocation** of fuel combustion emissions across the Energy and IPPU categories.

2006 Guidelines: overview of changes

This section describes the key methodological changes *2006 GLs* for a Tier 1 estimation of CO_2 emissions from fuel combustion, with a short assessment of their impact on results.

Net calorific values

Net calorific values (NCVs) are used to convert the activity data for all the different fuels from "physical" units (e.g. tonnes) to "energy" units (e.g. Joules).

In the *1996 GLs*, country-specific net calorific values were given for primary oil (crude oil and NGL), for primary coal and for a few secondary coal products. These NCVs were based on the average 1990 values of the 1993 edition of the *IEA Energy Balances*.

In the *2006 GLs*, those country-specific NCVs were removed, and one default is provided for each fuel (with upper and lower limits, as done for the carbon content). Large differences were therefore observed for products whose quality varies a lot from country to country, such as primary oil and coal products. Replacing country-specific values with one default value would significantly affect emissions calculations if the default values were used.

1. Both the *1996 GLs* and the *2006 GLs* are available from the IPCC Greenhouse Gas Inventories Programme (*www.ipcc-nggip.iges.or.jp*).

The IEA CO_2 emissions from fuel combustion estimates are based on the IEA energy balances, computed using time-varying country-specific NCVs. Therefore, they are not affected by changes to the default net calorific values of the *2006 GLs*.

Carbon content

Carbon content is the quantity of carbon per unit of energy of a given fuel. Some of the fuel-specific default values for carbon content, called "carbon emission factors" in the *1996 GLs*, were revised in the *2006 GLs*. In addition, values were added for some fuels not directly mentioned in the *1996 GLs*.

As the carbon content may vary considerably for some fuels, the *2006 GLs* introduced ranges of values, *i.e.* providing for each fuel a default value with lower and upper limits. The IEA CO_2 emissions are calculated using the IPCC default values.

A summary of the default carbon content values in the two set of guidelines is shown in Table 1. Relative changes between the 200*6 GLs* and the 199*6 GLs* range between -13.7% (refinery gas) and + 7.3% (blast furnace gas), although for many fuels the variation is minimal, or zero. Such systematic changes are reflected in Tier 1 CO_2 emissions estimates.

Carbon oxidation factors

A small fraction of the carbon contained in fuels entering the combustion process (typically less than 1-2%) is not oxidised. Under the *1996 GLs*, this amount was subtracted from emissions in the calculations by multiplying the calculated carbon content of a fuel by a "fraction of carbon oxidised". The fraction of carbon oxidised had a value of less than 1.0, which had the effect of reducing the emissions estimate. However, in most instances, emissions inventory compilers had no "real" information as to whether this correction was actually applicable.

Therefore, in the *2006 GLs*, it was decided that all carbon is assumed to be emitted by default, unless more specific information is available. Therefore, under the *2006 GLs*, the default carbon oxidation factor is equal to 1 for all fuels.

A summary of the default carbon oxidation factors in the two set of guidelines is shown in Table 2. Relative changes from the *1996 GLs* and the *2006 GLs* are +0.5% for natural gas; +1% for oil, oil products and peat; and +2% for coal. Such changes are reflected in systematic increases in Tier 1 CO_2 emissions estimates.

