

2024 | 73rd edition

Statistical Review of World Energy

In collaboration with



KEARNEY

The Energy Institute (EI) is the professional membership body for the world of energy. The EI Statistical Review of World Energy™ analyses data on world energy markets from the prior year. It has been providing timely, comprehensive and objective data to the energy community since 1952.



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Foreword

This 73rd Statistical Review of World Energy is the second under the custodianship of the Energy Institute (EI).

Energy has always been and remains central to human achievement and progress. It is also, increasingly, central to our very survival. With global temperature increases averaging close to 1.5°C, 2023 was the warmest year since records began, and the increasingly severe impacts of climate change were felt across all continents. We also experienced the continuing effects of geopolitical disruption on energy markets, and the economies and livelihoods they support.

As the chartered professional membership body for people working across the world of energy, the Energy Institute is proud to be the home of the Statistical Review of World Energy. Our aim is to provide an objective, independent and comprehensive evidence base for decision makers in governments, businesses and civil society grappling with these profound challenges.

In this second Statistical Review under the Institute’s custodianship, we report on another year of highs in our energy hungry world. Record consumption of fossil fuels and record emissions from energy, but also record generation from renewables, driven by increasingly competitive wind and solar energy.

The progress of the transition is slow, but the big picture masks diverse energy stories playing out across different geographies. This year we provide additional visualisations to bring these contrasts to life – from advanced economies where we see signs of demand for fossil fuels peaking,

The progress of the transition is slow, but the big picture masks diverse energy stories playing out across different geographies

to economies in the Global South for whom economic development and improvements in quality of life continue to drive fossil growth.

This year we also introduce new data sets in areas that will grow in significance over the coming years and decades – in battery storage and battery cells, carbon capture, hydrogen, ammonia, uranium, carbon prices, and additional key minerals and materials. Over the coming months, we’ll be engaging with users on further developments, to ensure the way we measure and analyse energy keeps pace and stays relevant as the transition progresses from high to low carbon, from molecule to electron, from supply-led to demand-led.

We are grateful to our co-authors KPMG and Kearney in this vital endeavour, for the support of S&P Global Commodity Insights and bp, and for the data compilation undertaken by Heriot-Watt University. Together we are able to ensure the Statistical Review remains the respected, go-to source of data for the energy community around the world.

Juliet Davenport OBE HonFEI
President, Energy Institute

Dr Nick Wayth CEng FEI FIMechE
CEO, Energy Institute



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In collaboration with

KPMG

Businesses worldwide rely on independent and authoritative data to inform their energy transition strategies and investment decisions. The Energy Institute’s 2024 Statistical Review of World Energy provides comprehensive insights, which is why KPMG International is proud to collaborate with them on the production of this report.

We saw renewables continuing to scale at pace, with record highs in 2023 and China adding more renewable generation than the rest of the world combined. But fossil fuels grew as well to meet the rising demand for energy globally. As a result, the share of fossil fuels in world energy demand remained stubbornly stuck around the 80% mark.

With record CO₂ emissions as well in 2023, this recent data should serve as a timely reminder for the world to redouble efforts to reduce carbon emissions and reach net zero. In particular, we should do more to provide finance and capacity to support the building of more low-carbon energy sources in the Global South, where demand is growing at a rapid pace.



Simon Virley CB FEI
Vice Chair and Head of Energy and Natural Resources, KPMG in the UK

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Kearney

COP28 and rhetoric from world leaders on the energy transition demonstrates the ambition to reduce the world’s fossil fuel dependency. However, this ambition is futile unless it is matched with drastic and coordinated actions resulting in real and immediate impact on climate change mitigation.

The Statistical Review of World Energy is the perfect opportunity for us to take a step back and examine the reality of our energy usage to understand just how far we must go on this transitional journey. While progress has been made, 2023 was unfortunately another record year for the consumption of fossil fuels and emissions from energy. With global temperature increases closing in on 1.5°C, we are also seeing a real disconnect with the Paris goals and the progress of the transition is too slow.

We hope that this report will help governments, world leaders and analysts around the world move forward, clear-eyed about the challenge that lies ahead, and ready to take a lead in promoting and enabling the use of clean energy across the world.



Dr Romain Debarre
Partner and Managing Director, Energy Transition Institute, Kearney

2023 Key highlights

2023 was a year of production and consumption records across the board with most markets returning to at least their 2019 pre-COVID long-term trends as supply chain issues finally eased.

Oil consumption in particular rebounded strongly, largely on the back of China relaxing its zero-COVID lockdown policies. Although demand for natural gas remained flat, consumption of crude oil broke through the 100 million barrels per day level for the first time ever and coal demand beat the previous year's record level. Consumption of renewable energy grew at six times the rate of total primary energy, and electricity demand grew 25% faster than total primary energy consumption.

Energy developments

- Total primary energy consumption increased by 2% over its 2022 level, 0.6% above its ten-year average and over 5% above its 2019 pre-COVID level.
- Renewables' share of total primary energy consumption reached 14.6%, an increase of 0.4% over the previous year. Together with nuclear, they represented over 18% of total primary energy consumption.
- Fossil fuel consumption as a percentage of primary energy dropped 0.4% to 81.5%.

Carbon emissions

- Greenhouse gas emissions from energy use, industrial processes, flaring and methane (in carbon dioxide equivalent terms) increased 2.1% to exceed the record level set in 2022. For the first time ever, energy-related emissions exceeded the 40 GtCO₂e level, with emissions from the direct use of energy breaching 35 GtCO₂e for the first time ever.
- Carbon dioxide emissions from flaring increased by 7% along with emissions from methane and industrial processes that also increased by over 5%.

Oil

- Although Brent crude oil prices fell 18% to average \$83/bbl in 2023, they were still some 29% above their 2019 pre-COVID levels.
- Global oil production increased by 2.1 million b/d to reach a record level of 96 million b/d in 2023. The US remained the largest producer seeing its output grow by over 8%. Overall production from non-OPEC+ countries exceeded global incremental demand growth by 20%.
- Back in 2022 the combined consumption of oil and biofuel products exceeded 100 million barrels per day for the first time ever. In 2023, consumption of oil products alone exceeded this level.

- Regionally, whilst North America witnessed a modest increase in oil consumption of around 0.8%, demand in Europe fell by nearly 1% to 13.9 million barrels per day. By contrast, the Asia Pacific region saw an increase of over 5% to 38 million barrels per day.
- The ending of China's extended zero-COVID lockdown measures saw demand for gasoline and diesel rebound to 7,179 kbd, 15% above its 2019 pre-COVID levels. Whilst its demand for jet/kerosene grew by 74% in 2023 to 828 kbd, this is still 14% below its 2019 level which was a record year for China.
- China's refining capacity (18,484 kb/d) exceeded the US (18,429 kb/d) for the first time ever making it the largest oil refining market by capacity. However, throughput of refined products from China still lags the US with an overall utilisation of 81.7% versus 86.6%.

Natural gas

- On average natural gas prices in Europe and Asia fell 30% from their record highs recorded in 2022, averaging around \$13/mmBtu. US Henry Hub prices exhibited an even greater fall of 60% to average \$2.5/mmBtu across the year, back to their 2019 pre-COVID level.
- Global gas production remained relatively constant compared to 2022. The US remains the largest producer of gas delivering around a quarter of the world's supply. Output in Europe and the CIS fell by around 7% and 4% respectively. In absolute terms, the Russian Federation saw the largest fall in output with a 5% drop of 32 bcm.
- In 2023 LNG supply grew nearly 2% (10 bcm) to 549 bcm. The US overtook Qatar as the world's largest exporter of LNG, seeing its supply increase nearly 10% versus a 2% drop from Qatar. The Russian Federation saw falls in both its LNG and pipeline exports with LNG dropping nearly 2% (0.8 bcm) and pipeline supplies dropping around 24% (30 bcm).
- Global natural gas demand increased by only 1 bcm in 2023, a rise of only 0.02% and only slightly above its 2019 pre-COVID level. Whilst its share of global fossil fuel consumption remained around the 29% mark, its share of total primary energy consumption fell 0.5% from 2019.
- The global growth in LNG demand was triggered primarily by the Asia Pacific region with China, India, and other non-OECD Asia Pacific countries' demand increasing by 11 bcm, 2.6 bcm, and 7.6 bcm respectively. LNG into both Europe and OECD Asia Pacific countries fell by 3 bcm and 11 bcm respectively.

- China regained its position as the world's largest LNG importing country followed by Japan and South Korea. Together, they accounted for around 45% of global LNG trade.
- Overall natural gas pipeline net trade fell by around 8% (or 35 bcm) in 2023. European pipeline imports fell by 26% (40 bcm), almost entirely attributable to supplies from the Russian Federation which accounted for 91% of the drop.

Coal

- From the record levels recorded in 2022, coal prices fell 46% on average with European delivered prices settling around \$130/tonne and delivered prices in Asia averaging around \$125/tonne.
- Global coal production reached its highest ever level (179 EJ), beating the previous high set the year before. The Asia Pacific region accounted for nearly 80% of global output with activity concentrated in just four countries, Australia, China, India, and Indonesia.
- Global coal consumption continued to increase and breached 164 EJ for the first time ever. The increase of 1.6% over 2022 was seven times higher than the previous ten-year average growth rate.
- Whilst China is by far the largest consumer of coal (it beat its own record set in 2022 and now accounts for 56% of the world's total consumption), in 2023 India exceeded the combined consumption of Europe and North America for the first time ever. Coal consumption in both Europe and North America fell below 10 EJ each and has been in constant decline over the past 10 years.

Electricity

- Global electricity generation increased by 2.5% in 2023 to reach a record level of 29,925 TWh. Whilst electricity demand in Asia Pacific and the Middle East increased by around 5%, demand in both Europe and North America fell by 2.4% and 1% respectively.
- For fossil fuels, coal retained its position as the dominant fuel for power generation in 2023 with a stable share around 35%. Natural gas' share of the generation fleet also remained stable at around 23%. Oil-fired plant contributed just over 2% of total electrical output.
- Renewables share of total power generation rose from 29% to 30%. At a regional level, Southern & Central America recorded the highest contribution from renewables at 72%. In Brazil, responsible for over 40% of electricity demand in the region, wind and solar increased by 17% and 71% respectively.

- The share of nuclear remained flat at around 9% with new build in China and returns to service of plant in France and Japan being offset by the closure of Germany's remaining plant.
- In 2023, grid-scale battery electricity storage system (BESS) capacity stood at 55.7 GW, nearly 50% of which was installed in China.

Wind and Solar

- Solar and wind capacity continued to grow rapidly in 2023 beating the previous year's record of 276 GW by around 186 GW, a 67% increase.
- Solar accounted for 75% (346 GW) of the capacity additions with China responsible for around a quarter of the growth. Europe installed just over 56 GW of solar, representing 16% of total solar capacity additions.
- Wind achieved a record year for new build with over 115 GW coming online. Nearly 66% of capacity additions were in China and its total installed capacity is now equal to North America and Europe combined. Although Europe has the highest share of offshore in its wind portfolio (12%), China has 37 GW compared to Europe's 32 GW.

Biofuels

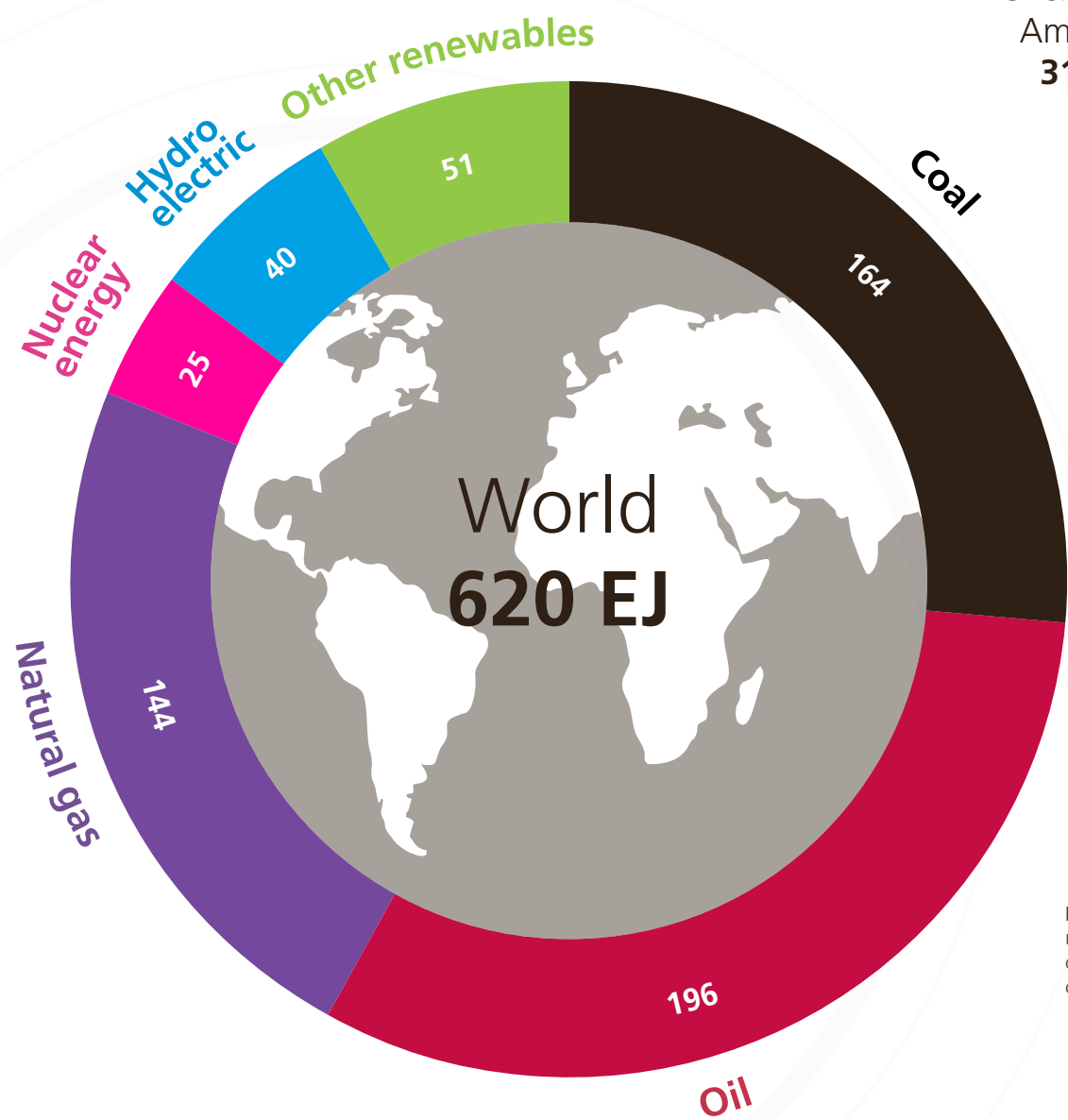
- Global biofuels' production grew by over 8% in 2023 with the biggest increases seen in the US (75 mboe/d) and Brazil (65 mboe/d). Indonesia was responsible for around 46% of Asia Pacific region's production of 422 mboe/d.
- The production split in 2023 was 54% biogasoline and 46% biodiesel.
- The US, Brazil, and Europe were responsible for around three-quarters of all biofuels consumed globally.

Key minerals

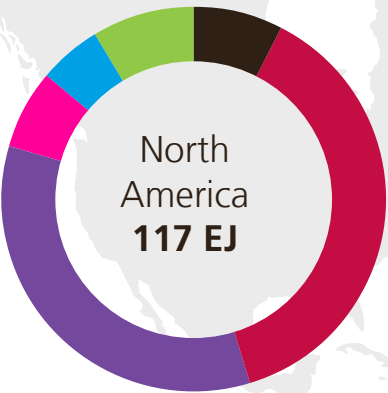
- Across the board, prices for key metals and materials fell by around 26% in 2023. The biggest declines were in cobalt (-47%), pet needle coke (-36%), and lithium carbonate (-32%). Prices for copper and natural graphite fell by only 4% and 15% respectively.
- Africa was responsible for nearly 75% of the world's cobalt production. Within this, the Democratic Republic of Congo was responsible for around 96% (or 56% of the global total).

2023 Regional overview – access to energy and sustainability

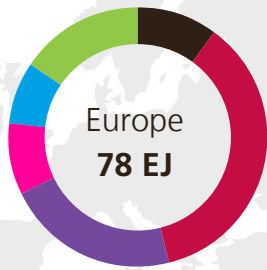
Global primary energy consumption reached a new record for the second consecutive year with non-OECD countries dominating both the share and annual growth rates. Fossil fuels continue to underpin their development accounting for 84% of their energy mix.



Note: primary energy resources in the charts are ordered according to their carbon intensity.



S. & Cent. America
31 EJ



Middle East
40 EJ



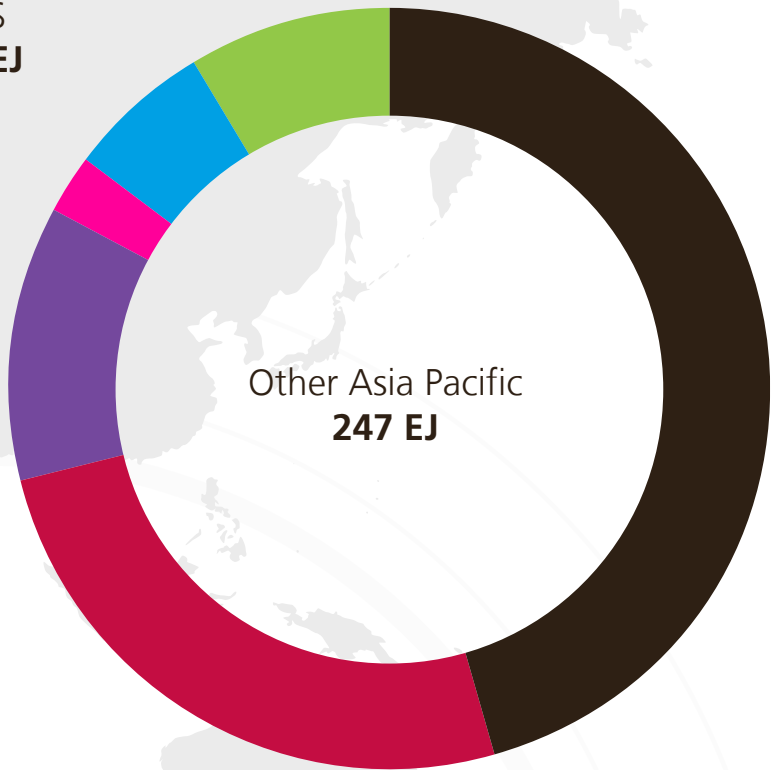
South Asia
45 EJ



Africa
21 EJ



CIS
41 EJ



Other Asia Pacific
247 EJ

The contrasts between the northern and southern hemispheres is quite stark. Consumption of primary energy in the Global South first exceeded that of the Global North in 2014. In 2023 it accounted for 56% of total energy consumed and grew at twice the global average rate of 2%. The Asia Pacific region was responsible for 85% of the Global South's demand (and 47% of global demand) where the economies of China, India, Indonesia, Japan and South Korea dominated. Whilst Southern & Central America, and Asia Pacific experienced growth rates above the global average, total demand in Africa dropped by 0.4% in 2023 and electricity consumption remained flat. Electricity demand in both North America and Europe experienced falls of -1% and -2% respectively. In these regions, electricity demand in particular is increasingly impacted by energy efficiency regulations, energy-efficient lighting, and changing consumer habits.

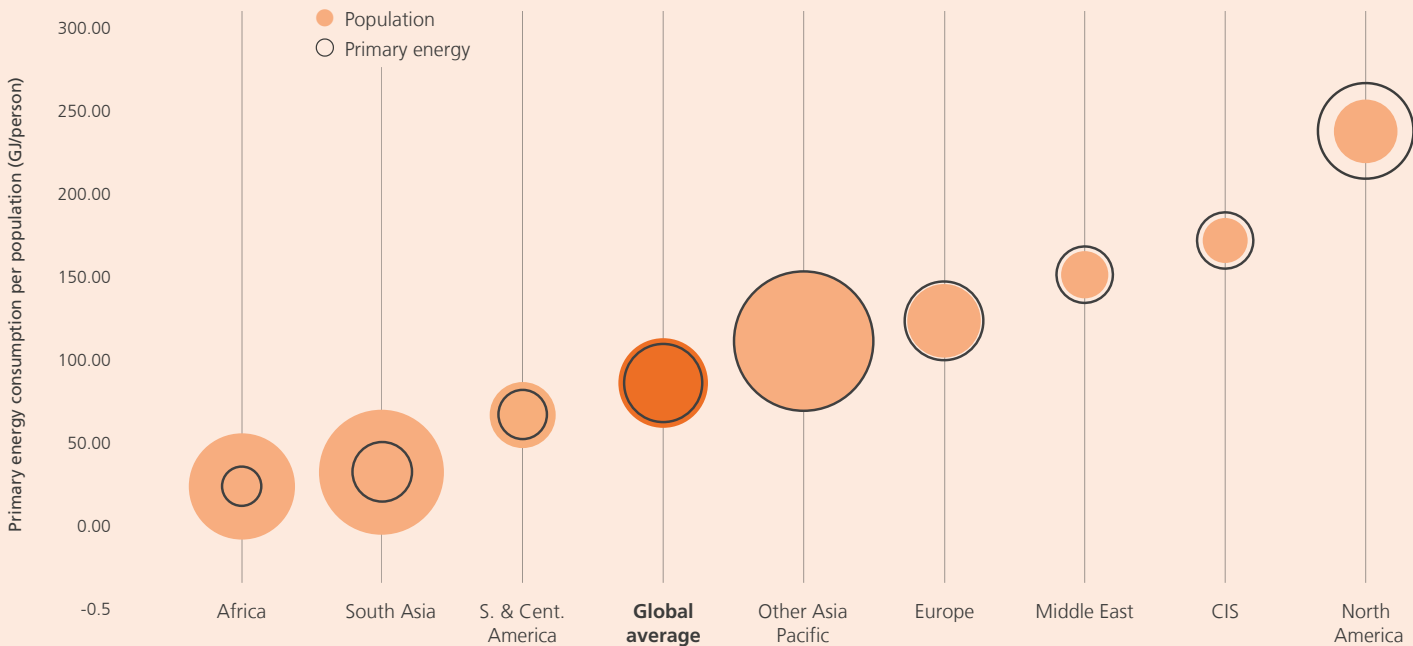
2023 Regional overview – energy access, efficiency, and sustainability

Whilst collectively Africa and South Asia were responsible for less than 10% of the world’s energy demand in 2023, a prevalence of developing economies, large populations, low rate of access to energy today, potentially positions them for significant energy demand growth in the future.

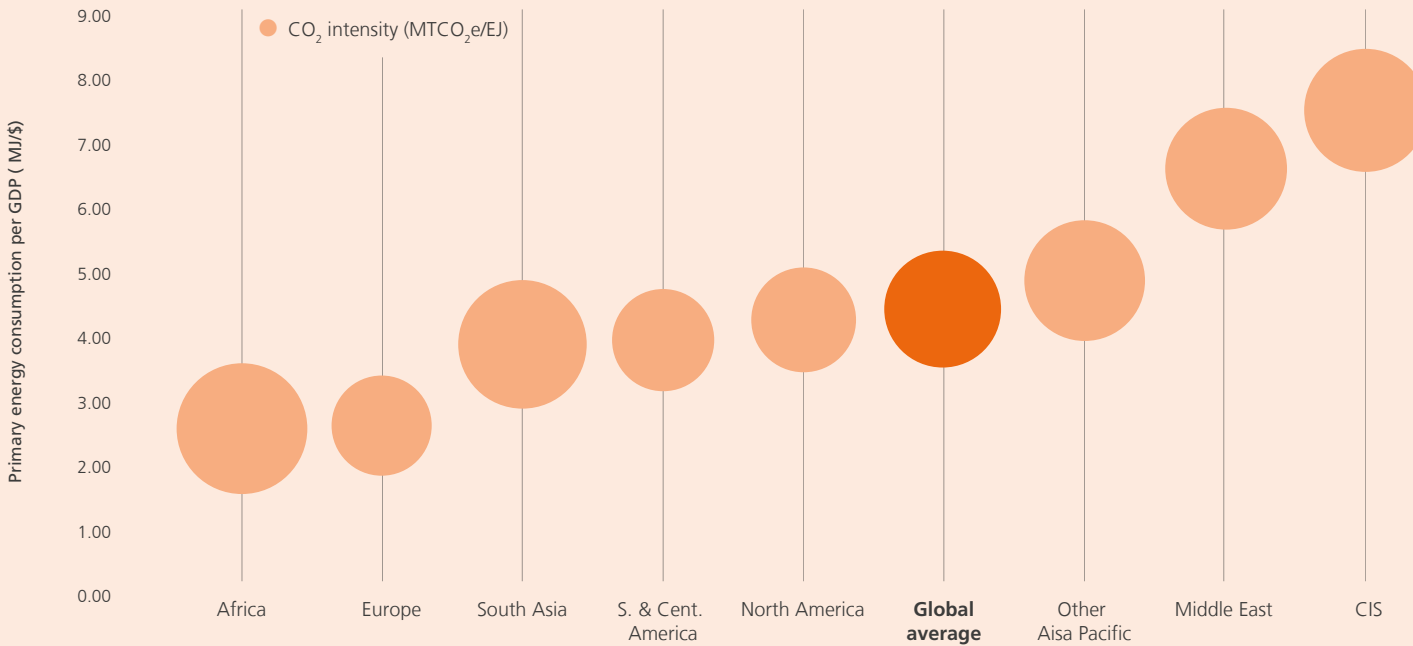
It is estimated that globally around 750 million people – 1 out of 10 – do not have access to electricity to light their homes, refrigerate their food, or keep cool in rising temperatures and around 2.6 billion people rely on heavily polluting biomass fuels such as charcoal, coal, and animal waste for heating and cooking. In 2023 significant geographical variations were evident in the relationships between regional population sizes and regional energy consumption. In Africa, South Asia, and Southern & Central America, the average amount of energy consumed per person stood at 30 Gigajoules (GJ). This was in stark contrast to North America, the CIS, and the Middle East, where energy consumption per capita averaged 180 GJ. In North America, the ratio was almost three times the global average of 77 GJ.

A similar pattern also played out for average greenhouse gas emissions per person where Africa, South Asia, and Southern & Central America averaged 2 MtCO₂e relative to a global average of 6.7 MtCO₂e. North America, the CIS, and the Middle East collectively averaged 11.5 MtCO₂e, almost twice the global average. The exception was Other Asia Pacific that was just below the global average for energy consumption per capita but 0.7 MtCO₂e above the global average for greenhouse gas emissions per person. This was primarily due to China, the world’s largest consumer of coal and second largest consumer of oil.

Today, both Africa and South Asia have very low levels of energy demand relative to the size of their population



Europe and Southern & Central America are the only regions to be below both the global average for CO₂ Intensity and Energy Consumption per GDP

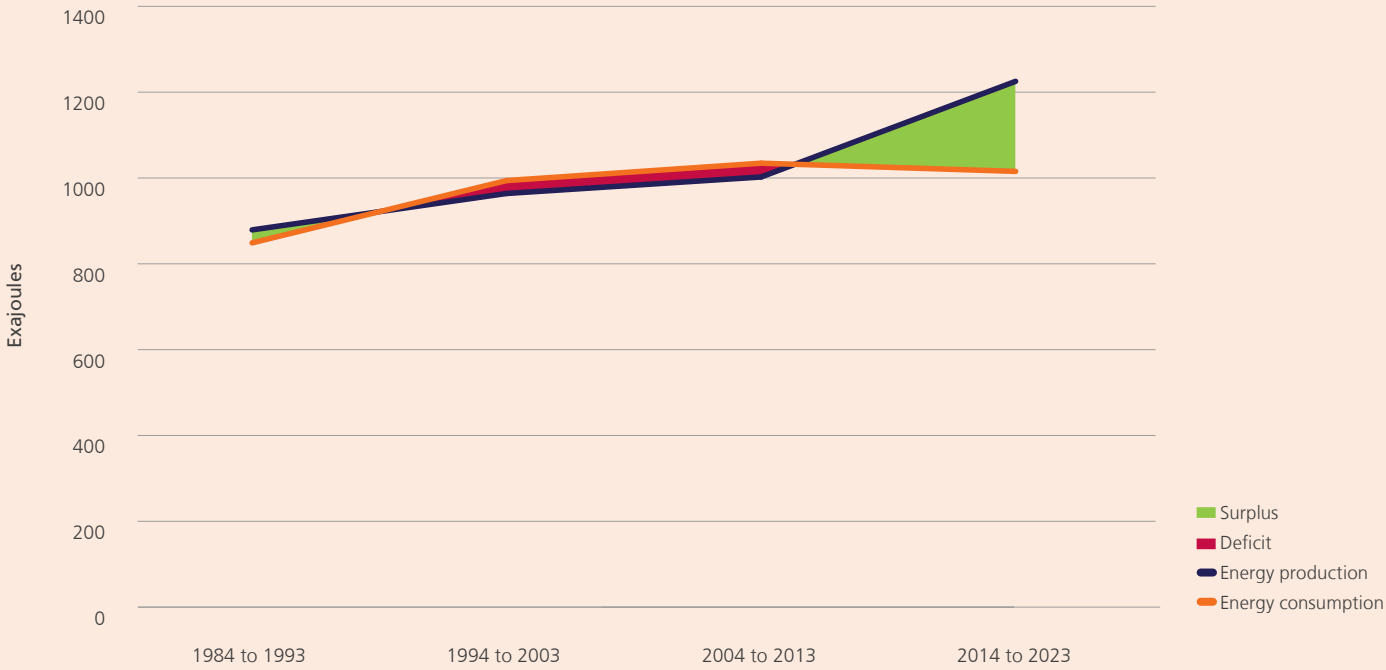


2023 Regional overview – energy security

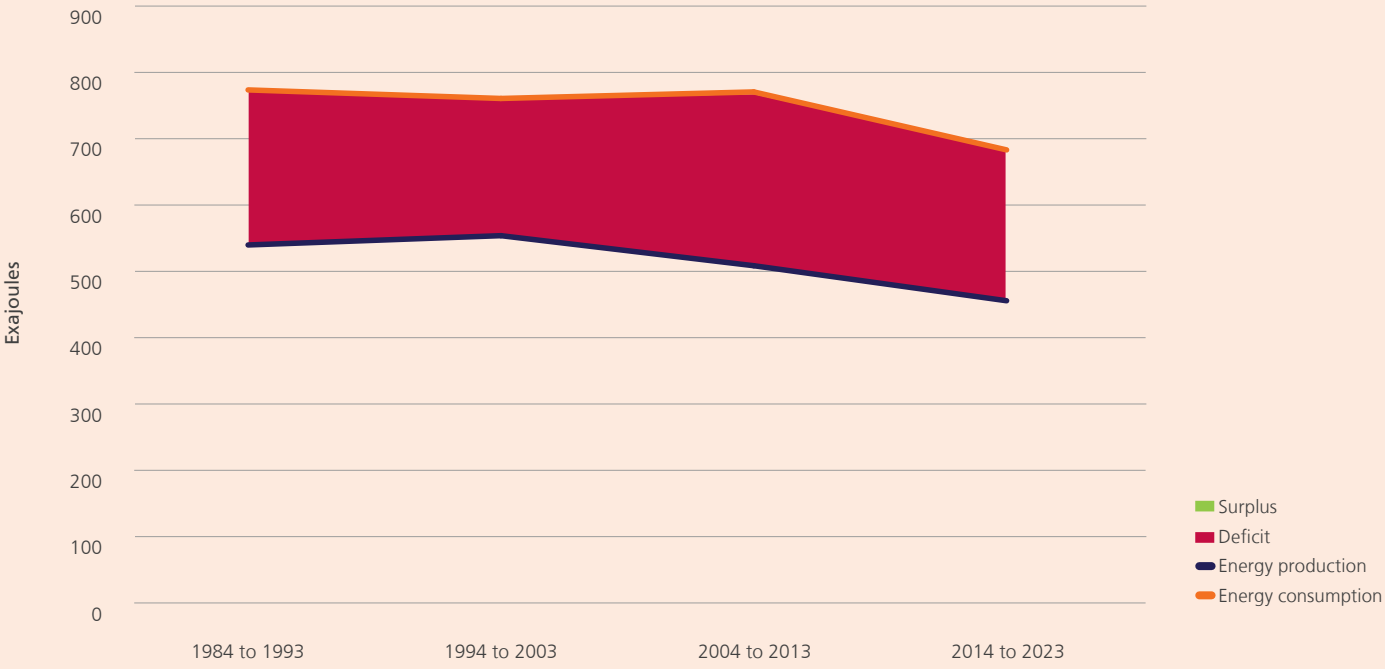
Along with sustainability and affordability, secure supply of energy is a key pillar of the energy trilemma. In 2023, the total international trade of oil, gas, and coal was 53% higher than it was in 2000. Collectively, North America, Europe, and Asia Pacific regions consumed 78% of the world’s total energy in 2023. Over the past two decades, North America’s energy system has been transformed by the growth in unconventional oil and gas that began in the early 2000s. As a result, in the past 10 years the region has moved from being a net importer of energy to a net exporter. In 2023, oil production in North America was 16% above its domestic consumption whilst gas production sat at 14% above its demand level. Since the 1980s, Europe has consistently been a net importer of energy. Its biggest deficit in 2023 was

in oil where production only met 23% of demand. Whilst European gas production was only able to meet 44% of consumption, the balance with coal was less severe with production meeting 58% of demand. The Asia Pacific region had the highest demand of any region in 2023, consuming 292 EJ of primary energy, 47% of the world’s total demand. Like Europe, it has consistently been a net importer of energy since the 1980s. In 2023, its biggest shortfall was in servicing its demand for oil with production only meeting around 19% of its consumption. Its gas position was more positive with production able to meet 74% of its demand. For coal, production in the Asia Pacific region achieved a surplus in 2023, with supply exceeding the region’s demand by 5%.

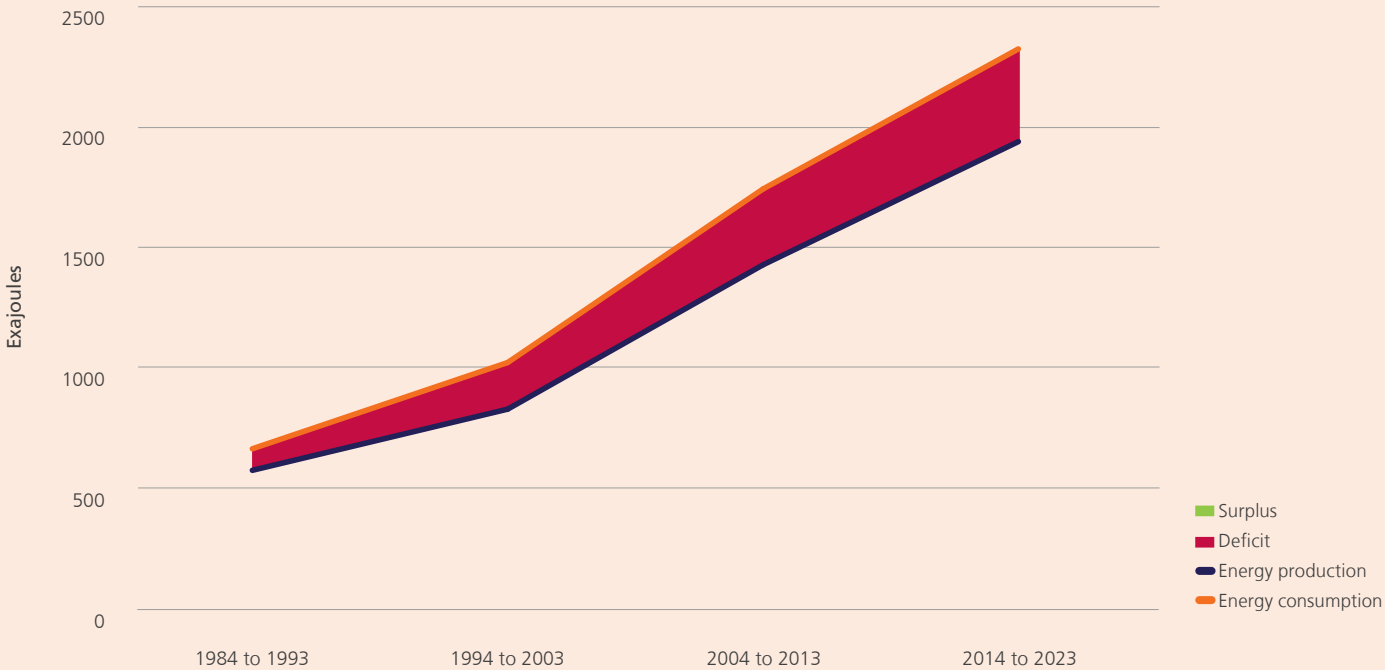
Production vs consumption by region
North America



Production vs consumption by region
Europe



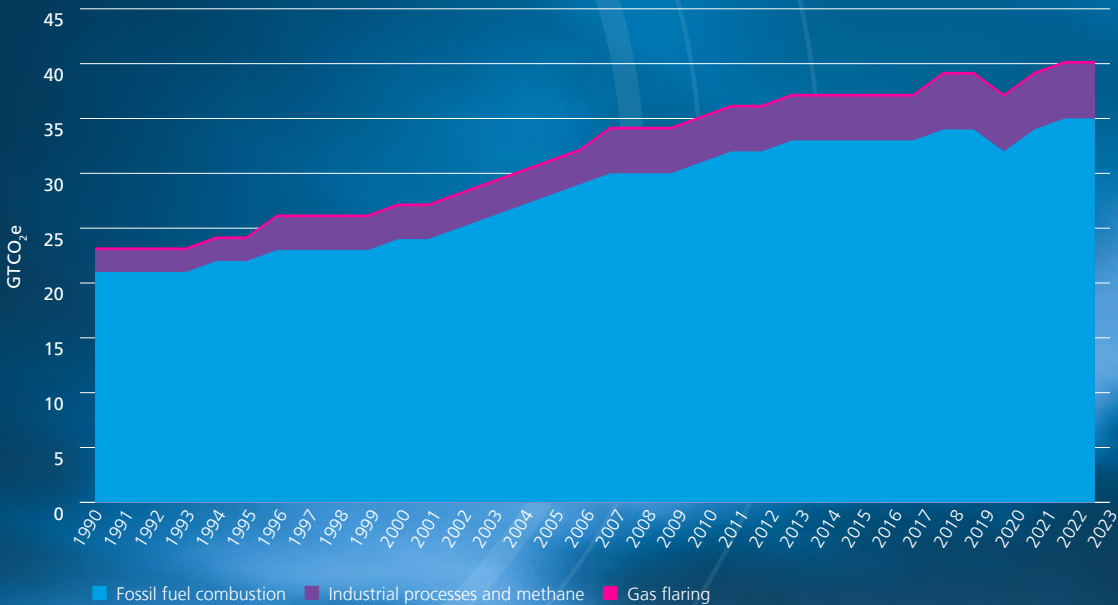
Production vs consumption by region
Asia Pacific



Primary energy and carbon

2023 saw a second consecutive record year for global primary energy consumption as it grew by 2%, reaching 620 EJ. Its growth rate was 0.6% above its ten-year average and over 5% above its 2019 pre-COVID level. Whilst a new record in the consumption of fossil fuels (in absolute terms) was recorded. In 2023, it fell to 81.5% compared to almost 81.9% in 2022. With demand for natural gas, a relatively low carbon-intensive fossil fuel, remaining flat, the increased use of more carbon-intensive oil and coal meant that energy-related greenhouse gas emissions also reached a record high, exceeding 40 GtCO₂e for the very first time. CO₂ emissions from the combustion of fossil fuels is by far the largest source of energy-related greenhouse gas emissions contributing around 87% of the total.

2023 global energy-related greenhouse gas emissions exceeded 40 gigatonnes for the first time ever



P Primary energy Consumption*

Exajoules												Growth rate per annum		Share
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023
Canada	14.40	14.43	14.47	14.34	14.54	14.72	14.64	13.76	13.92	14.30	13.95	-2.4%	-0.3%	2.3%
Mexico	8.07	8.03	7.94	8.11	8.26	8.15	8.07	7.35	7.83	8.18	8.45	3.3%	0.5%	1.4%
US	92.62	93.59	92.69	92.62	92.97	96.37	95.68	88.64	93.44	95.42	94.28	-1.2%	0.2%	15.2%
Total North America	115.09	116.04	115.10	115.07	115.76	119.25	118.40	109.75	115.20	117.90	116.68	-1.0%	0.1%	18.8%
Argentina	3.53	3.53	3.59	3.57	3.57	3.54	3.34	3.13	3.45	3.71	3.67	-0.9%	0.4%	0.6%
Brazil	12.51	12.83	12.66	12.36	12.47	12.51	12.72	12.22	12.85	13.44	13.87	3.3%	1.0%	2.2%
Chile	1.49	1.47	1.49	1.56	1.62	1.69	1.71	1.59	1.72	1.81	1.81	0.1%	2.0%	0.3%
Colombia	1.75	1.84	1.74	1.96	1.98	2.01	2.03	1.85	2.07	2.20	2.26	2.7%	2.6%	0.4%
Ecuador	0.65	0.68	0.68	0.67	0.70	0.74	0.76	0.66	0.77	0.80	0.84	5.2%	2.7%	0.1%
Peru	0.95	0.97	1.01	1.08	1.09	1.15	1.18	1.04	1.18	1.22	1.24	1.7%	2.7%	0.2%
Trinidad & Tobago	0.82	0.82	0.80	0.70	0.75	0.70	0.70	0.61	0.62	0.62	0.59	-5.3%	-3.3%	0.1%
Venezuela	3.73	3.65	3.49	3.20	3.14	2.62	2.37	1.90	2.17	2.34	2.53	8.1%	-3.8%	0.4%
Other S. & Cent. America	3.90	3.92	4.11	4.33	4.33	4.41	4.39	3.93	4.15	4.24	4.46	5.2%	1.4%	0.7%
Total S. & Cent. America	29.32	29.71	29.57	29.44	29.65	29.37	29.19	26.92	28.99	30.37	31.28	3.0%	0.6%	5.0%
Austria	1.48	1.42	1.43	1.47	1.50	1.47	1.54	1.44	1.46	1.37	1.39	1.3%	-0.7%	0.2%
Belgium	2.53	2.34	2.37	2.55	2.58	2.57	2.66	2.39	2.66	2.50	2.31	-7.5%	-0.9%	0.4%
Czech Republic	1.76	1.73	1.69	1.67	1.77	1.76	1.72	1.59	1.68	1.64	1.52	-7.1%	-1.5%	0.2%
Finland	1.23	1.19	1.18	1.20	1.18	1.20	1.18	1.13	1.15	1.15	1.20	3.6%	-0.3%	0.2%
France	10.53	10.07	10.16	9.96	9.92	10.04	9.83	8.79	9.34	8.27	8.66	4.7%	-1.9%	1.4%
Germany	13.93	13.36	13.61	13.83	14.00	13.64	13.30	12.40	12.76	12.29	11.41	-7.1%	-2.0%	1.8%
Greece	1.18	1.11	1.12	1.11	1.16	1.17	1.14	1.00	1.09	1.13	1.10	-2.9%	-0.7%	0.2%
Hungary	0.86	0.86	0.90	0.92	0.97	0.98	0.99	0.97	1.02	0.96	0.91	-5.3%	0.6%	0.1%
Italy	6.69	6.34	6.53	6.56	6.64	6.67	6.55	5.95	6.37	6.19	5.95	-3.9%	-1.2%	1.0%
Netherlands	3.83	3.66	3.69	3.76	3.79	3.70	3.68	3.56	3.65	3.44	3.44	-0.1%	-1.1%	0.6%
Norway	1.89	1.95	1.98	2.01	2.02	1.99	1.86	2.01	2.05	1.92	1.99	3.8%	0.5%	0.3%
Poland	4.07	3.92	3.97	4.14	4.35	4.40	4.27	4.10	4.41	4.27	4.12	-3.7%	0.1%	0.7%
Portugal	1.04	1.05	1.04	1.12	1.09	1.11	1.06	0.95	0.96	0.95	0.95	0.0%	-0.9%	0.2%
Romania	1.33	1.36	1.37	1.37	1.40	1.41	1.38	1.33	1.40	1.30	1.28	-1.6%	-0.4%	0.2%
Spain	5.68	5.60	5.66	5.70	5.77	5.86	5.70	5.12	5.51	5.73	5.66	-1.1%	↑	0.9%
Sweden	2.17	2.16	2.24	2.19	2.27	2.19	2.25	2.16	2.28	2.24	2.15	-3.9%	-0.1%	0.3%
Switzerland	1.29	1.24	1.21	1.14	1.14	1.16	1.21	1.11	1.07	1.04	1.13	8.5%	-1.3%	0.2%
Türkiye	5.08	5.24	5.72	6.01	6.43	6.44	6.66	6.56	7.02	7.10	7.00	-1.4%	3.3%	1.1%
Ukraine	4.93	4.35	3.61	3.78	3.51	3.64	3.45	3.31	3.36	2.33	2.22	-4.6%	-7.7%	0.4%
United Kingdom	8.56	8.09	8.21	8.08	8.10	8.09	7.92	7.10	7.17	7.27	6.95	-4.4%	-2.1%	1.1%
Other Europe	6.41	6.19	6.33	6.50	6.62	6.73	6.56	6.19	6.59	6.52	6.51	-0.2%	0.2%	1.1%
Total Europe	86.47	83.23	84.05	85.06	86.19	86.21	84.90	79.16	83.01	79.60	77.85	-2.2%	-1.0%	12.6%
Azerbaijan	0.56	0.57	0.62	0.61	0.60	0.63	0.67	0.67	0.71	0.76	0.82	8.4%	4.0%	0.1%
Belarus	1.06	1.06	0.96	0.98	1.00	1.11	1.11	1.03	1.10	1.06	1.07	0.6%	0.1%	0.2%
Kazakhstan	2.63	2.77	2.29	2.56	2.75	2.84	2.88	2.65	2.96	2.95	2.98	1.1%	1.2%	0.5%
Russian Federation	28.92	29.01	28.55	29.11	29.29	30.36	30.13	29.08	30.01	31.08	31.29	0.7%	0.8%	5.1%
Turkmenistan	0.96	1.02	1.16	1.26	1.17	1.32	1.26	1.58	1.60	1.63	1.60	-1.7%	5.2%	0.3%
Uzbekistan	1.96	2.04	1.94	1.88	1.93	1.94	1.95	1.94	2.04	2.12	2.10	-0.7%	0.7%	0.3%
Other CIS	0.72	0.75	0.75	0.75	0.78	0.85	0.82	0.82	0.84	0.84	0.86	2.6%	1.7%	0.1%
Total CIS	36.81	37.21	36.27	37.15	37.52	39.05	38.82	37.78	39.25	40.43	40.72	0.7%	1.0%	6.6%
Iran	9.55	9.97	9.85	10.39	10.78	11.15	11.75	12.20	11.96	12.48	12.71	1.9%	2.9%	2.1%
Iraq	1.69	1.64	1.61	1.75	2.04	2.13	2.30	2.06	2.13	2.39	2.51	5.1%	4.0%	0.4%
Israel	0.96	0.94	0.99	1.01	1.03	1.05	1.09	1.03	1.05	1.11	1.11	0.3%	1.5%	0.2%
Kuwait	1.53	1.49	1.60	1.59	1.60	1.66	1.51	1.43	1.53	1.56	1.58	1.3%	0.3%	0.3%
Oman	1.14	1.14	1.21	1.22	1.27	1.35	1.34	1.30	1.42	1.50	1.55	3.2%	3.1%	0.2%
Qatar	1.74	1.88	2.14	2.10	2.03	2.01	2.10	1.84	1.95	2.04	2.22	8.7%	2.5%	0.4%
Saudi Arabia	9.83	10.55	11.00	11.45	11.45	11.17	10.68	10.39	10.73	11.34	11.60	2.3%	1.7%	1.9%
United Arab Emirates	4.08	4.07	4.42	4.59	4.38	4.14	4.39	4.34	4.49	4.88	5.13	5.2%	2.3%	0.8%
Other Middle East	2.15	2.14	2.00	1.96	2.00	2.00	2.00	1.93	2.01	1.99	2.05	2.7%	-0.5%	0.3%
Total Middle East	32.67	33.81	34.82	36.05	36.59	36.65	37.17	36.51	37.27	39.29	40.46	3.0%	2.2%	6.5%
Algeria	1.93	2.11	2.22	2.22	2.25	2.41	2.50	2.34	2.55	2.64	2.54	-4.0%	2.8%	0.4%
Egypt	3.50	3.46	3.51	3.71	3.85	3.86	3.78	3.56	3.81	3.98	3.94	-1.1%	1.2%	0.6%
Morocco	0.77	0.78	0.80	0.80	0.84	0.87	0.95	0.87	0.97	0.96	0.98	1.6%	2.4%	0.2%
South Africa	5.15	5.21	5.10	5.34	5.32	5.12	5.35	5.01	5.06	4.87	4.85	-0.4%	-0.6%	0.8%
Other Africa	5.95	6.22	6.53	6.60	7.04	7.52	7.61	7.36	8.36	8.49	8.56	0.7%	3.7%	1.4%
Total Africa	17.31	17.78	18.16	18.67	19.29	19.77	20.20	19.14	20.75	20.95	20.87	-0.5%	1.9%	3.4%
Australia	5.60	5.64	5.76	5.78	5.77	5.85	6.05	5.71	5.72	5.98	6.02	0.7%	0.7%	1.0%
Bangladesh	1.10	1.15	1.39	1.39	1.45	1.55	1.74	1.65	1.77	1.86	1.83	-1.8%	5.2%	0.3%
China	121.87	125.02	126.49	127.00	131.94	138.27	144.68	149.38	157.85	160.26	170.74	6.5%	3.4%	27.6%
China Hong Kong SAR	1.17	1.14	1.18	1.21	1.29	1.31	1.24	0.93	0.88	0.78	0.90	15.4%	-2.6%	0.1%
India	25.84	27.59	28.55	29.83	30.96	32.72	33.54	31.78	34.51	36.37	39.02	7.3%	4.2%	6.3%
Indonesia	6.52	6.62	6.72	6.83	7.08	7.75	8.28	7.79	7.97	10.05	10.11	0.6%	4.5%	1.6%
Japan	20.07	19.55	19.31	19.06	19.28	19.14	18.74	17.37	18.13	18.02	17.40	-3.4%	-1.4%	2.8%
Malaysia	3.91	3.95	4.01	4.22	4.28	4.35	4.47	4.31	4.49	4.79	4.81	0.3%	2.1%	0.8%
New Zealand	0.86	0.90	0.91	0.92	0.94	0.93	0.95	0.86	0.85	0.84	0.86	3.0%	↑	0.1%
Pakistan	2.71	2.79	2.94	1.95	3.39	3.50	3.54	3.52	3.90	3.60	3.37	-6.2%	2.2%	0.5%
Philippines	1.39	1.46	1.60	1.74	1.91	1.98	2.04	1.85	1.96	2.06	2.19	6.7%	4.7%	0.4%
Singapore	2.92	2.98	3.16	3.34	3.42	3.42	3.35	3.28	3.17	3.17	3.47	9.3%	1.7%	0.6%
South Korea	11.61	11.71	11.91	12.2										