Table 1. Comparison of default carbon content values*

Kilogrammes / gigajoule

Fuel Type	*1996 Guidelines*	*2006 Guidelines***	Percent Change
Anthracite	26.8	26.8	0.0%
Coking Coal	25.8	25.8	0.0%
Other Bituminous Coal	25.8	25.8	0.0%
Sub-Bituminous Coal	26.2	26.2	0.0%
Lignite	27.6	27.6	0.0%
Patent Fuel	25.8	26.6	+3.1%
Coke oven coke	29.5	29.2	-1.0%
Gas Coke	29.5	29.2	-1.0%
Coal Tar	..	22.0	x
BKB	25.8	26.6	+3.1%
Gas Works Gas	..	12.1	x
Coke Oven Gas	13.0	12.1	-6.9%
Blast Furnace Gas	66.0	70.8	+7.3%
Other recovered gases	..	49.6	x
Peat	28.9	28.9	0.0%
Oil shale	29.1	29.1	0.0%
Natural Gas	15.3	15.3	0.0%
Crude Oil	20.0	20.0	0.0%
Natural Gas Liquids	17.2	17.5	+1.7%
Refinery Feedstocks	20.0	20.0	0.0%
Orimulsion	22.0	21.0	-4.5%
Refinery Gas	18.2	15.7	-13.7%
Ethane	16.8	16.8	0.0%
Liquefied petroleum gases (LPG)	17.2	17.2	0.0%
Motor Gasoline excl. bio	18.9	18.9	0.0%
Aviation Gasoline		19.1	+1.1%
Gasoline type jet fuel		19.1	+1.1%
Kerosene type jet fuel excl. bio	19.5	19.5	0.0%
Other Kerosene	19.6	19.6	0.0%
Gas/Diesel Oil excl. bio	20.2	20.2	0.0%
Fuel Oil	21.1	21.1	0.0%
Naphtha	20.0	20.0	0.0%
Lubricants	20.0	20.0	0.0%
Bitumen	22.0	22.0	0.0%
Petroleum Coke	27.5	26.6	-3.3%
Non-specified oil products	20.0	20.0	0.0%
Other hydrocarbons			
White Spirit & SBP		20.0	0.0%
Paraffin Waxes		20.0	0.0%
Industrial Waste	..	39.0	x
Municipal Waste (non-renewable)	..	25.0	x

* "Carbon content" was referred to as the "carbon emission factor" in the *1996 GLs*.

** The *2006 GLs* also give the lower and upper limits of the 95 percent confidence intervals, assuming lognormal distributions.

Table 2. Comparison of default carbon oxidation factors*

Fuel Type	*1996 Guidelines*	*2006 Guidelines***	Percent Change
Coal	0.980	1.00	+2.0%
Oil and oil products	0.990	1.00	+1.0%
Natural gas	0.995	1.00	+0.5%
Peat **	0.990	1.00	+1.0%

* "Carbon oxidation factor" was referred to as "fraction of carbon oxidised" in the 1996 GLs.

** The 1996 GLs specified a carbon oxidation factor for peat used for electricity generation only.

Treatment of fuels used for non-energy purposes

Many hydrocarbons are used for non-energy purposes e.g. petrochemical feedstocks, lubricants, solvents, and bitumen. In some of these cases, the carbon in the fuel is quickly oxidised to CO_2, in other cases, it is stored (or sequestered) in the product, sometimes for as long as centuries.

In the *1996 IPCC GLs*, Tier 1 Sectoral Approach emissions included emissions from fuels used for non-energy purposes. The share of carbon assumed to be stored (not emitted) was estimated based on default "fractions of carbon stored" (shown for reference in Table 3).

Table 3. Fraction of carbon stored in the *1996 GLs*

Fuel Type	*1996 Guidelines*
Naphtha*	0.8
Lubricants	0.5
Bitumen	1.0
Coal Oils and Tars (from coking coal)	0.75
Natural Gas*	0.33
Gas/Diesel Oil*	0.5
LPG*	0.8
Ethane*	0.8
Other fuels for non-energy use	To be specified

* When used as feedstocks.

Note: this table is included only for reference. CO_2 emissions from fuel combustion in this publication do not include emissions from non-energy use of fuels.

In the *2006 GLs*, all deliveries for non-energy purposes are excluded. Numerically, excluding all non-energy use of fuel from energy sector emissions calculations is equivalent to applying a fraction of carbon stored equal to 1 to all quantities delivered for non-energy purposes.

In the case of a complete greenhouse gas inventory covering all IPCC Source/Sink categories, any emissions associated with non-energy use of fuels would be accounted in another Source/Sink category. However, as this publication only deals with CO_2 emissions from fuel combustion, emissions associated with non-energy use of fuels are not any longer included in the IEA CO_2 emissions estimates.

Within the IEA estimates, the effect of this change is mainly noticeable for countries whose petrochemical sectors are large in comparison to the size of their economies, e.g. the Netherlands.

Allocation of fuel combustion emissions across the Energy and the IPPU sectors

To avoid possible double counting, the *2006 GLs* state that combustion emissions from fuels obtained directly or indirectly from the feedstock for an Industrial Processes and Product Use (IPPU) process will be allocated to the source category in which the process occurs, unless the derived fuels are transferred for combustion in another source category.

In the case of a complete inventory, this reallocation would not affect total emissions. Still, the effect on individual source categories could be quite significant, especially in countries with large IPPU sectors (e.g. the iron and steel, and non-ferrous metals industries).