Primary energy Consumption by fuel*

2022								2023							
Exajoules	Oil	Natural gas	Coal	Nuclear energy	Hydro-electricity	Renewables	Total	Oil	Natural gas	Coal	Nuclear energy	Hydro-electricity	Renewables	Total	
Canada	4.31	4.46	0.39	0.78	3.73	0.64	14.30	4.35	4.35	0.37	0.80	3.41	0.68	13.95	
Mexico	3.77	3.27	0.24	0.10	0.33	0.46	8.18	3.84	3.51	0.26	0.11	0.19	0.54	8.45	
US	35.75	31.67	9.91	7.31	2.36	8.42	95.42	35.86	31.91	8.20	7.32	2.21	8.78	94.28	
Total North America	43.83	39.40	10.54	8.19	6.43	9.51	117.90	44.05	39.77	8.83	8.23	5.81	9.99	116.68	
Argentina	1.48	1.65	0.05	0.07	0.21	0.24	3.71	1.41	1.62	0.05	0.08	0.28	0.24	3.67	
Brazil	5.01	1.15	0.59	0.13	4.01	2.55	13.44	5.11	1.08	0.57	0.13	4.01	2.97	13.87	
Chile	0.82	0.26	0.24	—	0.19	0.30	1.81	0.83	0.25	0.18	—	0.22	0.33	1.81	
Colombia	0.96	0.45	0.10	—	0.60	0.08	2.20	0.98	0.47	0.16	—	0.56	0.09	2.26	
Ecuador	0.54	0.02	^	—	0.23	0.01	0.80	0.58	0.02	^	—	0.24	0.01	0.84	
Peru	0.50	0.35	0.03	—	0.28	0.05	1.22	0.52	0.36	0.03	—	0.27	0.05	1.24	
Trinidad & Tobago	0.07	0.56	—	—	—	^	0.62	0.07	0.52	—	—	—	^	0.59	
Venezuela	0.65	1.05	0.01	—	0.64	^	2.34	0.84	1.07	0.01	—	0.61	^	2.53	
Other S. & Cent. America	2.56	0.36	0.17	—	0.82	0.34	4.24	2.68	0.43	0.18	—	0.82	0.36	4.46	
Total S. & Cent. America	12.59	5.85	1.19	0.20	6.99	3.56	30.37	13.01	5.82	1.16	0.21	7.01	4.06	31.28	
Austria	0.49	0.28	0.10	—	0.32	0.17	1.37	0.49	0.25	0.10	—	0.36	0.19	1.39	
Belgium	1.19	0.52	0.12	0.40	0.27	0.20	2.50	1.13	0.49	0.10	0.30	0.29	0.29	2.31	
Czech Republic	0.42	0.27	0.56	0.28	0.02	0.10	1.64	0.42	0.24	0.47	0.27	0.02	0.10	1.52	
Finland	0.35	0.04	0.12	0.23	0.13	0.29	1.15	0.33	0.04	0.09	0.31	0.14	0.29	1.20	
France	2.80	1.38	0.23	2.65	0.42	0.79	8.27	2.76	1.22	0.18	3.03	0.52	0.95	8.66	
Germany	4.25	2.79	2.31	0.31	0.17	2.46	12.29	4.01	2.72	1.83	0.06	0.18	2.60	11.41	
Greece	0.62	0.22	0.07	—	0.04	0.19	1.13	0.62	0.19	0.05	—	0.04	0.20	1.10	
Hungary	0.35	0.33	0.05	0.14	^	0.09	0.96	0.34	0.29	0.04	0.14	^	0.10	0.91	
Italy	2.51	2.35	0.31	—	0.27	0.76	6.19	2.47	2.11	0.22	—	0.36	0.78	5.95	
Netherlands	1.66	0.99	0.23	0.04	^	0.52	3.44	1.70	0.93	0.16	0.04	^	0.61	3.44	
Norway	0.39	0.14	0.03	—	1.20	0.16	1.92	0.38	0.14	0.03	—	1.27	0.16	1.99	
Poland	1.40	0.67	1.78	—	0.02	0.40	4.27	1.41	0.70	1.51	—	0.02	0.48	4.12	
Portugal	0.46	0.20	^	—	0.06	0.22	0.95	0.45	0.16	^	—	0.11	0.23	0.95	
Romania	0.46	0.35	0.15	0.10	0.13	0.11	1.30	0.46	0.33	0.11	0.10	0.17	0.11	1.28	
Spain	2.61	1.19	0.16	0.53	0.17	1.08	5.73	2.57	1.05	0.12	0.51	0.24	1.17	5.66	
Sweden	0.48	0.03	0.07	0.47	0.66	0.54	2.24	0.47	0.03	0.07	0.43	0.62	0.54	2.15	
Switzerland	0.38	0.11	^	0.21	0.28	0.07	1.04	0.39	0.10	^	0.21	0.35	0.09	1.13	
Türkiye	2.18	1.84	1.76	—	0.63	0.69	7.10	2.30	1.74	1.65	—	0.60	0.71	7.00	
Ukraine	0.39	0.66	0.54	0.56	0.10	0.07	2.33	0.39	0.67	0.49	0.47	0.12	0.08	2.22	
United Kingdom	2.65	2.55	0.21	0.43	0.05	1.37	7.27	2.69	2.29	0.18	0.37	0.05	1.38	6.95	
Other Europe	2.57	1.00	1.21	0.34	0.65	0.75	6.52	2.57	0.97	1.02	0.36	0.79	0.81	6.51	
Total Europe	28.60	17.92	10.02	6.68	5.29	11.09	79.60	28.33	16.68	8.39	6.60	5.97	11.86	77.85	
Azerbaijan	0.25	0.49	^	—	0.01	^	0.76	0.26	0.54	^	—	0.02	^	0.82	
Belarus	0.30	0.66	0.04	0.04	^	0.01	1.06	0.30	0.60	0.04	0.11	^	0.01	1.07	
Kazakhstan	0.65	0.77	1.41	—	0.09	0.04	2.95	0.69	0.77	1.39	—	0.08	0.05	2.98	
Russian Federation	7.14	16.14	3.84	2.01	1.86	0.08	31.08	7.21	16.32	3.83	1.95	1.88	0.10	31.29	
Turkmenistan	0.28	1.35	—	—	^	^	1.63	0.28	1.32	—	—	^	^	1.60	
Uzbekistan	0.22	1.74	0.11	—	0.05	^	2.12	0.22	1.68	0.14	—	0.07	^	2.10	
Other CIS	0.20	0.20	0.09	0.03	0.32	0.01	0.84	0.20	0.22	0.09	0.02	0.32	0.01	0.86	
Total CIS	9.03	21.35	5.49	2.08	2.33	0.14	40.43	9.16	21.46	5.49	2.08	2.37	0.17	40.72	
Iran	3.58	8.62	0.08	0.06	0.13	0.02	12.48	3.50	8.84	0.08	0.06	0.21	0.02	12.71	
Iraq	1.70	0.66	—	—	0.02	^	2.39	1.80	0.67	—	—	0.03	^	2.51	
Israel	0.45	0.44	0.16	—	^	0.06	1.11	0.44	0.45	0.14	—	^	0.08	1.11	
Kuwait	0.77	0.78	0.01	—	—	^	1.56	0.76	0.81	0.01	—	—	^	1.58	
Oman	0.45	1.03	0.01	—	—	0.01	1.50	0.47	1.06	0.01	—	—	0.01	1.55	
Qatar	0.58	1.45	^	—	—	^	2.04	0.61	1.59	^	—	—	0.01	2.22	
Saudi Arabia	7.11	4.20	^	—	—	0.02	11.34	7.43	4.11	^	—	—	0.05	11.60	
United Arab Emirates	2.14	2.38	0.10	0.18	—	0.07	4.88	2.20	2.41	0.10	0.29	—	0.13	5.13	
Other Middle East	1.06	0.82	0.03	—	0.01	0.07	1.99	1.06	0.85	0.04	—	0.01	0.07	2.05	
Total Middle East	17.85	20.38	0.38	0.24	0.17	0.27	39.29	18.28	20.80	0.38	0.35	0.26	0.39	40.46	
Algeria	0.82	1.81	0.01	—	^	0.01	2.64	0.86	1.67	0.01	—	^	0.01	2.54	
Egypt	1.53	2.18	0.04	—	0.12	0.10	3.98	1.49	2.16	0.05	—	0.13	0.10	3.94	
Morocco	0.58	0.01	0.31	—	^	0.06	0.96	0.57	0.03	0.29	—	^	0.08	0.98	
South Africa	1.06	0.15	3.38	0.09	0.03	0.16	4.87	1.09	0.17	3.33	0.08	0.02	0.18	4.85	
Other Africa	4.52	2.13	0.38	—	1.31	0.15	8.49	4.48	2.13	0.41	—	1.36	0.17	8.56	
Total Africa	8.50	6.29	4.12	0.09	1.47	0.48	20.95	8.49	6.16	4.08	0.08	1.51	0.54	20.87	
Australia	2.05	1.56	1.54	—	0.16	0.68	5.98	2.17	1.44	1.51	—	0.14	0.76	6.02	
Bangladesh	0.62	1.03	0.20	—	0.01	0.01	1.86	0.52	1.01	0.28	—	0.01	0.01	1.83	
China	29.51	13.60	87.83	3.76	12.18	13.37	160.26	32.73	14.57	91.94	3.90	11.46	16.13	170.74	
China Hong Kong SAR	0.46	0.16	0.15	—	—	0.01	0.78	0.57	0.17	0.15	—	—	0.01	0.90	
India	10.10	2.10	20.03	0.42	1.64	2.09	36.37	10.57	2.25	21.98	0.43	1.39	2.38	39.02	
Indonesia	3.09	1.59	4.38	—	0.26	0.74	10.05	3.10	1.64	4.32	—	0.23	0.83	10.11	
Japan	6.94	3.61	4.92	0.47	0.70	1.39	18.02	6.65	3.33	4.54	0.70	0.70	1.49	17.40	
Malaysia	1.60	1.87	0.95	—	0.30	0.08	4.79	1.79	1.66	0.98	—	0.29	0.08	4.81	
New Zealand	0.30	0.13	0.05	—	0.25	0.11	0.84	0.32	0.14	0.04	—	0.25	0.12	0.86	
Pakistan	0.99	1.38	0.64	0.20	0.32	0.06	3.60	0.78	1.36	0.62	0.20	0.35	0.06	3.37	
Philippines	0.89	0.11	0.80	—	0.10	0.16	2.06	0.93	0.12	0.88	—	0.10	0.17	2.19	
Singapore	2.67	0.47	0.02	—	—	0.02	3.17	2.99	0.44	0.01	—	—	0.02	3.47	
South Korea	5.47	2.25	2.87	1.59	0.03	0.55	12.75	5.36	2.16	2.69	1.62	0.03	0.56	12.43	
Sri Lanka	0.20	—	0.07	—	0.06	0.02	0.35	0.22	—	0.06	—	0.05	0.03	0.36	
Taiwan	1.73	1.01	1.58	0.21	0.05	0.16	4.75	1.63	1.01	1.49	0.16	0.04	0.20	4.53	
Thailand	2.32	1.60	0.71	—	0.06	0.31	5.00	2.31	1.70	0.60	—	0.06	0.33	5.01	
Vietnam	1.07	0.28	1.90	—	0.90	0.33	4.48	1.20	0.26	2.32	—	0.76	0.36	4.89	
Other Asia Pacific	1.22	0.40	1.17	—	0.87	0.03	3.70	1.26	0.41	1.27	—	0.85	0.04	3.83	
Total Asia Pacific	71.21	33.13	129.80	6.65	17.90	20.12	278.81	75.10	33.67	135.70	7.01	16.72	23.57	291.77	
Total World	191.62	144.31	161.53	24.13	40.58	45.18	607.35	196.43	144.37	164.03	24.57	39.65	50.58	619.63	
of which: OECD	87.43	64.56	28.88	16.12	13.09	23.47	233.55	87.15	63.25	25.15	16.44	12.96	24.96	229.90	
Non-OECD	104.19	79.75	132.65	8.01	27.49	21.71	373.80	109.29	81.11	138.88	8.13	26.69	25.62	389.73	
European Union	21.88	12.38	6.89	5.49	2.57	8.64	57.85	21.45	11.50	5.48	5.56	3.05	9.35	56.38	

* In this review, primary energy comprises commercially-traded fuels, including modern renewables used to generate electricity. Energy from all sources of non-fossil power generation is accounted for on an input-equivalent basis. See the appendix or <https://www.energyinst.org/statistical-review> for more details on this methodology.
^ Less than 0.005.

Primary energy Consumption per capita*

													Growth rate per annum		
Gigajoule per capita	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2023	2013–23	
Canada	410.6	407.5	404.9	397.1	397.7	397.6	390.3	363.1	364.9	371.8	359.7	359.7	-3.3%	-1.3%	
Mexico	68.8	67.6	66.1	66.8	67.2	65.8	64.5	58.3	61.8	64.2	65.8	65.8	2.5%	-0.4%	
US	290.0	290.6	285.5	283.1	281.9	290.1	286.2	263.9	277.3	282.1	277.3	277.3	-1.7%	-0.4%	
Total North America	244.0	243.7	239.5	237.3	236.										

													Growth rate per annum		Share
Million tonnes of carbon dioxide	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	2023
Canada	559.3	564.5	559.4	546.9	561.2	574.2	562.4	502.2	511.3	525.0	519.5	-1.0%	-0.7%	1.5%	
Mexico	496.7	482.8	480.9	491.1	503.3	489.0	480.6	413.4	442.5	469.3	489.9	4.4%	-0.1%	1.4%	
US	5246.9	5252.5	5137.8	5039.3	4980.3	5134.6	4982.8	4466.8	4755.3	4798.2	4639.7	-3.3%	-1.2%	13.2%	
Total North America	6302.9	6299.8	6178.1	6077.3	6044.9	6197.8	6025.8	5382.4	5709.2	5792.4	5649.1	-2.5%	-1.1%	16.1%	
Argentina	187.6	187.8	191.2	190.1	188.5	186.0	174.6	162.3	183.5	198.4	190.9	-3.8%	0.2%	0.5%	
Brazil	487.0	511.7	494.8	455.9	461.7	442.1	435.5	408.3	461.6	443.4	451.0	1.7%	-0.8%	1.3%	
Chile	88.9	87.2	87.4	92.2	93.9	93.5	94.8	85.1	93.8	93.0	86.5	-7.0%	-0.3%	0.2%	
Colombia	89.1	94.9	87.7	102.3	95.3	96.9	99.7	89.6	96.8	103.0	110.2	7.0%	2.1%	0.3%	
Ecuador	36.5	38.4	37.6	35.4	34.4	37.2	35.7	29.2	36.2	39.6	42.2	6.7%	1.5%	0.1%	
Peru	46.0	46.8	49.2	53.2	51.0	52.8	54.4	45.3	54.0	57.9	59.5	2.7%	2.6%	0.2%	
Trinidad & Tobago	25.1	24.7	23.8	21.5	20.7	19.6	19.0	16.4	15.5	15.8	15.2	-3.7%	-4.9%	0.0%	
Venezuela	186.1	181.7	172.1	159.2	149.9	123.8	111.3	77.7	93.6	104.7	120.8	15.5%	-4.2%	0.3%	
Central America	60.1	61.8	68.7	71.6	72.1	72.9	80.7	63.7	72.4	75.0	81.0	8.0%	3.0%	0.2%	
Other Caribbean	103.8	105.5	110.0	112.8	109.6	112.1	111.5	101.2	101.4	101.0	106.9	5.9%	0.3%	0.3%	
Other South America	34.7	35.2	35.6	37.3	38.2	39.4	40.0	35.9	41.4	42.6	43.8	2.7%	2.4%	0.1%	
Total S. & Cent. America	1344.9	1375.9	1357.9	1331.5	1315.3	1276.3	1257.3	1114.8	1250.2	1274.3	1308.1	2.7%	-0.3%	3.7%	
Austria	62.8	59.0	61.6	62.1	64.5	62.3	63.8	56.2	59.3	56.3	53.8	-4.5%	-1.5%	0.2%	
Belgium	117.3	109.0	115.2	116.9	118.8	125.5	121.8	105.3	113.9	109.7	103.3	-5.8%	-1.3%	0.3%	
Bulgaria	40.7	43.2	45.9	43.1	45.9	42.7	41.5	36.1	42.0	46.4	35.5	-23.5%	-1.4%	0.1%	
Croatia	16.1	15.8	16.2	16.7	17.1	16.3	16.3	14.9	15.7	16.0	16.0	-0.1%	-0.1%	0.0%	
Cyprus	7.3	7.3	7.5	8.1	8.3	8.2	8.2	7.0	7.2	7.7	7.6	-0.5%	0.5%	0.0%	
Czech Republic	105.0	102.0	102.8	104.8	104.8	103.8	98.2	88.4	92.9	91.9	82.9	-9.8%	-2.3%	0.2%	
Denmark	43.0	39.2	36.7	38.0	35.5	35.8	32.6	27.4	28.8	29.8	28.4	-4.5%	-4.1%	0.1%	
Estonia	24.5	23.5	21.4	22.2	24.5	24.1	18.3	15.7	16.8	17.8	15.0	-15.6%	-4.8%	0.0%	
Finland	52.0	47.7	44.9	47.7	45.1	46.5	43.4	36.8	36.3	35.8	31.7	-11.5%	-4.8%	0.1%	
France	339.5	304.4	308.9	314.2	319.1	308.9	301.5	252.9	278.6	272.5	254.6	-6.6%	-2.8%	0.7%	
Germany	797.6	751.1	755.6	767.4	758.2	731.0	678.4	603.0	640.2	631.8	571.9	-9.5%	-3.3%	1.6%	
Greece	79.9	76.1	73.8	70.7	75.0	73.6	69.6	56.3	59.6	62.8	59.4	-5.5%	-2.9%	0.2%	
Hungary	42.0	41.3	43.8	44.7	46.9	47.3	47.1	44.6	46.0	43.3	39.1	-9.6%	-0.7%	0.1%	
Iceland	2.6	2.6	2.9	2.8	3.1	3.3	2.8	1.8	2.1	2.6	2.4	-6.6%	-0.8%	0.0%	
Ireland	37.5	37.2	38.7	40.4	39.3	39.1	37.6	33.4	35.5	36.2	34.0	-6.3%	-1.0%	0.1%	
Italy	341.4	318.8	334.4	331.4	335.5	336.1	328.6	286.3	318.2	324.9	301.3	-7.3%	-1.2%	0.9%	
Latvia	8.0	7.7	7.9	8.2	8.0	7.8	8.4	7.1	7.5	6.7	6.5	-2.1%	-1.9%	0.0%	
Lithuania	11.7	11.0	11.3	11.8	12.0	12.6	12.4	12.1	12.4	11.9	11.7	-1.5%	0.0%	0.0%	
Luxembourg	10.9	10.5	10.1	10.0	10.3	10.8	10.9	9.0	9.7	8.6	8.3	-3.8%	-2.7%	0.0%	
Netherlands	211.4	202.5	207.6	208.0	204.3	198.2	193.7	173.1	176.9	164.8	156.1	-5.3%	-3.0%	0.4%	
North Macedonia	8.1	7.7	7.4	7.5	7.8	7.5	8.3	7.0	7.1	7.9	8.2	4.3%	0.1%	0.0%	
Norway	37.5	37.4	38.0	37.0	37.1	37.3	36.0	33.7	34.6	34.7	34.0	-1.9%	-1.0%	0.1%	
Poland	307.5	290.3	290.1	303.2	316.0	320.7	302.5	284.3	310.3	294.5	270.3	-8.2%	-1.3%	0.8%	
Portugal	48.8	48.0	52.6	52.0	57.3	54.3	50.3	40.5	39.1	42.2	39.7	-5.7%	-2.0%	0.1%	
Romania	70.4	70.7	71.5	69.1	72.6	72.2	70.7	64.5	69.6	64.8	59.9	-7.7%	-1.6%	0.2%	
Slovakia	32.6	30.0	30.4	30.8	32.9	32.3	30.0	27.8	31.3	28.4	27.6	-2.6%	-1.6%	0.1%	
Slovenia	14.1	12.6	12.7	13.6	13.9	13.9	13.3	11.9	12.1	11.6	10.4	-10.5%	-3.0%	0.0%	
Spain	273.5	271.1	286.9	279.4	297.1	291.4	274.6	221.4	242.3	260.3	246.8	-5.2%	-1.0%	0.7%	
Sweden	45.6	44.5	44.7	44.8	44.9	40.9	41.2	38.9	41.2	37.8	35.8	-5.3%	-2.4%	0.1%	
Switzerland	43.4	38.9	39.6	38.1	38.9	37.1	38.2	32.6	33.3	32.8	32.7	-0.1%	-2.8%	0.1%	
Türkiye	303.3	335.1	341.1	359.2	404.2	401.8	394.0	384.6	420.7	420.4	411.1	-2.2%	3.1%	1.2%	
Ukraine	286.5	246.8	195.1	215.6	187.9	198.7	185.5	171.5	167.7	109.4	105.3	-3.7%	-9.5%	0.3%	
United Kingdom	499.0	458.0	440.9	413.8	403.6	397.1	381.8	320.9	339.4	341.1	327.3	-4.1%	-4.1%	0.9%	
Other Europe	113.3	102.3	111.7	116.5	120.4	119.4	119.9	117.9	118.2	119.8	118.3	-1.3%	0.4%	0.3%	
Total Europe	4434.7	4203.5	4210.0	4250.1	4310.8	4258.5	4081.5	3625.0	3866.4	3783.0	3546.8	-6.2%	-2.2%	10.1%	
Azerbaijan	30.4	31.2	33.7	33.2	32.2	34.3	34.3	34.5	36.6	37.3	42.4	8.0%	3.4%	0.1%	
Belarus	60.0	59.1	54.8	54.9	55.6	60.5	60.8	55.8	57.0	55.1	52.5	-4.8%	-1.3%	0.1%	
Kazakhstan	210.8	218.0	175.2	197.0	211.3	218.6	217.0	199.3	221.8	220.9	221.2	0.1%	0.5%	0.6%	
Russian Federation	1548.8	1551.5	1520.8	1529.3	1516.9	1573.3	1557.1	1461.1	1512.4	1599.1	1614.7	1.0%	0.4%	4.6%	
Turkmenistan	58.2	62.0	68.9	76.0	69.8	78.5	74.4	94.0	93.4	95.4	93.9	-1.6%	4.9%	0.3%	
Uzbekistan	109.4	114.0	107.6	103.6	105.4	109.0	108.9	110.8	115.7	120.7	120.1	-0.5%	0.9%	0.3%	
Other CIS	25.3	27.5	28.9	29.3	29.8	33.3	31.3	31.9	33.6	32.9	34.1	3.6%	3.0%	0.1%	
Total CIS	2042.8	2063.2	1989.8	2023.5	2021.1	2107.5	2084.0	1987.2	2070.4	2163.3	2178.8	0.7%	0.6%	6.2%	
Iran	542.8	552.3	546.9	567.2	575.8	602.3	627.4	653.2	649.3	677.2	683.6	1.0%	2.3%	1.9%	
Iraq	114.1	112.3	110.6	118.8	140.4	144.5	151.5	134.7	141.9	159.9	168.2	5.2%	4.0%	0.5%	
Israel	66.8	64.0	66.7	66.0	66.5	67.1	69.1	62.9	63.4	67.2	65.5	-2.5%	-0.2%	0.2%	
Kuwait	93.2	90.0	97.1	96.3	96.7	100.3	91.1	85.2	91.3	92.1	93.9	2.0%	0.1%	0.3%	
Oman	65.2	64.7	69.0	69.5	72.2	74.9	74.6	70.1	76.6	82.3	85.1	3.4%	2.7%	0.2%	
Qatar	100.3	110.3	123.9	124.3	116.8	119.2	125.2	108.6	117.0	119.7	132.5	10.7%	2.8%	0.4%	
Saudi Arabia	526.0	565.1	601.8	634.5	631.2	612.4	576.3	556.9	572.2	609.4	620.4	1.8%	1.7%	1.8%	
United Arab Emirates	247.1	243.0	265.1	275.8	264.1	248.8	261.8	262.0	281.4	287.2	287.2	2.1%	1.5%	0.8%	
Other Middle East	134.2	135.2	124.8	120.3	122.7	123.1	121.2	115.1	119.8	118.3	121.8	3.0%	-1.0%	0.3%	
Total Middle East	1889.8	1936.8	2006.0	2072.8	2086.4	2092.6	2098.2	2041.7	2093.6	2207.4	2258.3	2.3%	1.8%	6.4%	
Algeria	115.4	123.6	129.0	127.7	130.7	137.3	142.4	131.7	144.5	149.6	144.7	-3.3%	2.3%	0.4%	
Egypt	202.7	201.6	204.2	216.6	221.6	217.7	209.6	189.7	221.2	235.6	232.1	-1.5%	1.4%	0.7%	
Morocco	54.4	56.6	56.8	57.2	60.2	61.8	67.9	62.8	69.9	70.3	69.1	-1.8%	2.4%	0.2%	
South Africa	463.0	467.4	455.3	474.4	470.5	452.4	474.9	448.9	444.8	425.7	425.0	-0.1%	-0.9%	1.2%	
Eastern Africa	90.7	101.8	106.0	105.0	114.3	121.1	117.7	109.6	119.0	114.3	116.8	2.2%	2.6%	0.3%	
Middle Africa	45.5	47.9	48.3	46.4	44.5	45.5	47.4	40.5	46.7	51.2	52.2	1.9%	1.4%	0.1%	
Western Africa	109.2	110.5	127.4	132.5	142.9	160.8	164.2	166.0	194.0	195.7	189.9	-3.0%	5.7%	0.5%	
Other Northern Africa	75.2	74.8	67.9	69.6	74.4	75.6	76.4	68.8	82.3	86.7	89.6	3.3%	1.8%	0.3%	
Other Southern Africa	12.4	13.7	13.7	13.6	14.5	15.1	14.4	12.3	13.9	15.3	15.7	2.2%	2.3%	0.0%	
Total Africa	1168.5	1197.9	1208.5	1243.0	1273.5	1287.3	1314.8	1231.4	1336.2	1344.5	1335.1	-0.7%	1.3%	3.8%	
Australia	395.6	399.2	407.4	406.0	404.3	402.5	406.9	376.5	369.2	377.0	376.1	-0.2%	-0.5%	1.1%	
Bangladesh	64.4	66.9	83.8	83.8	88.4	95.7	107.7	102.2	109.7	119.0	118.2	-0.7%	6.3%	0.3%	
China	9214.1	9235.5	9172.9	9027.1	9274										



Carbon

Carbon dioxide equivalent emissions from energy, process emissions, methane and flaring

Million tonnes of carbon dioxide equivalent												Growth rate per annum		Share
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023
Canada	615.8	625.0	620.3	608.9	627.7	643.8	632.0	567.8	580.0	596.7	599.4	0.4%	-0.3%	1.5%
Mexico	570.2	557.5	553.9	562.7	568.2	553.1	544.8	481.3	514.0	538.1	559.7	4.0%	-0.2%	1.4%
US	5610.0	5648.5	5540.6	5415.7	5375.0	5579.0	5474.3	4912.9	5197.2	5270.1	5130.1	-2.7%	-0.9%	12.7%
Total North America	6796.0	6831.0	6714.8	6587.3	6570.8	6776.0	6651.0	5962.0	6291.1	6405.0	6289.3	-1.8%	-0.8%	15.6%
Argentina	218.4	218.6	222.1	220.2	218.4	217.6	208.4	193.3	218.3	235.2	229.4	-2.5%	0.5%	0.6%
Brazil	544.7	573.0	555.3	514.3	518.5	498.0	494.3	469.2	524.0	505.5	525.0	3.9%	-0.4%	1.3%
Chile	90.4	88.7	88.9	93.8	95.2	94.8	96.2	86.5	95.3	94.4	87.9	-6.9%	-0.3%	0.2%
Colombia	121.8	128.4	120.7	134.1	126.6	127.4	130.8	112.8	121.8	129.4	138.2	6.8%	1.3%	0.3%
Ecuador	47.7	50.5	49.2	47.2	45.7	48.0	46.7	39.1	46.6	50.4	56.2	11.7%	1.7%	0.1%
Peru	53.9	55.5	57.5	61.2	58.6	60.4	62.2	52.2	62.3	66.6	69.2	3.9%	2.5%	0.2%
Trinidad & Tobago	34.0	33.4	31.9	28.5	27.7	26.6	26.4	22.4	20.8	21.2	20.4	-3.7%	-5.0%	0.1%
Venezuela	364.4	359.3	342.7	320.2	287.8	244.1	214.5	156.4	174.8	195.2	225.0	15.3%	-4.7%	0.6%
Central America	64.2	66.0	73.0	75.7	76.4	76.9	84.5	66.9	75.8	78.5	84.5	7.7%	2.8%	0.2%
Other Caribbean	107.7	109.7	114.2	116.8	113.5	116.0	115.4	104.7	105.4	105.0	111.2	5.8%	0.3%	0.3%
Other South America	43.7	44.8	45.4	47.1	47.7	48.4	48.4	44.4	50.1	52.4	52.1	-0.5%	1.8%	0.1%
Total S. & Cent. America	1691.0	1727.8	1700.7	1659.2	1616.2	1558.2	1527.9	1347.9	1495.1	1533.7	1599.1	4.3%	-0.6%	4.0%
Austria	65.0	61.3	63.8	64.4	66.7	64.6	66.0	58.5	61.5	58.5	56.0	-4.3%	-1.5%	0.1%
Belgium	120.0	111.7	117.7	119.4	121.2	128.1	124.7	108.0	116.6	112.4	106.0	-5.7%	-1.2%	0.3%
Bulgaria	43.1	45.6	48.7	45.8	48.7	45.4	44.2	38.5	44.5	48.8	37.6	-22.9%	-1.3%	0.1%
Croatia	18.2	17.9	18.3	18.7	19.2	18.3	18.1	16.7	17.4	17.4	17.5	0.7%	-0.4%	0.0%
Czech Republic	111.4	108.3	109.2	111.1	110.9	109.9	104.5	94.0	98.2	96.5	87.8	-9.0%	-2.4%	0.2%
Denmark	45.3	41.5	39.0	40.5	37.9	38.0	34.6	29.3	30.6	31.6	30.1	-4.6%	-4.0%	0.1%
Estonia	25.0	24.0	21.7	22.5	24.9	24.5	18.7	15.8	16.9	17.9	15.1	-15.4%	-4.9%	0.0%
France	349.0	313.3	317.5	323.0	327.7	317.6	310.4	261.0	287.1	280.8	262.9	-6.3%	-2.8%	0.7%
Germany	815.0	768.2	772.5	784.5	776.3	748.7	696.1	620.6	658.3	649.2	589.4	-9.2%	-3.2%	1.5%
Greece	85.5	81.8	79.0	75.7	80.0	78.3	74.0	59.9	63.2	66.7	63.3	-5.2%	-3.0%	0.2%
Hungary	43.7	43.0	45.6	46.5	48.8	49.3	49.5	47.0	48.2	45.2	41.2	-8.8%	-0.6%	0.1%
Ireland	39.0	38.9	40.6	43.1	42.1	42.0	40.3	35.8	38.1	38.6	36.4	-5.9%	-0.7%	0.1%
Italy	355.3	331.7	347.4	343.8	348.1	348.7	341.3	298.1	331.0	337.0	312.7	-7.2%	-1.3%	0.8%
Lithuania	12.1	11.4	11.9	12.3	12.4	13.1	13.0	12.6	13.0	12.5	12.3	-1.4%	0.2%	0.0%
Netherlands	212.0	203.1	208.1	208.5	204.8	198.6	193.9	173.3	177.0	165.0	156.5	-5.2%	-3.0%	0.4%
North Macedonia	8.1	7.7	7.4	7.5	7.8	7.5	8.3	7.0	7.1	7.9	8.2	4.3%	0.1%	0.0%
Norway	39.8	39.5	40.1	39.2	39.1	39.2	37.7	35.5	36.4	36.4	35.5	-2.6%	-1.2%	0.1%
Poland	336.6	319.5	319.7	334.1	347.7	353.0	335.4	317.3	343.7	326.9	299.1	-8.5%	-1.2%	0.7%
Romania	80.0	80.6	81.6	78.6	82.5	82.2	80.8	74.4	79.6	74.5	69.6	-6.6%	-1.4%	0.2%
Slovakia	33.9	31.5	31.9	32.4	34.5	33.8	31.5	29.4	32.8	29.9	29.1	-2.6%	-1.5%	0.1%
Slovenia	14.5	13.1	13.1	14.0	14.3	14.4	13.8	12.4	12.6	12.1	10.9	-10.0%	-2.8%	0.0%
Spain	281.5	280.4	296.3	288.9	306.7	301.3	283.8	229.8	251.0	268.5	254.9	-5.1%	-1.0%	0.6%
Sweden	47.1	45.9	46.3	46.4	46.5	42.5	42.6	40.3	42.5	39.1	37.1	-4.9%	-2.3%	0.1%
Türkiye	342.4	375.1	380.1	402.0	448.8	446.9	433.0	432.2	471.9	464.0	457.1	-1.5%	2.9%	1.1%
Ukraine	323.9	280.6	225.4	246.0	217.2	229.6	215.5	200.8	196.8	132.6	131.4	-1.0%	-8.6%	0.3%
United Kingdom	511.1	470.1	453.5	427.0	416.6	409.8	394.4	332.6	350.4	351.2	338.5	-3.6%	-4.0%	0.8%
Other Europe	297.2	276.4	288.2	293.9	302.7	298.4	293.1	264.4	264.9	267.2	279.6	4.6%	-0.6%	0.7%
Total Europe	4655.5	4422.3	4424.5	4469.8	4534.0	4483.6	4299.4	3844.9	4091.5	3988.3	3775.8	-5.3%	-2.1%	9.3%
Azerbaijan	40.8	41.2	43.2	42.5	41.1	43.8	44.1	43.4	46.2	49.2	54.3	10.4%	2.9%	0.1%
Belarus	63.9	62.9	58.1	58.3	59.2	64.5	65.0	59.3	60.5	58.3	55.2	-5.4%	-1.5%	0.1%
Kazakhstan	278.0	284.1	237.9	256.2	274.6	283.6	277.7	259.8	279.4	277.5	308.7	11.2%	1.1%	0.8%
Russian Federation	2060.5	2055.3	2029.5	2055.0	2052.9	2136.1	2139.2	2015.4	2103.4	2165.6	2176.1	0.5%	0.5%	5.4%
Turkmenistan	133.1	135.3	143.8	148.7	142.0	152.5	150.2	168.1	178.6	181.8	222.2	22.3%	5.3%	0.5%
Uzbekistan	137.8	140.0	133.1	129.7	131.5	138.4	138.7	140.3	147.7	150.8	152.9	1.4%	1.0%	0.4%
Other CIS	27.1	29.9	31.3	31.7	33.4	37.7	36.1	36.6	38.8	37.7	39.0	3.4%	3.7%	0.1%
Total CIS	2741.3	2748.8	2676.9	2722.1	2734.8	2856.7	2851.1	2723.0	2854.7	2920.9	3008.4	3.0%	0.9%	7.4%
Iran	740.9	762.1	756.2	810.7	834.3	859.9	856.1	879.6	896.3	927.6	937.0	1.0%	2.4%	2.3%
Iraq	225.3	228.6	245.7	270.7	294.1	304.0	314.9	286.1	295.6	321.6	278.3	-13.5%	2.1%	0.7%
Israel	69.4	66.8	69.5	68.6	69.2	69.5	71.3	65.3	66.1	70.0	68.2	-2.6%	-0.2%	0.2%
Kuwait	119.5	116.1	122.2	123.8	121.6	125.7	116.2	108.5	114.9	117.2	125.8	7.3%	0.5%	0.3%
Oman	87.8	87.4	91.9	94.3	95.9	99.9	99.7	94.9	102.8	108.6	110.0	1.3%	2.3%	0.3%
Qatar	125.8	135.1	148.5	149.0	141.1	143.5	149.7	132.1	140.8	143.8	164.2	14.3%	2.7%	0.4%
Saudi Arabia	629.1	669.7	709.0	745.8	734.5	719.0	679.2	658.1	676.3	720.9	725.9	0.7%	1.4%	1.8%
United Arab Emirates	298.6	294.7	320.1	330.5	316.7	301.2	315.8	305.6	312.7	336.3	340.8	1.3%	1.3%	0.8%
Other Middle East	172.8	170.0	149.3	141.2	147.4	146.0	145.0	138.7	144.3	142.7	149.4	4.7%	-1.4%	0.4%
Total Middle East	2469.2	2530.4	2612.3	2734.6	2754.7	2768.7	2747.9	2668.8	2749.8	2888.7	2899.5	0.4%	1.6%	7.2%
Algeria	206.7	219.1	223.7	228.8	231.6	239.5	243.2	229.2	248.5	254.7	248.5	-2.4%	1.9%	0.6%
Egypt	249.9	250.3	253.1	267.2	271.0	267.6	259.1	269.7	282.4	284.7	279.3	-1.1%	1.1%	0.7%
Morocco	60.6	61.9	62.2	62.5	65.3	66.8	73.0	67.4	75.1	75.5	74.4	-1.5%	2.1%	0.2%
South Africa	501.4	506.2	494.2	513.5	509.3	491.4	513.9	486.0	479.9	461.7	478.1	3.6%	-0.5%	1.2%
Eastern Africa	109.0	122.7	128.0	127.0	136.8	144.4	141.9	134.0	143.0	139.8	142.7	2.0%	2.7%	0.4%
Middle Africa	98.9	105.3	109.7	107.3	101.9	100.9	102.3	92.3	94.8	99.9	113.7	13.9%	1.4%	0.3%
Western Africa	214.0	212.3	226.3	225.2	238.1	258.2	267.2	263.8	286.2	278.2	276.5	-0.6%	2.6%	0.7%
Other Northern Africa	140.3	123.0	113.8	113.6	138.4	148.7	154.2	107.6	168.7	161.5	158.8	-1.7%	1.2%	0.4%
Other Southern Africa	12.7	14.0	14.1	13.9	14.9	15.6	14.9	12.8	14.4	15.9	16.2	2.4%	2.5%	0.0%
Total Africa	1593.5	1614.8	1627.1	1659.0	1707.4	1733.2	1769.5	1629.2	1780.3	1769.6	1788.3	1.1%	1.2%	4.4%
Australia	448.3	456.4	466.8	464.2	464.1	462.7	472.2	440.6	429.9	437.6	440.4	0.6%	-0.2%	1.1%
Bangladesh	73.7	76.4	94.5	95.3	100.0	107.0	119.2	113.8	121.7	130.2	124.6	-4.3%	5.4%	0.3%
China	10443.7	10493.8	10372.3	10213.0	10481.9	10856.5	11241.3	11489.1	11941.3	11895.5	12603.5	6.0%	1.9%	31.2%
China Hong Kong SAR	92.1	90.3	91.1	93.3	99.4	100.6	95.1	68.6	65.0	58.1	66.5	14.4%	-3.2%	0.2%
India	2091.1	2252.5	2325.9	2429.3	2497.7	2617.3	2649.5	2454.4	2705.6	2865.0	3121.5	9.0%	4.1%	7.7%
Indonesia	575.4	584.0	592.9	597.7	619.8	665.5	715.4	660.2	666.4	852.1	861.5	1.1%	4.1%	2.1%
Japan	1328.6	1293.6	1254.5	1233.5	1228.4	1205.5	1165.6	1075.4	1109.3	1108.7	1038.6	-6.3%	-2.4%	2.6%
Malaysia	260.3	271.5	275.5	280.0	267.2	276.4	281.5	278.0	284.6	303.1				

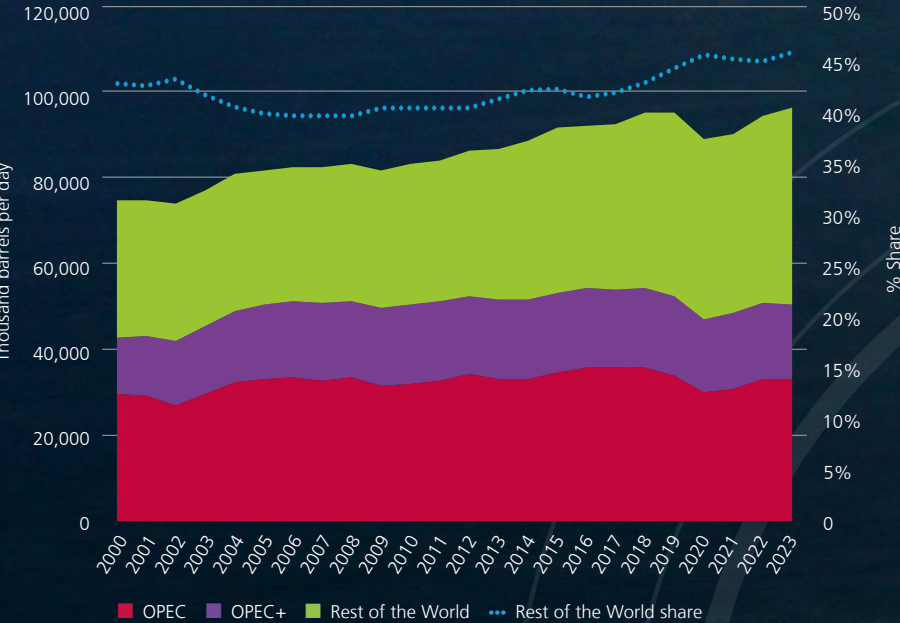
In 2023, global oil production reached a record level of just over 96 million barrels per day. The US remained the largest producer seeing its output grow by over 8%. In contrast, the Russian Federation’s production decreased by over 1% as a full year of international sanctions were felt. Southern & Central America continues to grow rapidly post-COVID and recorded the highest growth rate (11%) for any region in 2023. In Asia Pacific, China’s production rose by 2%, accounting for around 57% of the region’s total production. Whilst the US lost its position as the largest oil refining market by capacity with China

reaching 18,484 thousand barrels per day, throughput of refined products from China still lags the US with a utilisation of nearly 82% compared to around 87%.