To provide continuity with previous editions of this publication and to fully account for fuel combustion emissions, the IEA CO_2 emissions from fuel combustion include all emissions from fuel combustion, irrespective of the category of reporting (Energy or IPPU) under the *2006 GLs.*

To ensure comparability with submissions from Parties, an additional online database provides a summary of CO_2 emissions calculated according to the IPCC Reference and Sectoral Approaches, and a breakdown of the fuel combustion emissions which would be reallocated to IPPU under the *2006 GLs*.[1]

Assessing the overall impact of methodological changes on IEA estimates

Table 4 shows IEA estimates of total CO_2 emissions from fuel combustion for OECD countries, for the most recent year of available data (2014). Emissions are calculated using: i) the *1996 GLs* Sectoral Approach, methodology as in previous publications, and ii) the *2006 GLs*[2] - which correspond to the data published in this edition.

1. Note that the data available to the IEA do not allow assessing whether fuels derived from IPPU processes are transferred for combustion in another source category.

2. Including the emissions which may be reallocated from Energy to IPPU under the *2006 GLs*.

The overall impact of the change in methodology on the IEA estimates of CO_2 emissions from fuel combustion varies from country to country, mainly depending on the underlying fuel mix and on the relative importance of non-energy use of fuels in the total.

Most countries show a decrease in CO_2 emissions levels under the new methodology, as the reductions due to the removal of non-energy use emissions are generally larger than the systematic increase due to changes in the oxidation factor.

For the year 2014, reductions of 1% or greater are observed for sixty-five countries, with thirteen showing a decrease of 5% or more. The largest relative decreases are observed in countries with high non-energy use of fuels (mainly oil products and natural gas) relative to their total energy consumption: Trinidad and Tobago (-39%), Gibraltar (-17%), Lithuania (-14%), and Singapore, the Netherlands, Belarus and Brunei Darussalam (all -11%). As emissions from non-energy use of fuels are not included in energy sector emissions under the 2006 GLs, emissions previously attributed to non-energy use of oil products and natural gas are no longer included in IEA CO_2 emissions from fuel combustion estimates for these countries. One country, Curaçao presented a large increase (27%) in 2014. This was due to the inclusion of emissions from reported energy use of bitumen, which had been excluded (considered carbon stored / non-energy use) under the 1996 GLs.

Within the IEA databases, these changes will also be reflected in all indicators derived from CO_2 emissions totals (*e.g.* CO_2/TPES, CO_2/GDP). Impacts on trends should be visible when the relative weight of the non-energy use of fuels changes in time.

However, as mentioned, most of the methodological changes would not have significant impact in the case of a complete inventory covering all IPCC source/sink categories; in particular, the reallocation of emissions between categories would not affect total emissions estimates, nor the overall trends.

Table 4. Comparison of IEA CO_2 emissions estimates (2014)

$MtCO_2$

Country	*1996 GLs CO_2 Sectoral Approach*	*2006 GLs CO_2 Fuel Combustion*	Percent Change
World	**32903.3**	**32381.0**	**-1.6%**
Annex I Parties	**12852.2**	**12628.4**	**-2%**
Non-Annex I Parties	**18932.1**	**18622.2**	**-2%**
OECD			
Australia	375.2	373.8	-0.4%
Austria	60.8	60.8	0.0%
Belgium	95.0	87.4	-8.0%
Canada	574.6	554.8	-3.4%
Chile	76.4	75.8	-0.8%
Czech Republic	98.4	96.6	-1.8%
Denmark	34.7	34.5	-0.6%
Estonia	17.5	17.5	0.0%
Finland	46.4	45.3	-2.4%
France	295.8	285.7	-3.4%
Germany	734.6	723.3	-1.5%
Greece	66.4	65.9	-0.8%
Hungary	41.3	40.3	-2.4%
Iceland	2.0	2.0	0.0%
Ireland	33.7	33.9	0.6%
Israel	66.3	64.7	-2.4%
Italy	325.7	319.7	-1.8%
Japan	1193.3	1188.6	-0.4%
Korea	589.5	567.8	-3.7%
Luxembourg	9.2	9.2	0.0%
Mexico	432.1	430.9	-0.3%
Netherlands	166.6	148.3	-11.0%
New Zealand	33.2	31.2	-6.0%
Norway	36.9	35.3	-4.3%
Poland	281.3	279.0	-0.8%
Portugal	43.2	42.8	-0.9%
Slovak Republic	29.9	29.3	-2.0%
Slovenia	12.6	12.8	1.6%
Spain	234.8	232.0	-1.2%
Sweden	38.7	37.4	-3.4%
Switzerland	37.7	37.7	0.0%
Turkey	304.8	307.1	0.8%
United Kingdom	409.0	407.8	-0.3%
United States	5235.9	5176.2	-1.1%
OECD Total	**12033.5**	**11855.6**	**-1.5%**

Country	*1996 GLs CO_2 Sectoral Approach*	*2006 GLs CO_2 Fuel Combustion*	Percent Change
Non-OECD Europe and Eurasia			
Albania	4.3	4.1	-4.7%
Armenia	5.2	5.2	0.0%
Azerbaijan	31.3	30.8	-1.6%
Belarus	64.3	57.4	-10.7%
Bosnia and Herzegovina	21.2	21.6	1.9%
Albania	42.2	42.1	-0.2%
Croatia	15.8	15.1	-4.4%
Cyprus[1]	5.7	5.8	1.8%
Georgia	8.0	7.7	-3.8%
Gibraltar	0.6	0.5	-16.7%
Kazakhstan	220.3	223.7	1.5%
Kosovo	7.3	7.4	1.4%
Kyrgyzstan	8.3	8.4	1.2%
Latvia	6.7	6.7	0.0%
Lithuania	12.0	10.3	-14.2%
FYR of Macedonia	7.3	7.4	1.4%
Malta	2.3	2.3	0.0%
Republic of Moldova	7.2	7.2	0.0%
Montenegro	2.2	2.2	0.0%
Romania	69.0	68.2	-1.2%
Russian Federation	1525.3	1467.6	-3.8%
Serbia	37.9	38.1	0.5%
Tajikistan	4.6	4.7	2.2%
Turkmenistan	66.6	67.0	0.6%
Ukraine	239.6	236.5	-1.3%
Uzbekistan	101.0	97.9	-3.1%
Non-OECD Europe and Eurasia	**2516.4**	**2446.1**	**-2.8%**

1. Please refer to the chapter *Geographical coverage.*

Table 4. Comparison of IEA CO_2 emissions estimates for Non-OECD Countries (2014)

$MtCO_2$

Country	*1996 GLs CO_2 Sectoral Approach*	*2006 GLs CO_2 Fuel Combustion*	Percent Change
Africa			
Algeria	126.4	122.9	-2.8%
Angola	19.5	19.3	-1.0%
Benin	5.7	5.7	0.0%
Botswana	6.8	6.9	1.5%
Cameroon	6.0	6.0	0.0%
Congo	2.7	2.6	-3.7%
Cote d'Ivoire	4.6	4.7	2.2%
Dem. Rep. of Congo	9.3	9.4	1.1%
Egypt	181.1	173.3	-4.3%
Eritrea	0.6	0.6	0.0%
Ethiopia	9.2	9.1	-1.1%
Gabon	3.5	3.5	0.0%
Ghana	13.3	13.1	-1.5%
Kenya	12.3	12.4	0.8%
Libya	48.1	47.9	-0.4%
Mauritius	3.9	4.0	2.6%
Morocco	53.0	53.1	0.2%
Mozambique	3.8	3.9	2.6%
Namibia	3.6	3.6	0.0%
Niger	2.0	2.0	0.0%
Nigeria	61.9	60.2	-2.7%
Senegal	6.4	6.3	-1.6%
South Africa	442.3	437.4	-1.1%
South Sudan	13.9	13.3	-4.3%
Sudan	1.5	1.5	0.0%
United Rep. of Tanzania	10.4	10.4	0.0%
Togo	1.7	1.7	0.0%
Tunisia	25.0	25.0	0.0%
Zambia	3.3	3.2	-3.0%
Zimbabwe	11.4	11.5	0.9%
Other Africa	32.3	31.0	-4.0%
Africa	**1125.6**	**1105.3**	**-1.8%**
Asia (excl. China)			
Bangladesh	63.9	62.3	-2.5%
Brunei Darussalam	7.5	6.7	-10.7%
Cambodia	6.0	6.1	1.7%
DPR of Korea	37.0	37.8	2.2%
India	2038.9	2019.7	-0.9%
Indonesia	442.3	436.5	-1.3%
Malaysia	227.5	220.5	-3.1%
Mongolia	17.8	18.2	2.2%
Myanmar	19.6	19.6	0.0%
Nepal	5.8	5.9	1.7%
Pakistan	141.0	137.4	-2.6%
Philippines	94.5	95.7	1.3%
Singapore	50.9	45.3	-11.0%
Sri Lanka	16.5	16.7	1.2%
Chinese Taipei	260.9	249.7	-4.3%
Thailand	263.1	243.5	-7.4%
Viet Nam	143.7	143.3	-0.3%
Other Asia	41.7	42.1	1.0%
Asia (excl. China)	**3878.8**	**3807.0**	**-1.9%**