Consumption of oil exceeded 100 million barrels of oil per day (mbpd) for the first time ever. Gasoline, diesel and kerosene (aviation) use returned to or beyond their 2019 levels, but within the data sets there are some national/regional differences. Whilst global gasoline consumption (25 mbpd) was just above its 2019 pre-COVID level, kerosene, although growing strongly (17.5% in 2023), has yet to return to its 2019 peak.

In 2023, production from non-OPEC+ countries exceeded global incremental demand growth by 20%

Since 2008, countries beyond OPEC+ have been steadily increasing their share of oil production with the US, Canada, and Brazil making notable increases



												Growth rate per annum		Share
Thousand barrels daily	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013-23	2023
Canada	4000	4271	4388	4464	4813	5244	5372	5130	5414	5575	5653	1.4%	3.5%	5.9%
Mexico	2875	2784	2587	2456	2224	2068	1918	1910	1926	1943	2040	5.0%	-3.4%	2.1%
US	10101	11805	12782	12356	13140	15321	17135	16493	16693	17844	19358	8.5%	6.7%	20.1%
Total North America	16976	18860	19756	19275	20178	22633	24426	23533	24033	25361	27050	6.7%	4.8%	28.1%
Argentina	644	638	646	610	590	592	720	721	797	955	1074	12.5%	5.2%	1.1%
Brazil	2110	2341	2525	2607	2731	2691	2890	3030	2991	3112	3502	12.5%	5.2%	3.6%
Colombia	1010	990	1006	886	854	865	886	781	736	754	777	3.0%	-2.6%	0.8%
Ecuador	527	557	543	548	531	517	531	479	473	481	475	-1.2%	-1.0%	0.5%
Guyana	-	-	-	-	-	-	1	74	117	278	391	40.8%	-	0.4%
Peru	171	175	153	141	136	139	144	131	128	128	123	-3.9%	-3.2%	0.1%
Trinidad & Tobago	116	114	109	97	99	87	82	76	77	74	72	-2.8%	-4.7%	0.1%
Venezuela	2680	2692	2864	2566	2199	1642	1051	680	678	735	853	16.1%	-10.8%	0.9%
Other S. & Cent. America	152	154	146	135	133	128	121	112	114	108	99	-7.8%	-4.2%	0.1%
Total S. & Cent. America	7411	7661	7991	7590	7275	6661	6426	6086	6111	6626	7368	11.2%	-0.1%	7.6%
Denmark	178	167	158	142	138	116	103	72	66	65	60	-8.3%	-10.3%	0.1%
Italy	114	120	113	78	86	97	89	112	100	94	90	-4.4%	-2.3%	0.1%
Norway	1849	1894	1953	2004	1982	1863	1774	2018	2036	1906	2022	6.1%	0.9%	2.1%
Romania	86	84	83	79	76	75	75	72	70	66	63	-4.7%	-3.1%	0.1%
United Kingdom	865	854	964	1015	1005	1092	1118	1049	874	809	715	-11.6%	-1.9%	0.7%
Other Europe	344	341	331	312	303	308	302	289	289	274	275	0.5%	-2.2%	0.3%
Total Europe	3437	3460	3602	3630	3590	3550	3460	3612	3436	3214	3225	0.3%	-0.6%	3.3%
Azerbaijan	878	851	841	828	782	784	763	703	708	669	620	-7.2%	-3.4%	0.6%
Kazakhstan	1720	1701	1672	1637	1813	1900	1903	1796	1805	1771	1891	6.8%	1.0%	2.0%
Russian Federation	10807	10927	11087	11342	11374	11562	11679	10666	11000	11202	11075	-1.1%	0.2%	11.5%
Turkmenistan	256	263	271	270	269	259	254	219	206	203	194	-4.2%	-2.7%	0.2%
Uzbekistan	69	63	60	57	61	64	62	44	46	45	43	-5.3%	-4.6%	†
Other CIS	35	35	36	36	37	38	39	39	41	43	44	3.2%	2.3%	†
Total CIS	13765	13840	13966	14171	14336	14607	14701	13468	13806	13933	13868	-0.5%	0.1%	14.4%
Iran	3609	3714	3853	4578	4939	4720	3510	3230	3766	3945	4662	18.2%	2.6%	4.8%
Iraq	3099	3239	3986	4423	4538	4632	4779	4114	4102	4520	4355	-3.6%	3.5%	4.5%
Kuwait	3134	3106	3069	3150	3009	3050	2976	2721	2706	3036	2908	-4.2%	-0.7%	3.0%
Oman	942	943	981	1004	971	978	971	951	971	1064	1049	-1.5%	1.1%	1.1%
Qatar	1934	1892	1844	1846	1783	1798	1737	1715	1697	1743	1772	1.6%	-0.9%	1.8%
Saudi Arabia	11393	11519	11998	12406	11892	12261	11832	11039	10954	12191	11389	-6.6%	†	11.8%
Syria	59	33	27	25	25	24	34	43	43	43	40	-6.6%	-3.8%	†
United Arab Emirates	3540	3592	3876	4020	3880	3894	3984	3679	3640	4020	3922	-2.5%	1.0%	4.1%
Yemen	198	153	54	43	71	94	95	88	83	74	49	-32.8%	-13.0%	0.1%
Other Middle East	208	214	213	214	208	207	214	202	208	209	217	3.7%	0.4%	0.2%
Total Middle East	28117	28405	29901	31709	31316	31658	30132	27782	28171	30844	30362	-1.6%	0.8%	31.5%
Algeria	1485	1589	1558	1577	1540	1511	1487	1332	1353	1443	1408	-2.4%	-0.5%	1.5%
Angola	1738	1701	1796	1745	1671	1519	1420	1325	1177	1191	1150	-3.4%	-4.0%	1.2%
Chad	91	89	111	117	98	116	127	126	116	124	134	8.2%	4.0%	0.1%
Republic of Congo	243	253	234	232	270	330	336	307	274	269	278	3.5%	1.4%	0.3%
Egypt	710	714	726	691	660	674	653	632	608	613	610	-0.4%	-1.5%	0.6%
Equatorial Guinea	282	284	260	223	195	176	160	158	131	121	88	-27.0%	-11.0%	0.1%
Gabon	213	211	214	221	210	193	218	207	181	191	223	17.0%	0.4%	0.2%
Libya	1048	518	437	412	929	1165	1232	420	1286	1143	1271	11.2%	2.0%	1.3%
Nigeria	2276	2273	2199	1898	1966	2000	2093	1894	1678	1445	1540	6.6%	-3.8%	1.6%
South Sudan	100	155	148	137	147	144	172	165	153	141	148	4.7%	4.0%	0.2%
Sudan	118	120	109	84	70	74	72	63	64	62	57	-7.3%	-6.9%	0.1%
Tunisia	68	63	57	54	45	44	40	37	45	38	38	-0.4%	-5.7%	†
Other Africa	242	247	276	270	317	315	348	331	294	284	282	-1.0%	1.5%	0.3%
Total Africa	8612	8218	8123	7660	8121	8263	8358	6998	7360	7063	7228	2.3%	-1.7%	7.5%
Australia	401	420	378	353	322	342	458	454	444	412	383	-7.0%	-0.5%	0.4%
Brunei	135	126	127	121	113	112	121	110	107	93	93	0.2%	-3.7%	0.1%
China	4216	4246	4309	3999	3846	3802	3848	3901	3994	4111	4198	2.1%	†	4.4%
India	921	914	904	896	897	892	851	795	770	739	728	-1.5%	-2.3%	0.8%
Indonesia	871	847	838	873	837	808	781	742	692	647	638	-1.4%	-3.1%	0.7%
Malaysia	627	649	696	726	718	713	672	615	571	561	565	0.7%	-1.0%	0.6%
Thailand	466	464	481	489	486	475	475	421	398	328	324	-1.3%	-3.6%	0.3%
Vietnam	346	325	352	317	284	257	236	207	196	194	188	-2.9%	-5.9%	0.2%
Other Asia Pacific	270	292	293	277	269	230	227	204	195	167	158	-5.4%	-5.2%	0.2%
Total Asia Pacific	8254	8284	8378	8051	7774	7630	7669	7449	7366	7252	7275	0.3%	-1.3%	7.5%
Total World	86572	88728	91717	92085	92588	95002	95172	88928	90282	94292	96376	2.2%	1.1%	100.0%
of which: OECD	21670	23589	24605	24010	24814	27251	29089	28244	28514	29614	31330	5.8%	3.8%	32.5%
Non-OECD	64901	65139	67113	68075	67774	67751	66084	60684	61768	64677	65046	0.6%	†	67.5%
OPEC	34740	34693	36342	37449	37240	37094	35079	31107	31928	34247	34048	-0.6%	-0.2%	35.3%
Non-OPEC	51832	54036	55375	54636	55348	57908	60093	57821	58354	60044	62328	3.8%	1.9%	64.7%
European Union	559	554	534	468	464	448	414	392	370	346	328	-5.1%	-5.2%	0.3%

Source: includes data from FGE Iran Service.
* Includes crude oil, shale oil, oil sands, condensates (lease condensate or gas condensates that require further refining) and NGLs (natural gas liquids – ethane, LPG and naphtha separated from the production of natural gas).
Excludes liquid fuels from other sources such as biofuels and synthetic derivatives of coal and natural gas. This also excludes liquid fuel adjustment factors such as refinery processing gain. Excludes oil shales/kerozen extracted in solid form.
† Less than 0.05.
Note: Annual changes and shares of total are calculated using thousand barrels daily figures.

												Growth rate per annum		Share
Million tonnes	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013-23	2023
Canada	195.4	209.8	216.1	218.8	236.6	257.7	263.5	252.0	266.6	273.9	277.9	1.4%	3.6%	6.2%
Mexico	141.8	137.1	127.5	121.4	109.5	102.3	94.9	95.1	96.4	97.6	102.5	5.0%	-3.2%	2.3%
US	448.6	524.6	567.0	542.7	574.2	669.6	751.0	713.3	715.9	762.1	827.1	8.5%	6.3%	18.3%
Total North America	785.8	871.5	910.6	882.9	920.3	1029.6	1109.4	1060.4	1079.0	1133.6	1207.5	6.5%	4.4%	26.8%
Argentina	30.2	29.8	30.0	28.6	27.3	27.6	33.8	33.7	37.6	45.4	51.2	13.0%	5.4%	1.1%
Brazil	110.2	122.5	132.2	136.7	142.6	140.6	151.2	159.3	156.9	163.2	183.7	12.5%	5.2%	4.1%
Colombia	53.2	52.2	53.0	46.8	45.0	45.6	46.7	41.3	38.8	39.7	40.9	3.0%	-2.6%	0.9%
Ecuador	28.2	29.8	29.1	29.5	28.5	27.7	28.5	25.8	25.3	25.8	25.5	-1.2%	-1.0%	0.6%
Guyana	-	-	-	-	-	-	0.1	3.7	5.8	13.8	19.5	40.8%	-	0.4%
Peru	7.3	7.5	6.5	5.8	5.7	5.9	6.1	5.5	5.3	5.4	5.1	-4.4%	-3.4%	0.1%
Trinidad & Tobago	5.1	5.1	4.8	4.3	4.4	3.9	3.7	3.4	3.5	3.4	3.3	-1.8%	-4.2%	0.1%
Venezuela	137.8	138.5	147.6	132.6	113.2	84.3	53.4	34.6	34.5	37.5	43.7	16.6%	-10.8%	1.0%
Other S. & Cent. America	7.6	7.7	7.4	6.8	6.7	6.4	6.1	5.7	5.8	5.5	5.1	-7.4%	-4.0%	0.1%
Total S. & Cent. America	379.6	393.1	410.7	391.2	373.3	342.0	329.5	313.0	313.5	339.7	378.1	11.3%	†	8.4%
Denmark	8.7	8.1	7.7	6.9	6.7	5.6	5.0	3.5	3.2	3.2	2.9	-8.3%	-10.3%	0.1%
Italy	5.5	5.8	5.5	3.8	4.1	4.7	4.3	5.4	4.8	4.5	4.3	-4.5%	-2.4%	0.1%
Norway	83.5	85.4	88.0	90.7	89.4	83.9	80.3	92.7	94.3	89.2	94.7	6.2%	1.3%	2.1%
Romania	4.1	4.1	4.0	3.8	3.6	3.6	3.6	3.5	3.3	3.1	3.0	-4.7%	-3.2%	0.1%
United Kingdom	40.6	39.9	45.3	47.4	46.6	50.9	51.8	49.0	40.9	37.8	33.4	-11.4%	-1.9%	0.7%
Other Europe	17.1	17.0	16.5	15.6	15.0	15.2	15.0	14.4	14.3	13.6	13.7	0.6%	-2.2%	0.3%
Total Europe	159.5	160.3	166.9	168.2	165.5	163.9	160.0	168.4	160.9	151.4	152.1	0.5%	-0.5%	3.4%
Azerbaijan	43.5	42.1	41.7	41.1	38.7	38.8	37.6	34.6	34.6	32.7	30.2	-7.5%	-3.6%	0.7%
Kazakhstan	81.8	80.8	79.5	78.0	86.2	90.4	90.6	85.7	85.9	84.2	90.0	6.8%	1.0%	2.0%
Russian Federation	532.2	537.4	544.6	558.5	558.5	567.9	573.4	524.4	538.8	548.5	541.7	-1.3%	0.2%	12.0%
Turkmenistan	12.5	12.9	13.2	13.2	13.1	12.5	12.2	10.4	9.8	9.6	9.2	-4.0%	-3.0%	0.2%
Uzbekistan	3.2	2.9	2.7	2.6	2.8	2.9	2.8	2.0	2.1	2.1	2.0	-5.2%	-4.6%	†
Other CIS	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.2	3.2%	2.3%	†
Total CIS	674.9	677.9	683.4	695.2	701.1	714.3	718.5	659.1	673.2	679.2	675.2	-0.6%	0.0%	15.0%
Iran	169.7	174.0	180.2	216.1	234.5	222.6	161.7	147.7	172.2	180.2	214.3	18.9%	2.4%	4.7%
Iraq	151.9	158.8	195.6	217.6	222.4	227.0	234.2	202.0	200.8	221.3	213.0	-3.7%	3.4%	4.7%
Kuwait	151.4	150.2	148.2	152.7	145.0	146.8	143.4	131.2	130.0	145.9	139.8	-4.2%	-0.8%	3.1%
Oman	46.1	46.2	48.0	49.3	47.6	47.8	47.3	46.1	46.8	51.4	50.6	-1.7%	0.9%	1.1%
Qatar	81.7	79.9	77.4	77.6	74.8	75.1	72.3	72.2	70.8	72.7	74.1	2.0%	-1.0%	1.6%
Saudi Arabia	538.4	543.8	568.0	586.7	559.3	576.8	556.6	519.6	515.0	574.2	531.7	-7.4%	-0.1%	11.8%
Syria	2.7	1.5	1.2	1.1	1.1	1.1	1.5	2.0	2.0	2.0	1.8	-6.9%	-3.8%	†
United Arab Emirates	161.6	162.9	175.1	181.6	174.9	176.0	179.9	165.9	163.4	181.1	176.1	-2.8%	0.9%	3.9%
Yemen	9.1	6.9	2.2	1.6	3.0	4.1	4.1	3.8	3.5	3.1	1.9	-37.7%	-14.4%	†
Other Middle East	10.3	10.5	10.5	10.6	10.2	10.2	10.4	9.9	10.2	10.2	10.6	4.0%	0.3%	0.2%
Total Middle East	1322.9	1334.8	1406.5	1495.0	1472.8	1487.4	1411.4	1300.3	1314.7	1442.1	1413.9	-2.0%	0.7%	31.3%
Algeria	64.8	68.8	67.2	68.4	66.6	65.3	64.3	57.6	58.2	62.1	60.4	-2.7%	-0.7%	1.3%
Angola	85.2	83.3	88.2	85.8	81.6	74.1	69.1	64.6	57.1	57.8	55.8	-3.5%	-4.1%	1.2%
Chad	4.8	4.7	5.8	6.1	5.2	6.1	6.7	6.6	6.1	6.5	7.0	8.2%	4.0%	0.2%
Republic of Congo	12.3	12.9	11.9	11.9	13.8	16.9	17.2	15.8	14.0	13.7	14.2	3.5%	1.4%	0.3%
Egypt	34.4	35.1	35.4	33.8	32.2	32.8	31.8	31.1	29.6	29.9	29.8	-0.3%	-1.4%	0.7%
Equatorial Guinea	13.2	13.3	12.1	10.3	9.0	8.1	7.4	7.4	6.1	5.6	4.0	-27.7%	-11.2%	0.1%
Gabon	10.7	10.5	10.7	11.0	10.5	9.7	10.9	10.4	9.0	9.5	11.1	17.0%	0.4%	0.2%
Libya	49.4	24.4	20.5	19.3	43.8	54.9	58.0	19.7	60.4	53.6	59.7	11.4%	1.9%	1.3%
Nigeria	109.4	109.2	105.7	91.3	94.4	96.2	100.9	91.4	80.7	69.3	73.9	6.7%	-3.8%	1.6%
South Sudan	4.9	7.7	7.3	6.8	7.3	7.1	8.4	8.1	7.5	6.9	7.3	4.7%	4.0%	0.2%
Sudan	5.8	5.9	5.4	4.2	3.4	3.7	3.6	3.1	3.2	3.1	2.8	-7.3%	-6.9%	0.1%
Tunisia	3.1	2.9	2.6	2.4	2.1	2.0	1.8	1.7	2.1	1.8	1.7	-1.8%	-5.8%	†
Other Africa	12.0	12.2	13.7	13.5	15.7	15.5	17.1	16.3	14.4	13.9	13.7	-1.5%	1.3%	0.3%
Total Africa	409.9	390.8	386.4	364.8	385.4	392.4	397.2	333.9	348.4	333.6	341.5	2.4%	-1.8%	7.6%
Australia	17.6	18.6	16.8	15.4	13.9	14.6	19.3	19.1	18.4	17.1	15.7	-8.3%	-1.2%	0.3%
Brunei	6.6	6.2	6.2	5.9	5.5	5.4	5.9	5.4	5.2	4.5	4.5	0.2%	-3.7%	0.1%
China	210.0	211.4	214.6	199.7	191.5	189.3	191.6	194.8	198.9	204.7	209.0	2.1%	†	4.6%
India	42.2	41.6	41.2	40.6	40.4	39.5	37.5	35.1	34.0	33.0	32.6	-1.4%	-2.6%	0.7%
Indonesia	42.4	41.0	40.6	42.6	40.9	39.5	38.1	36.3	33.7	31.5	31.1	-1.3%	-3.0%	0.7%
Malaysia	28.7	29.8	32.2	33.3	32.9	32.5	30.6	28.0	25.9	25.3	25.5	0.7%	-1.2%	0.6%
Thailand	17.1	16.9	17.6	18.1	17.6	17.0	16.9	15.1	13.9	11.5	11.2	-2.4%	-4.1%	0.2%
Vietnam	16.9	15.9	17.2	15.5	13.9	12.4	11.4	10.0	9.5	9.3	9.0	-3.2%	-6.1%	0.2%
Other Asia Pacific	11.9	13.0	13.1	12.4	12.0	10.3	10.1	9.2	8.7	7.5	7.1	-5.0%	-5.0%	0.2%
Total Asia Pacific	393.4	394.4	399.4	383.5	368.6	360.6	361.5	353.1	348.2	344.5	345.7	0.4%	-1.3%	7.7%
Total World	4126.0	4222.7	4363.9	4380.7	4387.0	4490.2	4487.4	4188.2	4237.9	4424.1	4514.1	2.0%	0.9%	100.0%
of which: OECD	1008.5	1095.4	1140.5	1106.6	1138.3	1246.9	1328.4	1282.6	1290.6	1335.7	1411.2	5.6%	3.4%	31.3%
Non-OECD	3117.4	3127.3	3223.5	3274.1	3248.7	3243.3	3159.1	2905.6	2947.3	3088.4	3102.9	0.5%	0.0%	68.7%
OPEC	1655.8	1650.7	1731.1	1785.4	1769.0	1758.8	1657.0	1468.0	1501.5	1611.8	1597.8	-0.9%	-0.4%	35.4%
Non-OPEC	2470.2	2572.0	2632.8	2595.3	2618.0	2731.4	2830.5	2720.3	2736.4	2812.3	2916.3	3.7%	1.7%	64.6%
European Union	27.3	27.1	26.1	23.0	22.6	21.9	20.2	19.2	18.0	16.8	16.0	-5.1%	-5.2%	0.4%

Source: includes data from FGE Iran Service.
* Includes crude oil, shale oil, oil sands, condensates (lease condensate or gas condensates that require further refining) and NGLs (natural gas liquids – ethane, LPG and naphtha separated from the production of natural gas).
Excludes liquid fuels from other sources such as biofuels and synthetic derivatives of coal and natural gas. This also excludes liquid fuel adjustment factors such as refinery processing gain.
Excludes oil shales/kerogen extracted in solid form.
† Less than 0.05%.
Note: Annual changes and shares of total are calculated using million tonnes figures. Growth rates are adjusted for leap years.

												Growth rate per annum			Share
Thousand barrels daily	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023	
Canada	3486	3758	3863	3868	4216	4596	4690	4470	4745	4866	4935	1.4%	3.5%	6.0%	
Mexico	2522	2429	2267	2154	1948	1833	1701	1705	1756	1785	1875	5.1%	-2.9%	2.3%	
US	7495	8791	9439	8846	9357	10951	12311	11318	11268	11911	12927	8.5%	5.6%	15.6%	
Total North America	13504	14977	15569	14868	15522	17381	18702	17494	17769	18562	19737	6.3%	3.9%	23.8%	
Argentina	540	532	532	511	480	490	608	601	682	832	946	13.8%	5.8%	1.1%	
Brazil	2024	2255	2437	2510	2622	2587	2788	2940	2905	3022	3402	12.6%	5.3%	4.1%	
Colombia	1010	990	1006	886	854	865	886	781	736	754	777	3.0%	-2.6%	0.9%	
Ecuador	526	557	543	548	531	517	531	479	473	481	475	-1.2%	-1.0%	0.6%	
Guyana	—	—	—	—	—	—	1	74	117	278	391	40.8%	—	0.5%	
Peru	118	121	104	91	88	92	95	84	82	86	80	-6.7%	-3.8%	0.1%	
Trinidad & Tobago	81	81	79	71	72	63	59	57	60	58	60	2.6%	-3.0%	0.1%	
Venezuela	2564	2578	2747	2461	2095	1553	972	628	629	689	809	17.5%	-10.9%	1.0%	
Other S. & Cent. America	135	139	133	123	119	114	108	100	101	95	88	-7.6%	-4.2%	0.1%	
Total S. & Cent. America	6999	7254	7581	7200	6861	6281	6048	5744	5785	6295	7029	11.7%	†	8.5%	
Denmark	178	167	158	142	138	116	103	72	66	65	60	-8.3%	-10.3%	0.1%	
Italy	114	120	113	78	86	97	89	112	100	92	88	-4.9%	-2.6%	0.1%	
Norway	1543	1570	1614	1655	1629	1527	1473	1725	1783	1709	1818	6.4%	1.7%	2.2%	
Romania	83	82	80	76	73	72	71	68	66	62	59	-4.6%	-3.3%	0.1%	
United Kingdom	810	791	903	933	913	1002	1019	961	807	742	659	-11.2%	-2.0%	0.8%	
Other Europe	328	327	317	297	284	289	285	274	273	258	260	0.6%	-2.3%	0.1%	
Total Europe	3057	3056	3186	3180	3124	3103	3040	3212	3096	2929	2944	0.5%	-0.4%	3.6%	
Azerbaijan	877	849	840	826	781	783	762	702	707	667	619	-7.3%	-3.4%	0.7%	
Kazakhstan	1720	1701	1672	1637	1813	1900	1903	1796	1805	1771	1891	6.8%	1.0%	2.3%	
Russian Federation	10528	10479	10617	10863	10898	11083	11186	10192	10455	10669	10554	-1.1%	†	12.8%	
Turkmenistan	239	246	254	250	248	236	228	189	179	173	166	-3.9%	-3.6%	0.2%	
Uzbekistan	69	63	60	57	61	64	62	44	46	45	43	-5.3%	-4.6%	0.1%	
Other CIS	35	35	36	36	37	38	39	39	41	43	44	3.2%	2.3%	0.1%	
Total CIS	13468	13373	13478	13670	13839	14104	14180	12963	13233	13368	13317	-0.4%	-0.1%	16.1%	
Iran	3192	3273	3392	4090	4491	4241	3023	2734	3184	3312	3940	19.0%	2.1%	4.8%	
Iraq	3058	3198	3945	4375	4473	4568	4712	4049	4032	4446	4271	-3.9%	3.4%	5.2%	
Kuwait	2847	2830	2782	2860	2704	2737	2678	2438	2415	2707	2590	-4.3%	-0.9%	3.1%	
Oman	942	943	981	1004	971	978	971	951	971	1064	1049	-1.5%	1.1%	1.3%	
Qatar	1463	1426	1374	1373	1333	1328	1266	1288	1256	1286	1310	1.9%	-1.1%	1.6%	
Saudi Arabia	9875	9941	10420	10688	10175	10533	10145	9304	9394	10509	9609	-8.6%	-0.3%	11.6%	
Syria	45	23	19	17	17	16	25	33	33	33	30	-7.7%	-3.8%	†	
United Arab Emirates	3058	3053	3262	3366	3250	3293	3345	3072	3016	3364	3251	-3.4%	0.6%	3.9%	
Yemen	174	128	28	16	44	67	67	60	55	46	22	-52.6%	-18.7%	†	
Other Middle East	199	204	203	204	198	196	196	184	193	193	201	4.1%	0.1%	0.2%	
Total Middle East	24851	25020	26407	27994	27656	27956	26427	24239	24550	26959	26274	-2.5%	0.6%	31.7%	
Algeria	1275	1329	1290	1316	1287	1259	1239	1099	1105	1178	1137	-3.4%	-1.1%	1.4%	
Angola	1716	1672	1780	1722	1632	1479	1373	1278	1130	1144	1103	-3.5%	-4.3%	1.3%	
Chad	91	89	111	117	98	116	127	126	116	124	134	8.2%	4.0%	0.2%	
Republic of Congo	234	245	227	225	263	323	329	300	267	262	271	3.6%	1.5%	0.3%	
Egypt	643	667	626	631	603	617	597	587	561	568	565	-0.6%	-1.3%	0.7%	
Equatorial Guinea	261	266	242	204	174	157	144	143	119	108	78	-27.6%	-11.4%	0.1%	
Gabon	213	211	214	221	210	193	218	207	181	191	223	17.0%	0.4%	0.3%	
Libya	1025	510	422	397	909	1144	1205	405	1246	1103	1231	11.7%	1.8%	1.5%	
Nigeria	2193	2188	2119	1822	1890	1922	2014	1833	1620	1378	1470	6.7%	-3.9%	1.8%	
South Sudan	100	155	148	137	147	144	172	165	153	141	148	4.7%	4.0%	0.2%	
Sudan	118	120	109	84	70	74	72	63	64	62	57	-7.3%	-6.9%	0.1%	
Tunisia	62	58	52	46	39	38	36	33	41	35	33	-4.5%	-6.0%	†	
Other Africa	242	247	276	270	317	315	347	328	287	274	267	-2.6%	1.0%	0.3%	
Total Africa	8173	7756	7651	7190	7639	7782	7872	6568	6889	6566	6719	2.3%	-1.9%	8.1%	
Australia	335	353	322	290	263	282	361	351	335	311	281	-9.5%	-1.7%	0.3%	
Brunei	122	114	115	109	101	100	110	100	98	84	84	0.2%	-3.7%	0.1%	
China	4216	4246	4309	3999	3846	3802	3848	3901	3994	4111	4198	2.1%	†	5.1%	
India	785	778	772	752	744	719	677	636	620	609	605	-0.7%	-2.6%	0.7%	
Indonesia	825	789	786	829	801	772	745	708	659	612	606	-1.1%	-3.0%	0.7%	
Malaysia	588	610	662	667	660	653	610	556	511	502	508	1.1%	-1.5%	0.6%	
Thailand	241	233	248	258	240	228	228	202	177	143	136	-5.0%	-5.5%	0.2%	
Vietnam	337	315	342	308	275	243	225	195	185	182	175	-3.8%	-6.3%	0.2%	
Other Asia Pacific	233	257	261	246	237	204	202	184	177	151	144	-4.5%	-4.7%	0.2%	
Total Asia Pacific	7681	7695	7816	7457	7167	7004	7006	6834	6755	6707	6737	0.5%	-1.3%	8.1%	
Total World	77732	79131	81688	81561	81808	83611	83275	77053	78079	81385	82757	1.7%	0.6%	100.0%	
of which: OECD	17749	19233	19945	19095	19637	21497	22854	21708	21810	22436	23642	5.4%	2.9%	28.6%	
Non-OECD	59983	59898	61743	62466	62172	62114	60421	55345	56269	58949	59116	0.3%	-0.1%	71.4%	
OPEC	31511	31294	32841	33746	33553	33402	31396	27616	28338	30388	29985	-1.3%	-0.5%	36.2%	
Non-OPEC	46221	47836	48847	47815	48255	50209	51879	49437	49741	50997	52772	3.5%	1.3%	63.8%	
European Union	546	542	522	456	450	436	403	382	359	334	317	-5.3%	-5.3%	0.4%	

													Growth rate per annum		Share
Thousand barrels daily	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	2023
Canada	514	513	525	595	597	647	682	660	669	708	718	1.4%	3.4%	5.3%	
Mexico	353	355	320	302	276	235	217	205	170	158	164	3.8%	-7.3%	1.2%	
US	2606	3015	3342	3509	3793	4369	4824	5175	5425	5933	6431	8.4%	9.5%	47.2%	
Total North America	3473	3883	4187	4407	4656	5252	5724	6040	6263	6800	7313	7.6%	7.7%	53.7%	
Argentina	104	105	114	99	110	102	112	120	114	123	128	3.7%	2.0%	0.9%	
Brazil	86	87	88	97	110	104	102	90	86	91	101	10.7%	1.6%	0.7%	
Colombia	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Ecuador	1	–	–	–	–	–	–	–	–	–	–	–	–	–	
Guyana	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Peru	54	54	49	50	48	47	49	48	46	43	43	1.7%	-2.1%	0.3%	
Trinidad & Tobago	34	33	30	25	27	24	23	20	17	15	12	-23.4%	-10.2%	0.1%	
Venezuela	116	114	117	105	104	88	80	52	49	47	44	-5.0%	-9.2%	0.3%	
Other S. & Cent. America	17	14	13	12	15	14	13	13	13	12	11	-9.7%	-4.0%	0.1%	
Total S. & Cent. America	412	407	411	389	414	379	378	342	325	331	339	2.4%	-1.9%	2.5%	
Denmark	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Italy	–	–	–	–	–	–	–	–	–	2	2	20.8%	–	–	†
Norway	306	324	338	349	352	335	301	293	252	197	204	3.6%	-4.0%	1.5%	
Romania	3	3	3	4	3	3	4	4	4	4	3	-6.2%	1.8%	–	
United Kingdom	55	62	60	82	92	90	99	88	67	67	56	-16.3%	0.1%	0.4%	
Other Europe	16	14	14	15	18	18	17	15	16	16	15	-1.0%	-0.3%	0.1%	
Total Europe	380	404	415	450	466	446	421	400	339	284	281	-1.3%	-3.0%	2.1%	
Azerbaijan	1	2	1	1	1	1	1	1	1	1	2	39.5%	2.2%	–	
Kazakhstan	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Russian Federation	278	448	470	479	476	479	493	474	544	533	522	-2.2%	6.5%	3.8%	
Turkmenistan	17	17	17	20	21	23	27	30	27	30	28	-6.2%	5.3%	0.2%	
Uzbekistan	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Other CIS	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Total CIS	297	467	488	500	497	503	521	505	573	565	551	-2.3%	6.4%	4.0%	
Iran	418	441	461	488	448	479	487	496	582	633	722	14.1%	5.6%	5.3%	
Iraq	41	40	41	48	64	64	68	64	70	74	84	13.3%	7.3%	0.6%	
Kuwait	287	276	288	290	305	313	299	283	291	329	318	-3.2%	1.0%	2.3%	
Oman	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Qatar	471	466	470	473	450	471	470	427	441	457	461	0.8%	-0.2%	3.4%	
Saudi Arabia	1518	1577	1578	1718	1717	1728	1687	1609	1560	1682	1780	5.8%	1.6%	13.1%	
Syria	14	10	8	8	8	8	9	10	10	10	10	-3.0%	-3.9%	0.1%	
United Arab Emirates	482	539	614	654	630	600	639	608	625	656	671	2.2%	3.3%	4.9%	
Yemen	24	25	26	26	27	28	28	28	28	28	28	–	1.2%	0.2%	
Other Middle East	10	10	10	10	10	11	19	18	15	16	16	-1.4%	5.0%	0.1%	
Total Middle East	3266	3386	3494	3715	3659	3703	3705	3543	3622	3885	4088	5.2%	2.3%	30.0%	
Algeria	210	260	268	261	254	252	247	233	248	265	271	2.2%	2.6%	2.0%	
Angola	22	30	16	23	39	40	47	47	47	47	47	-0.8%	7.7%	0.3%	
Chad	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Republic of Congo	9	8	7	7	7	7	7	7	7	7	7	–	-2.5%	0.1%	
Egypt	67	47	64	60	57	58	56	44	47	45	45	1.5%	-3.8%	0.3%	
Equatorial Guinea	21	19	17	19	21	19	17	15	12	13	10	-21.8%	-7.1%	0.1%	
Gabon	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Libya	22	8	15	15	20	21	27	15	40	40	40	–	6.0%	0.3%	
Nigeria	82	86	80	76	77	79	79	61	59	67	70	4.3%	-1.6%	0.5%	
South Sudan	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Sudan	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Tunisia	6	5	5	7	6	5	4	4	5	3	5	45.0%	-2.6%	–	
Other Africa	–	–	–	–	–	1	1	3	7	11	15	39.1%	–	0.1%	
Total Africa	440	462	472	469	481	481	486	430	471	497	509	2.4%	1.5%	3.7%	
Australia	66	67	56	64	59	60	97	103	109	101	101	0.9%	4.4%	0.7%	
Brunei	13	12	11	12	13	12	12	10	8	9	9	–	-3.9%	0.1%	
China	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
India	136	136	133	144	153	173	174	159	151	130	123	-5.4%	-1.1%	0.9%	
Indonesia	46	58	52	44	36	36	35	34	33	34	32	-6.3%	-3.5%	0.2%	
Malaysia	39	39	35	59	58	60	62	59	60	59	57	-2.1%	4.0%	0.4%	
Thailand	225	231	233	231	247	247	246	219	221	185	188	1.6%	-1.8%	1.4%	
Vietnam	10	10	9	10	9	13	12	12	11	11	13	10.6%	2.9%	0.1%	
Other Asia Pacific	38	36	33	31	32	26	26	21	17	16	14	-13.3%	-9.3%	0.1%	
Total Asia Pacific	572	588	562	594	606	626	664	615	610	545	537	-1.4%	-0.6%	3.9%	
Total World	8840	9597	10029	10524	10779	11391	11898	11875	12203	12906	13619	5.5%	4.4%	100.0%	
of which: OECD	3921	4356	4659	4916	5177	5754	6235	6536	6704	7178	7689	7.1%	7.0%	56.5%	
Non-OECD	4918	5241	5370	5608	5602	5637	5663	5339	5499	5728	5930	3.5%	1.9%	43.5%	
OPEC	3230	3398	3501	3704	3686	3691	3684	3491	3590	3859	4063	5.3%	2.3%	29.8%	
Non-OPEC	5610	6199	6529	6820	7093	7699	8214	8384	8613	9047	9556	5.6%	5.5%	70.2%	
European Union	13	12	12	13	13	12	11	10	10	11	11	0.1%	-1.2%	0.1%	

Source: Includes data from FGE, FGE Iran Service, and ICIS.
* Includes ethane, LPG and naphtha separated from the production of natural gas. Excludes condensates.
† Less than 0.05%.
Note: Annual changes and shares of total are calculated using thousand barrels daily figures.

												Growth rate per annum		Share
Thousand barrels daily	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013-23	2023
Canada	2471	2467	2487	2494	2471	2542	2552	2181	2283	2388	2439	2.1%	-0.1%	2.4%
Mexico	2172	2093	2044	2091	2044	1925	1825	1611	1777	1939	1970	1.6%	-1.0%	1.9%
US	18967	19100	19532	19692	19952	20512	20543	18186	19890	20010	20246	1.2%	0.7%	19.6%
Total North America	23609	23660	24062	24277	24467	24978	24920	21977	23950	24337	24654	1.3%	0.4%	23.8%
Argentina	711	709	729	713	713	684	608	527	638	757	721	-4.8%	0.1%	0.7%
Brazil	3127	3267	3192	3004	3045	3013	3076	2873	3039	3158	3271	3.6%	0.5%	3.2%
Chile	348	347	340	359	366	379	378	346	380	411	416	1.3%	1.8%	0.4%
Colombia	352	373	341	410	406	413	416	350	449	500	513	2.5%	3.8%	0.5%
Ecuador	247	260	254	240	237	255	249	203	249	271	288	6.2%	1.5%	0.3%
Peru	224	221	236	251	257	264	272	211	260	272	280	2.9%	2.2%	0.3%
Trinidad & Tobago	43	40	44	45	40	34	35	30	30	32	33	3.1%	-2.6%	+
Venezuela	869	809	711	628	548	425	411	230	247	310	396	27.8%	-7.5%	0.4%
Central America	371	384	422	438	454	450	487	387	447	472	500	6.1%	3.0%	0.5%
Other Caribbean	609	618	650	667	662	667	621	536	539	538	564	4.8%	-0.8%	0.5%
Other South America	201	202	208	219	223	232	239	214	249	253	255	0.8%	2.4%	0.2%
Total S. & Cent. America	7102	7232	7126	6973	6950	6819	6794	5908	6527	6973	7237	3.8%	0.2%	7.0%
Austria	262	255	258	264	265	270	276	239	253	243	243	+	-0.7%	0.2%
Belgium	612	606	619	625	632	679	639	557	618	601	574	-4.4%	-0.6%	0.6%
Bulgaria	81	88	98	101	105	105	109	99	104	111	111	0.3%	3.2%	0.1%
Croatia	64	66	68	68	73	71	71	60	65	69	70	2.2%	1.0%	0.1%
Cyprus	46	46	47	51	53	52	52	44	46	49	49	-0.1%	0.5%	0.1%
Czech Republic	188	199	191	179	213	214	218	190	209	213	213	+	1.3%	0.2%
Denmark	156	155	158	158	158	160	160	137	139	158	159	0.6%	0.2%	0.2%
Estonia	31	29	29	29	30	30	27	28	28	28	27	-3.6%	-1.4%	+
Finland	213	207	207	210	208	208	208	187	183	192	173	-9.8%	-2.0%	0.2%
France	1667	1619	1646	1614	1644	1605	1600	1340	1447	1447	1430	-1.2%	-1.5%	1.4%
Germany	2404	2344	2336	2377	2440	2318	2340	2129	2113	2147	2032	-5.4%	-1.7%	2.0%
Greece	285	284	297	297	301	298	308	251	266	303	303	+	0.6%	0.3%
Hungary	131	147	157	155	168	180	181	168	182	180	175	-2.7%	3.0%	0.2%
Iceland	15	16	17	19	21	23	20	13	15	18	17	-5.5%	1.6%	+
Ireland	141	141	146	152	153	158	159	134	145	154	155	0.9%	0.9%	0.1%
Italy	1289	1220	1293	1284	1304	1331	1277	1064	1182	1260	1248	-0.9%	-0.3%	1.2%
Latvia	34	34	36	37	38	34	39	35	36	35	35	0.5%	0.3%	+
Lithuania	53	53	57	62	65	69	69	65	66	67	68	2.0%	2.5%	0.1%
Luxembourg	58	57	56	56	59	63	64	52	56	51	50	-2.3%	-1.5%	+
Netherlands	953	944	923	939	948	933	907	869	866	852	880	3.2%	-0.8%	0.9%
North Macedonia	19	19	20	23	22	23	23	21	22	24	24	1.2%	2.7%	+
Norway	224	219	225	222	228	234	226	210	215	217	226	4.4%	0.1%	0.2%
Poland	518	518	544	588	666	689	707	668	699	726	728	0.3%	3.5%	0.7%
Portugal	238	238	244	245	246	245	253	208	216	234	224	-4.4%	-0.6%	0.2%
Romania	181	185	189	200	211	212	224	216	231	235	234	-0.6%	2.6%	0.2%
Slovakia	75	71	78	80	90	91	86	86	91	92	92	0.5%	2.1%	0.1%
Slovenia	51	50	49	52	54	56	54	46	49	51	46	-10.3%	-1.1%	+
Spain	1181	1188	1232	1266	1281	1312	1314	1059	1167	1287	1267	-1.6%	0.7%	1.2%
Sweden	300	298	295	310	315	286	291	262	294	275	275	-0.1%	-0.9%	0.3%
Switzerland	248	225	228	216	223	215	221	183	184	189	193	1.9%	-2.5%	0.2%
Türkiye	742	758	887	943	1017	1022	1029	973	1036	1075	1139	6.0%	4.4%	1.1%
Ukraine	275	245	216	229	231	241	242	229	232	202	205	1.6%	-2.9%	0.2%
United Kingdom	1508	1515	1555	1588	1612	1597	1568	1221	1257	1361	1381	1.5%	-0.9%	1.3%
Other Europe	299	294	305	325	341	338	350	326	341	355	361	1.7%	1.9%	0.3%
Total Europe	14543	14331	14704	14965	15414	15362	15311	13368	14055	14502	14411	-0.6%	-0.1%	13.9%
Azerbaijan	101	100	100	99	100	114	115	105	120	126	130	3.1%	2.5%	0.1%
Belarus	160	164	138	147	147	171	175	166	159	147	148	1.2%	-0.7%	0.1%
Kazakhstan	285	294	274	279	283	304	307	264	327	323	349	8.1%	2.0%	0.3%
Russian Federation	3218	3365	3277	3329	3336	3363	3429	3308	3530	3624	3647	0.6%	1.3%	3.5%
Turkmenistan	138	154	128	178	143	153	137	180	142	147	146	-0.5%	0.6%	0.1%
Uzbekistan	87	93	88	111	103	118	121	128	126	126	126	0.2%	3.8%	0.1%
Other CIS	77	76	81	88	85	97	90	88	97	101	102	0.5%	2.9%	0.1%
Total CIS	4066	4247	4085	4231	4197	4320	4373	4240	4501	4593	4648	1.2%	1.3%	4.5%
Iran	1890	1772	1552	1590	1652	1722	1796	1722	1794	1853	1817	-2.0%	-0.4%	1.8%
Iraq	682	654	645	657	778	762	753	656	735	825	875	6.0%	2.5%	0.8%
Israel	213	200	211	217	227	230	232	201	210	228	225	-1.1%	0.6%	0.2%
Kuwait	467	451	459	438	449	470	451	425	437	420	411	-2.0%	-1.3%	0.4%
Oman	176	182	186	189	211	224	217	180	199	226	233	2.8%	2.8%	0.2%
Qatar	305	315	357	375	341	351	372	294	319	360	370	2.7%	2.0%	0.4%
Saudi Arabia	3468	3789	3964	4100	4052	3871	3632	3437	3600	3854	4052	5.1%	1.6%	3.9%
United Arab Emirates	847	881	919	1002	993	992	963	909	966	1110	1139	2.7%	3.0%	1.1%
Other Middle East	645	654	568	532	548	567	544	500	528	524	525	0.1%	-2.0%	0.5%
Total Middle East	8693	8897	8862	9099	9250	9188	8962	8324	8788	9401	9647	2.6%	1.0%	9.3%
Algeria	387	401	425	412	408	413	430	385	405	418	440	5.2%	1.3%	0.4%
Egypt	767	801	817	843	809	727	692	607	654	756	742	-1.8%	-0.3%	0.7%
Morocco	282	272	268	275	291	287	293	259	291	299	300	0.4%	0.6%	0.3%
South Africa	556	548	605	582	583	583	578	467	504	514	524	2.0%	-0.6%	0.5%
Eastern Africa	498	520	566	582	622	655	654	602	645	597	598	0.2%	1.8%	0.6%
Middle Africa	272	286	281	258	247	252	269	220	257	295	307	4.2%	1.2%	0.3%
Western Africa	590	548	561	624	686	803	816	800	879	916	884	-3.4%	4.1%	0.9%
Other Northern Africa	347	357	318	298	330	335	327	305	346	382	380	-0.4%	0.9%	0.4%
Other Southern Africa	54	56	57	56	56	59	58	63	54	58	60	3.1%	1.0%	0.1%
Total Africa	3755	3789	3898	3930	4032	4114	4116	3697	4035	4234	4235	+	1.2%	4.1%
Australia	1038	1032	1021	1021	1068	1080	1069	919	944	1002	1060	5.7%	0.2%	1.0%
Bangladesh	117	128	155	160	181	208	204	171	233	283	240	-15.3%	7.5%	0.2%
China	10648	11106	11962	12370	13070	13727	14410	14479	14966	15048	16658	10.7%	4.6%	16.1%
China Hong Kong SAR	352	335	368	380	428	435	408	285	255	216	271	25.1%	-2.6%	0.3%
India	3752	3872	4190	4595	4769	5033	5216	4772	4897	5289	5544	4.8%	4.0%	5.4%
Indonesia	1592	1606	1524	1508	1612	1683	1695	1547	1624	1777	1816	2.1%	1.3%	1.8%
Japan	4613	4388	4246	4116	4097	3954	3860	3427	3500	3518	3380	-3.9%	-3.1%	3.3%
Malaysia	807	810	762	846	805	814	881	746	717	857	951	10.9%	1.7%	0.9%
New Zealand	151	154	160	166	174	175	179	148	148	147	157	6.8%	0.4%	0.2%
Pakistan	442	458	505	566	589	499	446	434	503	489	394	-19.6%	-1.2%	0.4%
Philippines	326	347	397	427	460	470	481	395	427	467	489	4.5%	4.1%	0.5%
Singapore	1147	1172	1232	1300	1320	1338	1310	1262	1247	1203	1359	13.0%	1.7%	1.3%
South Korea	2478	2468	2578	2802	2801	2798	2783	2645	2829	2871	2814	-2.0%	1.3%	2.7%
Sri Lanka	94	108	105	127	138	138	144	124	118	98	108	10.7%	1.4%	0.1%
Taiwan	966	995	1020	1021	1013	1014	958	916	968	888	840	-5.5%	-1.4%	0.8%
Thailand	1185	1209	1213	1241	1291	1324	1343	1204	1212	1269	1273	0.3%	0.7%	1.2%
Vietnam	370	388	475	524	552	581	597	507	493	534	602	12.7%	5.0%	0.6%
Other Asia Pacific	353	368	434	418	476	529	566	576	581	610	626	2.7%	5.9%	0.6%
Total Asia Pacific	30432	30945	32347	33590	34842	35800	36548	34557	35662	36569				

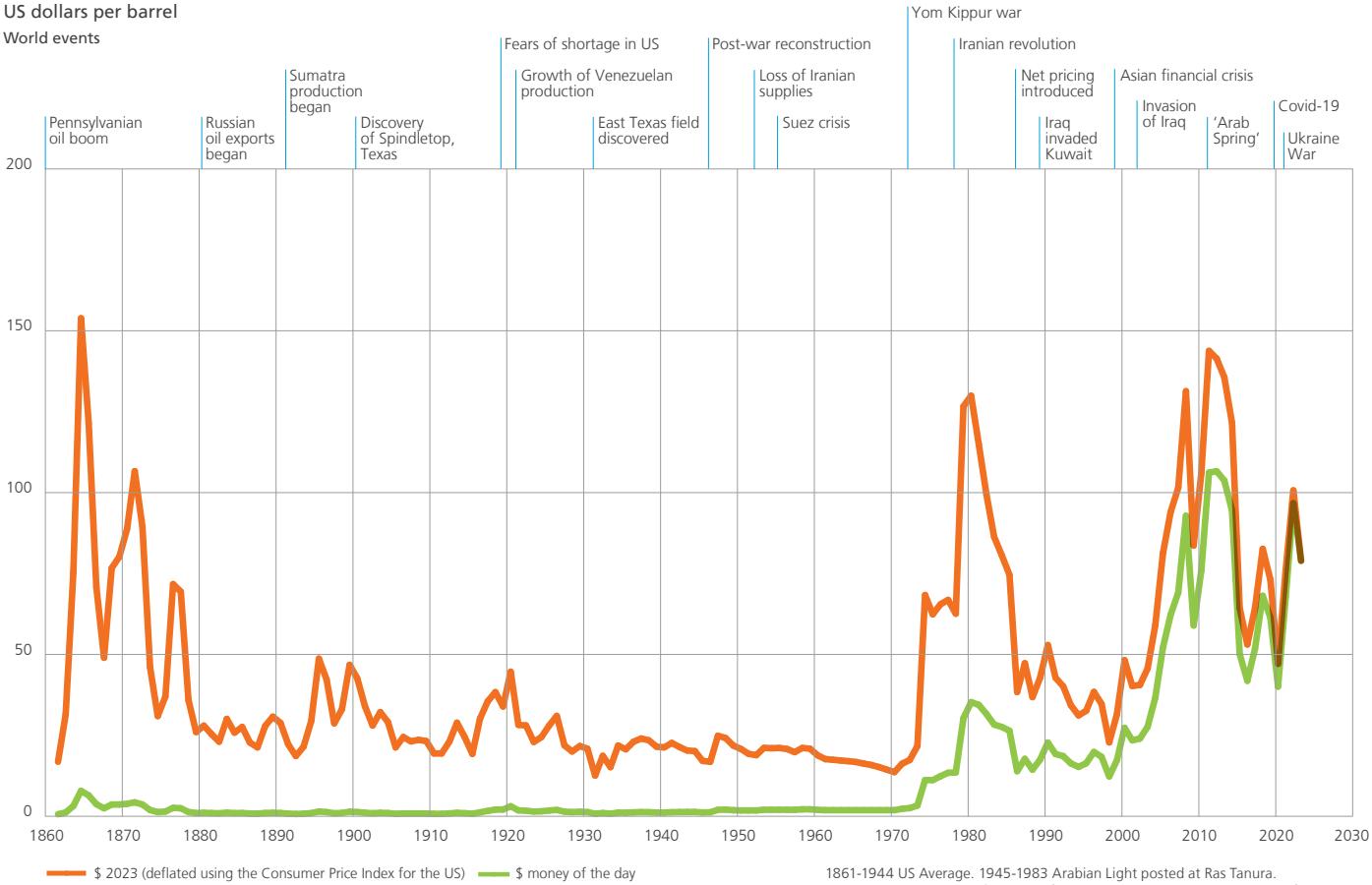
													Growth rate per annum		Share
Thousand barrels daily	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	2023
Canada	2413	2408	2431	2439	2408	2476	2486	2121	2219	2312	2351	1.7%	-0.3%	2.3%	
Mexico	2168	2087	2038	2085	2038	1918	1818	1602	1770	1931	1962	1.6%	-1.0%	2.0%	
US	17992	18111	18499	18593	18845	19417	19424	17183	18785	18862	18984	0.6%	0.5%	18.9%	
Total North America	22573	22606	22968	23117	23291	23811	23727	20907	22774	23106	23296	0.8%	0.3%	23.2%	
Argentina	685	678	695	677	672	645	567	504	613	723	690	-4.7%	0.1%	0.7%	
Brazil	2651	2747	2583	2453	2485	2368	2361	2218	2394	2512	2567	2.2%	-0.3%	2.6%	
Chile	348	347	340	359	366	379	378	346	380	411	416	1.3%	1.8%	0.4%	
Colombia	335	356	323	393	389	392	394	331	429	478	484	1.3%	3.7%	0.5%	
Ecuador	247	260	254	239	236	255	249	203	248	271	287	6.2%	1.5%	0.3%	
Peru	215	213	227	241	246	254	262	201	248	261	269	2.9%	2.2%	0.3%	
Trinidad & Tobago	43	40	44	45	40	34	35	30	30	32	33	3.1%	-2.6%	0.1%	
Venezuela	869	809	711	628	548	425	411	230	247	310	396	27.8%	-7.5%	0.4%	
Central America	370	383	421	437	452	449	486	387	446	471	499	6.1%	3.0%	0.5%	
Other Caribbean	600	609	640	657	652	658	612	527	531	529	556	5.0%	-0.8%	0.6%	
Other South America	197	197	202	212	216	225	230	206	240	245	247	0.7%	2.3%	0.2%	
Total S. & Cent. America	6561	6640	6440	6342	6302	6084	5986	5184	5805	6244	6445	3.2%	-0.2%	6.4%	
Austria	251	244	247	253	254	259	265	230	244	234	234	0.1%	-0.7%	0.2%	
Belgium	603	597	613	615	620	668	628	541	600	583	556	-4.5%	-0.8%	0.6%	
Bulgaria	79	85	95	97	102	101	105	95	100	107	106	-0.8%	3.0%	0.1%	
Croatia	63	65	68	68	73	71	69	59	63	68	70	2.3%	1.0%	0.1%	
Cyprus	46	45	46	51	52	52	44	45	48	48	48	-0.2%	0.5%	†	
Czech Republic	181	192	184	172	205	207	209	181	201	205	206	0.2%	1.3%	0.2%	
Denmark	150	150	153	153	153	154	154	130	133	152	153	0.7%	0.2%	0.2%	
Estonia	31	29	29	29	30	30	27	27	27	28	27	-4.0%	-1.6%	†	
Finland	208	197	196	206	200	200	199	178	168	179	164	-8.4%	-2.3%	0.2%	
France	1606	1553	1579	1547	1577	1538	1528	1275	1373	1360	1348	-0.9%	-1.7%	1.3%	
Germany	2336	2273	2269	2310	2372	2247	2270	2047	2038	2072	1955	-5.7%	-1.8%	2.0%	
Greece	282	281	294	293	298	294	304	246	261	297	297	†	0.5%	0.3%	
Hungary	128	142	153	150	164	175	176	161	175	172	167	-3.0%	2.7%	0.2%	
Iceland	15	16	17	19	21	23	19	13	14	18	17	-5.8%	1.3%	†	
Ireland	139	138	143	150	149	155	154	130	141	149	148	-0.7%	0.6%	0.1%	
Italy	1261	1196	1264	1255	1274	1300	1259	1039	1156	1236	1221	-1.2%	-0.3%	1.2%	
Latvia	33	34	35	36	37	34	38	33	35	34	35	0.8%	0.3%	†	
Lithuania	52	51	56	61	63	67	67	62	63	64	65	2.0%	2.3%	0.1%	
Luxembourg	57	55	54	54	57	60	61	49	53	48	47	-2.8%	-1.9%	†	
Netherlands	944	934	914	932	939	919	889	849	846	827	850	2.8%	-1.0%	0.8%	
North Macedonia	19	19	20	23	22	23	23	21	22	24	24	1.2%	2.7%	†	
Norway	221	216	221	215	217	226	215	201	206	209	213	2.2%	-0.4%	0.2%	
Poland	500	501	528	576	650	667	683	644	674	698	700	0.2%	3.4%	0.7%	
Portugal	232	232	236	239	240	239	247	203	209	228	216	-5.1%	-0.7%	0.2%	
Romania	177	181	184	193	204	204	215	206	221	224	223	-0.3%	2.4%	0.2%	
Slovakia	73	68	74	77	86	87	83	83	87	88	88	0.5%	2.0%	0.1%	
Slovenia	50	49	49	52	53	54	52	43	47	49	44	-11.1%	-1.3%	†	
Spain	1153	1159	1202	1233	1243	1262	1265	1016	1123	1245	1228	-1.4%	0.6%	1.2%	
Sweden	286	282	277	288	294	261	266	237	266	240	240	†	-1.7%	0.2%	
Switzerland	247	225	227	214	220	211	216	179	180	185	188	1.7%	-2.7%	0.2%	
Türkiye	734	755	884	940	1014	1018	1025	970	1033	1072	1136	6.0%	4.5%	1.1%	
Ukraine	274	244	215	228	230	240	239	227	230	201	204	1.6%	-2.9%	0.2%	
United Kingdom	1481	1484	1529	1563	1587	1564	1528	1183	1217	1309	1325	1.2%	-1.1%	1.3%	
Other Europe	299	294	305	324	341	338	350	325	341	355	360	1.7%	1.9%	0.4%	
Total Europe	14211	13984	14358	14616	15040	14947	14882	12926	13591	14009	13904	-0.8%	-0.2%	13.9%	
Azerbaijan	101	100	100	99	100	114	115	105	120	126	130	3.1%	2.5%	0.1%	
Belarus	159	163	137	147	147	171	174	166	159	147	148	1.2%	-0.7%	0.1%	
Kazakhstan	285	294	274	279	283	304	307	264	327	323	349	8.1%	2.0%	0.3%	
Russian Federation	3218	3365	3277	3328	3334	3360	3425	3304	3523	3615	3635	0.6%	1.2%	3.6%	
Turkmenistan	138	154	128	178	143	153	137	180	142	147	146	-0.5%	0.6%	0.1%	
Uzbekistan	87	93	88	111	103	118	121	128	126	126	126	0.2%	3.8%	0.1%	
Other CIS	77	76	81	88	85	97	90	88	97	101	102	0.5%	2.9%	0.1%	
Total CIS	4066	4246	4085	4229	4195	4317	4369	4235	4494	4584	4636	1.1%	1.3%	4.6%	
Iran	1890	1772	1552	1590	1652	1722	1796	1722	1794	1853	1817	-2.0%	-0.4%	1.8%	
Iraq	682	654	645	657	778	762	753	656	735	825	875	6.0%	2.5%	0.9%	
Israel	212	199	211	216	226	229	231	199	209	226	223	-1.2%	0.5%	0.2%	
Kuwait	467	451	459	438	449	470	451	425	437	420	411	-2.0%	-1.3%	0.4%	
Oman	176	182	186	189	211	224	217	180	199	226	233	2.8%	2.8%	0.2%	
Qatar	305	315	357	375	341	351	372	294	319	360	370	2.7%	2.0%	0.4%	
Saudi Arabia	3468	3789	3964	4100	4052	3871	3632	3437	3600	3854	4052	5.1%	1.6%	4.0%	
United Arab Emirates	847	881	919	1002	993	992	963	909	966	1110	1139	2.7%	3.0%	1.1%	
Other Middle East	645	654	568	532	548	567	544	500	528	524	525	0.1%	-2.0%	0.5%	
Total Middle East	8693	8896	8861	9099	9249	9187	8961	8323	8786	9399	9646	2.6%	1.0%	9.6%	
Algeria	387	401	425	412	408	413	430	385	405	418	440	5.2%	1.3%	0.4%	
Egypt	767	801	817	843	809	727	692	607	654	756	742	-1.8%	-0.3%	0.7%	
Morocco	282	272	268	277	291	287	293	259	291	299	300	0.4%	0.6%	0.3%	
South Africa	555	547	603	581	582	580	576	465	502	512	522	2.0%	-0.6%	0.5%	
Eastern Africa	498	520	565	581	622	655	653	601	645	597	597	0.2%	1.8%	0.6%	
Middle Africa	272	286	281	258	247	252	269	220	257	295	307	4.2%	1.2%	0.3%	
Western Africa	590	548	561	624	686	803	816	800	879	916	884	-3.4%	4.1%	0.9%	
Other Northern Africa	347	357	318	298	330	335	327	305	346	382	380	-0.4%	0.9%	0.4%	
Other Southern Africa	54	56	57	56	56	59	58	53	54	58	60	3.1%	1.0%	0.1%	
Total Africa	3753	3787	3896	3928	4030	4111	4113	3694	4032	4231	4233	†	1.2%	4.2%	
Australia	1031	1025	1015	1016	1062	1075	1064	915	941	999	1056	5.8%	0.2%	1.1%	
Bangladesh	117	128	155	160	181	208	204	171	233	283	240	-15.3%	7.5%	0.2%	
China	10563	11018	11890	12297	13003	13641	14316	14404	14888	14970	16577	10.7%	4.6%	16.5%	
China Hong Kong SAR	351	335	367	379	427	433	407	283	254	214	268	25.2%	-2.7%	0.3%	
India	3743	3865	4181	4574	4754	5004	5179	4738	4841	5209	5446	4.6%	3.8%	5.4%	
Indonesia	1574	1574	1508	1456	1567	1618	1584	1403	1464	1597	1604	0.4%	0.2%	1.6%	
Japan	4605	4379	4235	4103	4084	3939	3846	3412	3485	3504	3366	-3.9%	-3.1%	3.4%	
Malaysia	803	803	754	838	797	804	867	729	699	837	930	11.0%	1.5%	0.9%	
New Zealand	151	154	160	165	174	175	179	148	148	147	157	6.8%	0.4%	0.2%	

												Growth rate per annum			Share
Thousand barrels daily	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013-23	2023	
North America															
Light distillates	9871	9914	10138	10310	10244	10234	10142	8710	9424	9472	9598	1.3%	-0.3%	9.6%	
of which: gasoline	9492	9566	9801	9965	9945	9932	9859	8445	9158	9248	9364	1.2%	-0.1%	9.3%	
of which: naphtha	379	348	337	345	298	303	282	265	266	224	234	4.7%	-4.7%	0.2%	
Middle distillates	6422	6678	6762	6619	6778	7076	6962	5745	6389	6656	6546	-1.6%	0.2%	6.5%	
of which: diesel/gasoil	4791	5001	4995	4777	4859	5112	4963	4540	4863	4868	4637	-4.7%	-0.3%	4.6%	
of which: jet/kerosene	1631	1676	1767	1842	1920	1964	1999	1205	1526	1788	1909	6.8%	1.6%	1.9%	
Fuel oil	599	468	442	516	548	495	440	315	468	478	427	-10.7%	-3.3%	0.4%	
Others	5682	5546	5626	5671	5721	6006	6184	6137	6492	6499	6725	3.5%	1.7%	6.7%	
of which: ethane and LPG	3366	3292	3361	3428	3453	3789	3838	3959	4082	4027	4169	3.5%	2.2%	4.2%	
Total North America	22573	22606	22968	23117	23291	23811	23727	20907	22774	23106	23296	0.8%	0.3%	23.2%	
of which: US															
Light distillates	8263	8287	8503	8613	8621	8633	8579	7419	8103	8045	8167	1.5%	-0.1%	8.1%	
of which: gasoline	7993	8056	8280	8394	8393	8400	8372	7235	7917	7907	8025	1.5%	†	8.0%	
of which: naphtha	270	231	223	219	228	233	207	185	185	139	142	2.4%	-6.2%	0.1%	
Middle distillates	5259	5519	5534	5438	5580	5815	5793	4793	5254	5417	5322	-1.7%	0.1%	5.3%	
of which: diesel/gasoil	3819	4040	3979	3815	3893	4103	4043	3709	3878	3852	3660	-5.0%	-0.4%	3.7%	
of which: jet/kerosene	1440	1479	1555	1623	1687	1712	1750	1084	1376	1565	1663	6.3%	1.5%	1.7%	
Fuel oil	317	256	258	325	341	317	275	208	314	329	275	-16.5%	-1.4%	0.3%	
Others	4153	4049	4204	4216	4303	4652	4777	4763	5114	5071	5219	2.9%	2.3%	5.2%	
of which: ethane and LPG	2514	2447	2493	2516	2570	2921	2967	3056	3228	3148	3235	2.7%	2.6%	3.2%	
Total US	17992	18111	18499	18593	18845	19417	19424	17183	18785	18862	18984	0.6%	0.5%	18.9%	
S. & Cent. America															
Light distillates	1721	1752	1710	1724	1769	1651	1663	1322	1568	1730	1770	2.3%	0.3%	1.8%	
of which: gasoline	1509	1539	1478	1503	1532	1438	1437	1154	1378	1503	1566	4.2%	0.4%	1.6%	
of which: naphtha	212	213	232	221	237	213	226	168	190	227	204	-10.2%	-0.4%	0.2%	
Middle distillates	2656	2675	2589	2554	2516	2548	2550	2189	2465	2661	2720	2.2%	0.2%	2.7%	
of which: diesel/gasoil	2354	2353	2260	2231	2187	2198	2198	2014	2253	2365	2381	0.7%	0.1%	2.4%	
of which: jet/kerosene	302	323	329	323	329	350	352	174	212	296	339	14.6%	1.2%	0.3%	
Fuel oil	714	731	727	665	611	566	587	546	596	570	621	9.0%	-1.4%	0.6%	
Others	1470	1482	1413	1398	1407	1319	1187	1126	1175	1283	1334	3.9%	-1.0%	1.3%	
of which: ethane and LPG	798	812	810	836	846	786	691	674	693	740	746	0.8%	-0.7%	0.7%	
Total S. & Cent. America	6561	6640	6440	6342	6302	6084	5986	5184	5805	6244	6445	3.2%	-0.2%	6.4%	
of which: Brazil															
Light distillates	695	716	675	682	717	623	633	554	620	699	716	2.4%	0.3%	0.7%	
of which: gasoline	547	576	522	541	556	483	481	450	495	542	580	6.9%	0.6%	0.6%	
of which: naphtha	148	140	153	141	161	140	152	104	125	157	136	-13.1%	-0.8%	0.1%	
Middle distillates	1139	1169	1100	1030	1027	1045	1043	981	1063	1121	1149	2.6%	0.1%	1.1%	
of which: diesel/gasoil	1013	1039	973	913	911	915	922	918	987	1018	1036	1.8%	0.2%	1.0%	
of which: jet/kerosene	126	129	127	117	116	130	121	63	76	103	113	9.6%	-1.1%	0.1%	
Fuel oil	167	191	187	141	137	112	112	112	135	100	96	-4.2%	-5.4%	0.1%	
Others	649	671	622	601	604	587	573	572	576	592	605	2.2%	-0.7%	0.6%	
of which: ethane and LPG	339	339	324	326	322	322	318	319	313	311	316	1.6%	-0.7%	0.3%	
Total Brazil	2651	2747	2583	2453	2485	2368	2361	2218	2394	2512	2567	2.2%	-0.3%	2.6%	
Europe															
Light distillates	2999	2923	2863	2880	2932	2863	2836	2604	2787	2721	2757	1.3%	-0.8%	2.8%	
of which: gasoline	2014	1983	1934	1936	1942	2011	2041	1759	1914	2012	2114	5.1%	0.5%	2.1%	
of which: naphtha	985	941	929	944	990	853	795	846	873	708	643	-9.3%	-4.2%	0.6%	
Middle distillates	7423	7368	7743	7891	8160	8161	8187	6796	7238	7681	7635	-0.6%	0.3%	7.6%	
of which: diesel/gasoil	6173	6087	6398	6500	6684	6624	6617	6053	6383	6379	6181	-3.1%	†	6.2%	
of which: jet/kerosene	1250	1282	1345	1391	1476	1537	1570	743	855	1302	1454	11.7%	1.5%	1.5%	
Fuel oil	1049	985	916	920	978	980	943	790	794	828	780	-5.8%	-2.9%	0.8%	
Others	2740	2707	2835	2925	2969	2944	2916	2735	2772	2780	2732	-1.7%	†	2.7%	
of which: ethane and LPG	1299	1318	1358	1408	1437	1462	1466	1367	1359	1327	1338	0.8%	0.3%	1.3%	
Total Europe	14211	13984	14358	14616	15040	14947	14882	12926	13591	14009	13904	-0.8%	-0.2%	13.9%	
of which: European Union															
Light distillates	2404	2363	2333	2355	2420	2356	2309	2138	2316	2240	2231	-0.4%	-0.7%	2.2%	
of which: gasoline	1467	1463	1439	1445	1461	1541	1570	1358	1467	1545	1611	4.3%	0.9%	1.6%	
of which: naphtha	937	900	894	910	959	815	738	780	849	695	620	-10.8%	-4.1%	0.6%	
Middle distillates	5600	5511	5749	5849	6035	6032	6081	5089	5383	5691	5583	-1.9%	†	5.6%	
of which: diesel/gasoil	4780	4684	4889	4949	5072	5023	5049	4620	4818	4826	4630	-4.1%	-0.3%	4.6%	
of which: jet/kerosene	820	827	860	900	962	1009	1032	468	565	865	954	10.3%	1.5%	1.0%	
Fuel oil	906	852	794	788	813	822	797	666	681	703	665	-5.3%	-3.0%	0.7%	
Others	2051	2046	2106	2143	2171	2146	2131	1963	2011	2053	2008	-2.2%	-0.2%	2.0%	
of which: ethane and LPG	929	942	962	978	1002	1026	1026	951	955	952	949	-0.3%	0.2%	0.9%	
Total European Union*	10961	10771	10982	11135	11439	11356	11318	9855	10390	10687	10488	-1.9%	-0.4%	10.5%	
CIS															
Light distillates	1210	1221	1195	1212	1201	1233	1209	1157	1248	1254	1257	0.3%	0.4%	1.3%	
of which: gasoline	1073	1087	1052	1071	1051	1064	1041	990	1076	1101	1113	1.1%	0.4%	1.1%	
of which: naphtha	137	134	143	141	150	169	168	168	172	153	144	-5.6%	0.5%	0.1%	
Middle distillates	1406	1441	1387	1426	1470	1512	1531	1443	1564	1667	1742	4.5%	2.2%	1.7%	
of which: diesel/gasoil	1092	1149	1115	1079	1084	1149	1184	1147	1232	1386	1438	3.8%	2.8%	1.4%	
of which: jet/kerosene	315	292	272	347	386	363	347	296	332	281	304	8.2%	-0.4%	0.3%	
Fuel oil	450	521	422	431	364	377	393	357	330	316	311	-1.5%	-3.6%	0.3%	
Others	999	1062	1081	1160	1159	1194	1236	1277	1352	1347	1326	-1.6%	2.9%	1.3%	
of which: ethane and LPG	611	634	677	737	729	749	786	817	853	865	835	-3.4%	3.2%	0.8%	
Total CIS	4066	4246	4085	4229	4195	4317	4369	4235	4494	4584	4636	1.1%	1.3%	4.6%	
Middle East															
Light distillates	1880	1948	1960	1998	2120	2154	2113	1805	2019	2103	2156	2.5%	1.4%	2.2%	
of which: gasoline	1587	1613	1639	1678	1784	1831	1830	1531	1692	1763	1801	2.2%	1.3%	1.8%	
of which: naphtha	294	335	321	319	336	323	283	274	327	340	355	4.4%	1.9%	0.4%	
Middle distillates	2631	2539	2465	2381	2259	2233	2344	2037	2174	2518	2596	3.1%	-0.1%	2.6%	
of which: diesel/gasoil	2122	2068	1904	1793	1701	1686	1766	1709	1765	1917	1930	0.7%	-0.9%	1.9%	
of which: jet/kerosene	509	471	561	588	558	547	578	328	409	601	666	10.8%	2.7%	0.7%	
Fuel oil	2034	2110	2105	2094	2156	2036	1991	1994	2053	2155	2163	0.4%	0.6%	2.2%	
Others	2147	2300	2332	2626	2713	2764	2513	2486	2540	2623	2730	4.1%	2.4%	2.7%	
of which: ethane and LPG	1811	1917	1903	2027	2100	2139	2065	2062	2097	2154	2228	2.4%	2.1%	2.2%	
Total Middle East	8693	8896	8861	9099	9249	9187	8961	8323	8786	9399	9646	2.6%	1.0%	9.6%	

	Dubai \$/bbl ¹	Brent \$/bbl ²	Nigerian Forcados \$/bbl ³	West Texas Intermediate \$/bbl ⁴
US dollars per barrel				
1972	1.90	–	–	–
1973	2.83	–	–	–
1974	10.41	–	–	–
1975	10.70	–	–	–
1976	11.63	12.80	12.87	12.23
1977	12.38	13.92	14.21	14.22
1978	13.03	14.02	13.65	14.55
1979	29.75	31.61	29.25	25.08
1980	35.69	36.83	36.98	37.96
1981	34.32	35.93	36.18	36.08
1982	31.80	32.97	33.29	33.65
1983	28.78	29.55	29.54	30.30
1984	28.06	28.78	28.14	29.39
1985	27.53	27.56	27.75	27.98
1986	13.10	14.43	14.46	15.05
1987	16.95	18.44	18.39	19.19
1988	13.18	14.92	15.00	15.98
1989	15.59	18.23	18.30	19.67
1990	20.21	23.73	23.85	24.46
1991	16.70	20.00	20.11	21.53
1992	17.18	19.32	19.61	20.57
1993	14.99	16.97	17.41	18.45
1994	14.69	15.82	16.25	17.21
1995	16.08	17.02	17.26	18.42
1996	19.26	20.67	21.16	22.16
1997	18.31	19.09	19.33	20.61
1998	12.30	12.72	12.63	14.39
1999	16.90	17.97	17.98	19.31
2000	26.27	28.50	28.42	30.37
2001	22.78	24.44	24.23	25.93
2002	23.60	25.02	25.04	26.16
2003	26.75	28.83	28.68	31.06
2004	33.51	38.27	38.13	41.49
2005	46.78	54.52	55.69	56.59
2006	61.48	65.14	67.07	66.04
2007	67.92	72.39	74.48	72.20
2008	94.28	97.26	101.43	100.06
2009	61.14	61.67	63.35	61.92
2010	77.78	79.50	81.05	79.45
2011	105.93	111.26	113.65	95.04
2012	109.06	111.67	114.21	94.13
2013	105.47	108.66	111.95	97.99
2014	97.02	98.95	101.35	93.28
2015	51.22	52.39	54.41	48.71
2016	41.02	43.73	44.54	43.34
2017	53.02	54.19	54.31	50.79
2018	70.15	71.31	72.47	65.20
2019	63.71	64.21	64.95	57.03
2020	42.41	41.84	42.31	39.25
2021	68.91	70.91	69.76	68.10
2022	96.38	101.32	101.40	94.58
2023	82.09	82.64	83.60	78.88

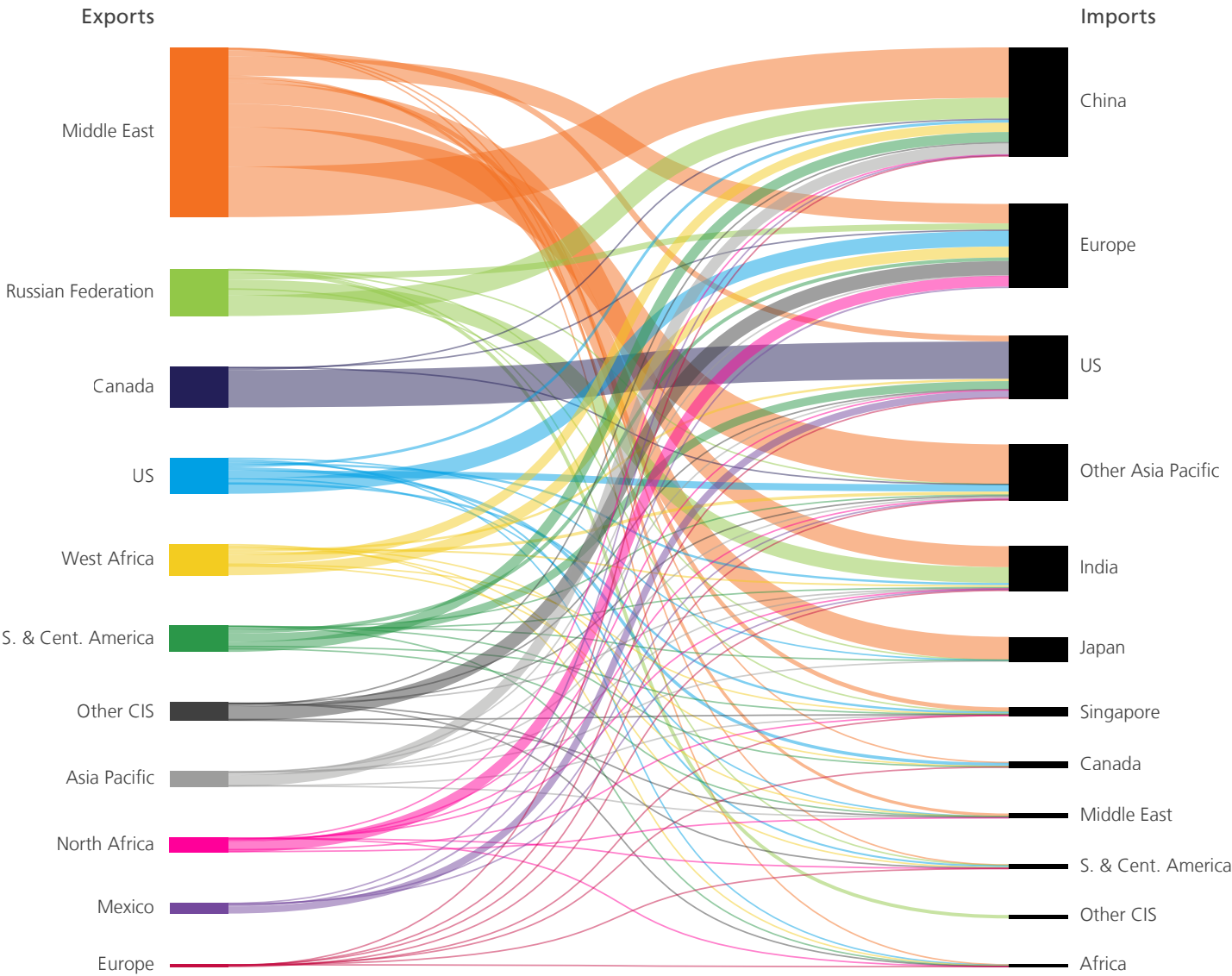
Source: S&P Global Commodity Insights, ©2024 by S&P Global Inc.
¹ 1972–1985 Arabian Light, 1986–2023 Dubai dated.
² 1976–1983 Forties, 1984–2023 Brent dated.
³ Forcados FOB Nigeria.
⁴ 1976–1983 Posted WTI prices, 1984–2023 Spot WTI (Cushing) prices.

Crude oil prices 1861–2023



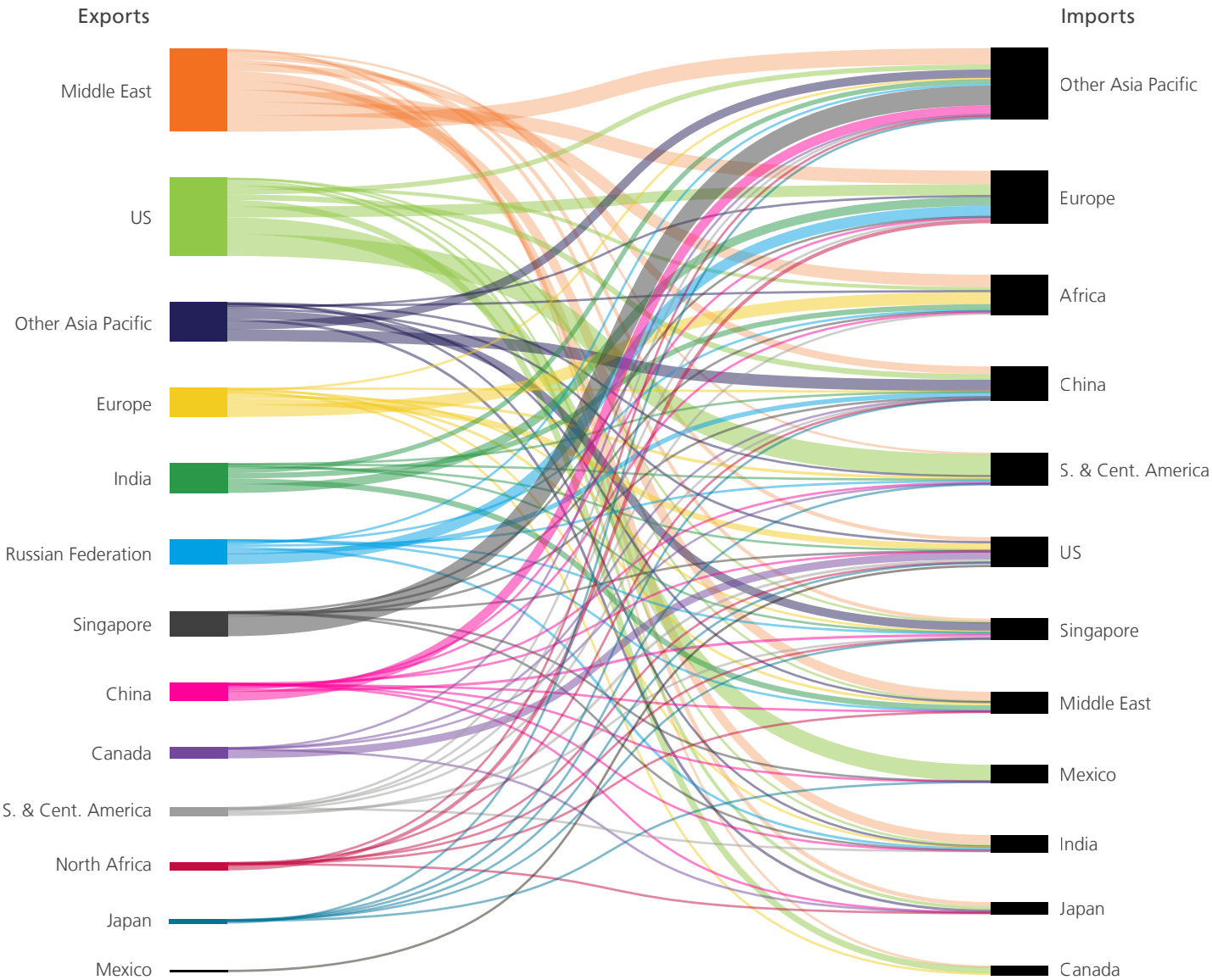
												Growth rate per annum		Share
Thousand barrels daily*	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013-23	2023
Canada	1929	1929	1931	1934	1970	1939	2054	2065	1954	1954	1954	-	0.1%	1.9%
Mexico	1606	1522	1522	1522	1546	1558	1558	1558	1558	1558	1558	-	-0.3%	1.5%
US	17925	17967	18317	18617	18598	18808	18974	18143	17941	18061	18429	2.0%	0.3%	17.8%
Total North America	21460	21418	21770	22073	22113	22305	22586	21766	21453	21573	21941	1.7%	0.2%	21.2%
Argentina	657	657	657	657	657	580	580	580	580	580	580	-	-1.2%	0.6%
Brazil	2097	2238	2281	2289	2285	2285	2290	2290	2303	2304	2290	-0.6%	0.9%	2.2%
Chile	242	242	242	242	242	242	242	242	242	242	242	-	-	0.2%
Colombia	336	336	421	421	421	421	421	421	421	421	501	19.0%	4.1%	0.5%
Curaçao	320	320	320	320	320	320	320	320	320	320	320	-	-	0.3%
Ecuador	175	175	175	175	175	175	175	175	175	186	196	5.4%	1.1%	0.2%
Netherlands Antilles	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Peru	253	253	253	253	253	253	253	253	276	283	283	-	1.1%	0.3%
Trinidad & Tobago	175	175	175	175	175	175	175	175	175	175	140	-20.0%	-2.2%	0.1%
Venezuela	1303	1303	1303	1303	1303	1303	1303	1303	1303	1303	1303	-	-	1.3%
Other S. & Cent. America	655	657	675	675	675	675	675	855	580	400	384	-4.0%	-5.2%	0.4%
Total S. & Cent. America	6213	6356	6502	6510	6506	6429	6434	6614	6375	6214	6239	0.4%	+	6.0%
Austria	193	193	193	193	193	193	193	193	193	193	193	-	-	0.2%
Belgium	776	776	776	776	776	776	776	776	645	645	645	-	-1.8%	0.6%
Bulgaria	195	195	195	195	195	195	195	195	195	195	195	-	-	0.2%
Czech Republic	175	175	175	175	175	175	175	175	175	175	175	-	-	0.2%
Denmark	181	180	180	180	180	181	181	181	181	181	181	-	+	0.2%
Finland	261	261	261	261	261	261	261	261	220	206	206	-	-2.3%	0.2%
France	1375	1375	1375	1245	1245	1245	1245	1245	1170	1145	1145	-	-1.8%	1.1%
Germany	2061	2077	2049	2051	2069	2062	2062	2062	2121	2121	2076	-2.1%	0.1%	2.0%
Greece	498	498	528	528	528	528	528	528	528	528	528	-	0.6%	0.5%
Hungary	165	165	165	165	165	165	165	165	165	165	165	-	-	0.2%
Ireland	75	75	75	75	75	75	75	75	75	75	75	-	-	0.1%
Italy	1861	1900	1900	1900	1900	1900	1900	1900	1900	1794	1794	-	-0.4%	1.7%
Lithuania	241	241	241	241	241	241	241	241	240	240	240	-	+	0.2%
Netherlands	1279	1279	1298	1298	1299	1299	1291	1244	1238	1241	1241	-	-0.3%	1.2%
Norway	342	342	342	342	342	342	342	342	226	226	226	-	-4.1%	0.2%
Poland	582	582	581	581	568	581	581	581	581	581	583	0.3%	+	0.6%
Portugal	330	330	330	330	330	330	330	330	225	225	225	-	-3.8%	0.2%
Romania	235	228	239	256	247	254	252	239	252	252	252	-	0.7%	0.2%
Slovakia	122	122	122	122	122	122	122	122	122	122	122	-	-	0.1%
Spain	1546	1546	1562	1562	1562	1564	1586	1586	1591	1591	1591	-	0.3%	1.5%
Sweden	454	454	454	454	454	454	454	454	454	454	454	-	-	0.4%
Switzerland	140	140	68	68	68	68	68	68	68	68	68	-	-7.0%	0.1%
Türkiye	596	596	596	596	596	818	822	822	822	822	822	-	3.3%	0.8%
Ukraine	272	258	250	250	250	250	250	250	250	250	250	-	-0.9%	0.2%
United Kingdom	1498	1337	1337	1227	1227	1227	1227	1251	1251	1219	1219	-	-2.04%	1.2%
Other Europe	410	410	410	410	393	355	355	311	311	311	207	-33.3%	-6.6%	0.2%
Total Europe	15863	15735	15703	15482	15460	15660	15678	15597	15197	15023	14876	-1.0%	-0.6%	14.4%
Azerbaijan	325	325	325	325	205	163	120	120	135	150	150	-	-7.4%	0.1%
Belarus	460	460	460	460	490	520	520	520	520	520	520	-	1.2%	0.5%
Kazakhstan	350	350	350	350	360	390	400	400	400	400	400	-	1.3%	0.4%
Russian Federation	6229	6366	6472	6543	6545	6551	6676	6736	6861	6821	6781	-0.6%	0.9%	6.6%
Turkmenistan	251	251	271	271	271	271	271	271	271	271	271	-	0.8%	0.3%
Uzbekistan	232	232	232	232	232	232	232	232	232	232	232	-	-	0.2%
Other CIS	18	35	44	45	48	48	51	61	73	73	67	-8.2%	14.1%	0.1%
Total CIS	7865	8019	8154	8226	8151	8175	8270	8340	8492	8467	8421	-0.5%	0.7%	8.1%
Bahrain	260	260	260	260	260	260	260	260	260	260	260	-	-	0.3%
Iran	2075	2075	2075	2075	2220	2330	2495	2475	2520	2550	2604	2.1%	2.3%	2.5%
Iraq	917	791	763	779	779	849	919	919	919	1150	1219	6.0%	2.9%	1.2%
Israel	294	301	301	301	301	301	301	301	301	301	301	-	0.2%	0.3%
Kuwait	936	936	936	936	736	736	736	800	800	835	1309	56.8%	3.4%	1.3%
Oman	222	222	222	222	304	304	304	304	304	304	435	43.1%	7.0%	0.4%
Qatar	283	283	283	429	429	429	429	429	429	429	429	-	4.2%	0.4%
Saudi Arabia	2507	2899	2899	2901	2826	2835	2905	2947	2977	3224	3289	2.0%	2.8%	3.2%
United Arab Emirates	712	728	1149	1149	1229	1229	1307	1331	1246	1246	1259	1.0%	5.9%	1.2%
Other Middle East	496	496	496	496	496	496	496	496	496	496	496	-	-	0.5%
Total Middle East	8702	8991	9384	9548	9580	9769	10152	10262	10252	10795	11601	7.5%	2.9%	11.2%
Algeria	647	651	651	651	657	657	657	657	657	657	657	-	0.2%	0.6%
Egypt	810	810	810	810	810	795	795	795	795	795	795	-	-0.2%	0.8%
Morocco	201	201	201	201	201	201	-	-	-	-	-	-	-100.0%	-
Nigeria	446	449	449	449	449	454	460	460	475	475	529	11.4%	1.7%	0.5%
South Africa	520	520	520	520	520	520	520	520	395	384	277	-27.9%	-6.1%	0.3%
Other Africa	724	726	726	726	706	687	687	687	697	731	698	-4.5%	-0.4%	0.7%
Total Africa	3347	3357	3357	3357	3343	3314	3119	3119	3019	3042	2956	-2.8%	-1.2%	2.9%
Australia	662	536	443	452	454	454	455	456	311	235	235	-	-9.8%	0.2%
Bangladesh	43	43	43	43	43	43	43	48	43	43	43	-	-	+
China	14503	15253	15024	14895	15231	15655	16199	16691	16990	17259	18484	7.1%	2.5%	17.9%
India	4319	4319	4307	4620	4699	4972	4994	5018	5005	5045	5085	0.8%	1.6%	4.9%
Indonesia	1099	1099	1111	1111	1111	1094	1111	1094	1094	1180	1242	5.3%	1.2%	1.2%
Japan	4123	3749	3721	3600	3343	3343	3343	3285	3285	3164	3069	-3.0%	-2.9%	3.0%
Malaysia	612	612	612	618	625	625	625	625	955	955	955	-	4.6%	0.9%
New Zealand	136	136	136	136	136	136	136	136	135	76	30	-60.5%	-14.0%	+
Pakistan	390	390	389	389	401	401	401	430	430	430	430	-	1.0%	0.4%
Philippines	270	271	271	271	271	271	271	180	180	180	180	-	-4.0%	0.2%
Singapore	1414	1514	1514	1514	1514	1514	1514	1514	1461	1302	1302	-	-0.8%	1.3%
South Korea	2878	3123	3128	3259	3298	3346	3393	3334	3363	3363	3363	-	1.6%	3.2%
Taiwan	1197	1197	988	988	1083	1083	1083	1131	1131	1083	1083	-	-1.0%	1.0%
Thailand	1237	1252	1252	1235	1235	1235	1235	1245	1245	1245	1244	-0.1%	0.1%	1.2%
Vietnam	159	159	159	163	167	367	367	367	367	367	367	-	8.7%	0.4%
Other Asia Pacific	190	197	197	197	197	197	357	357	357	357	351	-1.7%	6.3%	0.3%
Total Asia Pacific	33231	33849	33294	33490	33808	34735	35527	35909	36351	36284	37463	3.2%	1.2%	36.2%
Total World	96681	97726	98164	98686	98962	100388	101767	101609	101139	101399	103498	2.1%	0.7%	100.0%
of which: OECD	44881	44485	44771	44853	44684	45154	45503	44543	43701	43391	43654	0.6%	-0.3%	42.2%
Non-OECD	51800	53241	53394	53832	54277	55235	56264	57066	57439	58008	59844	3.2%	1.5%	57.8%
European Union	12777	12824	12871	12761	12757	12735	12748	12643	12359	12217	12154	-0.5%	-0.5%	11.7%