Country	*1996 GLs CO_2 Sectoral Approach*	*2006 GLs CO_2 Fuel Combustion*	Percent Change
China			
People's Republic of China	9199.1	9087.0	-1.2%
Hong Kong (China)	47.3	47.9	1.3%
China (incl. Hong Kong)	**9246.4**	**9134.9**	**-1.2%**
Non-OECD Americas			
Argentina	195.3	192.4	-1.5%
Bolivia	18.2	18.3	0.5%
Brazil	492.6	476.0	-3.4%
Colombia	73.0	72.5	-0.7%
Costa Rica	7.1	7.2	1.4%
Cuba	29.6	29.4	-0.7%
Curaçao	3.7	4.7	27.0%
Dominican Republic	19.5	19.3	-1.0%
Ecuador	38.7	38.7	0.0%
El Salvador	5.9	5.9	0.0%
Guatemala	16.1	16.1	0.0%
Haiti	2.7	2.8	3.7%
Honduras	8.7	8.7	0.0%
Jamaica	7.1	7.2	1.4%
Nicaragua	4.5	4.5	0.0%
Panama	10.6	10.6	0.0%
Paraguay	5.2	5.2	0.0%
Peru	48.4	47.8	-1.2%
Suriname	2.0	2.0	0.0%
Trinidad and Tobago	38.0	23.2	-38.9%
Uruguay	6.5	6.3	-3.1%
Venezuela	155.5	155.0	-0.3%
Other Non-OECD Americas	19.9	20.1	1.0%
Non-OECD Americas	**1209.0**	**1173.9**	**-2.9%**
Middle East			
Bahrain	31.8	29.7	-6.6%
Islamic Republic of Iran	576.1	556.1	-3.5%
Iraq	140.2	141.0	0.6%
Jordan	23.9	24.1	0.8%
Kuwait	88.4	86.1	-2.6%
Lebanon	22.1	22.4	1.4%
Oman	63.1	59.9	-5.1%
Qatar	82.7	77.6	-6.2%
Saudi Arabia	521.4	506.6	-2.8%
Syrian Arab Republic	28.1	27.6	-1.8%
United Arab Emirates	175.8	175.4	-0.2%
Yemen	21.1	21.3	0.9%
Middle East	**1774.7**	**1727.8**	**-2.6%**

8. UNITS AND CONVERSIONS

General conversion factors for energy

To:	TJ	Gcal	Mtoe	MBtu	GWh
From:	multiply by:				
terajoule (TJ)	1	$2.388x10^{2}$	$2.388x10^{-5}$	$9.478x10^{2}$	$2.778x10^{-1}$
gigacalorie (Gcal)	$4.187x10^{-3}$	1	$1.000x10^{-7}$	3.968	$1.163x10^{-3}$
million tonnes of oil equivalent (Mtoe)	$4.187x10^{4}$	$1.000x10^{7}$	1	$3.968x10^{7}$	$1.163x10^{4}$
million British thermal units (MBtu)	$1.055x10^{-3}$	$2.520x10^{-1}$	$2.520x10^{-8}$	1	$2.931x10^{-4}$
gigawatt hour (GWh)	3.600	$8.598x10^{2}$	$8.598x10^{-5}$	$3.412x10^{3}$	1

Conversion factors for mass

To:	kg	t	lt	st	lb
From:	multiply by:				
kilogramme (kg)	1	$1.000x10^{-3}$	$9.842x10^{-4}$	$1.102x10^{-3}$	2.205
tonne (t)	$1.000x10^{3}$	1	$9.842x10^{-1}$	1.102	$2.205x10^{3}$
long ton (lt)	$1.016x10^{3}$	1.016	1	1.120	$2.240x10^{3}$
short ton (st)	$9.072x10^{2}$	$9.072x10^{-1}$	$8.929x10^{-1}$	1	$2.000x10^{3}$
pound (lb)	$4.536x10^{-1}$	$4.536x10^{-4}$	$4.464x10^{-4}$	$5.000x10^{-4}$	1