													Growth rate per annum		Share
Thousand barrels daily*	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	2023
Canada	1719	1615	1640	1594	1757	1653	1822	1585	1653	1696	1716	1.1%	1.1%	†	2.1%
Mexico	1223	1155	1064	933	767	612	592	591	712	816	792	-2.9%	-2.9%	-4.3%	1.0%
US	15312	15848	16188	16187	16590	16969	16563	14212	15148	15977	15963	-0.1%	-0.1%	0.4%	19.2%
Total North America	18254	18618	18892	18714	19114	19234	18977	16387	17513	18489	18471	-0.1%	-0.1%	0.1%	22.3%
Argentina	527	526	536	511	500	470	476	417	472	489	519	6.1%	6.1%	-0.2%	0.6%
Brazil	2035	2085	1972	1812	1741	1733	1751	1769	1818	1935	1987	2.7%	2.7%	-0.2%	2.4%
Chile	174	174	165	163	172	172	186	172	192	174	183	5.1%	5.1%	0.5%	0.2%
Colombia	284	247	244	339	355	415	415	355	375	388	398	2.7%	2.7%	3.4%	0.5%
Curaçao	170	189	178	156	84	29	4	—	—	—	—	—	—	-100.0%	—
Ecuador	141	125	121	150	156	159	142	116	163	170	175	3.0%	3.0%	2.2%	0.2%
Netherlands Antilles	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Peru	186	188	188	194	213	209	192	105	138	132	131	-0.7%	-0.7%	-3.4%	0.2%
Trinidad & Tobago	132	105	125	148	131	99	—	—	—	—	—	—	—	-100.0%	0.0%
Venezuela	952	920	863	654	544	306	135	123	135	138	137	-0.3%	-0.3%	-17.6%	0.2%
Other S. & Cent. America	286	277	275	231	197	240	234	240	283	230	237	3.1%	3.1%	-1.9%	0.3%
Total S. & Cent. America	4887	4836	4667	4359	4093	3832	3537	3298	3577	3655	3767	3.1%	3.1%	-2.6%	4.5%
Austria	174	173	179	164	162	180	183	162	166	113	160	42.3%	42.3%	-0.8%	0.2%
Belgium	555	645	644	640	685	663	693	545	577	558	606	8.7%	8.7%	0.9%	0.7%
Bulgaria	113	104	121	125	136	118	137	97	84	141	126	-10.8%	-10.8%	1.1%	0.2%
Czech Republic	134	151	145	109	158	151	158	122	143	150	150	0.5%	0.5%	1.2%	0.2%
Denmark	144	139	147	140	151	152	154	142	150	145	150	3.3%	3.3%	0.4%	0.2%
Finland	227	225	197	226	226	233	240	219	159	186	197	5.7%	5.7%	-1.4%	0.2%
France	1117	1096	1152	1122	1149	1085	978	665	683	829	913	10.1%	10.1%	-2.0%	1.1%
Germany	1857	1833	1875	1887	1870	1752	1763	1685	1690	1801	1598	-11.3%	-11.3%	-1.5%	1.9%
Greece	399	416	436	464	483	489	462	445	476	442	469	6.3%	6.3%	1.6%	0.6%
Hungary	120	131	130	133	131	141	137	135	134	129	139	7.7%	7.7%	1.5%	0.2%
Ireland	57	55	68	64	64	61	51	57	61	60	56	-7.6%	-7.6%	-0.2%	0.1%
Italy	1259	1198	1347	1293	1399	1346	1355	1105	1224	1317	1292	-1.9%	-1.9%	0.3%	1.6%
Lithuania	192	160	170	187	197	195	191	157	160	165	182	10.0%	10.0%	-0.5%	0.2%
Netherlands	1065	1090	1157	1172	1180	1192	1217	1103	1151	1129	1201	6.5%	6.5%	1.2%	1.4%
Norway	292	274	293	230	281	305	265	237	222	145	158	9.1%	9.1%	-5.9%	0.2%
Poland	488	486	532	517	508	540	546	516	497	535	503	-5.9%	-5.9%	0.3%	0.6%
Portugal	239	217	278	279	284	252	223	218	191	204	185	-9.0%	-9.0%	-2.5%	0.2%
Romania	189	194	208	228	225	232	244	206	193	235	207	-11.9%	-11.9%	0.9%	0.2%
Slovakia	116	105	119	115	112	109	103	112	111	108	105	-3.1%	-3.1%	-1.0%	0.1%
Spain	1168	1185	1306	1302	1326	1363	1318	1105	1143	1273	1243	-2.4%	-2.4%	0.6%	1.5%
Sweden	332	380	401	395	392	406	337	349	366	369	352	-4.5%	-4.5%	0.6%	0.4%
Switzerland	97	98	56	59	57	61	55	56	46	61	57	-6.9%	-6.9%	-5.3%	0.1%
Türkiye	421	406	526	531	542	472	673	655	692	736	726	-1.4%	-1.4%	5.6%	0.9%
Ukraine	85	69	64	64	77	47	50	56	62	49	51	4.0%	4.0%	-5.1%	0.1%
United Kingdom	1197	1125	1118	1071	1073	1041	1044	880	889	1017	938	-7.8%	-7.8%	-2.4%	1.1%
Other Europe	136	128	141	148	165	166	123	110	114	122	113	-6.8%	-6.8%	-1.8%	0.1%
Total Europe	12173	12082	12810	12666	13032	12751	12699	11139	11383	12018	11878	-1.2%	-1.2%	-0.2%	14.3%
Azerbaijan	132	135	130	120	118	122	124	118	133	126	126	-0.2%	-0.2%	-0.5%	0.2%
Belarus	425	448	462	372	364	366	359	326	327	306	314	2.7%	2.7%	-3.0%	0.4%
Kazakhstan	341	361	342	339	355	374	392	367	391	457	463	1.2%	1.2%	3.1%	0.6%
Russian Federation	5636	5926	5773	5715	5703	5864	5824	5504	5723	5534	5668	2.4%	2.4%	0.1%	6.8%
Turkmenistan	146	136	127	118	125	117	122	118	117	120	121	0.8%	0.8%	-1.8%	0.1%
Uzbekistan	61	50	57	57	58	70	60	57	46	48	56	16.7%	16.7%	-0.8%	0.1%
Other CIS	2	4	7	8	9	11	7	4	7	7	8	6.6%	6.6%	13.5%	†
Total CIS	6742	7060	6899	6730	6732	6924	6889	6494	6744	6599	6756	2.4%	2.4%	†	8.1%
Bahrain	264	257	266	258	262	260	264	230	223	251	246	-2.1%	-2.1%	-0.7%	0.3%
Iran	2000	1941	1868	1875	1897	2087	2101	2193	2344	2391	2578	7.8%	7.8%	2.6%	3.1%
Iraq	598	487	409	440	527	596	633	536	510	572	449	-21.6%	-21.6%	-2.8%	0.5%
Israel	221	226	232	213	223	238	242	243	238	275	275	0.0%	0.0%	2.2%	0.3%
Kuwait	873	879	905	841	686	679	663	539	643	807	1036	28.2%	28.2%	1.7%	1.2%
Oman	187	180	190	178	232	304	257	255	286	318	322	1.2%	1.2%	5.6%	0.4%
Qatar	270	261	253	280	379	397	396	366	381	415	409	-1.6%	-1.6%	4.3%	0.5%
Saudi Arabia	1876	2201	2447	2753	2802	2770	2649	2397	2766	3020	2810	-7.0%	-7.0%	4.1%	3.4%
United Arab Emirates	650	643	1098	1078	1119	1096	1037	936	939	983	1064	8.2%	8.2%	5.0%	1.3%
Other Middle East	238	230	181	144	161	153	159	144	136	164	166	1.2%	1.2%	-3.5%	0.2%
Total Middle East	7177	7306	7847	8059	8287	8579	8400	7839	8466	9199	9355	1.7%	1.7%	-2.7%	11.3%
Algeria	492	615	591	584	573	601	569	585	588	649	650	0.1%	0.1%	2.8%	0.8%
Egypt	514	530	530	509	508	522	565	605	600	623	529	-15.0%	-15.0%	0.3%	0.6%
Morocco	111	105	53	—	—	—	—	—	—	—	—	—	—	-100.0%	—
Nigeria	97	64	22	62	81	35	7	0	3	6	18	177.3%	177.3%	-15.7%	†
South Africa	422	440	453	474	447	455	396	262	192	196	199	1.3%	1.3%	-7.2%	0.2%
Other Africa	594	444	453	459	429	446	442	324	418	382	410	7.3%	7.3%	-3.6%	0.5%
Total Africa	2230	2197	2101	2087	2038	2059	1980	1777	1801	1856	1805	-2.7%	-2.7%	-2.1%	2.2%
Australia	588	538	427	433	419	474	465	388	308	248	248	-0.2%	-0.2%	-8.3%	0.3%
Bangladesh	27	24	25	23	28	25	28	22	31	28	28	1.4%	1.4%	0.3%	†
China	9599	10165	10824	11304	11844	12574	13433	13824	14461	13892	15102	8.7%	8.7%	4.6%	18.2%
India	4462	4475	4561	4930	5010	5154	5119	4493	4792	5082	5249	3.3%	3.3%	1.6%	6.3%
Indonesia	822	848	836	885	885	916	918	826	824	845	895	5.9%	5.9%	0.8%	1.1%
Japan	3453	3289	3258	3280	3214	3059	3046	2492	2488	2694	2545	-5.6%	-5.6%	-3.0%	3.1%
Malaysia	557	552	514	574	570	566	586	491	571	584	582	-0.3%	-0.3%	0.4%	0.7%
New Zealand	105	101	109	107	108	103	110	76	74	18	—	-100.0%	-100.0%	—	—
Pakistan	223	232	257	242	261	275	243	210	240	231	222	-3.9%	-3.9%	-0.1%	0.3%
Philippines	158	168	212	216	211	237	180	106	78	87	92	5.2%	5.2%	-5.3%	0.1%
Singapore	936	839	901	929	994	974	1000	861	871	888	857	-3.5%	-3.5%	-0.9%	1.0%
South Korea	2484	2516	2784	2928	3061	3031	2922	2679	2634	2811	2758	-1.9%	-1.9%	1.1%	3.3%
Taiwan	847	850	838	861	848	889	890	726	770	815	807	-1.0%	-1.0%	-0.5%	1.0%
Thailand	1017	961	1066	1022	1064	1093	990	982	976	1021	1054	3.3%	3.3%	0.4%	1.3%
Vietnam	148	129	155	155	141	221	276	276	308	356	287	-19.3%	-19.3%	6.8%	0.3%
Other Asia Pacific	98	95	87	103	100	97	101	250	243	263	231	-12.1%	-12.1%	8.9%	0.3%
Total Asia Pacific	25524	25782	26855	27993	28759	29689	30308	28700	29670	29864	30957	3.7%	3.7%	1.9%	37.3%
Total World	76988	77881	80071	80608	82056	83068	82790	75634	79154	81680	82988	1.6%	1.6%	0.8%	100.0%
of which: OECD	37212	37297	38387	38279	39096	38914	38507	33460	34753	36570	36258	-0.9%	-0.9%	-0.3%	43.7%
Non-OECD	39776	40584	41684	42329	42960	44154	44282	42174	44401	45110	46730	3.6%	3.6%	1.6%	56.3%
European Union	10005	10029	10670	10627	10907	10733	10542	9184	9396	9924	9870				



International trade of crude oil was 2.1 billion tonnes in 2023, similar to 2022. The Middle East dominated exports accounting for 41% of the total. Although the Russian Federation’s share dropped by 22 million tonnes, its share of the total remained the second highest at 11%. The US increased its share of total exports by 1%, rising to 9%

in 2023. On the import side, China was the single largest importer at 0.6 billion tonnes, 27% of the global total. Europe had the second highest share at 21%, followed by the US at 15%. Collectively, China and India increased their imports of Russian Federation crude oil by 53% whilst European reduced its imports by 72%.



At 1.2 billion tonnes, international trade of refined product was around 57% that of crude oil trade in terms of volume and similar to 2022 levels. Between them, the Middle East and the US accounted for 44% of the total exports at 0.27 and 0.26 billion tonnes respectively. At 0.5 billion tonnes,

Asia Pacific region accounted for around 43% of total imports. Europe was the second-largest importer of refined products at 0.2 billion tonnes, 16% of the total. It reduced its imports from the Russian Federation by 51%.

Oil Inter-area movements 2023 crude trade

Crude (million tonnes)		To															Total
From		Canada	Mexico	US	S. & Cent. America	Europe	Russian Federation	Other CIS	Middle East	Africa	Australasia	China	India	Japan	Singapore	Other Asia Pacific	
Canada	–	–	192.9	–	6.7	–	–	–	–	†	–	7.5	–	–	–	0.1	207.2
Mexico	–	–	36.5	†	8.0	–	–	–	–	–	–	1.6	3.4	–	–	4.3	53.8
US	16.9	–	–	9.6	80.4	–	–	–	0.1	0.7	1.4	14.3	11.3	2.4	11.6	36.5	185.0
S. & Cent. America	0.6	†	42.9	–	18.2	7.6	†	2.9	1.0	†	52.1	7.0	1.9	2.5	4.5	–	141.2
Europe	0.2	–	2.3	–	–	–	†	0.3	†	†	3.1	5.1	–	0.2	0.8	–	12.1
Russian Federation	–	–	–	0.3	32.4	–	18.0	–	–	–	107.0	81.8	0.1	0.3	0.9	–	240.8
Other CIS	–	–	1.6	0.1	72.7	–	–	2.4	0.8	†	6.4	0.4	–	0.1	6.7	–	91.4
Iraq	†	–	10.6	–	49.2	–	–	0.3	0.3	–	59.3	48.8	–	0.9	14.8	–	184.2
Kuwait	–	–	1.1	–	3.4	–	–	–	–	–	24.5	8.1	–	0.1	30.8	–	81.1
Saudi Arabia	2.5	–	17.4	3.2	40.7	–	–	11.7	2.9	–	85.9	35.3	51.4	4.9	93.3	–	349.1
UAE	†	–	0.8	†	5.4	–	†	†	0.1	†	41.8	13.2	48.6	11.1	49.7	–	170.7
Other Middle East	–	–	0.4	–	1.8	–	–	3.6	†	–	49.6	3.2	8.2	5.5	17.6	–	90.0
North Africa	†	–	5.1	1.9	56.5	–	–	1.6	0.3	0.6	3.5	2.2	–	0.2	3.7	–	75.6
West Africa	4.8	–	11.9	5.4	56.9	–	–	0.3	4.5	0.2	48.1	9.3	–	1.2	16.0	–	158.6
East & S. Africa	–	–	–	†	1.1	–	–	–	†	–	0.7	0.1	–	†	0.5	0.8	3.2
Australasia	–	–	0.1	–	0.1	–	–	–	0.2	–	2.0	–	–	0.5	1.5	5.6	10.0
China	–	–	–	–	0.4	–	–	–	–	–	–	–	–	–	†	0.8	1.2
India	†	–	–	†	1.9	–	–	–	–	–	–	–	–	–	–	†	1.9
Japan	–	–	–	–	†	–	–	–	–	–	–	–	–	–	–	–	†
Singapore	–	–	–	–	0.1	–	–	–	–	–	–	0.3	–	–	–	1.6	2.0
Other Asia Pacific	–	–	†	–	0.7	–	–	–	–	–	6.1	56.2	2.0	1.0	1.9	–	67.9
Total imports		25.0	†	323.8	20.7	436.6	7.7	18.0	23.2	12.4	8.4	563.9	231.0	125.5	42.3	288.5	2127.1

† Less than 0.05. Notes: Does not include biofuels trade. Bunker fuel use is not included as exports. Intra-area movements (for example, between countries within Europe) are excluded. Crude imports and exports include condensates.

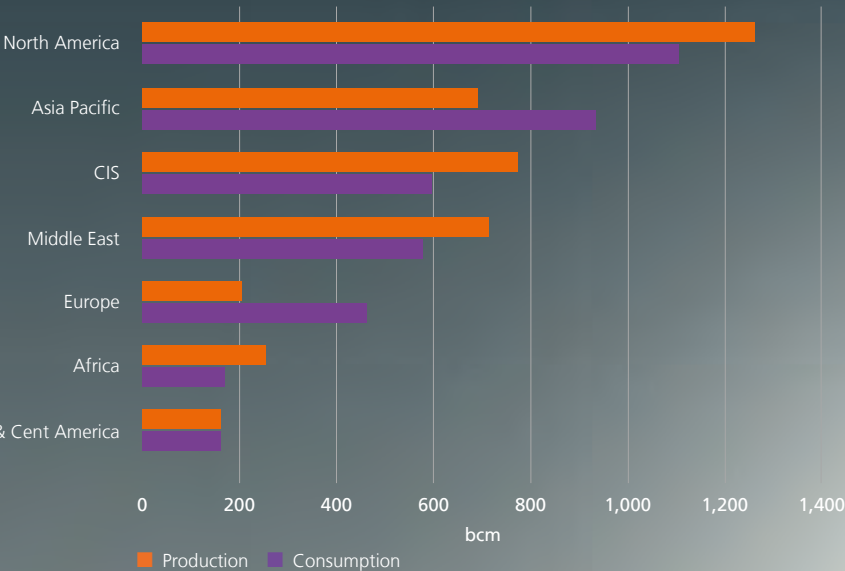
Oil Inter-area movements 2023 refined product

Product (million tonnes)		To															Total
From		Canada	Mexico	US	S. & Cent. America	Europe	Russian Federation	Other CIS	Middle East	Africa	Australasia	China	India	Japan	Singapore	Other Asia Pacific	
Canada	–	0.1	26.3	1.7	0.5	–	–	†	†	†	†	0.6	0.2	2.2	†	0.9	32.3
Mexico	†	–	8.5	0.1	0.2	–	–	–	†	†	†	†	†	†	†	0.4	9.2
US	22.0	55.7	–	73.5	37.0	†	†	†	1.7	12.2	1.2	19.1	8.1	10.7	1.3	15.5	258.0
S. & Cent. America	0.1	0.1	9.2	–	3.1	†	†	†	0.5	2.3	†	4.4	0.8	0.4	5.9	1.0	27.9
Europe	4.2	0.3	21.1	10.0	–	–	0.2	2.0	9.4	40.6	†	1.9	2.0	0.5	4.4	3.8	100.3
Russian Federation	†	–	–	7.6	37.5	–	–	6.7	1.1	4.7	–	16.2	8.7	–	2.8	5.6	90.9
Other CIS	†	–	0.3	0.1	12.8	0.8	–	†	0.1	0.7	–	0.7	–	†	0.3	0.2	15.9
Iraq	–	–	4.9	†	5.0	–	–	†	5.1	0.1	–	0.5	1.4	†	0.3	2.5	19.8
Kuwait	0.4	–	1.2	0.5	11.0	–	–	–	3.9	3.0	†	2.2	3.4	2.9	2.6	6.4	37.4
Saudi Arabia	†	–	4.3	1.5	13.3	–	–	†	8.4	12.9	0.2	2.7	6.7	1.1	2.3	7.3	60.8
UAE	†	†	0.7	1.5	9.0	†	–	0.1	8.3	16.3	0.2	11.7	10.8	4.9	5.3	23.6	92.5
Other Middle East	0.1	†	1.7	0.6	7.5	–	–	0.1	6.3	9.0	0.1	9.2	7.9	4.7	1.3	14.9	63.3
North Africa	†	–	2.6	0.2	11.9	†	†	†	0.8	0.4	†	0.8	0.1	0.6	1.1	5.6	24.2
West Africa	†	–	1.2	0.3	1.0	†	†	†	0.1	0.3	†	0.9	†	–	0.2	0.7	4.8
East & S. Africa	†	†	†	†	0.1	†	†	†	0.2	0.4	†	†	†	†	0.5	†	1.3
Australasia	†	–	0.1	†	0.8	–	–	†	†	†	–	0.6	†	†	1.7	0.3	4.9
China	0.1	1.2	0.5	3.9	6.5	0.2	0.1	1.8	4.7	2.7	–	0.5	1.2	9.0	29.1	–	61.5
India	†	†	5.2	1.7	29.8	†	†	19.0	17.8	4.8	0.9	–	–	0.2	2.9	11.2	93.3
Japan	0.2	0.7	0.7	0.9	0.1	†	†	†	†	†	2.5	1.1	†	–	2.4	3.7	12.5
Singapore	†	0.5	1.3	0.3	1.4	†	†	†	0.4	2.6	15.1	2.8	1.5	0.2	–	51.8	78.0
Other Asia Pacific	0.1	0.2	7.7	1.4	4.9	0.1	–	†	2.6	5.1	28.1	38.2	1.9	7.5	28.8	–	126.6
Total imports		27.3	58.8	97.5	105.9	193.4	1.3	9.0	69.7	133.0	54.9	114.4	54.0	38.8	72.2	185.2	1215.5

† Less than 0.05. Notes: Does not include biofuels trade. Bunker fuel use is not included as exports. Intra-area movements (for example, between countries within Europe) are excluded. Crude imports and exports include condensates.

Natural gas

Global gas demand remained stable in 2023 rising by just 1 bcm. This was not sufficient to recover the losses seen in 2022 when overall demand dropped by 0.4% (15 bcm). In Europe, natural gas demand fell by 7% (34 bcm) in 2023, down to its lowest level since 1994. Similarly, gas production in the region declined by around 7% driven by decreases in its top producing countries, Norway, UK, and the Netherlands. Gas demand in the Asia Pacific region grew nearly 2%, driven by



The US alone accounts for 25% of global natural gas production and 22% of its consumption



Natural gas Production in billion cubic metres*

												Growth rate per annum		Share
Billion cubic metres	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023
Canada	151.9	159.0	160.8	165.0	171.3	176.8	169.6	165.6	172.3	184.8	190.3	2.9%	2.3%	4.7%
Mexico	52.5	51.3	47.9	43.7	38.3	37.9	36.7	35.5	32.1	33.7	35.6	5.5%	-3.8%	0.9%
US	655.7	704.7	740.3	727.4	746.2	840.9	928.1	924.8	944.5	993.4	1035.3	4.2%	4.7%	25.5%
Total North America	860.1	915.0	949.0	936.0	955.7	1055.6	1134.4	1126.0	1148.9	1211.9	1261.1	4.1%	3.9%	31.1%
Argentina	34.6	34.5	35.5	37.3	37.1	39.4	41.6	38.3	38.6	41.7	41.6	-0.2%	1.9%	1.0%
Bolivia	19.6	20.4	20.1	18.9	18.6	17.3	15.1	14.7	15.1	13.7	11.9	-12.9%	-4.8%	0.3%
Brazil	21.9	23.3	23.8	24.1	27.2	25.2	25.7	24.2	24.3	23.0	23.4	1.8%	0.7%	0.6%
Colombia	13.2	12.3	11.6	12.0	11.8	12.4	12.6	12.5	12.6	12.4	12.1	-3.0%	-0.9%	0.3%
Peru	12.4	13.1	12.7	14.0	13.0	12.8	13.5	13.2	12.4	15.0	15.4	3.1%	2.2%	0.4%
Trinidad & Tobago	38.7	38.1	36.0	31.3	31.9	34.0	34.6	29.5	24.7	26.0	25.0	-3.8%	-4.3%	0.6%
Venezuela	30.6	31.8	36.1	37.2	38.6	31.6	25.6	21.6	28.1	29.1	29.7	2.2%	-0.3%	0.7%
Other S. & Cent. America	2.7	2.6	2.9	3.1	3.1	3.1	3.3	2.7	2.6	2.8	2.9	3.0%	0.6%	0.1%
Total S. & Cent. America	173.8	176.2	178.6	178.0	181.3	175.8	172.0	156.6	158.5	163.6	162.0	-1.0%	-0.7%	4.0%
Denmark	5.0	4.8	4.8	4.7	5.1	4.3	3.2	1.4	1.5	1.4	1.4	-3.3%	-11.9%	†
Germany	8.6	8.1	7.5	6.9	6.4	5.5	5.3	4.5	4.5	4.3	3.8	-10.6%	-7.8%	0.1%
Italy	7.4	6.8	6.4	5.5	5.3	5.2	4.6	3.9	3.2	3.2	2.8	-9.9%	-9.1%	0.1%
Netherlands	72.4	60.4	45.9	44.3	37.9	32.5	27.7	20.1	18.0	15.0	9.9	-34.2%	-18.1%	0.2%
Norway	108.5	107.7	116.3	116.0	123.8	121.4	114.4	111.7	114.5	123.0	116.6	-5.2%	0.7%	2.9%
Poland	4.4	4.3	4.3	4.1	4.0	4.0	4.0	3.9	3.9	3.8	3.6	-5.5%	-2.1%	0.1%
Romania	10.0	10.2	10.2	9.1	10.0	10.0	9.6	8.6	8.6	8.8	8.9	1.4%	-1.2%	0.2%
Ukraine	20.2	20.2	18.8	19.0	19.4	19.7	19.4	19.1	18.7	17.5	17.7	0.9%	-1.3%	0.4%
United Kingdom	37.0	37.4	40.7	41.7	41.9	40.6	39.3	39.6	32.8	38.1	34.5	-9.6%	-0.7%	0.8%
Other Europe	7.2	6.3	6.1	8.7	9.0	8.4	7.4	6.3	5.4	5.1	5.1	0.2%	-3.2%	0.1%
Total Europe	280.6	266.3	261.0	260.0	262.7	251.5	235.0	219.1	211.1	220.2	204.3	-7.2%	-3.1%	5.0%
Azerbaijan	17.5	18.4	18.8	18.3	17.8	18.8	23.9	25.9	31.8	34.1	35.6	4.2%	7.4%	0.9%
Kazakhstan	30.4	32.8	27.1	30.9	36.4	39.2	33.5	30.6	26.7	27.6	30.8	11.7%	0.1%	0.8%
Russian Federation	614.5	591.2	584.4	589.3	635.6	669.1	679.0	638.4	702.1	618.4	586.4	-5.2%	-0.5%	14.4%
Turkmenistan	59.0	63.5	65.9	63.2	58.7	61.5	63.2	66.0	79.3	78.3	76.3	-2.5%	2.6%	1.9%
Uzbekistan	55.9	56.3	53.6	53.1	53.6	58.3	57.5	47.1	50.9	48.9	44.2	-9.6%	-2.3%	1.1%
Other CIS	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-3.4%	-1.8%	†
Total CIS	777.6	762.4	750.2	755.1	802.3	847.2	857.4	808.4	891.2	807.6	773.6	-4.2%	-0.1%	19.1%
Bahrain	14.0	14.7	14.6	14.4	14.5	14.6	16.3	16.4	16.6	15.8	16.7	5.9%	1.8%	0.4%
Iran	157.5	175.5	183.5	199.3	213.9	220.1	228.3	235.8	242.8	247.7	251.7	1.6%	4.8%	6.2%
Iraq	7.1	7.5	7.3	9.9	10.1	10.6	11.0	7.0	9.1	9.3	9.9	6.9%	3.5%	0.2%
Israel	6.1	7.1	7.9	8.8	9.3	9.9	10.0	14.7	18.3	20.8	23.5	12.8%	14.5%	0.6%
Kuwait	15.5	14.3	16.1	16.4	16.2	16.9	13.3	12.2	12.1	13.2	13.5	2.6%	-1.3%	0.3%
Oman	30.8	29.3	30.7	31.5	32.3	36.3	36.7	36.9	40.3	42.1	43.2	2.5%	3.4%	1.1%
Qatar	167.9	169.4	175.9	174.8	170.5	175.2	177.2	174.9	177.0	178.5	181.0	1.4%	0.8%	4.5%
Saudi Arabia	95.0	97.3	99.2	105.3	109.3	112.1	111.2	113.1	114.5	116.7	114.1	-2.2%	1.8%	2.8%
Syria	5.0	4.6	4.1	3.5	3.5	3.5	3.3	2.9	3.1	2.9	3.0	2.1%	-5.1%	0.1%
United Arab Emirates	53.2	52.9	58.6	59.5	52.7	46.4	53.7	53.7	53.1	54.2	55.6	2.5%	0.4%	1.4%
Other Middle East	10.5	9.9	3.0	0.6	0.4	0.2	0.3	0.4	0.4	0.5	0.6	22.5%	-25.1%	†
Total Middle East	562.5	582.5	600.8	624.2	632.7	645.9	661.1	667.9	687.4	701.7	712.7	1.6%	2.4%	17.6%
Algeria	79.3	80.2	81.4	91.4	93.0	93.8	87.0	81.4	101.1	97.6	101.5	4.0%	2.5%	2.5%
Egypt	54.0	47.0	42.6	40.3	48.8	58.6	64.9	58.5	67.8	64.5	57.1	-11.5%	0.6%	1.4%
Libya	12.2	11.8	12.9	12.7	14.2	14.0	16.0	12.7	15.3	14.6	16.3	12.0%	3.0%	0.4%
Nigeria	33.1	40.0	47.6	42.6	47.2	48.3	49.3	49.4	52.4	47.1	43.7	-7.3%	2.8%	1.1%
Other Africa	20.4	20.6	21.7	22.8	27.0	28.0	28.4	29.9	30.1	32.0	35.0	9.5%	5.5%	0.9%
Total Africa	199.0	199.5	206.2	209.8	230.1	242.6	245.6	231.9	266.7	255.8	253.6	-0.8%	2.5%	6.2%
Australia	60.6	65.3	74.3	94.1	110.3	127.4	146.1	145.7	147.9	154.2	151.7	-1.6%	9.6%	3.7%
Bangladesh	22.0	23.0	25.9	26.5	26.6	26.6	25.3	23.7	23.6	22.5	21.1	-6.3%	-0.4%	0.5%
Brunei	11.9	12.7	13.3	12.9	12.9	12.6	13.0	12.6	11.5	10.6	10.0	-5.8%	-1.7%	0.2%
China	121.8	131.2	135.7	137.9	149.2	161.4	176.7	194.0	209.2	221.8	234.3	5.6%	6.8%	5.8%
India	31.1	29.4	28.1	26.6	27.7	27.5	26.9	23.8	28.5	29.8	31.6	6.0%	0.2%	0.8%
Indonesia	77.6	76.4	76.2	75.1	72.7	72.8	67.6	64.7	64.4	62.8	64.3	2.3%	-1.9%	1.6%
Malaysia	72.6	72.2	76.8	76.7	79.6	76.1	77.5	73.1	79.0	83.0	81.1	-2.3%	1.1%	2.0%
Myanmar	12.9	16.5	19.2	18.3	17.8	17.0	18.5	17.5	17.2	16.8	15.2	-10.1%	1.7%	0.4%
Pakistan	35.6	35.0	35.0	-	34.7	34.2	32.7	30.6	32.7	28.7	27.8	-3.1%	-2.4%	0.7%
Thailand	38.9	39.1	37.5	37.3	35.9	34.7	35.8	32.7	31.5	25.6	25.7	0.1%	-4.1%	0.6%
Vietnam	9.4	9.9	10.3	10.2	9.5	9.7	9.8	8.8	7.2	7.8	7.2	-7.4%	-2.6%	0.2%
Other Asia Pacific	18.2	23.1	27.9	29.0	29.2	26.9	28.7	29.0	27.2	24.0	22.0	-8.2%	1.9%	0.5%
Total Asia Pacific	512.5	533.7	560.2	544.6	606.0	626.8	658.5	656.3	680.0	687.8	691.8	0.6%	3.0%	17.0%
Total World	3366.1	3435.6	3506.0	3507.7	3670.9	3845.3	3964.0	3866.2	4043.7	4048.6	4059.2	0.2%	1.9%	100.0%
of which: OECD	1197.2	1242.6	1281.2	1289.8	1328.1	1434.4	1517.0	1497.3	1518.0	1599.6	1632.5	2.1%	3.1%	40.2%
Non-OECD	2168.9	2193.0	2224.8	2217.9	2342.8	2410.9	2447.1	2368.8	2525.7	2449.0	2426.8	-0.9%	1.1%	59.8%
European Union	113.9	99.9	84.3	82.4	76.8	69.0	61.0	47.9	44.3	40.8	34.4	-15.7%	-11.3%	0.8%

Source: Includes data from Cedigaz, FGE MENA gas service.

* Excludes gas flared or recycled. Includes natural gas produced for Gas-to-Liquids transformation.

† Less than 0.05%.

Notes: As far as possible, the data above represents standard cubic metres (measured at 15°C and 1013 mbar); as they are derived directly from measures of energy content using an average conversion factor and have been standardised using a Gross Calorific Value (GCV) of 40 MJ/m³, they do not necessarily equate with gas volumes expressed in specific national terms.

Annual changes and shares of total are calculated using billion cubic metres figures.

													Growth rate per annum		Share
Exajoules	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	2023
Canada	5.47	5.72	5.79	5.94	6.17	6.36	6.11	5.96	6.20	6.65	6.85	2.9%	2.3%	4.7%	
Mexico	1.89	1.85	1.73	1.57	1.38	1.36	1.32	1.28	1.15	1.21	1.28	5.5%	-3.8%	0.9%	
US	23.60	25.37	26.65	26.18	26.86	30.27	33.41	33.29	34.00	35.76	37.27	4.2%	4.7%	25.5%	
Total North America	30.96	32.94	34.16	33.70	34.41	38.00	40.84	40.53	41.36	43.63	45.40	4.1%	3.9%	31.1%	
Argentina	1.24	1.24	1.28	1.34	1.34	1.42	1.50	1.38	1.39	1.50	1.50	-0.2%	1.9%	1.0%	
Bolivia	0.70	0.74	0.72	0.68	0.67	0.62	0.54	0.53	0.55	0.49	0.43	-12.9%	-4.8%	0.3%	
Brazil	0.79	0.84	0.86	0.87	0.98	0.91	0.93	0.87	0.88	0.83	0.84	1.8%	0.7%	0.6%	
Colombia	0.48	0.44	0.42	0.43	0.42	0.45	0.45	0.45	0.45	0.45	0.43	-3.0%	-0.9%	0.3%	
Peru	0.45	0.47	0.46	0.50	0.47	0.46	0.49	0.48	0.45	0.54	0.56	3.1%	2.2%	0.4%	
Trinidad & Tobago	1.39	1.37	1.29	1.13	1.15	1.22	1.24	1.06	0.89	0.94	0.90	-3.8%	-4.3%	0.6%	
Venezuela	1.10	1.14	1.30	1.34	1.39	1.14	0.92	0.78	1.01	1.05	1.07	2.2%	-0.3%	0.7%	
Other S. & Cent. America	0.10	0.09	0.10	0.11	0.11	0.11	0.12	0.10	0.09	0.10	0.10	3.0%	0.6%	0.1%	
Total S. & Cent. America	6.26	6.34	6.43	6.41	6.53	6.33	6.19	5.64	5.71	5.89	5.83	-1.0%	-0.7%	4.0%	
Denmark	0.18	0.17	0.17	0.17	0.18	0.15	0.12	0.05	0.05	0.05	0.05	-3.3%	-11.9%	+	
Germany	0.31	0.29	0.27	0.25	0.23	0.20	0.19	0.16	0.16	0.15	0.14	-10.6%	-7.8%	0.1%	
Italy	0.27	0.25	0.23	0.20	0.19	0.19	0.17	0.14	0.11	0.11	0.10	-9.9%	-9.1%	0.1%	
Netherlands	2.61	2.17	1.65	1.59	1.37	1.17	1.00	0.72	0.65	0.54	0.35	-34.2%	-18.1%	0.2%	
Norway	3.90	3.88	4.19	4.17	4.46	4.37	4.12	4.02	4.12	4.43	4.20	-5.2%	0.7%	2.9%	
Poland	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.13	-5.5%	-2.1%	0.1%	
Romania	0.36	0.37	0.37	0.33	0.36	0.36	0.35	0.31	0.31	0.32	0.32	1.4%	-1.2%	0.2%	
Ukraine	0.73	0.73	0.68	0.68	0.70	0.71	0.70	0.69	0.67	0.63	0.64	0.9%	-1.3%	0.4%	
United Kingdom	1.33	1.35	1.46	1.50	1.51	1.46	1.41	1.42	1.18	1.37	1.24	-9.6%	-0.7%	0.8%	
Other Europe	0.26	0.23	0.22	0.31	0.32	0.30	0.27	0.23	0.19	0.18	0.19	0.2%	-3.2%	0.1%	
Total Europe	10.10	9.59	9.40	9.36	9.46	9.05	8.46	7.89	7.60	7.93	7.36	-7.2%	-3.1%	5.0%	
Azerbaijan	0.63	0.66	0.68	0.66	0.64	0.68	0.86	0.93	1.15	1.23	1.28	4.2%	7.4%	0.9%	
Kazakhstan	1.10	1.18	0.98	1.11	1.31	1.41	1.21	1.10	0.96	0.99	1.11	11.7%	0.1%	0.8%	
Russian Federation	22.12	21.28	21.04	21.21	22.88	24.09	24.44	22.98	25.28	22.26	21.11	-5.2%	-0.5%	14.4%	
Turkmenistan	2.12	2.29	2.37	2.28	2.11	2.21	2.27	2.38	2.85	2.82	2.75	-2.5%	2.6%	1.9%	
Uzbekistan	2.01	2.03	1.93	1.91	1.93	2.10	2.07	1.70	1.83	1.76	1.59	-9.6%	-2.3%	1.1%	
Other CIS	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-3.4%	-1.8%	+	
Total CIS	27.99	27.45	27.01	27.19	28.88	30.50	30.87	29.10	32.08	29.07	27.85	-4.2%	-0.1%	19.1%	
Bahrain	0.50	0.53	0.53	0.52	0.52	0.53	0.59	0.59	0.60	0.57	0.60	5.9%	1.8%	0.4%	
Iran	5.67	6.32	6.61	7.18	7.70	7.92	8.22	8.49	8.74	8.92	9.06	1.6%	4.8%	6.2%	
Iraq	0.25	0.27	0.26	0.36	0.36	0.38	0.39	0.25	0.33	0.33	0.36	6.9%	3.5%	0.2%	
Israel	0.22	0.26	0.28	0.32	0.34	0.36	0.36	0.53	0.66	0.75	0.85	12.8%	14.5%	0.6%	
Kuwait	0.56	0.51	0.58	0.59	0.58	0.61	0.48	0.44	0.44	0.47	0.49	2.6%	-1.3%	0.3%	
Oman	1.11	1.06	1.11	1.13	1.16	1.31	1.32	1.33	1.45	1.52	1.55	2.5%	3.4%	1.1%	
Qatar	6.04	6.10	6.33	6.29	6.14	6.31	6.38	6.30	6.37	6.43	6.52	1.4%	0.8%	4.5%	
Saudi Arabia	3.42	3.50	3.57	3.79	3.93	4.04	4.00	4.07	4.12	4.20	4.11	-2.2%	1.8%	2.8%	
Syria	0.18	0.17	0.15	0.13	0.13	0.12	0.12	0.11	0.11	0.10	0.11	2.1%	-5.1%	0.1%	
United Arab Emirates	1.92	1.90	2.11	2.14	1.90	1.67	1.93	1.93	1.91	1.95	2.00	2.5%	0.4%	1.4%	
Other Middle East	0.38	0.36	0.11	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.02	22.5%	-25.1%	+	
Total Middle East	20.25	20.97	21.63	22.47	22.78	23.25	23.80	24.05	24.74	25.26	25.66	1.6%	2.4%	17.6%	
Algeria	2.86	2.89	2.93	3.29	3.35	3.38	3.13	2.93	3.64	3.51	3.66	4.0%	2.5%	2.5%	
Egypt	1.94	1.69	1.53	1.45	1.76	2.11	2.34	2.10	2.44	2.32	2.06	-11.5%	0.6%	1.4%	
Libya	0.44	0.43	0.46	0.46	0.51	0.50	0.58	0.46	0.55	0.52	0.59	12.0%	3.0%	0.4%	
Nigeria	1.19	1.44	1.71	1.53	1.70	1.74	1.77	1.78	1.89	1.70	1.57	-7.3%	2.8%	1.1%	
Other Africa	0.74	0.74	0.78	0.82	0.97	1.01	1.02	1.08	1.08	1.15	1.26	9.5%	5.5%	0.9%	
Total Africa	7.16	7.18	7.42	7.55	8.28	8.73	8.84	8.35	9.60	9.21	9.13	-0.8%	2.5%	6.2%	
Australia	2.18	2.35	2.67	3.39	3.97	4.59	5.26	5.25	5.33	5.55	5.46	-1.6%	9.6%	3.7%	
Bangladesh	0.79	0.83	0.93	0.95	0.96	0.96	0.91	0.85	0.85	0.81	0.76	-6.3%	-0.4%	0.5%	
Brunei	0.43	0.46	0.48	0.47	0.46	0.45	0.47	0.46	0.42	0.38	0.36	-5.8%	-1.7%	0.2%	
China	4.39	4.72	4.88	4.97	5.37	5.81	6.36	6.98	7.53	7.99	8.43	5.6%	6.8%	5.8%	
India	1.12	1.06	1.01	0.96	1.00	0.99	0.97	0.86	1.03	1.07	1.14	6.0%	0.2%	0.8%	
Indonesia	2.79	2.75	2.74	2.70	2.62	2.62	2.43	2.33	2.32	2.26	2.31	2.3%	-1.9%	1.6%	
Malaysia	2.61	2.60	2.77	2.76	2.86	2.74	2.79	2.63	2.84	2.99	2.92	-2.3%	1.1%	2.0%	
Myanmar	0.46	0.60	0.69	0.66	0.64	0.61	0.67	0.63	0.62	0.61	0.55	-10.1%	1.7%	0.4%	
Pakistan	1.28	1.26	1.26	-	1.25	1.23	1.18	1.10	1.18	1.03	1.00	-3.1%	-2.4%	0.7%	
Thailand	1.40	1.41	1.35	1.34	1.29	1.25	1.29	1.18	1.13	0.92	0.92	0.1%	-4.1%	0.6%	
Vietnam	0.34	0.35	0.37	0.37	0.34	0.35	0.35	0.32	0.26	0.28	0.26	-7.4%	-2.6%	0.2%	
Other Asia Pacific	0.66	0.83	1.01	1.04	1.05	0.97	1.03	1.04	0.98	0.86	0.79	-8.2%	1.9%	0.5%	
Total Asia Pacific	18.45	19.21	20.17	19.60	21.82	22.57	23.71	23.63	24.48	24.76	24.91	0.6%	3.0%	17.0%	
Total World	121.18	123.68	126.22	126.28	132.15	138.43	142.71	139.18	145.57	145.75	146.13	0.3%	1.9%	100.0%	
of which: OECD	43.10	44.73	46.12	46.43	47.81	51.64	54.61	53.90	54.65	57.59	58.77	2.1%	3.1%	40.2%	
Non-OECD	78.08	78.95	80.09	79.84	84.34	86.79	88.09	85.28	90.93	88.16	87.36	-0.9%	1.1%	59.8%	
European Union	4.10	3.60	3.03	2.96	2.76	2.48	2.19	1.72	1.60	1.47	1.24	-15.7%	-11.3%	0.8%	

Source: Includes data from Cedigaz, FGE MENA gas service.
* Excludes gas flared or recycled. Includes natural gas produced for Gas-to-Liquids transformation.
† Less than 0.05%.

Note: Annual changes and shares of total are calculated using exajoules figures.

												Growth rate per annum			Share
Billion cubic metres	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013-23	2023	
Canada	105.4	109.8	110.3	105.6	109.6	117.7	118.7	115.3	118.6	123.8	120.7	-2.5%	1.4%	3.0%	
Mexico	77.8	78.8	80.8	83.0	86.0	90.3	93.4	92.2	91.6	90.9	97.6	7.3%	2.3%	2.4%	
US	707.0	722.3	743.6	749.1	740.0	822.0	851.0	834.5	836.4	879.6	886.5	0.8%	2.3%	22.1%	
Total North America	890.3	911.0	934.7	937.8	935.7	1029.9	1063.0	1042.1	1046.7	1094.3	1104.8	1.0%	2.2%	27.5%	
Argentina	46.0	46.2	46.7	48.2	48.3	48.7	46.6	43.9	45.9	45.9	44.9	-2.0%	-0.2%	1.1%	
Brazil	38.4	40.7	42.9	37.1	37.6	35.9	35.7	31.4	40.4	32.0	30.0	-6.3%	-2.4%	0.7%	
Chile	5.3	4.4	4.8	5.9	5.6	5.6	6.5	6.2	6.8	7.3	7.0	-3.5%	2.8%	0.2%	
Colombia	10.5	11.4	11.2	12.1	11.8	12.7	12.9	13.1	12.6	12.6	13.1	3.7%	2.2%	0.3%	
Ecuador	0.9	0.9	0.8	0.9	0.9	0.8	0.7	0.6	0.6	0.5	0.5	-7.9%	-5.3%	+	
Peru	6.7	7.4	7.6	8.5	7.5	8.0	8.2	8.2	8.9	9.8	10.1	2.8%	4.2%	0.3%	
Trinidad & Tobago	20.4	20.5	19.6	16.9	18.3	17.4	15.2	15.6	15.5	14.5	14.5	-6.2%	-3.3%	0.4%	
Venezuela	32.3	34.0	37.0	37.2	38.6	31.6	25.6	21.6	28.1	29.1	29.7	2.2%	-0.8%	0.7%	
Central America	-	-	-	-	-	0.2	0.5	0.4	0.3	0.6	1.2	83.6%	-	-	
Other Caribbean	3.6	3.7	3.7	3.8	3.5	4.0	4.5	4.6	5.5	5.3	6.4	20.8%	5.9%	0.2%	
Other South America	3.3	3.5	3.4	3.6	3.9	4.0	3.9	3.4	3.7	4.0	4.4	11.1%	2.9%	0.1%	
Total S. & Cent. America	167.3	172.6	177.8	174.3	176.1	169.0	162.5	148.6	168.5	162.4	161.7	-0.5%	-0.3%	4.0%	
Austria	8.2	7.5	8.0	8.3	9.1	8.7	8.9	8.5	9.0	7.9	6.9	-13.0%	-1.7%	0.2%	
Belgium	16.5	14.5	15.8	16.2	16.4	16.9	17.4	17.0	17.0	14.6	13.7	-5.8%	-1.9%	0.3%	
Bulgaria	2.8	2.7	3.0	3.1	3.2	3.0	2.8	2.9	3.3	2.7	2.5	-6.6%	-0.9%	0.1%	
Croatia	2.7	2.3	2.4	2.5	2.9	2.7	2.8	2.9	2.8	2.5	2.5	0.8%	-0.6%	0.1%	
Czech Republic	8.1	7.2	7.5	8.2	8.4	8.0	8.3	8.5	9.1	7.4	6.7	-9.2%	-1.9%	0.2%	
Denmark	3.8	3.3	3.3	3.4	3.2	3.1	2.9	2.3	2.4	1.7	1.6	-3.7%	-8.2%	+	
Estonia	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.4	0.4	-8.4%	-5.4%	+	
Finland	3.0	2.7	2.3	2.0	1.8	2.1	2.0	2.1	2.1	1.1	1.2	6.2%	-8.7%	+	
France	45.1	37.9	40.8	44.5	44.8	42.8	43.7	40.6	43.0	38.4	33.9	-11.7%	-2.8%	0.8%	
Germany	85.0	73.9	77.0	84.9	87.7	85.9	89.3	87.1	91.7	77.5	75.7	-2.4%	-1.2%	1.9%	
Greece	4.1	3.2	3.4	4.4	5.4	5.2	5.8	6.3	7.0	6.2	5.4	-13.1%	2.6%	0.1%	
Hungary	9.1	8.1	8.7	9.3	9.9	9.6	9.8	10.2	10.8	9.2	8.2	-10.9%	-1.0%	0.2%	
Ireland	4.5	4.3	4.4	4.9	5.0	5.2	5.3	5.3	5.1	5.2	4.8	-7.2%	0.8%	0.1%	
Italy	66.7	59.0	64.3	67.5	71.6	69.2	70.8	67.6	72.4	65.2	58.6	-10.1%	-1.3%	1.5%	
Latvia	1.4	1.3	1.3	1.3	1.2	1.4	1.3	1.1	1.2	0.8	0.8	-5.3%	-5.9%	+	
Lithuania	2.5	2.4	2.4	2.1	2.2	2.2	2.2	2.4	2.2	1.6	1.6	-2.6%	-4.6%	+	
Luxembourg	1.0	1.0	0.9	0.8	0.8	0.8	0.8	0.7	0.8	0.6	0.6	-6.3%	-5.7%	+	
Netherlands	39.1	34.3	33.8	35.2	36.3	35.6	37.2	36.1	34.8	27.5	25.8	-6.4%	-4.1%	0.6%	
North Macedonia	0.2	0.1	0.1	0.2	0.3	0.2	0.3	0.3	0.4	0.3	0.4	26.6%	8.9%	+	
Norway	4.0	4.3	4.6	4.4	4.6	4.5	4.6	4.5	4.3	3.9	3.8	-3.4%	-0.6%	0.1%	
Poland	17.4	17.0	17.1	18.3	19.2	19.9	20.9	21.1	22.4	18.6	19.6	5.3%	1.2%	0.5%	
Portugal	4.3	4.1	4.8	5.1	6.3	5.8	6.1	6.0	5.8	5.6	4.5	-19.8%	0.4%	0.1%	
Romania	11.4	10.9	10.4	10.5	11.3	11.6	10.8	11.3	11.6	9.7	9.1	-6.4%	-2.3%	0.2%	
Slovakia	5.3	4.4	4.5	4.5	4.8	4.7	4.8	4.8	5.3	4.4	4.2	-4.8%	-2.3%	0.1%	
Slovenia	0.8	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.8	-3.5%	-0.6%	+	
Spain	30.3	27.5	28.5	29.1	31.7	31.5	36.0	32.5	34.3	33.0	29.3	-11.1%	-0.3%	0.7%	
Sweden	1.0	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.1	0.8	0.7	-10.4%	-3.5%	+	
Switzerland	3.6	3.1	3.3	3.5	3.5	3.3	3.4	3.3	3.6	3.0	2.7	-7.4%	-2.6%	0.1%	
Türkiye	44.0	46.6	46.0	44.5	51.6	47.2	43.4	46.2	57.3	51.2	48.4	-5.5%	1.0%	1.2%	
Ukraine	47.7	40.3	32.0	31.4	30.2	30.6	28.3	29.3	27.3	18.3	18.7	2.6%	-8.9%	0.5%	
United Kingdom	76.3	70.1	72.0	79.9	78.2	78.8	77.9	73.1	76.9	70.9	63.5	-10.4%	-1.8%	1.6%	
Other Europe	4.2	4.1	4.5	4.6	5.3	5.3	5.5	5.5	6.2	6.7	7.0	4.3%	5.2%	0.2%	
Total Europe	554.9	500.3	509.3	537.2	559.3	548.3	555.4	541.8	572.5	497.7	463.4	-6.9%	-1.8%	11.6%	
Azerbaijan	9.4	9.9	11.1	10.9	10.6	10.8	11.8	12.4	12.8	13.6	15.1	11.1%	4.8%	0.4%	
Belarus	19.3	19.1	17.9	17.8	18.2	19.3	19.2	17.8	18.8	18.5	16.8	-9.1%	-1.4%	0.4%	
Kazakhstan	11.2	14.8	13.8	15.0	16.7	16.7	19.7	17.7	21.6	21.3	21.4	0.7%	6.7%	0.5%	
Russian Federation	424.9	422.2	408.7	420.6	431.1	454.5	444.3	423.5	431.5	448.4	453.4	1.1%	0.7%	11.3%	
Turkmenistan	19.3	20.0	25.4	25.1	24.8	28.4	27.7	34.3	36.8	37.5	36.8	-2.1%	6.6%	0.9%	
Uzbekistan	46.2	48.5	46.3	43.3	44.8	44.4	44.6	43.6	46.5	48.3	46.6	-3.6%	0.1%	1.2%	
Other CIS	4.8	5.3	5.2	5.1	5.1	5.9	5.6	5.9	5.8	5.5	6.0	8.7%	2.3%	0.1%	
Total CIS	535.0	539.8	528.4	538.0	551.2	580.0	572.9	555.0	573.8	593.1	596.0	0.5%	1.1%	14.9%	
Iran	153.8	173.4	184.0	196.3	205.0	212.6	218.4	236.8	229.5	239.4	245.6	2.6%	4.8%	6.1%	
Iraq	7.1	7.5	7.3	9.9	11.4	14.6	19.5	18.5	16.4	18.4	18.7	1.9%	10.2%	0.5%	
Israel	6.6	7.2	8.0	9.2	9.8	10.6	10.7	11.3	11.7	12.1	12.6	3.5%	6.7%	0.3%	
Kuwait	17.8	17.9	20.3	21.1	21.0	21.2	18.4	17.9	19.8	21.7	22.5	3.7%	2.4%	0.6%	
Oman	21.7	21.3	23.1	22.9	23.4	25.0	25.0	25.9	28.0	28.5	29.5	3.4%	3.1%	0.7%	
Qatar	35.3	38.4	43.3	41.3	41.1	40.3	41.4	38.4	40.1	40.3	44.2	9.6%	2.3%	1.1%	
Saudi Arabia	95.0	97.3	99.2	105.3	109.3	112.1	111.2	113.1	114.5	116.7	114.1	-2.2%	1.8%	2.8%	
United Arab Emirates	64.7	63.4	71.5	71.9	65.7	59.6	67.2	67.9	65.5	66.1	66.9	1.1%	0.3%	1.7%	
Other Middle East	21.3	20.9	22.5	23.1	23.2	23.0	23.2	23.2	23.6	22.8	23.7	4.1%	1.1%	0.6%	
Total Middle East	423.3	447.4	479.3	501.1	509.8	517.9	534.8	552.9	549.1	566.1	577.7	2.0%	3.2%	14.4%	
Algeria	32.1	36.1	37.9	38.6	39.5	43.4	45.1	43.4	48.2	50.3	46.3	-8.0%	3.7%	1.2%	
Egypt	49.5	46.2	46.0	49.4	55.9	59.6	59.0	58.3	62.1	60.6	60.0	-0.9%	1.9%	1.5%	
Morocco	1.2	1.2	1.2	1.2	1.2	1.1	1.0	0.8	0.8	0.2	0.9	298.8%	-3.1%	+	
South Africa	4.1	4.3	4.3	3.7	4.0	4.4	4.3	4.0	4.2	4.3	4.7	11.2%	1.6%	0.1%	
Eastern Africa	1.1	1.3	1.6	2.0	2.0	2.1	2.4	2.3	2.7	2.9	2.9	3.0%	9.9%	0.1%	
Middle Africa	4.0	3.9	4.2	5.5	5.5	5.6	5.0	5.4	6.0	5.7	4.9	-13.3%	2.1%	0.1%	
Western Africa	12.7	16.0	23.9	21.1	22.1	23.6	24.3	26.0	34.5	33.0	32.0	-3.1%	9.7%	0.8%	
Other Northern Africa	12.3	11.3	11.6	13.6	15.4	15.6	16.6	14.1	18.1	17.7	19.4	9.3%	4.6%	0.5%	
Total Africa	117.0	120.2	130.8	135.0	145.6	155.3	157.7	154.2	176.6	174.7	171.2	-2.0%	3.9%	4.3%	
Australia	35.0	37.6	39.0	38.0	37.3	37.2	44.1	42.3	39.6	43.2	40.1	-7.2%	1.4%	1.0%	
Bangladesh	22.0	23.0	25.9	26.5	26.6	27.4	30.9	29.9	30.6	28.7	28.1	-2.0%	2.5%	0.7%	
China	171.9	188.4	194.7	209.4	241.3	283.9	308.4	336.6	380.3	377.6	404.8	7.2%	8.9%	10.1%	
China Hong Kong SAR	2.5	2.4	3.0	3.1	3.1	3.0	3.1	4.9	4.8	4.5	4.8	6.9%	6.9%	0.1%	
India	49.0	48.5	47.8	50.8	53.6	58.0	59.2	60.4	62.4	58.3	62.6	7.5%	2.5%	1.6%	
Indonesia	42.5	42.6	44.0	45.4	44.5	45.3	45.5	42.6	42.9	44.0	45.4	3.2%	0.7%	1.1%	
Japan	123.5	124.8	118.7	116.4	117.0	115.7	108.1	104.1	103.5	100.2	92.4	-7.8%	-2.9%	2.3%	
Malaysia	44.6	44.7	46.8	45.0	45.0	44.7	45.2	43.6	51.4	51.9	46.1	-11.3%	0.3%	1.1%	
New Zealand	4.7	5.2	4.8	4.8	5.0	4.5	4.8	4.6	3.9	3.6	3.8	5.1%	-2.1%	0.1%	
Pakistan	35.6	35.0	36.5	4.0	40.7	43.6	44.5	41.2	44.9	38.2	37.8	-0.9%	0.6%	0.9%	
Philippines	3.4	3.5	3.3	3.8	3.8	4.1	4.2	3.8	3.3	3.1	3.2	4.0%	-0.5%	0.1%	
Singapore	10.0	10.4	11.6	11.9	12.3	12.3	12.5	12.6	13.4	13.1	12.3	-5.6%	2.1%	0.3%	
South Korea	55.0	50.0	45.6	47.6	49.8	57.8	56.0	57.5	62.4	62.4	60.1	-3.7%	0.9%	1.5%	
Taiwan	17.9	18.9	20.2	21.0	23.2	23.7	23.3	24.9	27.3	28.1	27.9	-0.4%	4.5%	0.7%	
Thailand	48.9	49.9	51.0	50.6	50.1	50.0	50.9	46.9	47.0	44.3	47.2	6.4%	-0.4%	1.2%	
Vietnam	9.4	9.9	10.3	10.2	9.5	9.7	9.8	8.8	7.2	7.8	7.2	-7.4%	-2.6%	0.2%	
Other Asia Pacific	8.6	10.3	11.6	11.1	11.3	10.9	11.4	12.2	11.9	11.2	11.3	1.0%	2.8%	0.3%	
Total Asia Pacific	684.4	705.0	714.9												

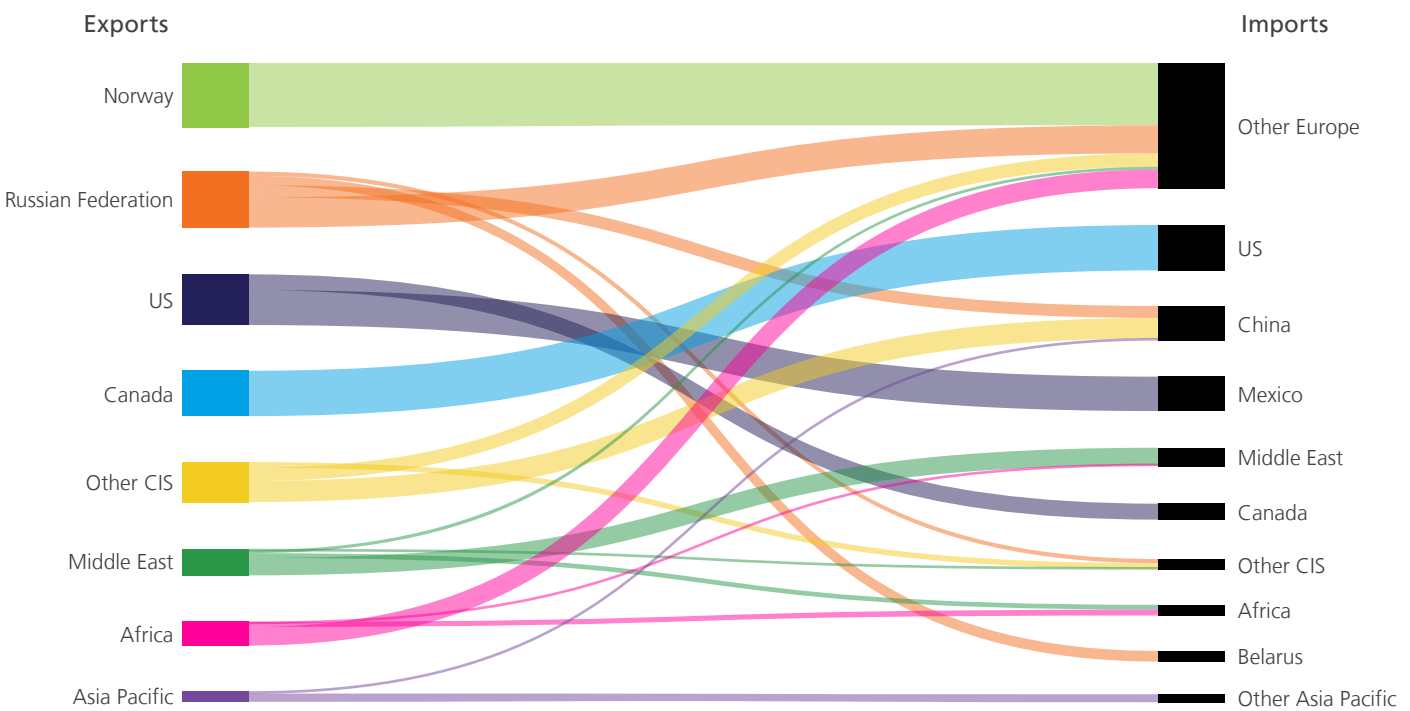


Natural gas

Consumption in exajoules*

													Growth rate per annum		Share
Exajoules	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	2023
Canada	3.80	3.95	3.97	3.80	3.95	4.24	4.27	4.15	4.27	4.46	4.35		-2.5%	1.4%	3.0%
Mexico	2.80	2.84	2.91	2.99	3.10	3.25	3.36	3.32	3.30	3.27	3.51		7.3%	2.3%	2.4%
US	25.45	26.00	26.77	26.97	26.64	29.59	30.64	30.04	30.11	31.67	31.91		0.8%	2.3%	22.1%
Total North America	32.05	32.79	33.65	33.76	33.68	37.08	38.27	37.52	37.68	39.40	39.77		1.0%	2.2%	27.6%
Argentina	1.66	1.66	1.68	1.74	1.74	1.75	1.68	1.58	1.65	1.65	1.62		-2.0%	-0.2%	1.1%
Brazil	1.38	1.46	1.55	1.34	1.35	1.29	1.13	1.46	1.15	1.08			-6.3%	-2.4%	0.7%
Chile	0.19	0.16	0.17	0.21	0.20	0.20	0.23	0.22	0.25	0.26	0.25		-3.5%	2.8%	0.2%
Colombia	0.38	0.41	0.40	0.43	0.43	0.46	0.46	0.47	0.45	0.45	0.47		3.7%	2.2%	0.3%
Ecuador	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02		-7.9%	-5.3%	†
Peru	0.24	0.27	0.28	0.31	0.27	0.29	0.30	0.29	0.32	0.35	0.36		2.8%	4.2%	0.3%
Trinidad & Tobago	0.73	0.74	0.71	0.61	0.66	0.63	0.63	0.55	0.56	0.56	0.52		-6.2%	-3.3%	0.4%
Venezuela	1.16	1.22	1.33	1.34	1.39	1.14	0.92	0.78	1.01	1.05	1.07		2.2%	-0.8%	0.7%
Central America	–	–	–	–	–	–	0.01	0.02	0.01	0.01	0.02		83.6%	–	†
Other Caribbean	0.13	0.13	0.13	0.14	0.12	0.14	0.16	0.17	0.20	0.19	0.23		20.8%	5.9%	0.2%
Other South America	0.12	0.13	0.12	0.13	0.14	0.14	0.14	0.12	0.13	0.14	0.16		11.1%	2.9%	0.1%
Total S. & Cent. America	6.02	6.21	6.40	6.27	6.34	6.08	5.85	5.35	6.07	5.85	5.82		-0.5%	-0.3%	4.0%
Austria	0.30	0.27	0.29	0.30	0.33	0.31	0.32	0.31	0.32	0.28	0.25		-13.0%	-1.7%	0.2%
Belgium	0.60	0.52	0.57	0.58	0.59	0.61	0.63	0.61	0.61	0.52	0.49		-5.8%	-1.9%	0.3%
Bulgaria	0.10	0.10	0.11	0.11	0.12	0.11	0.10	0.11	0.12	0.10	0.09		-6.6%	-0.9%	0.1%
Croatia	0.10	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.10	0.09	0.09		0.8%	-0.6%	0.1%
Czech Republic	0.29	0.26	0.27	0.29	0.30	0.29	0.30	0.30	0.33	0.27	0.24		-9.2%	-1.9%	0.2%
Denmark	0.14	0.12	0.12	0.12	0.12	0.11	0.10	0.08	0.09	0.06	0.06		-3.7%	-8.2%	†
Estonia	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01		-8.4%	-5.4%	†
Finland	0.11	0.10	0.08	0.07	0.07	0.08	0.07	0.07	0.07	0.04	0.04		6.2%	-8.7%	†
France	1.63	1.36	1.47	1.60	1.61	1.54	1.57	1.46	1.55	1.38	1.22		-11.7%	-2.8%	0.8%
Germany	3.06	2.66	2.77	3.06	3.16	3.09	3.21	3.14	3.30	2.79	2.72		-2.4%	-1.2%	1.9%
Greece	0.15	0.11	0.12	0.16	0.19	0.19	0.21	0.23	0.25	0.22	0.19		-13.1%	2.6%	0.1%
Hungary	0.33	0.29	0.31	0.34	0.36	0.35	0.35	0.37	0.39	0.33	0.29		-10.9%	-1.0%	0.2%
Ireland	0.16	0.16	0.16	0.18	0.18	0.19	0.19	0.19	0.18	0.19	0.17		-7.2%	0.8%	0.1%
Italy	2.40	2.12	2.32	2.43	2.58	2.49	2.55	2.43	2.61	2.35	2.11		-10.1%	-1.3%	1.5%
Latvia	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.04	0.04	0.03	0.03		-5.3%	-5.9%	†
Lithuania	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.06	0.06		-2.6%	-4.6%	†
Luxembourg	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02		-6.3%	-5.7%	†
Netherlands	1.41	1.24	1.22	1.27	1.31	1.28	1.34	1.30	1.25	0.99	0.93		-6.4%	-4.1%	0.6%
North Macedonia	0.01	^	^	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		26.6%	8.9%	†
Norway	0.15	0.16	0.17	0.16	0.17	0.16	0.17	0.16	0.15	0.14	0.14		-3.4%	-0.6%	0.1%
Poland	0.63	0.61	0.62	0.66	0.69	0.72	0.75	0.76	0.81	0.67	0.70		5.3%	1.2%	0.5%
Portugal	0.16	0.15	0.17	0.18	0.23	0.21	0.22	0.22	0.21	0.20	0.16		-19.8%	0.4%	0.1%
Romania	0.41	0.39	0.37	0.38	0.41	0.42	0.39	0.41	0.42	0.35	0.33		-6.4%	-2.3%	0.2%
Slovakia	0.19	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.19	0.16	0.15		-4.8%	-2.3%	0.1%
Slovenia	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03		-3.5%	-0.6%	†
Spain	1.09	0.99	1.03	1.05	1.14	1.13	1.30	1.17	1.24	1.19	1.05		-11.1%	-0.3%	0.7%
Sweden	0.04	0.03	0.03	0.04	0.03	0.04	0.04	0.04	0.04	0.03	0.03		-10.4%	-3.5%	†
Switzerland	0.13	0.11	0.12	0.13	0.13	0.12	0.12	0.12	0.13	0.11	0.10		-7.4%	-2.6%	0.1%
Türkiye	1.58	1.68	1.65	1.60	1.86	1.70	1.56	1.66	2.06	1.84	1.74		-5.5%	1.0%	1.2%
Ukraine	1.72	1.45	1.15	1.13	1.09	1.10	1.02	1.06	0.98	0.66	0.67		2.6%	-8.9%	0.5%
United Kingdom	2.75	2.52	2.59	2.88	2.82	2.84	2.80	2.63	2.77	2.55	2.29		-10.4%	-1.8%	1.6%
Other Europe	0.15	0.15	0.16	0.17	0.19	0.19	0.20	0.20	0.22	0.24	0.25		4.3%	5.2%	0.2%
Total Europe	19.98	18.01	18.34	19.34	20.13	19.74	20.00	19.50	20.61	17.92	16.68		-6.9%	-1.8%	11.6%
Azerbaijan	0.34	0.35	0.40	0.39	0.38	0.39	0.42	0.45	0.46	0.49	0.54		11.1%	4.8%	0.4%
Belarus	0.69	0.69	0.64	0.64	0.66	0.70	0.69	0.64	0.68	0.66	0.60		-9.1%	-1.4%	0.4%
Kazakhstan	0.40	0.53	0.50	0.54	0.60	0.60	0.71	0.64	0.78	0.77	0.77		0.7%	6.7%	0.5%
Russian Federation	15.30	15.20	14.71	15.14	15.52	16.36	16.00	15.25	15.54	16.14	16.32		1.1%	0.7%	11.3%
Turkmenistan	0.70	0.72	0.91	0.90	0.89	1.02	1.00	1.23	1.32	1.35	1.32		-2.1%	6.6%	0.9%
Uzbekistan	1.66	1.75	1.67	1.56	1.61	1.60	1.61	1.57	1.67	1.74	1.68		-3.6%	0.1%	1.2%
Other CIS	0.17	0.19	0.19	0.19	0.18	0.21	0.20	0.21	0.21	0.20	0.22		8.7%	2.3%	0.1%
Total CIS	19.26	19.43	19.02	19.37	19.84	20.88	20.62	19.98	20.66	21.35	21.46		0.5%	1.1%	14.9%
Iran	5.54	6.24	6.62	7.07	7.38	7.66	7.86	8.52	8.26	8.62	8.84		2.6%	4.8%	6.1%
Iraq	0.25	0.27	0.26	0.36	0.41	0.53	0.70	0.67	0.59	0.66	0.67		1.9%	10.2%	0.5%
Israel	0.24	0.26	0.29	0.33	0.35	0.38	0.39	0.41	0.42	0.44	0.45		3.5%	6.7%	0.3%
Kuwait	0.64	0.64	0.73	0.76	0.76	0.76	0.66	0.64	0.71	0.78	0.81		3.7%	2.4%	0.6%
Oman	0.78	0.77	0.83	0.83	0.84	0.90	0.90	0.93	1.01	1.03	1.06		3.4%	3.1%	0.7%
Qatar	1.27	1.38	1.56	1.49	1.48	1.45	1.49	1.38	1.44	1.45	1.59		9.6%	2.3%	1.1%
Saudi Arabia	3.42	3.50	3.57	3.79	3.93	4.04	4.00	4.07	4.12	4.20	4.11		-2.2%	1.8%	2.8%
United Arab Emirates	2.33	2.28	2.57	2.59	2.36	2.14	2.42	2.44	2.36	2.38	2.41		1.1%	0.3%	1.7%
Other Middle East	0.77	0.75	0.81	0.83	0.84	0.79	0.83	0.84	0.85	0.82	0.85		4.1%	1.1%	0.6%
Total Middle East	15.24	16.11	17.25	18.04	18.35	18.64	19.25	19.90	19.77	20.38	20.80		2.0%	3.2%	14.4%
Algeria	1.16	1.30	1.37	1.39	1.42	1.56	1.62	1.56	1.73	1.81	1.67		-8.0%	3.7%	1.2%
Egypt	1.78	1.66	1.66	1.78	2.01	2.15	2.13	2.10	2.24	2.18	2.16		-0.9%	1.9%	1.5%
Morocco	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.01	0.03		298.8%	-3.1%	†
South Africa	0.15	0.15	0.16	0.13	0.14	0.16	0.15	0.14	0.15	0.15	0.17		11.2%	1.6%	0.1%
Eastern Africa	0.04	0.05	0.06	0.07	0.07	0.08	0.09	0.08	0.10	0.10	0.11		3.0%	9.9%	0.1%
Middle Africa	0.14	0.14	0.15	0.20	0.20	0.20	0.18	0.20	0.22	0.20	0.16		-21.5%	1.1%	0.1%
Western Africa	0.46	0.58	0.86	0.76	0.79	0.85	0.87	0.93	1.24	1.19	1.15		-3.1%	9.7%	0.8%
Other Northern Africa	0.44	0.41	0.42	0.49	0.56	0.56	0.60	0.51	0.65	0.64	0.70		9.3%	4.6%	0.5%
Total Africa	4.21	4.33	4.71	4.86	5.24	5.59	5.68	5.55	6.36	6.29	6.15		-2.3%	3.9%	4.3%
Australia	1.26	1.35	1.40	1.37	1.34	1.34	1.59	1.52	1.42	1.56	1.44		-7.2%	1.4%	1.0%
Bangladesh	0.79	0.83	0.93	0.95	0.96	0.99	1.11	1.08	1.10	1.03	1.01		-2.0%	2.5%	0.7%
China	6.19	6.78	7.01	7.54	8.69	10.22	11.10	12.12	13.69	13.60	14.57		7.2%	8.9%	10.1%
China Hong Kong SAR	0.09	0.09	0.11	0.11	0.11	0.11	0.11	0.18	0.17	0.16	0.17		6.9%	6.9%	0.1%
India	1.76	1.75	1.72	1.83	1.93	2.09	2.13	2.17	2.25	2.10	2.25		7.5%	2.5%	1.6%
Indonesia	1.53	1.53	1.59	1.64	1.60	1.63	1.64	1.53	1.55	1.59	1.64		3.2%	0.7%	1.1%
Japan	4.45	4.49	4.27	4.19	4.21	4.17	3.89	3.75	3.73	3.61	3.33		-7.8%	-2.9%	2.3%
Malaysia	1.60	1.61	1.69	1.62	1.62	1.61	1.63	1.57	1.85	1.87	1.66		-11.3%	0.3%	1.1%
New Zealand	0.17	0.19	0.17	0.17	0.18	0.16	0.17	0.16	0.14	0.13	0.14		5.1%	-2.1%	0.1%
Pakistan	1.28	1.26	1.32	0.14	1.47	1.57	1.60	1.48	1.62	1.38	1.36		-0.9%	0.6%	0.9%
Philippines	0.12	0.13	0.12	0.14	0.14	0.15	0.15	0.14							

													Growth rate per annum		Share
Billion cubic metres	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	2023
US															
Pipeline imports	75.9	71.8	71.6	79.5	80.5	76.7	73.3	68.2	75.9	82.1	79.0		-3.8%	0.4%	8.4%
LNG imports	2.7	1.7	2.5	2.4	2.2	2.1	1.5	1.3	0.6	0.7	0.5		-33.4%	-16.1%	†
Total imports	78.6	73.5	74.1	82.0	82.7	78.8	74.7	69.5	76.5	82.8	79.5		-4.0%	0.1%	8.5%
Pipeline exports	42.5	40.4	47.2	58.7	65.7	67.8	77.4	78.9	84.3	82.8	89.1		7.6%	7.7%	9.5%
LNG exports*	0.2	0.4	0.7	4.0	17.1	28.6	47.4	61.3	94.5	104.5	114.4		9.4%	93.8%	12.2%
Total exports	42.7	40.8	47.9	62.7	82.8	96.3	124.8	140.2	178.8	187.3	203.4		8.6%	16.9%	21.7%
Other North America															
Pipeline imports	42.5	40.4	47.2	58.7	65.7	67.8	77.4	78.9	84.3	82.8	89.1		7.6%	7.7%	9.5%
LNG imports	8.8	9.8	7.4	5.9	7.0	7.5	7.1	3.4	1.6	0.9	1.2		30.6%	-18.4%	0.1%
Total imports	51.3	50.2	54.7	64.5	72.7	75.3	84.5	82.2	85.9	83.7	90.2		7.8%	5.8%	9.6%
Pipeline exports	75.9	71.8	71.6	79.5	80.5	76.7	73.3	68.2	75.9	82.1	79.0		-3.8%	0.4%	8.4%
LNG exports*	–	†	†	†	†	0.1	†	†	†	†	0.1		22.3%	–	†
Total exports	75.9	71.9	71.6	79.6	80.6	76.7	73.3	68.2	75.9	82.1	79.1		-3.7%	0.4%	8.4%
Brazil															
Pipeline imports	11.0	11.4	11.2	9.8	8.4	7.6	6.4	6.2	7.1	6.1	5.4		-11.8%	-6.9%	0.6%
LNG imports	5.2	7.1	6.8	2.6	1.7	2.9	3.2	3.3	10.1	2.3	1.3		-42.5%	-13.0%	0.1%
Total imports	16.3	18.5	18.0	12.4	10.1	10.5	9.7	9.5	17.2	8.4	6.7		-20.1%	-8.5%	0.7%
LNG exports*	0.1	0.2	†	0.6	0.2	0.1	–	–	0.1	–	0.3		–	15.5%	†
Total exports	0.1	0.2	†	0.6	0.2	0.1	–	–	0.1	–	0.3		–	15.5%	†
Other S&C America															
LNG imports	12.9	12.5	12.1	12.6	11.7	11.6	9.9	10.5	14.2	11.9	14.5		22.0%	1.2%	1.5%
Total imports	12.9	12.5	12.1	12.6	11.7	11.6	9.9	10.5	14.2	11.9	14.5		22.0%	1.2%	1.5%
Pipeline exports	11.0	11.4	11.2	9.8	8.4	7.6	6.4	6.2	7.1	6.1	5.4		-11.8%	-6.9%	0.6%
LNG exports*	24.1	23.3	21.4	19.9	19.1	21.4	22.5	19.8	13.2	16.4	16.6		1.0%	-3.7%	1.8%
Total exports	35.1	34.7	32.6	29.7	27.5	29.0	28.9	26.0	20.3	22.6	22.0		-2.5%	-4.6%	2.3%
Europe															
Pipeline imports	234.1	209.4	215.0	230.6	247.2	247.4	236.9	211.0	232.8	151.4	111.6		-26.3%	-7.1%	11.9%
LNG imports	51.8	52.1	56.0	56.4	64.8	71.2	119.4	116.2	107.5	172.1	169.1		-1.8%	12.6%	18.0%
Total imports	285.9	261.5	271.0	287.0	312.0	318.6	356.3	327.2	340.3	323.6	280.7		-13.2%	-0.2%	30.0%
LNG exports*	9.0	13.0	11.0	10.6	7.9	11.7	8.8	7.0	4.2	7.9	9.2		15.9%	0.2%	1.0%
Total exports	9.0	13.0	11.0	10.6	7.9	11.7	8.8	7.0	4.2	8.1	10.2		25.9%	1.3%	1.1%
Russian Federation															
Pipeline imports	32.9	33.1	26.5	24.3	28.6	24.6	30.3	10.7	14.8	7.7	5.7		-26.2%	-16.1%	0.6%
Total imports	32.9	33.1	26.5	24.3	28.6	24.6	30.3	10.7	14.8	7.7	5.7		-26.2%	-16.1%	0.6%
Pipeline exports	210.7	189.6	194.2	202.0	219.7	222.4	220.7	197.4	201.3	125.0	95.4		-23.6%	-7.6%	10.2%
LNG exports	14.5	13.6	14.6	14.6	15.4	24.9	39.1	41.8	39.5	43.4	42.7		-1.8%	11.4%	4.6%
Total exports	225.2	203.2	208.8	216.7	235.2	247.3	259.8	239.2	240.9	168.4	138.1		-18.0%	-4.8%	14.7%
Other CIS															
Pipeline imports	24.0	26.3	25.4	26.3	28.8	30.4	29.8	26.7	26.7	24.7	24.9		0.9%	0.4%	2.7%
Total imports	24.0	26.3	25.4	26.3	28.8	30.4	29.8	26.7	26.7	24.7	24.9		0.9%	0.4%	2.7%
Pipeline exports	69.5	75.4	72.6	72.8	78.0	80.8	85.2	61.5	75.4	69.9	65.7		-6.0%	-0.6%	7.0%
Total exports	69.5	75.4	72.6	72.8	78.0	80.8	85.2	61.5	75.4	69.9	65.7		-6.0%	-0.6%	7.0%
Middle East															
Pipeline imports	6.3	7.6	9.6	7.3	4.6	2.1	1.6	0.6	0.8	1.0	0.6		-41.5%	-21.4%	0.1%
LNG imports	4.3	5.3	9.8	13.7	13.0	9.4	9.1	9.6	9.5	9.5	10.1		7.1%	8.9%	1.1%
Total imports	10.6	12.9	19.4	21.1	17.7	11.5	11.0	9.7	10.4	10.4	10.7		2.6%	0.1%	1.1%
Pipeline exports	8.9	9.3	8.1	8.0	11.0	8.8	8.0	7.7	13.9	15.5	13.9		-10.2%	4.6%	1.5%
LNG exports	135.2	132.2	125.4	126.0	122.3	125.9	127.5	127.3	129.6	133.3	131.1		-1.7%	-0.3%	14.0%
Total exports	144.2	141.5	133.5	133.9	133.2	134.8	135.6	135.0	143.5	148.9	145.0		-2.6%	0.1%	15.5%
Africa															
Pipeline imports	–	–	–	–	–	–	–	2.1	4.0	6.2	9.2		47.8%	–	1.0%
LNG imports	–	–	3.9	10.7	8.3	3.2	–	–	–	–	†		–	–	†
Total imports	–	–	3.9	10.7	8.3	3.2	–	2.1	4.0	6.2	9.2		48.0%	–	1.0%
Pipeline exports	34.4	29.4	30.2	38.6	37.2	37.5	27.9	25.6	37.8	34.8	33.5		-3.6%	-0.3%	3.6%
LNG exports	47.0	49.5	48.5	46.2	55.7	53.5	61.6	56.0	58.1	54.1	55.5		2.6%	1.7%	5.9%
Total exports	81.4	78.9	78.7	84.8	92.9	91.0	89.5	81.6	95.9	88.9	89.0		0.1%	0.9%	9.5%
China															
Pipeline imports	26.4	30.3	32.4	36.8	39.9	47.9	47.7	45.1	53.2	58.4	61.3		5.0%	8.8%	6.5%
LNG imports	25.1	27.3	27.0	36.8	52.9	73.5	84.7	94.0	110.1	87.0	97.8		12.4%	14.6%	10.4%
Total imports	51.5	57.5	59.4	73.5	92.8	121.3	132.5	139.1	163.4	145.4	159.2		9.4%	12.0%	17.0%
LNG exports*	–	–	–	–	–	–	0.1	–	–	0.8	1.3		68.6%	–	0.1%
Total exports	–	–	–	–	–	–	0.1	–	–	0.8	1.3		68.6%	–	0.1%
India															
LNG imports	18.0	19.1	20.0	24.3	26.0	30.5	32.4	36.6	33.8	28.4	31.0		9.1%	5.6%	3.3%
Total imports	18.0	19.1	20.0	24.3	26.0	30.5	32.4	36.6	33.8	28.4	31.0		9.1%	5.6%	3.3%
LNG exports*	–	–	0.4	0.1	0.1	–	0.1	–	–	–	–		–	–	–
Total exports	–	–	0.4	0.1	0.1	–	0.1	–	–	–	–		–	–	–
OECD Asia															
Pipeline imports	5.9	5.2	5.8	5.5	4.9	4.9	4.3	5.3	4.8	2.3	0.9		-62.0%	-17.3%	0.1%
LNG imports	175.7	173.6	161.6	159.9	165.4	173.2	161.1	157.2	165.3	161.8	151.0		-6.7%	-1.5%	16.1%
Total imports	181.6	178.8	167.4	165.3	170.2	178.1	165.5	162.5	170.1	164.1	151.8		-7.5%	-1.8%	16.2%
LNG exports*	30.6	32.2	40.1	60.5	76.8	91.9	104.7	106.1	108.7	107.5	107.4		-0.1%	13.4%	11.5%
Total exports	30.6	32.2	40.1	60.5	76.8	91.9	104.7	106.1	108.7	107.5	107.4		-0.1%	13.4%	11.5%
Other Asia															
LNG imports	22.4	25.2	29.8	33.0	40.2	45.5	55.3	58.4	63.0	64.7	72.7		12.5%	12.5%	7.8%
Total imports	22.4	25.2	29.8	33.0	40.2	45.5	55.3	58.4	63.0	64.7	72.7		12.5%	12.5%	7.8%
Pipeline exports	6.1	8.1	9.5	9.2	8.1	7.8	8.7	9.2	8.7	6.3	4.5		-27.6%	-2.8%	0.5%
LNG exports*	66.2	69.3	75.0	75.8	78.5	72.4	72.4	70.7	68.0	71.3	70.3		-1.4%	0.6%	7.5%
Total exports	72.3	77.5	84.5	85.0	86.6	80.2	81.1	79.9	76.7	77.5	74.8		-3.5%	0.4%	8.0%
World															
Inter-regional pipeline trade	459.1	435.5	444.7	478.6	508.7	509.3	507.7	454.7	504.5	422.8	387.7		-8.3%	-1.7%	41.4%
LNG trade	326.8	333.6	337.1	358.3	393.3	430									



Notes: As far as possible, the data above represents standard cubic metres (measured at 15°C and 1013 mbar) and has been standardised using a gross calorific value (GCV) of 40 MJ/m³.
Source: Includes data from FGE MENA gas service, IHS.

In 2023, pipeline trade of natural gas continued to decline falling 8% to 388 bcm. The fall in supply was most noticeable in the Russian Federation which saw its exports fall by 24% to 95 bcm. The global balance between LNG and pipeline trade is now almost the complete inverse of the position back in 2017 with pipeline gas now accounting for only 41% of traded gas. Norway remains the largest supplier of pipeline gas to its European counterparts where imports from the Russian Federation fell by 42% to 50 bcm. Although Russian Federation pipeline exports experienced an overall decline, building on the 62% fall in 2022, its exports to China increased 45% to just over 21 bcm and by 53% to other CIS countries to 7 bcm.

 Natural gas Trade movements 2023 by pipeline

	From																						
Billion cubic metres To	Canada	Mexico	US	Bolivia	Other S. & Cent. America	European Union	Norway	Other Europe	Azerbaijan	Kazakhstan	Russian Federation	Turkmenistan	Uzbekistan	Iran	Qatar	Other Middle East	Algeria	Libya	Other Africa	Indonesia	Myanmar	Other Asia Pacific	Total imports
Canada	—	—	28.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.0
Mexico	—	—	61.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	61.1
US	79.0	†	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79.0
North America	79.0	†	89.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	168.1
Argentina	—	—	—	2.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.2
Brazil	—	—	—	5.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.4
Other S. & Cent. America	—	—	—	—	1.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6
S. & Cent. America	—	—	—	7.6	1.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.2
European Union	—	—	—	—	—	18.0	85.1	95.6	11.7	—	25.7	—	—	—	—	—	30.6	2.4	—	—	—	—	269.1
Rest of Europe	—	—	—	—	—	0.2	25.5	4.8	11.9	—	24.1	—	—	5.2	—	—	—	—	—	—	—	—	71.7
Europe	—	—	—	—	—	18.2	110.7	100.3	23.6	—	49.8	—	—	5.2	—	—	30.6	2.4	—	—	—	—	340.8
Belarus	—	—	—	—	—	—	—	—	—	16.8	—	—	—	—	—	—	—	—	—	—	—	—	16.8
Kazakhstan	—	—	—	—	—	—	—	—	—	0.2	—	0.4	—	—	—	—	—	—	—	—	—	—	0.6
Russian Federation	—	—	—	—	—	—	—	—	0.3	0.7	—	4.7	—	—	—	—	—	—	—	—	—	—	5.7
Other CIS	—	—	—	—	—	—	—	0.2	—	—	7.3	3.9	†	0.4	—	—	—	—	—	—	—	—	11.9
CIS	—	—	—	—	—	—	—	0.2	0.3	0.7	24.3	9.0	†	0.4	—	—	—	—	—	—	—	—	34.9
United Arab Emirates	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.0	—	—	—	—	—	—	—	18.0
Other Middle East	—	—	—	—	—	—	—	—	†	—	—	—	—	8.8	1.5	2.8	—	—	0.6	—	—	—	13.6
Middle East	—	—	—	—	—	—	—	—	†	—	—	—	—	8.8	19.5	2.8	—	—	0.6	—	—	—	31.6
South Africa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.1	—	—	—	4.1
Other Africa	—	—	—	—	—	—	0.9	—	—	—	—	—	—	—	—	8.4	3.9	—	1.0	—	—	—	14.2
Africa	—	—	—	—	—	—	0.9	—	—	—	—	—	—	—	—	8.4	3.9	—	5.1	—	—	—	18.2
Australia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	0.9
China	—	—	—	—	—	—	—	—	—	4.6	21.3	30.5	1.2	—	—	—	—	—	—	—	—	3.7	61.3
Malaysia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	—	—	0.4
Singapore	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.1	—	2.1	6.2
Thailand	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.4	—	5.4
Asia Pacific	—	—	—	—	—	—	—	—	—	4.6	21.3	30.5	1.2	—	—	—	—	—	—	4.5	9.0	3.0	74.2
Total exports	79.0	†	89.1	7.6	1.6	18.2	110.7	101.4	23.9	5.3	95.4	39.5	1.2	14.3	19.5	11.1	34.5	2.4	5.7	4.5	9.0	3.0	677.0

Source: Includes data from FGE MENA gas service, S&P Global Commodity Insights.

Note: As far as possible, the data above represents standard cubic metres (measured at 15°C and 1013 mbar) and has been standardized using a gross calorific value (GCV) of 40 MJ/m³.

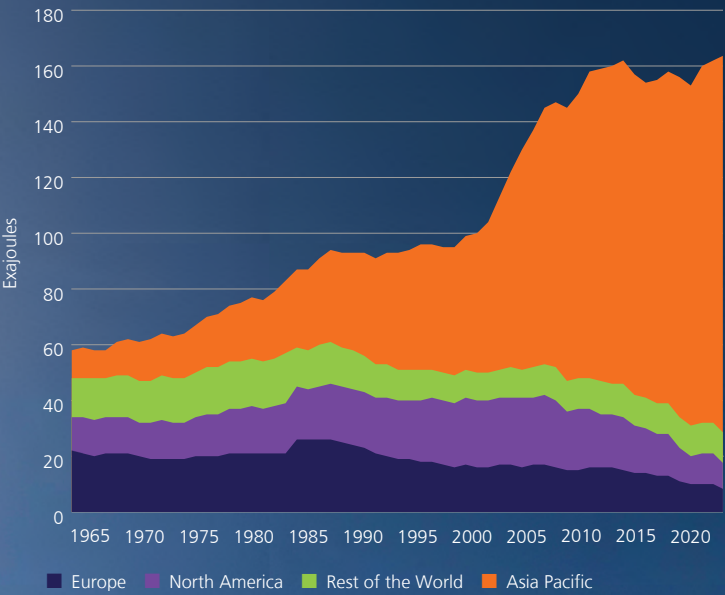
† Less than 0.05.

Coal

In 2023, global coal production reached its highest ever level (179 EJ), beating the previous high set the year before. The Asia Pacific region accounted for nearly 80% of global output with activity concentrated in just four countries: Australia, China, India, and Indonesia (jointly responsible for 97% of the region’s output). China alone was responsible for just over half of total global production. North America, Southern & Central America, Europe and the Commonwealth of Independent States (CIS) all saw their production fall relative to 2022 levels.

Global coal consumption breached 164 EJ for the first time ever. An increase of 1.6% over 2022 was seven times higher than the previous ten-year average growth rate. Whilst China is by far the largest consumer of coal (56% of the world’s total), in 2023 India exceeded the combined consumption of Europe and North America for the first time ever. Coal consumption in both Europe and North America each fell below 10 EJ.