Conversion factors for volume

To:	gal U.S.	gal U.K.	bbl	ft^3	l	m^3
From:	multiply by:					
U.S. gallon (gal U.S.)	1	$8.327x10^{-1}$	$2.381x10^{-2}$	$1.337x10^{-1}$	3.785	$3.785x10^{-3}$
U.K. gallon (gal U.K.)	1.201	1	$2.859x10^{-2}$	$1.605x10^{-1}$	4.546	$4.546x10^{-3}$
barrel (bbl)	$4.200x10^{1}$	$3.497x10^{1}$	1	5.615	$1.590x10^{2}$	$1.590x10^{-1}$
cubic foot (ft^3)	7.481	6.229	$1.781x10^{-1}$	1	$2.832x10^{1}$	$2.832x10^{-2}$
litre (l)	$2.642x10^{-1}$	$2.200x10^{-1}$	$6.290x10^{-3}$	$3.531x10^{-2}$	1	$1.000x10^{-3}$
cubic metre (m^3)	$2.642x10^{2}$	$2.200x10^{2}$	6.290	$3.531x10^{1}$	$1.000x10^{3}$	1

Decimal prefixes

10^{1}	deca (da)	10^{-1}	deci (d)
10^{2}	hecto (h)	10^{-2}	centi (c)
10^{3}	kilo (k)	10^{-3}	milli (m)
10^{6}	mega (M)	10^{-6}	micro (μ)
10^{9}	giga (G)	10^{-9}	nano (n)
10^{12}	tera (T)	10^{-12}	pico (p)
10^{15}	peta (P)	10^{-15}	femto (f)
10^{18}	exa (E)	10^{-18}	atto (a)

Tonne of CO_2

The *2006 GLs* and the UNFCCC *Reporting Guidelines on Annual Inventories* both ask that CO_2 emissions be reported in Gg (gigagrammes) 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, multiply the IEA emissions by 1 000.

Other organisations may present CO_2 emissions in tonnes of carbon instead of tonnes of CO_2. To convert from tonnes of carbon, multiply by 44/12, which is the molecular weight ratio of CO_2 to C.

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

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

Job description

The data managers/statisticians compile, verify and disseminate information on all aspects of energy including production, transformation and consumption of all fuels, energy efficiency indicators, CO_2 emissions, and energy prices and taxes. The data managers are responsible for the production of data sets through receiving, reviewing and inputting data submissions from member countries and other sources. 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. The data managers/statisticians also design and implement computer macros used in the preparation of their energy statistics publication(s) alongside analysis of the data.

Principal qualifications

- University degree in a topic relevant to energy, or statistics. We currently have staff with degrees in Mathematics, Statistics, Information Technology, Economics, Engineering, Physics, Environmental Studies, etc.
- Experience in the basic use of databases and computer software. Experience in Visual Basic is an advantage.
- 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. Ability to understand, and communicate data.
- Very good knowledge of one of the two official languages of the Organisation (English or French). Knowledge of other languages would be an advantage.
- Some knowledge of energy industry operations and terminology would also be an advantage, but is not required.

Nationals of any OECD member country are eligible for appointment. Basic salaries start at 3 284 euros per month. The possibilities for advancement are good for candidates with appropriate qualifications and experience. Tentative enquiries about future vacancies are welcomed from men and women with relevant qualifications and experience. Applications in French or English, accompanied by a curriculum vitae, should be sent to:

Office of Management and Administration
International Energy Agency
31-35 rue de la Fédération
75739 Paris Cedex 15, France

Online Data Services

Users can instantly access not only all the data published in this book, but also all the time series used for preparing this publication and all the other statistics publications of the IEA. The data are available online, either through annual subscription or pay-per-view access. More information on this service can be found on our website: *http://data.iea.org*

Eight Annual Publications

■ World Energy Statistics 2016

A new publication from the IEA presenting comprehensive world energy statistics, previously presented in *Energy Statistics of OECD Countries* and E*nergy Statistics of Non-OECD Countries, World Energy Statistics* contains detailed data on all energy sources – coal, gas, oil, electricity, renewables and waste. It covers energy supply and consumption for 150 countries and regions, including all OECD countries, over 100 other key energy producing and consuming countries, as well as world and regional totals. The book includes detailed tables by country in original units for the year 2014, and summary time series on production, trade, and final consumption by sector. It also presents provisional 2015 supply data for OECD countries, and initial 2015 estimates for non-OECD countries' production and trade of natural gas, primary coal and oil.

Published August 2016 - Price €120

■ World Energy Balances 2016

A new release from the IEA presenting comprehensive energy balances for all the world's largest energy producing and consuming countries, *World Energy Balances* is formed by merging *Energy Balances of OECD Countries* and *Energy Balances of Non-OECD Countries*, previously published separately. The volume contains detailed data on the supply and consumption of energy for all OECD countries, over 100 other key energy producing and consuming countries, as well as world and regional totals. The book includes graphs and detailed data by country for all energy sources – coal, gas, oil, electricity, renewables and waste - expressed in balance format, for the year 2014. Alongside this, there are summary time series on production, trade, final consumption by sector, as well as key energy and economic indicators. The volume also presents provisional 2015 supply data for OECD countries, and initial 2015 estimates for non-OECD countries' production and trade of natural gas, primary coal and oil.

Published August 2016 - Price €120

Coal Information 2016

Coal Information provides a comprehensive review of historical and current market trends in the world coal sector, including 2015 provisional data. It provides a review of the world coal market in 2015, alongside a statistical overview of developments, which covers world coal production and coal reserves, coal demand by type, coal trade and coal prices. A detailed and comprehensive statistical picture of historical and current coal developments in the 34 OECD member countries, by region and individually is presented in tables and charts. Complete coal balances and coal trade data for selected years are presented on 22 major non-OECD coal-producing and -consuming countries, with summary statistics on coal supply and end-use statistics for about 40 countries and regions worldwide.

Published August 2016 - Price €165

Electricity Information 2016

Electricity Information provides a comprehensive review of historical and current market trends in the OECD electricity sector, including 2015 provisional data. It provides an overview of the world electricity developments in 2014 covering world electricity and heat production, input fuel mix, supply and consumption, and electricity imports and exports. More detail is provided for the 34 OECD countries with information covering production, installed capacity, input energy mix to electricity and heat production, consumption, electricity trades, input fuel prices and end-user electricity prices. It provides comprehensive statistical details on overall energy consumption, economic indicators, electricity and heat production by energy form and plant type, electricity imports and exports, sectoral energy and electricity consumption, as well as prices for electricity and electricity input fuels for each country and regional aggregate.

Published August 2016 - Price €150

Natural Gas Information 2016

Natural Gas Information is a detailed reference work on gas supply and demand covering not only the OECD countries but also the rest of the world; this publication contains essential information on LNG and pipeline trade, gas reserves, storage capacity and prices. The main part of the book concentrates on OECD countries, showing a detailed supply and demand balance for each country and for the three OECD regions: Americas, Asia-Oceania and Europe, as well as a breakdown of gas consumption by end user. Import and export data are reported by source and destination.

Published August 2016 - Price €165

Oil Information 2016

Oil Information is a comprehensive reference book on current developments in oil supply and demand. 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. Its core consists of a 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 2016 - Price €165

■ Renewables Information 2016

Renewables Information provides a comprehensive review of historical and current market trends in OECD countries, including 2015 provisional data. It provides an overview of the development of renewables and waste in the world over the 1990 to 2014 period. A greater focus is given to the OECD countries with a review of electricity generation and capacity from renewable and waste energy sources, including detailed tables. However, an overview of developments in the world and OECD renewable and waste market is also presented. The publication encompasses energy indicators, generating capacity, electricity and heat production from renewable and waste sources, as well as production and consumption of renewables and waste.

Published August 2016 - Price €110

■ CO_2 Emissions from Fuel Combustion 2016

In recognition of the fundamental importance of understanding energy related environmental issues, the IEA's *CO_2 Emissions from Fuel Combustion* provides a full analysis of emissions stemming from energy use. This annual publication has become an essential tool for analysts and policy makers in many international fora such as the Conference of the Parties, which will be meeting in Marrakesh, Morocco, from 7 to 18 November 2016. The data in this book are designed to assist in understanding the evolution of the emissions of CO_2 from 1971 to 2014 for 150 countries and regions by sector and by fuel. Emissions were calculated using IEA energy databases and the default methods and emission factors from the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

Published November 2016 - Price €165

Two Quarterlies

■ Oil, Gas, Coal and Electricity, Quarterly Statistics

This publication provides up-to-date, detailed quarterly statistics on oil, coal, natural gas and electricity for OECD countries. Oil statistics cover production, trade, refinery intake and output, stock changes and consumption for crude oil, NGL and nine selected oil product groups. Statistics for electricity, natural gas and coal show supply and trade. Import and export data are reported by origin and destination. The gas trade data from 1st quarter 2011 onwards corresponds to physical flows (entries/exits). Moreover, oil as well as hard coal and brown coal production are reported on a worldwide basis.