Global coal consumption



Coal consumption in India exceeded the combined consumption of Europe and North America for the first time ever

Coal Production*

												Growth rate per annum		Share
Million tonnes	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023
Canada	68.4	68.3	62.4	62.4	60.6	55.0	53.2	46.1	47.6	46.7	48.6	4.0%	-3.3%	0.5%
Mexico	14.6	14.9	12.3	11.4	12.9	11.9	9.8	7.7	5.5	5.5	5.6	0.1%	-9.2%	0.1%
US	893.4	907.2	813.7	660.8	702.7	686.0	640.8	485.7	523.8	539.0	526.5	-2.3%	-5.1%	5.8%
Total North America	976.5	990.4	888.3	734.5	776.2	752.9	703.7	539.6	577.0	591.3	580.6	-1.8%	-5.0%	6.4%
Brazil	9.5	9.4	8.0	7.5	5.8	6.4	5.8	7.1	8.0	7.6	6.8	-10.1%	-3.2%	0.1%
Colombia	86.1	89.4	86.5	91.2	91.5	86.9	85.9	54.4	59.1	58.0	54.5	-5.9%	-4.4%	0.6%
Venezuela	1.2	0.8	0.8	0.7	0.7	0.4	0.4	0.3	0.2	0.8	0.8	-	-4.1%	†
Other S. & Cent. America	3.2	4.5	3.4	2.8	1.8	1.6	1.1	0.4	0.2	0.3	0.3	11.8%	-21.5%	†
Total S. & Cent. America	99.9	104.0	98.8	102.3	99.9	95.6	93.3	62.2	67.6	66.6	62.5	-6.2%	-4.6%	0.7%
Bulgaria	28.6	31.3	35.9	31.3	34.3	30.6	28.3	22.6	28.4	35.6	21.0	-40.9%	-3.0%	0.2%
Czech Republic	49.1	47.1	46.5	45.5	44.9	43.8	41.0	31.6	31.5	35.1	30.0	-14.7%	-4.8%	0.3%
Germany	190.6	185.8	184.3	175.4	175.1	168.8	131.3	107.4	126.3	130.8	102.3	-21.8%	-6.0%	1.1%
Greece	53.9	50.8	46.2	32.6	37.7	36.5	27.4	14.1	12.4	14.3	10.9	-23.6%	-14.8%	0.1%
Hungary	9.6	9.6	9.3	9.2	8.0	7.9	6.8	6.1	5.0	4.9	4.1	-17.4%	-8.2%	†
Poland	142.9	137.1	135.8	131.0	127.1	122.4	112.4	100.7	107.6	107.8	88.7	-17.7%	-4.6%	1.0%
Romania	24.7	23.6	25.5	23.0	25.8	23.7	21.7	15.0	17.7	18.2	14.8	-18.8%	-5.0%	0.2%
Serbia	40.3	29.8	37.8	38.5	39.8	37.6	38.9	39.7	36.4	35.1	31.9	-9.1%	-2.3%	0.4%
Spain	4.4	3.9	3.1	1.7	3.0	2.4	0.1	0.1	0.1	0.1	0.1	-	-33.7%	†
Türkiye	60.4	65.2	58.4	73.0	74.1	83.9	87.1	74.7	86.5	95.3	66.4	-30.4%	1.0%	0.7%
Ukraine	64.9	45.7	30.4	32.2	24.7	26.8	26.1	24.4	26.2	24.1	23.3	-3.3%	-9.7%	0.3%
United Kingdom	12.8	11.6	8.6	4.2	3.0	2.8	2.6	1.7	1.1	0.7	0.5	-22.3%	-27.6%	†
Other Europe	70.7	67.2	64.5	61.7	65.1	66.3	56.8	50.2	47.6	50.7	46.2	-8.9%	-4.2%	0.5%
Total Europe	752.8	708.8	686.3	659.4	662.6	653.5	580.5	488.3	526.7	552.6	440.1	-20.4%	-5.2%	4.8%
Kazakhstan	119.6	114.0	107.3	103.1	112.3	118.5	115.0	113.4	116.2	117.8	116.4	-1.2%	-0.2%	1.3%
Russian Federation	355.2	357.5	372.5	386.6	411.0	441.3	440.7	399.8	434.1	439.0	432.5	-1.5%	2.0%	4.8%
Uzbekistan	4.1	4.4	3.5	3.9	4.0	4.2	4.0	4.1	5.1	5.4	6.2	15.5%	4.3%	0.1%
Other CIS	4.2	4.1	4.0	4.6	5.7	7.7	7.9	6.2	6.6	8.6	8.4	-2.4%	7.2%	0.1%
Total CIS	483.1	480.0	487.3	498.1	533.0	571.6	567.6	523.5	561.9	570.8	563.4	-1.3%	1.6%	6.2%
Total Middle East	1.5	1.5	1.6	1.8	1.8	2.2	2.0	2.1	2.4	4.9	10.3	110.1%	21.1%	0.1%
South Africa	256.3	261.4	252.2	249.7	252.3	250.0	254.4	248.1	233.7	229.9	228.5	-0.6%	-1.1%	2.5%
Zimbabwe	3.1	5.8	4.3	2.7	2.9	3.3	2.6	2.7	3.2	3.9	5.0	26.6%	4.9%	0.1%
Other Africa	8.3	9.4	9.7	9.2	16.7	20.3	15.1	13.2	17.3	23.3	23.6	1.1%	11.1%	0.3%
Total Africa	267.7	276.6	266.2	261.7	271.9	273.7	272.2	264.0	254.3	257.2	257.1	†	-0.4%	2.8%
Australia	472.8	505.3	503.7	502.1	487.2	502.2	505.6	470.0	460.3	440.1	455.8	3.6%	-0.3%	5.0%
China	3974.3	3873.9	3746.5	3410.6	3523.6	3697.7	3846.3	3901.6	4125.8	4558.6	4710.0	3.3%	1.7%	51.8%
India	608.5	646.2	674.2	689.8	711.7	760.4	753.9	760.2	812.1	910.8	1010.9	11.0%	5.2%	11.1%
Indonesia	474.4	458.1	461.6	456.2	461.2	557.8	616.2	563.7	614.0	687.4	775.2	12.8%	5.1%	8.5%
Japan	1.2	1.3	1.2	1.3	1.4	1.0	0.8	0.8	0.7	0.7	0.6	-8.8%	-6.2%	†
Mongolia	33.3	24.4	24.1	35.1	49.5	54.6	57.1	43.1	32.3	39.3	83.2	111.6%	9.6%	0.9%
New Zealand	4.6	4.0	3.4	2.9	2.9	3.2	3.0	2.8	2.9	2.6	2.6	-1.4%	-5.6%	†
Pakistan	3.0	3.4	3.3	4.1	4.2	4.4	7.1	9.5	10.2	10.0	17.1	71.0%	19.1%	0.2%
South Korea	1.8	1.7	1.8	1.7	1.5	1.2	1.1	1.0	0.9	0.8	0.6	-21.1%	-9.8%	†
Thailand	18.1	18.0	15.2	17.0	16.3	14.9	14.1	13.3	14.2	13.6	12.8	-6.1%	-3.4%	0.1%
Vietnam	41.1	41.1	41.7	38.7	38.4	42.4	46.4	44.6	48.3	49.9	48.2	-3.4%	1.6%	0.5%
Other Asia Pacific	43.7	44.2	47.7	64.2	61.6	58.8	64.9	60.9	57.5	64.0	64.6	0.9%	4.0%	0.7%
Total Asia Pacific	5676.8	5621.7	5524.3	5223.8	5359.5	5698.5	5916.5	5871.5	6179.2	6777.9	7181.6	6.0%	2.4%	79.0%
Total World	8258.3	8183.0	7952.8	7481.6	7704.9	8048.1	8135.7	7751.2	8169.1	8821.3	9095.7	3.1%	1.0%	100.0%
of which: OECD	2111.9	2147.8	2016.5	1842.1	1872.1	1855.2	1738.4	1427.0	1491.7	1504.2	1418.0	-5.7%	-3.9%	15.6%
Non-OECD	6146.5	6035.3	5936.3	5639.5	5832.8	6192.9	6397.3	6324.2	6677.4	7317.1	7677.6	4.9%	2.3%	84.4%
European Union	543.9	527.3	521.3	481.6	492.2	473.4	397.3	318.8	348.9	368.2	291.7	-20.8%	-6.0%	3.2%

* Commercial solid fuels only, i.e. bituminous coal and anthracite (hard coal), and lignite and brown (sub-bituminous) coal, and other commercial solid fuels.
† Includes coal produced for Coal-to-Liquids and Coal-to-Gas transformations.
† Less than 0.05%.

Note: Annual changes and shares of total are calculated using million tonnes figures.



Coal Production*

Exajoules	Growth rate per annum												Share	
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023
Canada	1.53	1.51	1.36	1.37	1.33	1.22	1.20	1.15	1.21	1.19	1.24	4.1%	-2.0%	0.7%
Mexico	0.30	0.30	0.29	0.25	0.31	0.28	0.23	0.19	0.14	0.14	0.14	0.1%	-7.5%	0.1%
US	20.05	20.33	17.99	14.70	15.66	15.40	14.29	10.73	11.62	12.07	11.84	-1.9%	-5.1%	6.6%
Total North America	21.87	22.15	19.64	16.33	17.30	16.90	15.72	12.07	12.97	13.40	13.21	-1.4%	-4.9%	7.4%
Brazil	0.15	0.15	0.12	0.11	0.09	0.10	0.09	0.10	0.12	0.11	0.10	-11.1%	-4.4%	0.1%
Colombia	2.48	2.57	2.49	2.62	2.63	2.50	2.47	1.57	1.70	1.67	1.57	-5.9%	-4.4%	0.9%
Venezuela	0.04	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.02	—	-6.8%	†
Other S. & Cent. America	0.07	0.12	0.10	0.08	0.05	0.05	0.03	0.01	0.01	0.01	0.01	12.3%	-20.0%	†
Total S. & Cent. America	2.74	2.87	2.73	2.84	2.80	2.67	2.61	1.69	1.83	1.80	1.69	-6.1%	-4.7%	0.9%
Bulgaria	0.20	0.21	0.25	0.21	0.24	0.21	0.20	0.16	0.20	0.25	0.15	-40.9%	-3.1%	0.1%
Czech Republic	0.74	0.71	0.71	0.67	0.64	0.62	0.56	0.43	0.44	0.48	0.40	-15.2%	-5.9%	0.2%
Germany	1.89	1.85	1.79	1.66	1.65	1.58	1.19	0.98	1.15	1.19	0.92	-23.2%	-7.0%	0.5%
Greece	0.28	0.27	0.24	0.17	0.19	0.18	0.13	0.07	0.06	0.07	0.05	-23.6%	-15.4%	†
Hungary	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.03	0.03	0.03	-17.4%	-8.7%	†
Poland	2.39	2.26	2.22	2.18	2.08	1.98	1.87	1.68	1.76	1.71	1.48	-13.2%	-4.6%	0.8%
Romania	0.19	0.19	0.20	0.18	0.19	0.17	0.16	0.11	0.13	0.12	0.09	-18.8%	-7.0%	0.1%
Serbia	0.32	0.24	0.30	0.30	0.30	0.28	0.29	0.30	0.26	0.25	0.23	-9.1%	-3.4%	0.1%
Spain	0.07	0.07	0.05	0.03	0.05	0.04	^	^	^	^	^	—	-32.7%	†
Türkiye	0.65	0.68	0.54	0.65	0.63	0.69	0.73	0.66	0.75	0.83	0.58	-29.7%	-1.0%	0.3%
Ukraine	1.60	1.09	0.72	0.76	0.57	0.61	0.60	0.53	0.57	0.53	0.51	-3.3%	-10.8%	0.3%
United Kingdom	0.32	0.29	0.21	0.11	0.08	0.08	0.07	0.05	0.03	0.02	0.01	-22.3%	-26.8%	†
Other Europe	0.72	0.64	0.59	0.59	0.60	0.60	0.52	0.46	0.44	0.45	0.42	-8.3%	-5.2%	0.2%
Total Europe	9.45	8.57	7.88	7.58	7.28	7.08	6.36	5.47	5.82	5.92	4.88	-17.7%	-6.4%	2.7%
Kazakhstan	2.15	2.09	1.66	1.75	1.92	1.98	1.88	1.86	1.92	1.95	1.92	-1.2%	-1.1%	1.1%
Russian Federation	7.25	7.39	7.80	8.12	8.62	9.23	9.23	8.42	9.25	9.35	9.21	-1.5%	2.5%	5.1%
Uzbekistan	0.05	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.07	15.5%	4.3%	†
Other CIS	0.06	0.06	0.07	0.07	0.09	0.12	0.12	0.11	0.11	0.14	0.13	-3.6%	8.8%	0.1%
Total CIS	9.51	9.60	9.57	10.00	10.68	11.37	11.28	10.43	11.34	11.50	11.34	-1.4%	1.8%	6.3%
Total Middle East	0.03	0.03	0.03	0.04	0.04	0.05	0.04	0.04	0.04	0.06	0.09	37.4%	11.2%	†
South Africa	6.08	6.20	5.96	6.01	5.97	6.01	6.02	5.88	5.53	5.44	5.41	-0.6%	-1.1%	3.0%
Zimbabwe	0.08	0.16	0.12	0.07	0.08	0.09	0.07	0.07	0.09	0.11	0.13	26.6%	4.9%	0.1%
Other Africa	0.21	0.24	0.25	0.24	0.43	0.53	0.39	0.34	0.45	0.60	0.61	1.6%	11.0%	0.3%
Total Africa	6.38	6.59	6.33	6.32	6.49	6.63	6.48	6.29	6.06	6.15	6.15	0.1%	-0.3%	3.4%
Australia	11.97	12.81	12.80	12.83	12.50	13.10	13.18	12.09	11.75	11.24	11.66	3.8%	-0.2%	6.5%
China	79.32	78.05	76.59	70.82	73.17	76.87	79.76	80.51	83.44	91.32	93.10	2.0%	1.6%	51.9%
India	10.71	11.28	11.77	11.89	11.99	12.80	12.60	12.59	13.38	15.05	16.75	11.3%	4.6%	9.3%
Indonesia	10.44	10.15	10.19	9.87	9.69	11.44	12.84	11.78	12.68	13.95	15.73	12.8%	4.2%	8.8%
Japan	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	-5.0%	-5.8%	†
Mongolia	0.64	0.47	0.46	0.67	0.94	1.04	1.09	0.82	0.62	0.75	1.59	111.6%	9.6%	0.9%
New Zealand	0.12	0.10	0.09	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07	-0.3%	-5.9%	†
Pakistan	0.06	0.06	0.06	0.08	0.08	0.08	0.13	0.18	0.19	0.19	0.32	71.0%	19.1%	0.2%
South Korea	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	-21.1%	-9.4%	†
Thailand	0.20	0.19	0.16	0.18	0.17	0.16	0.15	0.14	0.15	0.14	0.13	-6.1%	-3.8%	0.1%
Vietnam	0.96	0.96	0.98	0.91	0.90	0.99	1.09	1.05	1.13	1.17	1.13	-3.4%	1.6%	0.6%
Other Asia Pacific	1.08	1.09	1.13	1.40	1.33	1.22	1.38	1.30	1.21	1.35	1.37	1.1%	2.5%	0.8%
Total Asia Pacific	115.55	115.25	114.27	108.78	110.91	117.83	122.33	120.55	124.66	135.26	141.88	4.9%	2.1%	79.2%
Total World	165.52	165.06	160.45	151.88	155.49	162.52	164.82	156.54	162.73	174.09	179.24	3.0%	0.8%	100.0%
of which: OECD	43.40	44.41	41.32	37.85	38.33	38.21	36.37	29.95	30.95	30.93	30.21	-2.3%	-3.5%	16.9%
Non-OECD	122.12	120.65	119.13	114.03	117.16	124.31	128.45	126.59	131.78	143.16	149.04	4.1%	2.0%	83.1%
European Union	6.22	5.97	5.82	5.47	5.42	5.16	4.42	3.67	3.96	4.04	3.31	-18.2%	-6.1%	1.8%

* Commercial solid fuels only, i.e. bituminous coal and anthracite (hard coal), and lignite and brown (sub-bituminous) coal, and other commercial solid fuels. Includes coal produced for Coal-to-Liquids and Coal-to-Gas transformations.

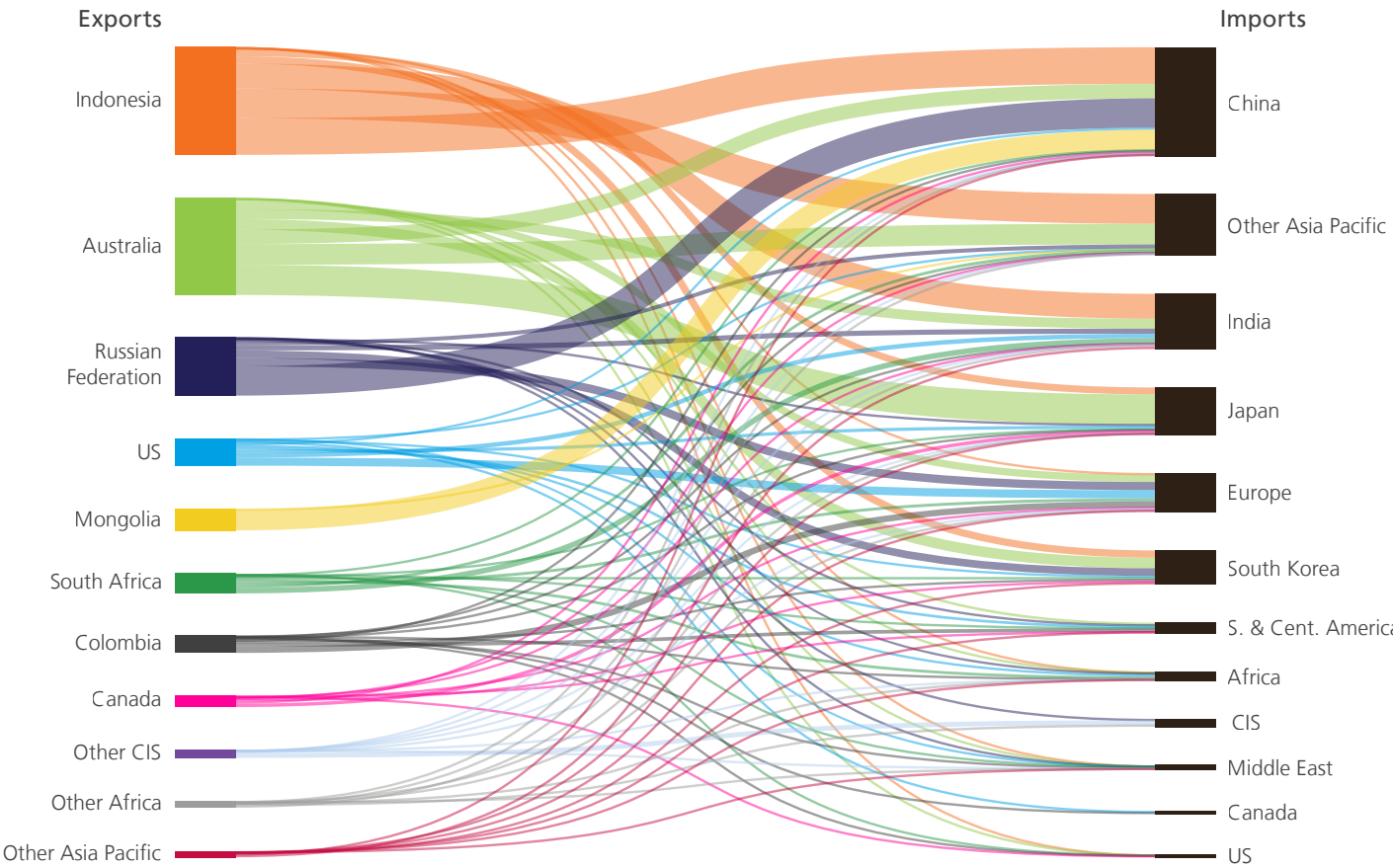
^ Less than 0.005.

† Less than 0.05%.

Note: Annual changes and shares of total are calculated using exajoules figures.



Coal Trade movements



Notes: Commercial solid fuels only, i.e. bituminous coal and anthracite (hard coal), and lignite and brown (sub-bituminous) coal, and other commercial solid fuels. Intra-area movements (for example, between countries in Europe) are excluded.

Overall, international coal trade increased by almost 10% in 2023 reaching its highest level since 2018. Indonesia, Australia, and the Russian Federation were jointly responsible for around 70% of total global exports with Indonesia alone accounting for around 40% of that (over a quarter of total global exports). China was by far the largest importer of coal

at around 10 EJ, almost double that of India, the second-highest ranked country. Russian Federation exports increased by 1.5% with China accounting for just over half of its overseas markets. Overall, the Asia Pacific region accounted for 82% of global coal imports. Europe’s imports fell to their lowest level since 2000.



Coal Inter-area movements 2023

From	To													
Exajoules	Canada	Mexico	US	S. & Cent. America	Europe	CIS	Middle East	Africa	China	India	Japan	South Korea	Other Asia Pacific	Total
Canada	—	†	0.02	0.02	0.09	—	†	†	0.22	0.05	0.32	0.20	0.06	0.99
US	0.15	0.01	—	0.25	0.76	†	0.01	0.19	0.18	0.42	0.30	0.13	0.07	2.47
Colombia	0.04	0.06	0.07	0.34	0.59	—	0.11	0.02	0.12	0.01	0.04	0.15	0.03	1.59
Europe	†	†	0.01	0.01	—	†	0.01	0.08	0.01	0.10	†	†	0.01	0.23
Russian Federation	—	—	—	0.04	0.77	0.04	0.01	0.13	2.75	0.48	0.09	0.71	0.38	5.39
Other CIS	—	—	†	—	0.16	0.46	0.01	0.01	0.01	†	†	†	0.01	0.65
South Africa	†	—	†	0.02	0.27	—	0.07	0.26	0.05	0.52	0.09	0.18	0.28	1.74
Other Africa	—	—	†	—	0.04	—	0.03	0.10	0.02	0.21	†	0.05	0.08	0.53
Australia	†	†	†	0.25	0.68	—	0.01	0.02	1.36	0.92	2.83	0.99	1.94	9.00
China	†	0.01	†	0.02	0.03	†	0.01	0.01	—	0.02	0.03	0.01	0.16	0.31
Indonesia	†	—	†	†	0.10	—	†	†	3.43	2.33	0.65	0.68	2.79	10.00
Mongolia	—	—	—	—	†	†	—	—	1.92	—	—	†	0.04	1.96
Other Asia Pacific	†	†	†	0.01	0.03	†	†	†	0.08	0.23	0.02	0.08	—	0.46
Rest of World	†	†	†	0.01	0.02	†	†	†	0.01	0.05	†	0.01	0.01	0.13
Total imports	0.19	0.08	0.11	0.96	3.56	0.50	0.27	0.82	10.16	5.35	4.39	3.19	5.86	35.43

Note: Commercial solid fuels only, i.e. bituminous coal and anthracite (hard coal), and lignite and brown (sub-bituminous) coal, and other commercial solid fuels. Intra-area movements (for example, between countries in Europe) are excluded.

† Less than 0.05%.

													Growth rate per annum		Share
Exajoules	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	2023
Imports															
Canada	0.22	0.26	0.22	0.19	0.22	0.23	0.21	0.17	0.19	0.18	0.19		6.7%	-1.3%	0.5%
Mexico	0.20	0.22	0.23	0.21	0.32	0.32	0.25	0.13	0.05	0.05	0.08		72.5%	-8.4%	0.2%
US	0.24	0.28	0.28	0.25	0.19	0.15	0.17	0.65	0.14	0.16	0.11		-34.8%	-7.6%	0.3%
S. & Cent. America	1.08	1.08	1.03	1.08	1.20	1.18	1.12	1.04	1.25	1.05	0.96		-8.3%	-1.1%	2.7%
Europe	5.84	6.08	6.02	5.38	5.83	6.34	5.08	3.93	4.44	4.94	3.56		-27.9%	-4.8%	10.0%
CIS	0.58	0.59	0.58	0.52	0.60	0.65	0.70	0.66	0.64	0.49	0.50		1.3%	-1.6%	1.4%
Middle East	0.44	0.49	0.39	0.34	0.36	0.37	0.34	0.38	0.34	0.24	0.27		9.4%	-4.9%	0.8%
Africa	0.82	0.37	0.46	0.50	0.63	0.82	0.92	0.52	0.68	0.73	0.82		11.7%	†	2.3%
China	7.62	6.62	4.69	5.65	5.87	6.00	6.40	6.61	6.68	5.83	10.16		74.3%	2.9%	28.7%
India	3.66	4.65	4.92	10.11	5.25	5.68	4.70	4.74	4.67	4.99	5.35		7.3%	3.9%	15.1%
Japan	5.06	5.00	5.05	5.01	5.25	5.00	4.90	4.56	4.84	4.82	4.39		-9.0%	-1.4%	12.4%
South Korea	3.32	3.43	3.54	3.53	3.89	3.90	3.73	3.28	3.35	3.36	3.19		-4.9%	-0.4%	9.0%
Other Asia Pacific	3.49	3.58	3.79	4.47	4.90	5.34	5.22	6.36	6.22	5.53	5.86		6.0%	5.3%	16.5%
Total World	32.57	32.66	31.19	37.25	34.32	35.99	33.72	33.03	33.51	32.37	35.43		9.5%	0.8%	100.0%
Exports															
Canada	1.12	1.03	0.85	0.78	0.95	1.03	1.02	0.95	0.96	0.97	0.99		1.5%	-1.3%	2.8%
US	2.88	2.37	1.90	1.53	2.41	2.89	2.21	1.74	2.18	2.23	2.47		10.6%	-1.5%	7.0%
Colombia	2.05	2.27	2.19	2.33	2.48	2.42	2.09	1.82	1.67	1.59	1.59		†	-2.5%	4.5%
Europe	0.68	0.13	0.10	0.13	0.19	0.25	0.24	0.21	0.22	0.15	0.23		49.4%	-10.4%	0.6%
Russian Federation	3.54	3.91	4.10	4.45	5.09	5.76	5.79	5.66	6.03	5.31	5.39		1.4%	4.3%	15.2%
Other CIS	0.53	0.54	0.53	0.48	0.50	0.49	0.55	0.63	0.65	0.72	0.65		-8.9%	2.1%	1.8%
South Africa	2.11	2.19	2.27	2.14	2.68	2.95	1.41	1.73	1.62	1.72	1.74		1.0%	-1.9%	4.9%
Other Africa	0.11	0.18	0.28	5.68	0.66	0.24	0.28	0.74	0.37	0.47	0.53		12.5%	16.5%	1.5%
Australia	9.16	9.89	9.91	9.84	9.63	9.71	9.60	9.33	9.60	8.21	9.00		9.6%	-0.2%	25.4%
China	0.28	0.37	0.45	0.50	0.40	0.41	0.31	0.18	0.28	0.31	0.31		-0.2%	1.1%	0.9%
Indonesia	8.51	8.35	7.41	7.69	8.01	8.49	8.49	8.79	8.98	9.19	10.00		8.8%	1.6%	28.2%
Mongolia	0.49	0.53	0.41	0.73	0.95	0.99	1.04	0.83	0.49	0.90	1.96		116.8%	14.8%	5.5%
Other Asia Pacific	0.96	0.80	0.67	0.79	0.32	0.29	0.60	0.34	0.36	0.44	0.46		5.5%	-7.1%	1.3%
Rest of World	0.15	0.09	0.13	0.17	0.06	0.08	0.09	0.08	0.08	0.14	0.13		-13.0%	-1.6%	0.4%
Total World	32.57	32.66	31.19	37.25	34.32	35.99	33.72	33.03	33.51	32.37	35.43		9.5%	0.8%	100.0%

† Less than 0.05.
Note: Commercial solid fuels only, i.e. bituminous coal and anthracite (hard coal), and lignite and brown (sub-bituminous) coal, and other commercial solid fuels.
Intra-area movements (for example between countries in Europe) are excluded.

Mined energy resource prices

	Coal \$/te								Uranium \$/lb
	United States ¹	Colombia ²	Northwest Europe ³	South Africa ⁴	Indonesia ⁵	South China ⁶	Japan ⁷	Australia ⁸	Canada ⁹
1987	–	–	31.30		–	–	–	–	–
1988	–	–	39.94		–	–	–	–	–
1989	–	–	42.08		–	–	–	–	–
1990	31.59	–	43.48		–	–	–	–	–
1991	29.01	–	42.80		–	–	–	–	–
1992	28.53	–	38.53		–	–	–	–	–
1993	29.85	–	33.68		–	–	–	–	–
1994	31.72	–	37.18		–	–	–	–	–
1995	27.01	–	44.50		–	–	–	–	–
1996	29.86	–	41.25		–	–	–	–	–
1997	29.76	–	38.92		–	–	–	–	–
1998	31.00	–	32.00		–	–	–	–	–
1999	31.29	–	28.79		–	–	–	–	–
2000	29.90	–	35.99		–	27.52	–	–	–
2001	50.15	–	39.03		–	31.78	37.69	–	–
2002	33.20	–	31.65		–	33.19	31.47	–	–
2003	38.52	–	43.60		–	31.74	39.61	–	–
2004	64.90	–	72.13		–	42.76	74.22	–	–
2005	70.12	–	60.54		–	51.34	64.62	–	–
2006	57.82	–	64.11		–	53.53	65.22	–	–
2007	49.73	–	88.79		–	61.23	95.59	–	–
2008	117.42	–	147.67		–	104.97	157.88	–	–
2009	60.73	–	70.39		–	87.86	83.59	–	–
2010	67.87	59.21	92.50		–	110.08	108.47	–	–
2011	84.75	79.73	121.48		–	127.27	126.13	–	–
2012	67.28	65.02	92.50		–	111.89	100.30	–	–
2013	69.72	54.18	81.69		–	95.42	90.07	–	–
2014	67.08	50.25	75.38	62.80	–	84.12	76.13	–	–
2015	51.57	47.31	56.79	47.48	–	67.53	60.10	–	–
2016	51.45	52.62	60.09	53.04	–	71.35	71.66	–	–
2017	63.83	68.75	84.51	71.59	–	94.72	96.02	–	–
2018	72.84	72.76	91.83	78.03	–	99.45	112.73	71.13	–
2019	57.16	51.26	60.17	55.67	50.53	35.20	73.57	54.24	–
2020	42.77	45.16	50.13	48.30	45.22	30.64	61.03	44.75	30.46
2021	68.54	100.39	122.60	96.49	95.22	124.70	114.59	83.26	35.16
2022	157.57	248.37	291.28	212.99	127.65	177.78	214.57	174.49	49.78
2023	73.59	99.87	129.54	99.66	84.61	120.65	130.25	103.59	60.37

¹**Source:** S&P Global Commodity Insights, ©2024 by S&P Global Inc. Prices are for CAPP 12,500 Btu, 1.2 SO2 coal, fob. Prices for 1996-2000 are by coal price publication date, 2001-2005 by coal price assessment date.
From 2006, average daily OTC.
²**Source:** S&P Global Commodity Insights, ©2024 by S&P Global Inc 6,000 kcal/kg NAR FOB.
³**Source:** IHS Northwest Europe prices for 1990-2000 average monthly marker prices, 2001-2018 average weekly prices. From 2019, monthly average of S&P Global Commodity Insights, ©2024 by S&P Global Inc Thermal Coal CIF ARA 6,000 kcal/kg NAR.
⁴**Source:** S&P Global Commodity Insights, ©2024 by S&P Global Inc FOB Richards Bay 5500 kcal/kg NAR 7-45 Day \$/mt.
⁵**Source:** S&P Global Commodity Insights, ©2024 by S&P Global Inc FOB Kalimantan 5,000 kcal/kg GAR.
⁶South China prices are the average monthly price for 2000-2005, weekly prices 2006 -2018, from 2019 monthly average of S&P Global Commodity Insights, ©2024 by S&P Global Inc CFR South China 5,500 kilocalories per kilogram NAR.
⁷**Source:** 2001-2018 IHS Japan prices basis = 6,000 kilocalories per kilogram NAR CIF. From 2019, monthly average of S&P Global Commodity Insights, ©2024 by S&P Global Inc NEAT 5,750 kcal/kg NAR.
⁸**Source:** S&P Global Commodity Insights, ©2024 by S&P Global Inc FOB Newcastle High Ash 5500 kcal/kg NAR 7-45 Day \$/mt.
⁹ S&P Global Commodity Insights, ©2024 by S&P Global Inc Uranium U3O8 Spot Canada Mo01 \$/lb.
Note: CAPP = Central Appalachian, CIF = cost+insurance+freight (average prices); FOB = free on board, NAR = net as received, CFR = cost+freight.

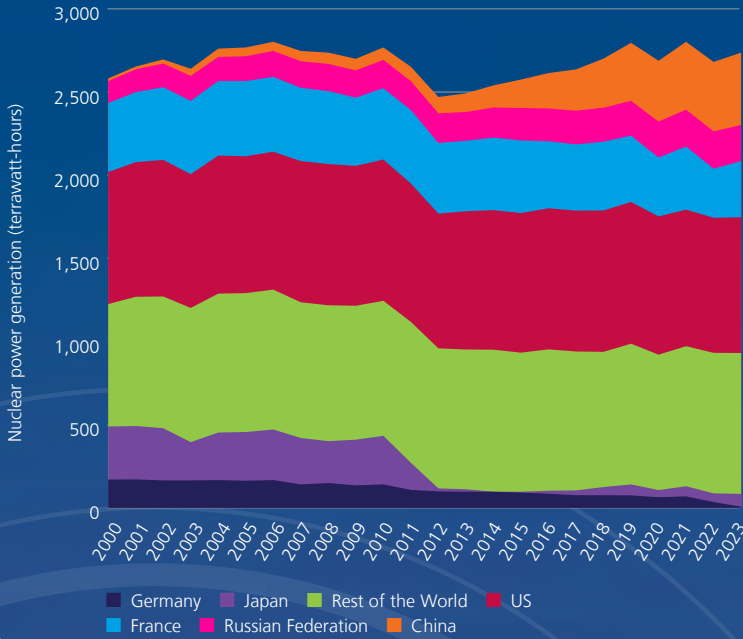
												Growth rate per annum		Share
Exajoules	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013-23	2023
Canada	0.86	0.82	0.77	0.77	0.80	0.65	0.61	0.53	0.47	0.39	0.37	-3.7%	-8.1%	0.2%
Mexico	0.53	0.53	0.53	0.52	0.64	0.57	0.54	0.24	0.20	0.24	0.26	8.1%	-6.8%	0.2%
US	18.08	18.04	15.58	14.26	13.87	13.28	11.34	9.20	10.57	9.91	8.20	-17.3%	-7.6%	5.0%
Total North America	19.48	19.39	16.89	15.55	15.30	14.50	12.49	9.97	11.24	10.54	8.83	-16.2%	-7.6%	5.4%
Argentina	0.05	0.06	0.06	0.04	0.05	0.05	0.03	0.04	0.05	0.05	0.05	-14.1%	-1.5%	†
Brazil	0.69	0.73	0.74	0.67	0.70	0.69	0.65	0.59	0.71	0.59	0.57	-2.2%	-1.8%	0.3%
Chile	0.32	0.32	0.31	0.31	0.32	0.31	0.31	0.26	0.29	0.24	0.18	-26.4%	-5.7%	0.1%
Colombia	0.21	0.22	0.21	0.23	0.17	0.16	0.19	0.17	0.11	0.10	0.16	52.9%	-3.0%	0.1%
Ecuador	^	^	^	^	^	^	^	^	^	^	^	-13.9%	16.8%	†
Peru	0.04	0.04	0.03	0.04	0.03	0.03	0.03	0.02	0.03	0.03	0.03	-3.4%	-2.2%	†
Venezuela	0.01	0.01	0.01	0.01	0.01	^	^	^	^	0.01	0.01	-	-2.6%	†
Central America	0.04	0.04	0.05	0.06	0.04	0.06	0.07	0.06	0.07	0.05	0.05	15.1%	3.3%	†
Other Caribbean	0.08	0.08	0.08	0.08	0.07	0.07	0.10	0.12	0.11	0.12	0.12	1.7%	4.6%	0.1%
Other South America	^	^	^	^	^	^	^	^	^	^	^	11.4%	6.2%	†
Total S. & Cent. America	1.43	1.50	1.48	1.43	1.40	1.38	1.39	1.27	1.38	1.19	1.16	-1.8%	-2.0%	0.7%
Austria	0.14	0.13	0.14	0.13	0.13	0.12	0.12	0.10	0.11	0.10	0.10	-6.6%	-3.5%	0.1%
Belgium	0.15	0.14	0.14	0.13	0.13	0.13	0.13	0.10	0.11	0.12	0.10	-14.9%	-3.9%	0.1%
Bulgaria	0.25	0.27	0.27	0.24	0.26	0.23	0.21	0.17	0.22	0.26	0.16	-38.7%	-4.3%	0.1%
Croatia	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	-17.4%	-6.7%	†
Cyprus	^	^	^	^	^	^	^	^	^	^	^	-9.0%	60.9%	†
Czech Republic	0.71	0.69	0.68	0.69	0.67	0.67	0.60	0.52	0.54	0.56	0.47	-15.3%	-4.0%	0.3%
Denmark	0.14	0.11	0.08	0.09	0.07	0.07	0.04	0.03	0.04	0.04	0.03	-33.6%	-14.2%	†
Estonia	0.17	0.17	0.15	0.16	0.18	0.18	0.13	0.10	0.11	0.12	0.10	-19.7%	-5.5%	0.1%
Finland	0.21	0.19	0.16	0.18	0.17	0.18	0.15	0.11	0.12	0.12	0.09	-26.1%	-8.2%	0.1%
France	0.53	0.39	0.37	0.36	0.39	0.36	0.29	0.20	0.27	0.23	0.18	-23.3%	-10.3%	0.1%
Germany	3.47	3.33	3.29	3.20	3.01	2.90	2.25	1.85	2.24	2.31	1.83	-21.0%	-6.2%	1.1%
Greece	0.29	0.28	0.24	0.18	0.20	0.20	0.13	0.08	0.07	0.07	0.05	-28.3%	-16.6%	†
Hungary	0.10	0.09	0.10	0.09	0.09	0.09	0.08	0.07	0.06	0.05	0.04	-30.2%	-9.2%	†
Iceland	^	^	^	^	^	^	^	^	^	^	^	-28.1%	-2.7%	†
Ireland	0.09	0.08	0.09	0.09	0.08	0.06	0.04	0.04	0.05	0.04	0.03	-31.7%	-10.8%	†
Italy	0.57	0.55	0.52	0.46	0.40	0.37	0.28	0.21	0.23	0.31	0.22	-30.3%	-9.1%	0.1%
Latvia	^	^	^	^	^	^	^	^	^	^	^	-45.4%	-20.1%	†
Lithuania	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	^	-38.7%	-8.3%	†
Luxembourg	^	^	^	^	^	^	^	^	^	^	^	-18.5%	-3.5%	†
Netherlands	0.34	0.38	0.46	0.43	0.39	0.35	0.27	0.17	0.23	0.23	0.16	-31.6%	-7.4%	0.1%
North Macedonia	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.04	0.04	5.5%	-2.7%	†
Norway	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.03	2.7%	0.7%	†
Poland	2.23	2.07	2.04	2.07	2.08	2.09	1.86	1.72	1.90	1.78	1.51	-15.6%	-3.8%	0.9%
Portugal	0.11	0.11	0.14	0.12	0.14	0.11	0.05	0.02	0.01	^	^	-28.6%	-46.6%	†
Romania	0.25	0.24	0.25	0.22	0.23	0.21	0.21	0.15	0.17	0.15	0.11	-24.5%	-7.4%	0.1%
Slovakia	0.14	0.14	0.14	0.13	0.14	0.14	0.11	0.10	0.12	0.10	0.10	-4.5%	-3.9%	0.1%
Slovenia	0.06	0.04	0.04	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	-8.5%	-6.4%	†
Spain	0.48	0.49	0.57	0.44	0.56	0.48	0.21	0.12	0.13	0.16	0.12	-24.2%	-13.0%	0.1%
Sweden	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	-1.8%	-2.9%	†
Switzerland	0.01	0.01	0.01	^	^	^	^	^	^	^	^	-	-3.6%	†
Türkiye	1.32	1.51	1.45	1.61	1.65	1.71	1.76	1.70	1.74	1.76	1.65	-6.3%	2.3%	1.0%
Ukraine	1.73	1.49	1.14	1.36	1.08	1.17	1.09	0.96	0.95	0.54	0.49	-10.5%	-11.9%	0.3%
United Kingdom	1.57	1.26	1.00	0.51	0.41	0.35	0.25	0.23	0.23	0.21	0.18	-12.6%	-19.3%	0.1%
Other Europe	0.61	0.50	0.58	0.60	0.59	0.59	0.57	0.59	0.56	0.54	0.51	-5.6%	-1.7%	0.3%
Total Europe	15.86	14.88	14.24	13.74	13.29	12.98	11.06	9.57	10.44	10.02	8.39	-16.2%	-6.1%	5.1%
Azerbaijan	^	^	^	^	^	^	^	^	^	^	^	-	-32.3%	†
Belarus	0.04	0.03	0.03	0.03	0.04	0.05	0.06	0.04	0.04	0.04	0.04	3.5%	1.5%	†
Kazakhstan	1.57	1.55	1.14	1.34	1.47	1.52	1.44	1.37	1.40	1.41	1.39	-1.7%	-1.2%	0.8%
Russian Federation	3.79	3.67	3.86	3.74	3.51	3.63	3.57	3.29	3.43	3.84	3.83	-0.2%	0.1%	2.3%
Uzbekistan	0.07	0.07	0.05	0.06	0.06	0.09	0.08	0.10	0.09	0.11	0.14	28.0%	6.7%	0.1%
Other CIS	0.06	0.07	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.09	0.09	1.5%	4.5%	0.1%
Total CIS	5.52	5.39	5.17	5.25	5.16	5.38	5.23	4.88	5.05	5.49	5.49	†	†	3.3%
Iran	0.03	0.04	0.05	0.04	0.04	0.06	0.07	0.08	0.08	0.08	0.08	1.8%	9.5%	†
Israel	0.30	0.28	0.27	0.23	0.21	0.20	0.21	0.18	0.16	0.16	0.14	-13.5%	-7.3%	0.1%
Kuwait	0.01	0.01	0.01	0.01	0.01	0.01	0.01	^	^	0.01	0.01	-	-7.0%	†
Oman	^	^	^	^	^	^	^	^	^	0.01	0.01	-	10.5%	†
Qatar	^	^	^	^	^	^	^	^	^	^	^	14.1%	5.7%	†
Saudi Arabia	^	0.01	^	^	^	^	^	^	^	^	^	-	0.9%	†
United Arab Emirates	0.07	0.08	0.07	0.08	0.09	0.08	0.07	0.09	0.11	0.10	0.10	1.8%	3.3%	0.1%
Other Middle East	0.02	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.04	76.5%	7.9%	†
Total Middle East	0.44	0.44	0.42	0.38	0.38	0.37	0.38	0.37	0.38	0.38	0.38	0.2%	-1.5%	0.2%
Algeria	0.01	0.01	0.01	^	0.01	0.02	0.02	0.01	0.01	0.01	0.01	-11.1%	0.5%	†
Egypt	0.02	0.02	0.03	0.05	0.05	0.09	0.08	0.03	0.05	0.04	0.05	13.7%	12.0%	†
Morocco	0.13	0.17	0.19	0.18	0.19	0.22	0.28	0.29	0.31	0.31	0.29	-6.2%	8.8%	0.2%
South Africa	3.70	3.75	3.52	3.78	3.72	3.53	3.76	3.68	3.59	3.38	3.33	-1.6%	-1.0%	2.0%
Eastern Africa	0.16	0.24	0.21	0.16	0.20	0.22	0.18	0.18	0.20	0.22	0.24	11.6%	4.4%	0.1%
Middle Africa	^	^	^	^	0.01	0.01	0.01	0.01	0.01	0.02	0.02	33.9%	33.4%	†
Western Africa	0.02	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.07	0.07	0.07	-5.6%	13.9%	†
Other Northern Africa	-	-	-	-	-	^	^	^	^	^	^	-	-	†
Other Southern Africa	0.05	0.06	0.06	0.06	0.07	0.07	0.06	0.05	0.07	0.07	0.08	1.2%	4.4%	†
Total Africa	4.08	4.27	4.04	4.29	4.29	4.21	4.45	4.30	4.31	4.12	4.08	-1.0%	†	2.5%
Australia	1.89	1.88	1.95	1.94	1.88	1.83	1.75	1.69	1.63	1.54	1.51	-2.3%	-2.2%	0.9%
Bangladesh	0.05	0.03	0.11	0.08	0.09	0.10	0.17	0.19	0.15	0.20	0.28	41.3%	18.2%	0.2%
China	82.45	82.10	80.38	78.03	78.90	80.47	82.52	84.25	87.54	87.83	91.94	4.7%	1.1%	56.0%
China Hong Kong SAR	0.33	0.34	0.28	0.28	0.26	0.27	0.26	0.14	0.15	0.15	0.15	-2.3%	-7.6%	0.1%
India	14.44	15.84	16.17	16.52	17.05	17.93	17.96	16.97	19.27	20.03	21.98	9.8%	4.3%	13.4%
Indonesia	1.59	1.69	1.92	1.96	2.04	2.36	2.88	2.76	2.75	4.38	4.32	-1.4%	10.6%	2.6%
Japan	5.07	4.99	5.03	5.02	5.10	4.99	4.91	4.57	4.93	4.92	4.54	-7.7%	-1.1%	2.8%
Malaysia	0.63	0.64	0.73	0.78	0.87	0.93	0.88	1.04	0.96	0.95	0.98	3.8%	4.6%	0.6%
New Zealand	0.06	0.06	0.06	0.05	0.05	0.06	0.06	0.06	0.07	0.05	0.04	-10.6%	-4.4%	†
Pakistan	0.13	0.20	0.20	0.22	0.30	0.50	0.56	0.65	0.72	0.64	0.62	-4.0%	16.5%	0.4%
Philippines	0.42	0.45	0.49	0.55	0.65	0.68	0.73	0.73	0.79	0.80	0.88	10.4%	7.8%	0.5%
Singapore	0.01	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.02	0.02	0.01	-18.9%	2.5%	†
South Korea	3.41	3.53	3.58	3.41	3.61	3.63	3.44	3.02	3.04	2.87	2.69	-6.1%	-2.3%	1.6%
Sri Lanka	0.02	0.04	0.05	0.05	0.06	0.05	0.06	0.07	0.07	0.07	0.06	-10.2%	11.5%	†
Taiwan	1.68	1.70	1.65	1.67	1.70	1.70	1.67	1.56	1.68	1.58	1.49	-5.8%	-1.2%	0.9%
Thailand	0.68	0.75	0.73	0.75	0.75	0.80	0.71	0.76	0.78	0.71	0.60	-15.0%	-1.1%	0.4%
Vietnam	0.72	0.87	1.10	1.19	1.19	1.58	2.09	2.20	2.09	1.90	2.32	22.2%	12.5%	1.4%
Other Asia Pacific	0.55	0.62	0.57	0.67	1.15	1.13	1.26	1.23	1.13	1.17	1.27	8.8%	8.8%	0.8%
Total Asia Pacific	114.14	115.74	1											

Nuclear energy

Despite a small drop in total installed capacity, electricity generation from nuclear power plant increased in 2023 by 2%. However, it was still 58 terawatt-hours below its 2019 pre-COVID level and 2% below its peak output in 2006. Output from nuclear in Europe fell by 1% with the recovery of France’s nuclear fleet from prolonged outages in 2022 offset by Germany’s closure of its last three remaining units early in the year. China continues to lead the way in building new capacity. Since 2000 it has built around 60% of all new nuclear capacity additions.

In late 2023, commercial operations began at China’s onshore small modular reactor (SMR) demonstration project, a world-first featuring the latest Generation IV technology and incorporating inherent safety systems. Following events in Fukushima in 2011, Japan has gradually returned units to service and, in 2023 output increased by 50%. Whilst output from nuclear in the US remained relatively flat, it was still equal to the combined outputs of China and France, operators of the second and third-largest fleets.