Published Quarterly - Price €120, annual subscription €380

■ Energy Prices and Taxes

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

Published Quarterly - Price €120, annual subscription €380

Electronic Editions

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To complement its publications, the Energy Data Centre produces CD-ROMs containing the complete databases which are used for preparing the statistics publications. Built-in software allows you to access and manipulate all these data in a very user-friendly manner and includes graphic facilities. These databases are also available on the internet from our online data service.

Annual CD-ROMS / Online Databases

- World Energy Statistics 2016 — Price: €800 (single user)
- World Energy Balances 2016 — Price: €800 (single user)
- **World Energy Statistics and Balances 2016** — Price: €1 400 (single user)
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- Coal Information 2016 — Price: €550 (single user)
- Electricity Information 2016 — Price: €550 (single user)
- Natural Gas Information 2016 — Price: €550 (single user)
- Oil Information 2016 — Price: €550 (single user)
- Renewables Information 2016 — Price: €400 (single user)
- CO_2 Emissions from Fuel Combustion 2016 — Price: €550 (single user)

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- Energy Prices and Taxes — Price: (four quarters) €900 (single user)

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Other Online Services

The Monthly Oil Data Service

The IEA *Monthly Oil Data Service* provides the detailed databases of historical and projected information which is used in preparing the IEA's monthly *Oil Market Report* (OMR). The IEA Monthly Oil Data Service comprises three packages available separately or combined as a subscriber service on the Internet. The data are available at the same time as the official release of the Oil Market Report.

The packages include:

- Supply, Demand, Balances and Stocks — Price: €6 150 (single user)
- Trade — Price: €2 050 (single user)
- Field-by-Field Supply — Price: €3 080 (single user)
- **Complete Service** — **Price: €9 200 (single user)**

A description of this service is available on our website: ***www.iea.org/statistics/mods***

The Monthly Gas Data Service

The service provides monthly natural gas data for OECD countries:

- Supply balances in terajoules and cubic metres;
- Production, trade, stock changes and levels where available, gross inland deliveries, own use and losses;
- Highly detailed trade data with about 50 import origins and export destinations;
- LNG trade detail available from January 2002,
- From 2011 onwards, transit volumes are included and trade data corresponds to entries/exits.

The databases cover the time period January 1984 to current month with a time lag of two months for the most recent data.

- Monthly Gas Data Service: Natural Gas Balances & Trade
  Historical plus 12 monthly updates — Price: €800 (single user)

For more information consult: ***www.iea.org/statistics/mgds***

Moreover, the IEA statistics website contains a wealth of free statistics covering oil, natural gas, coal, electricity, renewables, energy-related CO_2 emissions and more for 150 countries and regions and historic data for the last 20 years. It also contains Sankey flows to enable users to explore visually how a country's energy balance shifts over up to 40 years, starting with production and continuing through transformation to see important changes in supply mix or share of consumption. The IEA Energy Atlas offers panoramas on every aspect of energy on a global basis and for 150 individual countries, with interactive maps and customisable charts that detail and compare a host of data based on the Agency's authoritative statistics. The website also includes free headline energy data in excel format for all OECD countries and global regions from 1971 onwards.

The IEA statistics website can be accessed at *www.iea.org/statistics/*


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Typesetted by the IEA, October 2016

In recognition of the fundamental importance of energy related environmental issues, the latest information on CO_2 emissions from fuel combustion – level, growth, source and geographic distribution – will be essential for analysts and policy makers in many international fora. To provide input to and support for the UN Conference of the Parties, which will be meeting in Marrakesh, Morocco, from 7 to 18 November 2016, the IEA is making available for free download the "Highlights" version of its 2016 *CO_2 Emissions from Fuel Combustion* publication.

This annual publication contains graphs and tables for World and the main regional aggregates and, for 150 countries and regions:

- estimates of CO_2 emissions from 1971 to 2014;
- selected indicators such as CO_2/GDP, CO_2/capita and CO_2/TPES;
- decompositions of total emissions and emissions from electricity generation into driving factors.

Emissions were calculated using the 2016 IEA *World Energy Balances* and the default methods and emission factors from the 2006 *IPCC Guidelines for National Greenhouse Gas Inventories*.

2016

statistics