Before Fukushima in 2011, nuclear met 25% of Japan’s electricity demand and 23% of Germany’s. In 2023, it met only around 8% in Japan and just 2% in Germany



China commissioned the world’s first onshore demonstration of a small modular reactor (SMR)

Nuclear energy Generation*

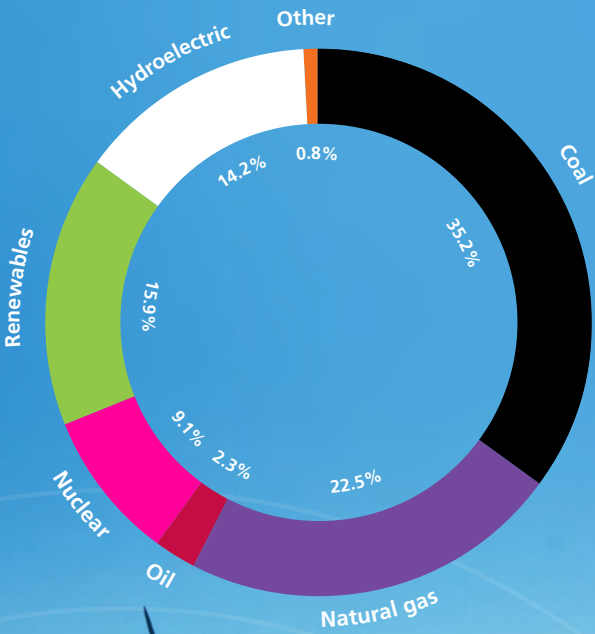
												Growth rate per annum			Share
Terawatt-hours	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013-23	2023	
Canada	102.7	106.5	101.1	100.7	100.6	100.0	100.5	97.5	92.0	86.6	89.0	2.8%	-1.4%	3.3%	
Mexico	11.8	9.7	11.6	10.6	10.9	13.6	11.2	11.2	11.9	10.8	12.4	14.2%	0.5%	0.5%	
US	830.5	839.1	839.1	848.1	847.3	849.6	852.0	831.5	820.7	812.1	816.2	0.5%	-0.2%	29.8%	
Total North America	945.1	955.3	951.8	959.4	958.8	963.1	963.7	940.1	924.6	909.6	917.6	0.9%	-0.3%	33.5%	
Argentina	6.2	5.5	7.0	8.3	6.1	6.9	8.4	10.0	10.2	7.5	9.0	20.0%	3.7%	0.3%	
Brazil	15.4	15.4	14.7	15.9	15.7	15.7	16.1	14.1	14.7	14.6	14.5	-0.3%	-0.6%	0.5%	
Chile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Colombia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ecuador	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Peru	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trinidad & Tobago	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Central America	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other Caribbean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other South America	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total S. & Cent. America	21.7	20.9	21.8	24.1	21.8	22.5	24.6	24.1	24.9	22.0	23.5	6.6%	0.8%	0.9%	
Austria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Belgium	42.6	33.7	26.1	43.5	42.2	28.6	43.5	34.4	50.3	43.9	32.9	-25.0%	-2.6%	1.2%	
Bulgaria	14.2	15.9	15.4	15.8	15.5	16.1	16.6	16.6	16.5	16.5	16.2	-1.7%	1.3%	0.6%	
Croatia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cyprus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Czech Republic	30.7	30.3	26.8	24.1	28.3	29.9	30.2	30.0	30.7	31.0	30.4	-2.0%	-0.1%	1.1%	
Denmark	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Estonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Finland	23.6	23.6	23.2	23.2	22.5	22.8	23.9	23.3	23.6	25.3	34.2	35.2%	3.8%	1.3%	
France	423.7	436.5	437.4	403.2	398.4	412.9	399.0	353.8	379.4	294.7	338.2	14.7%	-2.2%	12.4%	
Germany	97.3	97.1	91.8	84.6	76.3	76.0	75.1	64.4	69.1	34.7	7.2	-79.2%	-22.9%	0.3%	
Greece	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Hungary	15.4	15.6	15.8	16.1	16.1	15.7	16.3	16.1	16.0	15.8	15.9	0.7%	0.4%	0.6%	
Iceland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ireland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Italy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Latvia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lithuania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Netherlands	2.9	4.1	4.1	4.0	3.4	3.5	3.9	4.1	3.8	4.2	4.0	-4.1%	3.3%	0.1%	
North Macedonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Norway	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Poland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Portugal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Romania	11.6	11.7	11.6	11.3	11.5	11.4	11.3	11.5	11.3	11.1	11.2	0.9%	-0.4%	0.4%	
Slovakia	15.7	15.5	15.1	14.8	15.1	14.8	15.3	15.4	15.7	15.9	18.3	15.2%	1.6%	0.7%	
Slovenia	5.3	6.4	5.6	5.7	6.3	5.8	5.8	6.4	5.7	5.6	5.6	-	0.6%	0.2%	
Spain	56.7	57.3	57.3	58.6	58.1	55.8	58.3	58.3	56.6	58.6	56.8	-3.0%	-	2.1%	
Sweden	66.5	64.9	56.3	63.1	65.7	68.5	66.1	49.2	53.0	51.9	48.4	-6.8%	-3.1%	1.8%	
Switzerland	26.2	27.8	23.3	21.3	20.5	24.4	25.3	23.0	18.5	23.1	23.3	1.0%	-1.1%	0.9%	
Türkiye	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ukraine	83.2	88.4	87.6	81.0	85.6	84.4	83.0	76.2	86.2	62.1	52.4	-15.6%	-4.5%	1.9%	
United Kingdom	70.6	63.7	70.3	71.7	70.3	65.1	56.2	50.3	45.9	47.7	40.7	-14.6%	-5.3%	1.5%	
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Europe	986.2	992.4	968.0	941.9	935.9	935.8	929.7	833.0	882.3	742.2	735.9	-0.8%	-2.9%	26.9%	
Azerbaijan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Belarus	-	-	-	-	-	-	-	0.3	5.8	4.7	11.7	150.5%	-	0.4%	
Kazakhstan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Russian Federation	172.5	180.8	195.5	196.6	203.1	204.6	209.0	215.9	222.4	223.7	217.4	-2.8%	2.3%	7.9%	
Turkmenistan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Uzbekistan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other CIS	2.4	2.5	2.8	2.4	2.6	2.1	2.2	2.8	2.0	2.8	2.7	-4.8%	1.4%	0.1%	
Total CIS	174.9	183.2	198.3	199.0	205.8	206.7	211.2	219.0	230.2	231.2	231.8	0.3%	2.9%	8.5%	
Iran	4.3	4.1	3.5	6.5	7.0	6.9	6.4	6.3	3.5	6.6	6.6	1.1%	4.5%	0.2%	
Iraq	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Israel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Kuwait	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oman	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Qatar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
United Arab Emirates	-	-	-	-	-	-	-	1.6	10.5	20.1	32.3	60.5%	-	1.2%	
Other Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Middle East	4.3	4.1	3.5	6.5	7.0	6.9	6.4	8.0	14.1	26.7	38.9	45.9%	24.8%	1.4%	
Algeria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Egypt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Morocco	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
South Africa	14.1	13.8	12.2	15.0	14.2	11.6	13.3	9.9	12.4	10.1	8.9	-11.9%	-4.5%	0.3%	
Eastern Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Middle Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Western Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other Northern Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other Southern Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Africa	14.1	13.8	12.2	15.0	14.2	11.6	13.3	9.9	12.4	10.1	8.9	-11.9%	-4.5%	0.3%	
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bangladesh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China	111.5	133.2	171.4	213.2	248.1	295.0	348.7	366.2	407.5	417.8	434.7	4.1%	14.6%	15.9%	
China Hong Kong SAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
India	33.3	34.7	38.3	37.9	37.4	39.1	45.2	44.6	43.9	46.2	48.2	4.4%	3.8%	1.8%	
Indonesia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Japan	14.6	-	4.5	17.7	29.1	49.1	65.6	43.0	61.2	51.8	77.5	49.6%	18.2%	2.8%	
Malaysia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pakistan	4.3	4.7	4.3	5.3	8.1	9.2	9.2	9.5	15.7	22.2	22.4	0.6%	18.0%	0.8%	
Philippines	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Singapore	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
South Korea	138.8	156.4	164.8	162.0	148.4	133.5	145.9	160.2	158.0	176.1	180.5	2.5%	2.7%	6.6%	
Sri Lanka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Taiwan	41.6	42.4	36.5	31.7	22.4	27.7	32.3	31.4	27.8	23.8	17.8	-25.1%	-8.1%	0.7%	
Thailand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vietnam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other Asia Pacific	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Asia Pacific	344.1	371.4	419.7	467.7	493.6	553.6	646.9	655.0	714.1	737.8	781.1	5.9%	8.5%	28.5%	
Total World	2490.3	2541.1	2575.3	2613.7	2637.0	2700.2	2795.8	2689.0	2802.5	2679.6	2737.7	2.2%	1.0%	100.0%	
of which: OECD	1975.7	1988.3	1974.5	1973.0	1959.6	1969.7	1994.1	1872.0	1912.2	1790.0	1831.7	2.3%	-0.8%	66.9%	
Non-OECD	514.6	552.9	600.9	640.7	677.4	730.5	801.6	817.0	890.4	889.6	906.0	1.8%	5.8%	49.5%	
European Union	806.2	812.5													

Electricity and renewables

Global electricity generation increased by 2.5% in 2023 to reach a record level of 29,925 TWh. Recording a growth rate that was 25% faster than total global primary energy consumption suggests that the world’s energy system is increasingly electrifying. Whilst electricity demand in Asia Pacific and the Middle East increased by around 5%, demand in both Europe and North America fell by 2.4% and 1% respectively.

Coal retained its position as the dominant fuel for power generation with fossil fuels overall forming 60% of global electricity generation. Renewables share of total power generation rose from 29% to 30%. At a regional level, Southern & Central America recorded the highest contribution from renewables at 72%. The share of nuclear remained flat at around 9% with new build in China and returns to service of plant in France and Japan being offset by the closure of Germany’s remaining plant. In 2023, grid-scale battery electricity storage system (BESS) capacity stood at 56 GW, nearly 50% of which was installed in China.

Fossil fuels contributed 60% of total global electricity generated in 2023



Electricity Generation*

												Growth rate per annum			Share
Terawatt-hours	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013-23	2023	
Canada	655.7	653.0	661.1	668.2	669.6	661.5	656.0	653.9	649.9	658.9	633.2	-3.9%	-0.3%	2.1%	
Mexico	297.1	303.3	310.3	320.3	329.1	349.3	344.6	325.7	330.0	340.1	354.9	4.3%	1.8%	1.2%	
US	4330.3	4363.3	4349.9	4348.9	4303.8	4464.5	4414.1	4287.6	4400.9	4537.7	4494.0	-1.0%	0.4%	15.0%	
Total North America	5283.1	5319.5	5321.3	5337.4	5302.5	5475.3	5414.7	5267.2	5380.9	5536.8	5482.0	-1.0%	0.4%	18.3%	
Argentina	139.4	138.6	145.4	147.2	145.6	146.8	139.5	144.6	153.2	145.6	146.4	0.6%	0.5%	0.5%	
Brazil	570.8	590.5	581.2	578.9	589.3	601.4	633.3	628.8	656.1	677.2	710.0	4.8%	2.2%	2.4%	
Chile	73.0	71.6	74.5	77.7	78.6	82.3	83.6	83.7	87.4	88.0	88.0	0.2%	1.9%	0.3%	
Colombia	69.8	72.7	75.0	74.4	75.0	78.3	80.4	79.4	86.0	89.5	93.9	4.9%	3.0%	0.3%	
Ecuador	23.3	24.3	26.0	27.3	28.0	29.2	32.3	31.2	32.2	33.0	35.4	7.1%	4.3%	0.1%	
Peru	43.3	45.5	48.3	51.7	52.7	55.0	57.0	52.8	57.5	59.7	62.1	3.9%	3.7%	0.2%	
Trinidad & Tobago	9.5	9.4	9.6	9.4	9.3	9.2	9.2	9.2	9.3	9.8	9.7	-0.7%	0.2%	†	
Venezuela	132.6	131.0	126.3	116.2	110.3	92.3	78.1	81.6	83.9	87.6	85.8	-2.2%	-4.3%	0.3%	
Central America	48.1	49.4	52.2	53.8	54.5	56.4	59.3	57.2	61.6	63.0	65.3	3.5%	3.1%	0.2%	
Other Caribbean	76.8	76.0	77.8	78.7	74.4	76.2	79.5	78.7	80.0	79.3	84.5	6.7%	1.0%	0.3%	
Other South America	84.2	80.9	82.7	91.3	87.9	87.9	80.1	74.4	72.1	75.0	83.3	11.1%	-0.1%	0.3%	
Total S. & Cent. America	1270.9	1290.0	1299.0	1306.6	1305.8	1314.9	1332.4	1321.6	1379.3	1407.7	1464.5	4.0%	1.4%	4.9%	
Austria	68.4	65.6	65.5	68.5	71.3	68.6	74.2	72.6	70.8	68.5	72.6	6.0%	0.6%	0.2%	
Belgium	83.5	72.5	69.7	85.6	86.6	75.0	93.6	89.5	100.5	95.9	81.9	-14.7%	-0.2%	0.3%	
Bulgaria	43.8	47.5	49.2	45.3	45.6	46.8	44.3	40.8	47.6	50.5	39.9	-21.0%	-0.9%	0.1%	
Croatia	14.1	13.6	11.4	12.8	12.0	13.6	12.8	13.4	15.2	14.2	17.3	21.9%	2.1%	0.1%	
Cyprus	4.3	4.4	4.5	4.9	5.0	5.0	5.1	4.8	5.1	5.3	5.4	1.9%	2.3%	†	
Czech Republic	86.9	86.0	83.9	83.3	87.0	88.0	87.0	81.4	84.9	84.5	76.1	-9.9%	-1.3%	0.3%	
Denmark	34.7	32.2	28.9	30.5	31.0	30.4	29.5	28.7	33.1	35.1	33.6	-4.4%	-0.3%	0.1%	
Estonia	13.3	12.4	10.4	12.2	13.2	12.4	7.6	6.1	7.1	8.9	7.0	-21.6%	-6.2%	†	
Finland	71.3	68.1	68.6	68.8	67.5	70.3	68.7	69.3	72.1	72.2	81.3	12.6%	1.3%	0.3%	
France	575.3	564.8	571.6	556.2	554.0	573.9	562.7	524.3	547.2	466.5	519.7	11.4%	-1.0%	1.7%	
Germany	637.7	626.6	647.0	649.2	652.3	641.4	608.2	574.7	587.1	577.9	513.7	-11.1%	-2.1%	1.7%	
Greece	57.2	50.5	51.9	54.4	55.3	53.3	48.6	48.3	54.7	52.6	49.8	-5.4%	-1.4%	0.2%	
Hungary	30.3	29.4	30.4	31.9	32.9	32.1	34.3	34.9	36.1	35.8	34.9	-2.4%	1.4%	0.1%	
Iceland	18.1	18.1	18.8	18.5	19.2	19.8	19.5	19.1	19.6	20.1	20.2	0.6%	1.1%	0.1%	
Ireland	26.1	26.3	28.4	30.5	30.9	31.1	31.0	32.3	31.9	33.9	31.1	-8.1%	1.8%	0.1%	
Italy	289.8	279.8	283.0	289.8	295.8	289.7	293.9	280.5	289.1	284.0	265.3	-6.6%	-0.9%	0.9%	
Latvia	6.2	5.1	5.5	6.4	7.5	6.7	6.4	5.7	5.8	5.0	6.2	23.1%	-0.1%	†	
Lithuania	4.8	4.4	4.9	4.3	4.2	3.5	4.0	5.5	5.1	4.8	5.4	13.6%	1.3%	†	
Luxembourg	2.9	3.0	2.8	2.2	2.2	2.2	1.9	2.2	2.2	2.2	2.3	4.7%	-2.1%	†	
Netherlands	100.9	103.4	110.2	115.2	117.2	114.4	121.4	123.3	122.1	121.8	122.3	0.4%	1.9%	0.4%	
North Macedonia	6.1	5.4	5.6	5.6	5.6	5.6	5.9	5.3	5.5	5.9	6.9	17.1%	1.3%	†	
Norway	134.1	142.0	144.5	149.1	149.6	147.1	134.9	155.2	157.9	146.7	154.8	5.5%	1.4%	0.5%	
Poland	164.6	159.1	164.9	166.6	170.5	170.0	164.0	158.0	179.6	179.7	167.0	-7.1%	0.1%	0.6%	
Portugal	51.7	52.8	52.4	60.3	59.4	59.6	53.2	53.1	51.0	48.8	49.2	0.7%	-0.5%	0.2%	
Romania	58.9	63.3	66.3	65.1	64.3	64.8	59.5	55.8	59.3	55.9	58.2	4.1%	-0.1%	0.2%	
Slovakia	28.8	27.4	26.9	27.1	27.7	27.0	28.4	28.8	30.0	26.8	30.3	12.8%	0.5%	0.1%	
Slovenia	16.1	17.4	15.1	16.5	16.3	16.3	16.1	17.2	15.9	13.6	15.9	16.8%	-0.1%	0.1%	
Spain	285.3	278.8	281.0	274.6	275.6	274.5	267.5	263.4	274.3	292.5	282.0	-3.6%	-0.1%	0.9%	
Sweden	153.2	153.7	162.1	156.1	164.3	163.4	168.4	163.8	171.8	173.1	166.5	-3.8%	0.8%	0.6%	
Switzerland	70.4	72.0	67.9	63.3	63.3	67.6	71.9	70.2	64.7	64.1	73.6	14.8%	0.4%	0.2%	
Türkiye	240.2	252.0	261.8	274.4	297.3	304.8	303.9	306.7	334.7	328.4	328.0	-0.1%	3.2%	1.1%	
Ukraine	194.4	182.8	163.7	164.6	156.0	159.9	154.1	147.8	155.5	112.7	103.4	-8.3%	-6.1%	0.3%	
United Kingdom	358.3	338.1	338.9	339.2	338.2	333.7	327.1	314.7	308.9	322.0	285.6	-11.3%	-2.2%	1.0%	
Other Europe	90.1	80.2	85.2	89.0	82.9	92.5	87.6	86.7	94.8	89.3	97.6	9.3%	0.8%	0.3%	
Total Europe	4021.5	3938.5	3983.1	4022.0	4061.9	4065.0	3997.2	3884.2	4041.3	3899.4	3805.1	-2.4%	-0.6%	12.7%	
Azerbaijan	23.4	24.7	24.7	25.0	24.3	25.2	26.1	25.8	27.9	29.0	29.3	0.9%	2.3%	0.1%	
Belarus	31.5	34.7	34.2	33.6	34.5	38.9	40.5	38.7	41.2	39.7	41.8	5.3%	2.9%	0.1%	
Kazakhstan	92.6	94.6	91.6	94.6	103.1	107.3	106.5	108.6	115.1	113.5	113.0	-0.4%	2.0%	0.4%	
Russian Federation	1059.1	1064.2	1067.5	1091.0	1091.2	1109.2	1118.1	1085.4	1157.1	1166.9	1178.2	1.0%	1.1%	3.9%	
Turkmenistan	18.9	20.1	21.5	22.6	22.8	24.2	22.5	25.8	28.4	32.6	33.5	2.7%	5.9%	0.1%	
Uzbekistan	54.9	55.4	57.3	59.1	60.8	62.9	63.5	66.5	71.4	74.3	78.0	5.0%	3.6%	0.3%	
Other CIS	43.3	44.1	44.0	43.5	46.3	48.6	49.2	49.1	50.2	49.8	51.0	2.4%	1.6%	0.2%	
Total CIS	1323.7	1337.9	1340.9	1369.3	1383.0	1416.4	1426.4	1400.0	1491.2	1505.8	1524.8	1.3%	1.4%	5.1%	
Iran	258.9	275.6	280.2	286.1	305.2	312.4	318.9	337.2	356.4	367.1	382.9	4.3%	4.0%	1.3%	
Iraq	62.1	71.2	75.3	86.3	93.6	99.0	115.2	116.8	118.1	131.4	139.4	6.1%	8.4%	0.5%	
Israel	61.4	61.3	64.3	67.4	67.7	69.3	72.4	72.8	73.8	76.0	77.2	1.6%	2.3%	0.3%	
Kuwait	61.0	65.1	68.3	70.1	72.8	74.2	75.1	74.8	80.8	83.5	88.3	5.7%	3.8%	0.3%	
Oman	26.2	29.1	32.8	34.2	36.1	37.7	38.8	38.3	41.0	41.7	44.3	6.4%	5.4%	0.1%	
Qatar	34.7	38.7	41.5	42.3	45.6	47.9	49.9	49.3	51.6	50.0	54.4	8.7%	4.6%	0.2%	
Saudi Arabia	294.7	328.2	350.6	357.7	395.0	374.8	378.5	380.9	392.9	401.3	422.9	5.4%	3.7%	1.4%	
United Arab Emirates	110.0	116.5	127.4	129.6	134.6	136.0	138.5	137.3	149.1	153.3	165.0	7.6%	4.1%	0.6%	
Other Middle East	99.5	97.1	93.9	93.0	95.7	103.4	108.6	102.4	98.2	88.0	89.1	1.3%	-1.1%	0.3%	
Total Middle East	1008.4	1083.0	1134.4	1166.8	1246.2	1254.7	1295.9	1309.8	1361.9	1392.2	1463.4	5.1%	3.8%	4.9%	
Algeria	59.9	64.2	68.8	71.0	76.0	76.7	81.5	79.2	85.4	91.2	85.9	-5.8%	3.7%	0.3%	
Egypt	165.1	171.2	181.8	188.2	193.2	199.4	200.6	198.6	209.7	216.7	220.1	1.6%	2.9%	0.7%	
Morocco	28.1	29.3	30.3	30.7	31.6	34.4	40.1	38.5	41.0	41.2	42.2	2.6%	4.1%	0.1%	
South Africa	256.1	254.8	250.4	253.1	255.4	256.3	252.6	239.5	244.3	234.8	224.4	-4.4%	-1.3%	0.7%	
Eastern Africa	87.0	93.5	98.6	97.1	103.4	108.6	110.7	110.7	117.1	123.8	127.9	3.3%	3.9%	0.4%	
Middle Africa	28.4	31.3	33.8	34.4	35.6	39.6	42.0	43.6	44.8	44.4	45.3	2.0%	4.8%	0.2%	
Western Africa	60.4														



Electricity Generation by fuel*

	2022								2023							
Terawatt-hours	Oil	Natural gas	Coal	Nuclear energy	Hydro-electric	Renew-ables	Other†	Total	Oil	Natural Gas	Coal	Nuclear energy	Hydro-electric	Renew-ables	Other†	Total
Canada	5.2	84.7	26.2	86.6	397.7	54.5	3.9	658.9	4.8	89.9	23.6	89.0	364.2	57.0	4.7	633.2
Mexico	32.7	192.1	21.4	10.8	35.6	47.6	—	340.1	33.4	204.9	27.9	12.4	20.4	55.9	—	354.9
US	24.7	1814.1	906.7	812.1	251.3	717.3	11.6	4537.7	17.7	1937.7	738.4	816.2	236.3	737.3	10.3	4494.0
Total North America	62.6	2090.9	954.3	909.6	684.6	819.5	15.4	5536.8	55.9	2232.5	789.8	917.6	620.9	850.2	15.1	5482.0
Argentina	16.1	76.6	2.3	7.5	22.8	19.5	0.8	145.6	9.0	75.9	1.8	9.0	29.9	20.0	0.8	146.4
Brazil	10.1	42.1	14.2	14.6	427.1	166.8	2.3	677.2	9.8	37.7	14.2	14.5	428.7	202.8	2.4	710.0
Other S. & Cent. America	68.5	114.4	37.0	—	295.2	69.8	^	584.9	74.5	127.6	37.7	—	291.4	76.9	^	608.1
Total S. & Cent. America	94.8	233.1	53.6	22.0	745.1	256.0	3.1	1407.7	93.2	241.3	53.7	23.5	749.9	299.7	3.2	1464.5
France	2.4	47.1	3.1	294.7	44.3	66.8	8.2	466.5	1.8	32.3	0.9	338.2	55.5	84.3	6.7	519.7
Germany	5.7	79.1	180.0	34.7	17.6	237.0	23.8	577.9	4.9	77.7	127.8	7.2	19.6	252.8	23.6	513.7
Italy	12.8	141.4	24.2	—	28.4	72.1	5.0	284.0	10.6	117.5	20.0	—	38.9	75.1	3.2	265.3
Netherlands	1.6	47.7	17.4	4.2	^	48.3	2.6	121.8	1.6	45.9	10.7	4.0	0.1	58.1	2.1	122.3
Poland	2.4	11.4	126.7	—	2.0	35.7	1.7	179.7	2.0	16.4	100.2	—	2.4	44.0	2.0	167.0
Spain	10.6	86.0	8.7	58.6	17.6	105.3	5.8	292.5	10.7	61.7	4.3	56.8	25.5	116.5	6.5	282.0
Türkiye	0.4	75.1	113.7	—	66.8	71.0	1.4	328.4	0.7	69.7	118.3	—	63.9	74.1	1.4	328.0
Ukraine	0.5	7.2	24.3	62.1	11.1	7.5	—	112.7	0.9	8.1	21.6	52.4	12.7	7.7	—	103.4
United Kingdom	2.2	125.0	5.6	47.7	5.6	129.4	6.5	322.0	2.4	97.9	3.5	40.7	5.2	129.8	6.1	285.6
Other Europe	19.5	129.8	155.1	240.2	370.7	270.6	28.0	1214.0	17.8	109.7	122.4	236.6	414.9	288.3	28.2	1218.0
Total Europe	58.1	749.7	658.8	742.2	564.1	1043.7	82.9	3899.4	53.3	636.9	529.9	735.9	638.7	1130.6	79.8	3805.1
Kazakhstan	2.4	32.7	65.0	—	9.2	4.1	—	113.5	2.4	32.3	63.9	—	8.8	5.6	—	113.0
Russian Federation	7.0	527.1	198.6	223.7	197.7	7.4	5.4	1166.9	6.8	528.4	211.1	217.4	200.9	8.2	5.4	1178.2
Other CIS	2.3	163.1	8.5	7.5	41.3	2.1	0.6	225.4	2.1	161.6	9.1	14.4	43.3	2.4	0.6	233.6
Total CIS	11.7	723.0	272.1	231.2	248.2	13.6	5.9	1505.8	11.4	722.3	284.1	231.8	253.0	16.3	5.9	1524.8
Iran	30.2	313.4	0.9	6.6	14.0	2.0	—	367.1	26.9	323.6	0.9	6.6	22.7	2.1	—	382.9
Saudi Arabia	153.0	246.0	—	—	—	2.3	—	401.3	152.1	265.0	—	—	—	5.8	—	422.9
United Arab Emirates	^	125.5	—	20.1	—	7.8	—	153.3	^	118.9	—	32.3	—	13.8	—	165.0
Other Middle East	124.7	306.9	17.7	—	4.1	16.8	0.2	470.5	129.9	320.5	17.4	—	4.9	19.6	0.2	492.6
Total Middle East	307.9	991.8	18.6	26.7	18.2	28.8	0.2	1392.2	308.9	1028.1	18.4	38.9	27.6	41.3	0.2	1463.4
Egypt	16.2	176.3	—	—	13.3	10.9	—	216.7	16.6	178.7	—	—	13.8	11.0	—	220.1
South Africa	3.6	—	197.2	10.1	3.1	16.3	4.5	234.8	4.8	—	185.9	8.9	1.7	18.4	4.7	224.4
Other Africa	44.0	203.3	40.3	—	139.9	23.3	0.6	451.2	40.8	204.7	38.8	—	146.1	27.4	0.6	458.4
Total Africa	63.8	379.5	237.4	10.1	156.3	50.6	5.1	902.7	62.2	383.4	224.7	8.9	161.6	56.7	5.3	902.9
Australia	4.7	50.8	129.2	—	16.7	70.8	0.7	272.9	4.9	46.7	125.6	—	15.3	80.0	0.7	273.1
China	11.5	275.6	5412.7	417.8	1298.1	1372.5	60.5	8848.7	11.2	297.8	5753.9	434.7	1226.0	1668.1	64.7	9456.4
India	2.4	46.5	1354.2	46.2	174.9	203.8	1.3	1829.3	2.8	52.6	1471.3	48.2	149.2	232.8	1.3	1958.2
Indonesia	6.1	56.1	205.3	—	27.3	38.1	0.6	333.5	6.6	61.0	216.8	—	24.6	40.6	1.1	350.6
Japan	42.5	351.5	325.6	51.8	74.9	138.3	56.0	1040.6	33.4	320.9	304.3	77.5	74.5	149.0	53.7	1013.3
Malaysia	1.6	68.5	77.8	—	31.8	4.0	—	183.6	1.2	69.2	81.4	—	31.5	4.5	—	187.8
South Korea	8.3	174.4	206.2	176.1	3.5	51.9	4.1	624.6	7.7	167.0	202.8	180.5	3.7	52.0	4.2	617.9
Taiwan	4.4	112.0	121.0	23.8	5.8	16.2	4.9	288.2	3.8	111.6	119.2	17.8	4.0	21.1	4.7	282.1
Thailand	1.7	114.6	35.5	—	6.6	21.9	^	180.4	0.9	129.4	30.4	—	6.6	23.2	^	190.5
Vietnam	0.1	29.2	104.0	—	95.9	35.2	0.7	265.1	1.3	26.3	129.6	—	80.9	37.9	0.5	276.4
Other Asia Pacific	60.4	221.6	157.9	22.2	171.5	41.8	1.1	676.5	39.5	219.3	177.2	22.4	172.0	44.3	0.8	675.5
Total Asia Pacific	143.8	1500.9	8129.6	737.8	1907.1	1994.5	129.8	14543.4	113.2	1501.8	8612.4	781.1	1788.2	2353.5	131.8	15282.0
Total World	742.6	6668.9	10324.4	2679.6	4323.4	4206.7	242.4	29188.1	698.1	6746.3	10513.0	2737.7	4240.0	4748.4	241.3	29924.8
of which: OECD	171.6	3475.7	2211.4	1790.0	1394.8	2149.4	158.3	11351.2	150.5	3463.5	1904.5	1831.7	1385.5	2290.5	152.5	11178.6
Non-OECD	571.0	3193.1	8113.0	889.6	2928.7	2057.2	84.2	17836.8	547.6	3282.8	8608.6	906.0	2854.5	2457.9	88.7	18746.2
European Union	52.1	534.8	469.5	609.3	274.2	805.3	67.1	2812.4	46.3	452.2	343.0	619.4	325.7	886.0	64.7	2737.2

* Based on gross output.
† Includes uncategoryed generation, statistical differences and sources not specified elsewhere e.g. pumped hydro, non-renewable waste and heat from chemical sources.
^ Less than 0.05.



Electricity Grid-scale battery energy storage systems (BESS)

Installed capacity (Gigawatts)												Growth rate per annum		Share
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013-23	2023
Canada	^	^	^	^	^	^	^	0.1	0.1	0.1	0.4	426.1%	69.7%	0.7%
Mexico	—	—	—	—	—	—	—	—	—	^	^	—	—	†
US	0.2	0.2	0.4	0.6	0.7	0.9	1.1	1.7	5.1	9.3	15.8	70.0%	55.0%	28.3%
Total North America	0.2	0.2	0.4	0.6	0.8	1.0	1.2	1.8	5.2	9.4	16.2	72.8%	55.2%	29.0%
Brazil	—	—	—	—	—	—	—	—	^	^	^	900.0%	—	0.1%
Chile	^	^	^	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	98.0%	18.3%	0.3%
Other S. & Cent. America	^	^	^	^	^	^	^	^	^	^	0.1	206.6%	38.7%	0.1%
Total S. & Cent. America	^	^	^	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	145.2%	23.3%	0.5%
Germany	^	^	^	0.2	0.3	0.4	0.5	0.6	0.7	1.3	1.7	27.9%	54.9%	3.1%
Ireland	—	—	—	—	—	—	—	^	0.2	0.3	0.4	27.6%	—	0.8%
United Kingdom	^	^	^	^	0.2	0.6	0.8	1.0	1.7	2.3	3.6	54.2%	111.7%	6.5%
Other Europe	^	^	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.9	1.2	36.0%	59.2%	2.2%
Total Europe	^	0.1	0.1	0.3	0.6	1.1	1.4	1.8	2.9	4.9	7.0	41.9%	69.7%	12.5%
Kazakhstan	—	—	—	—	—	—	—	—	^	^	^	—	—	†
Other CIS	^	^	^	^	^	^	^	^	^	^	^	—	5.2%	†
Total CIS	^	^	^	^	^	^	^	^	^	^	^	—	25.9%	0.1%
United Arab Emirates	^	^	^	^	^	^	0.1	0.1	0.1	0.1	0.1	—	30.8%	0.2%
Other Middle East	—	—	—	—	—	—	—	—	^	^	^	100.0%	—	0.1%
Total Middle East	^	^	^	^	^	^	0.1	0.1	0.1	0.1	0.2	14.6%	34.7%	0.3%
South Africa	—	—	—	—	—	—	—	—	^	^	0.3	29300.0%	—	0.5%
Other Africa	—	—	—	—	^	^	^	^	0.1	0.2	0.3	17.9%	—	0.5%
Total Africa	—	—	—	—	^	^	^	^	0.1	0.2	0.5	153.4%	—	1.0%
Australia	—	^	—	^	0.1	0.2	0.3	0.4	0.7	0.9	1.8	95.1%	—	3.2%
China	^	^	0.1	0.1	0.1	0.2	0.4	0.8	1.8	7.8	27.1	249.1%	93.4%	48.6%
Japan	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.6	76.7%	21.3%	1.0%
South Korea	^	^	0.1	0.2	0.2	0.3	0.3	0.8	1.0	1.0	1.0	—	70.4%	1.8%
Other Asia Pacific	^	^	^	^	^	^	^	0.1	0.1	0.4	1.1	150.8%	101.1%	1.9%
Total Asia Pacific	0.1	0.2	0.3	0.5	0.7	1.0	1.3	2.3	4.0	10.5	31.6	201.7%	73.7%	56.6%
Total world	0.4	0.5	0.9	1.5	2.1	3.1	4.1	6.1	12.5	25.2	55.7	120.8%	63.6%	100.0%
of which: OECD	0.4	0.5	0.8	1.4	1.9	2.8	3.5	5.1	10.2	16.6	26.8	60.8%	54.1%	48.0%
Non-OECD	0.1	0.1	0.1	0.1	0.1	0.3	0.6	1.1	2.3	8.6	29.0	236.8%	88.2%	52.0%
European Union	^	0.1	0.1	0.3	0.4	0.5	0.6	0.8	1.3	2.6	3.4	30.7%	59.2%	6.0%

 Renewable energy

Combined renewable electricity and biofuels primary energy input consumption

													Growth rate per annum		Share
Exajoules (input-equivalent)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	2023
Canada	4.17	4.07	4.18	4.25	4.33	4.24	4.18	4.23	4.22	4.37	4.08	-6.6%	-0.2%	4.5%	
Mexico	0.40	0.53	0.48	0.48	0.50	0.54	0.56	0.67	0.78	0.79	0.73	-8.2%	6.2%	0.8%	
US	6.61	6.80	6.92	7.67	8.44	8.64	8.91	9.32	9.81	10.78	10.99	2.0%	5.2%	12.2%	
Total North America	11.18	11.40	11.58	12.41	13.27	13.41	13.65	14.22	14.81	15.94	15.80	-0.9%	3.5%	17.5%	
Argentina	0.39	0.39	0.39	0.36	0.39	0.40	0.40	0.39	0.39	0.45	0.52	14.6%	3.0%	0.6%	
Brazil	4.99	4.98	5.07	5.31	5.32	5.68	5.95	5.95	5.77	6.56	6.98	6.4%	3.4%	7.7%	
Chile	0.28	0.30	0.33	0.32	0.36	0.41	0.40	0.41	0.42	0.49	0.55	12.9%	7.1%	0.6%	
Colombia	0.48	0.49	0.48	0.50	0.60	0.60	0.58	0.54	0.64	0.68	0.65	-4.0%	3.1%	0.7%	
Ecuador	0.11	0.12	0.13	0.16	0.20	0.20	0.24	0.24	0.25	0.24	0.24	2.9%	8.1%	0.3%	
Peru	0.25	0.25	0.26	0.27	0.31	0.34	0.34	0.34	0.35	0.33	0.33	-0.5%	2.8%	0.4%	
Trinidad & Tobago	^	^	^	^	^	^	^	^	^	^	^	-0.4%	-0.4%	^	
Venezuela	0.80	0.79	0.73	0.61	0.67	0.62	0.60	0.64	0.64	0.64	0.61	-4.6%	-2.6%	0.7%	
Central America	0.30	0.31	0.34	0.36	0.39	0.41	0.38	0.42	0.46	0.46	0.41	-11.1%	3.0%	0.5%	
Other Caribbean	0.06	0.05	0.05	0.06	0.07	0.07	0.07	0.08	0.08	0.09	0.09	1.5%	3.8%	0.1%	
Other South America	0.74	0.71	0.72	0.79	0.76	0.76	0.69	0.62	0.59	0.61	0.68	10.9%	-0.8%	0.8%	
Total S. & Cent. America	8.40	8.38	8.50	8.73	9.08	9.50	9.65	9.61	9.59	10.55	11.07	4.9%	2.8%	12.3%	
Austria	0.52	0.52	0.49	0.52	0.52	0.51	0.55	0.55	0.52	0.49	0.56	12.6%	0.6%	0.6%	
Belgium	0.14	0.14	0.16	0.17	0.18	0.19	0.21	0.26	0.25	0.27	0.29	6.9%	7.7%	0.3%	
Bulgaria	0.07	0.08	0.09	0.08	0.07	0.10	0.08	0.08	0.11	0.10	0.11	4.6%	4.0%	0.1%	
Croatia	0.09	0.10	0.07	0.08	0.07	0.10	0.08	0.09	0.11	0.09	0.11	31.8%	2.2%	0.1%	
Cyprus	^	^	^	^	^	^	0.01	0.01	0.01	0.01	0.01	19.8%	11.0%	^	
Czech Republic	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.13	0.12	0.12	-1.6%	1.0%	0.1%	
Denmark	0.17	0.19	0.20	0.20	0.23	0.22	0.24	0.24	0.27	0.29	0.30	2.7%	5.7%	0.3%	
Estonia	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	-1.3%	8.6%	^	
Finland	0.28	0.29	0.33	0.32	0.34	0.35	0.35	0.38	0.41	0.41	0.43	4.3%	4.4%	0.5%	
France	1.08	1.03	1.01	1.07	1.01	1.20	1.19	1.29	1.27	1.21	1.47	21.6%	3.1%	1.6%	
Germany	1.68	1.78	2.03	2.03	2.28	2.34	2.50	2.62	2.43	2.62	2.78	6.1%	5.2%	3.1%	
Greece	0.15	0.13	0.15	0.15	0.14	0.16	0.16	0.18	0.22	0.22	0.24	7.0%	4.9%	0.3%	
Hungary	0.04	0.04	0.04	0.04	0.04	0.05	0.06	0.07	0.08	0.09	0.10	12.2%	10.7%	0.1%	
Iceland	0.18	0.17	0.18	0.18	0.18	0.19	0.18	0.18	0.19	0.19	0.19	0.2%	0.7%	0.2%	
Ireland	0.06	0.07	0.08	0.08	0.09	0.11	0.12	0.14	0.12	0.13	0.15	8.2%	9.2%	0.2%	
Italy	1.18	1.25	1.14	1.13	1.09	1.18	1.17	1.19	1.18	1.02	1.15	12.1%	-0.3%	1.3%	
Latvia	0.04	0.03	0.03	0.04	0.05	0.04	0.03	0.04	0.04	0.04	0.05	21.8%	2.4%	0.1%	
Lithuania	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	19.4%	8.8%	^	
Luxembourg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	1.9%	10.2%	^	
Netherlands	0.14	0.14	0.15	0.16	0.19	0.21	0.26	0.36	0.44	0.52	0.61	18.3%	15.6%	0.7%	
North Macedonia	0.02	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.02	35.9%	2.6%	^	
Norway	1.29	1.35	1.36	1.41	1.42	1.38	1.26	1.45	1.48	1.36	1.44	5.8%	1.1%	1.6%	
Poland	0.21	0.24	0.26	0.25	0.27	0.26	0.30	0.33	0.35	0.42	0.50	20.0%	8.9%	0.6%	
Portugal	0.31	0.32	0.26	0.33	0.23	0.30	0.28	0.30	0.32	0.28	0.34	22.3%	1.1%	0.4%	
Romania	0.20	0.25	0.26	0.27	0.25	0.26	0.25	0.25	0.27	0.24	0.28	15.9%	3.2%	0.3%	
Slovakia	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.07	0.06	0.08	21.9%	1.5%	0.1%	
Slovenia	0.05	0.07	0.04	0.05	0.04	0.05	0.05	0.06	0.06	0.04	0.06	52.1%	1.9%	0.1%	
Spain	1.15	1.14	1.00	1.08	0.92	1.10	1.02	1.17	1.28	1.25	1.41	13.3%	2.1%	1.6%	
Sweden	0.85	0.88	1.05	0.92	0.97	0.94	1.01	1.13	1.17	1.20	1.16	-3.2%	3.1%	1.3%	
Switzerland	0.40	0.40	0.40	0.37	0.37	0.38	0.41	0.41	0.40	0.34	0.43	25.9%	0.8%	0.5%	
Türkiye	0.70	0.52	0.82	0.88	0.84	0.94	1.27	1.22	1.13	1.31	1.31	-0.2%	6.5%	1.5%	
Ukraine	0.15	0.10	0.07	0.09	0.11	0.13	0.12	0.16	0.21	0.18	0.20	9.3%	2.6%	0.2%	
United Kingdom	0.60	0.72	0.90	0.90	1.05	1.17	1.28	1.41	1.30	1.43	1.43	^	9.1%	1.6%	
Other Europe	0.36	0.32	0.32	0.35	0.28	0.38	0.33	0.31	0.41	0.35	0.43	24.7%	2.0%	0.5%	
Total Europe	12.31	12.51	13.16	13.39	13.49	14.46	15.04	16.16	16.31	16.38	17.83	8.9%	3.8%	19.8%	
Azerbaijan	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	8.8%	2.1%	^	
Belarus	^	^	^	^	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-10.6%	13.3%	^	
Kazakhstan	0.08	0.08	0.09	0.12	0.11	0.10	0.11	0.11	0.12	0.12	0.13	8.0%	5.9%	0.1%	
Russian Federation	1.78	1.70	1.64	1.79	1.79	1.83	1.87	2.05	2.09	1.94	1.97	1.8%	1.0%	2.2%	
Turkmenistan	^	^	^	^	^	^	^	^	^	^	^	-0.4%	6.8%	^	
Uzbekistan	0.06	0.06	0.06	0.07	0.08	0.06	0.06	0.05	0.05	0.05	0.07	32.6%	1.1%	0.1%	
Other CIS	0.32	0.31	0.29	0.30	0.33	0.34	0.34	0.32	0.33	0.33	0.33	1.1%	0.3%	0.4%	
Total CIS	2.26	2.17	2.10	2.29	2.33	2.36	2.40	2.56	2.61	2.47	2.54	2.6%	1.2%	2.8%	
Iran	0.15	0.14	0.13	0.15	0.17	0.10	0.33	0.24	0.15	0.15	0.23	54.5%	4.7%	0.3%	
Iraq	0.05	0.03	0.03	0.03	0.02	0.02	0.05	0.04	0.04	0.03	0.04	23.5%	-2.5%	^	
Israel	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.04	0.05	0.06	0.08	25.0%	29.5%	0.1%	
Kuwait	^	^	^	^	^	^	^	^	^	^	^	-8.6%	96.5%	^	
Oman	^	^	^	^	^	^	^	^	0.01	0.01	0.01	2.0%	104.3%	^	
Qatar	^	^	^	^	^	^	^	^	^	^	0.01	239.6%	31.3%	^	
Saudi Arabia	^	^	^	^	^	^	^	^	0.01	0.02	0.05	152.0%	62.6%	0.1%	
United Arab Emirates	^	^	^	^	0.01	0.01	0.03	0.05	0.06	0.07	0.13	77.8%	65.2%	0.1%	
Other Middle East	0.04	0.03	0.01	0.02	0.03	0.04	0.05	0.07	0.07	0.09	0.09	0.5%	7.7%	0.1%	
Total Middle East	0.24	0.21	0.19	0.23	0.25	0.20	0.51	0.44	0.39	0.44	0.65	45.9%	10.4%	0.7%	
Algeria	^	^	^	^	0.01	0.01	0.01	0.01	0.01	0.01	0.01	7.4%	18.5%	^	
Egypt	0.15	0.14	0.15	0.15	0.15	0.16	0.19	0.23	0.23	0.23	0.23	2.2%	4.8%	0.3%	
Morocco	0.04	0.03	0.04	0.04	0.04	0.06	0.07	0.07	0.07	0.07	0.08	22.8%	7.7%	0.1%	
South Africa	0.02	0.04	0.07	0.08	0.12	0.12	0.14	0.17	0.19	0.19	0.19	3.0%	24.7%	0.2%	
Eastern Africa	0.65	0.70	0.71	0.67	0.69	0.74	0.75	0.79	0.83	0.86	0.89	4.0%	3.3%	1.0%	
Middle Africa	0.19	0.20	0.20	0.21	0.24	0.27	0.28	0.31	0.31	0.31	0.32	2.9%	5.4%	0.4%	
Western Africa	0.17	0.18	0.16	0.19	0.19	0.20	0.23	0.23	0.25	0.26	0.29	10.1%	5.3%	0.3%	
Other Northern Africa	^	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	10.8%	4.8%	^	
Other Southern Africa	0.02	0.03	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.02	0.03	26.8%	1.8%	^	
Total Africa	1.24	1.34	1.37	1.38	1.47	1.58	1.69	1.80	1.90	1.95	2.05	5.3%	5.1%	2.3%	
Australia	0.36	0.34	0.36	0.42	0.39	0.48	0.54	0.62	0.74	0.83	0.90	8.4%	9.5%	1.0%	
Bangladesh	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	19.1%	7.3%	^	
China	10.92	12.79	13.71	14.89	16.22	17.79	19.47	21.03	23.51	25.55	27.60	8.0%	9.7%	30.6%	
China Hong Kong SAR	^	^	^	^	^	^	^	^	0.01	0.01	0.01	13.6%	16.2%	^	
India	1.89	2.02	2.04	2.08	2.32	2.60	2.99	3.10	3.27	3.74	3.78	1.0%	7.1%	4.2%	
Indonesia	0.29	0.31	0.26	0.38	0.39	0.60	0.69	0.80	0.86	0.99	1.06	6.1%	13.8%	1.2%	
Japan	1.23	1.35	1.55	1.52	1.62	1.73	1.74	1.90	2.04	2.09	2.19	4.7%	6.0%	2.4%	
Malaysia	0.14	0.15	0.16	0.22	0.29	0.2									



Renewable energy

Solar – Installed photovoltaic (PV) power and concentrated solar power (CSP)*

Megawatts												Growth rate per annum		Share
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023
Canada	1210	1843	2519	2665	2932	3095	3327	3609	4554	5312	5757	8.4%	16.9%	0.4%
Mexico	109	174	287	633	1126	2583	4744	6712	8180	9364	10910	16.5%	58.5%	0.8%
US	13246	18112	24237	35434	43770	51987	61587	76441	95391	114361	139205	21.7%	26.5%	9.8%
Total North America	14565	20129	27043	38731	47828	57665	69658	86762	108125	129037	155873	20.8%	26.7%	11.0%
Argentina	16	16	16	16	16	198	447	769	1080	1116	1408	26.2%	57.0%	0.1%
Brazil	12	21	46	128	1207	2453	4698	8452	14499	25520	37449	46.7%	122.8%	2.6%
Chile	12	203	545	1050	1829	2294	2673	3229	4516	6525	8475	29.9%	93.1%	0.6%
Honduras	5	5	396	412	455	515	518	525	529	529	529	–	58.9%	–
The Dominican Republic	7	13	22	70	93	188	331	382	580	732	1073	46.7%	65.7%	0.1%
Other S. & Cent. America	405	506	882	1064	1666	1885	2415	2829	3494	4039	4669	15.6%	27.7%	0.3%
Total S. & Cent. America	457	764	1907	2739	5265	7531	11083	16186	24699	38462	53603	39.4%	61.1%	3.8%
Austria	626	785	937	1096	1269	1455	1702	2043	2783	3792	6832	80.2%	27.0%	0.5%
Belgium	2902	3015	3132	3329	3621	4000	4637	5573	6012	6756	8549	26.5%	11.4%	0.6%
Bulgaria	1039	1029	1028	1030	1031	1033	1044	1100	1275	1737	2937	69.1%	11.0%	0.2%
Czech Republic	2064	2067	2075	2068	2075	2081	2111	2172	2246	2420	2499	3.3%	1.9%	0.2%
Denmark	571	607	782	851	906	998	1080	1304	1704	3070	3529	15.0%	20.0%	0.2%
France	5277	6034	7138	7702	8610	9629	10738	11926	14612	17350	20551	18.4%	14.6%	1.4%
Germany	36710	37900	39224	40679	42293	45158	48914	53671	60038	67479	81739	21.1%	8.3%	5.8%
Greece	2579	2596	2604	2604	2606	2651	2834	3288	4277	5430	7030	29.5%	10.5%	0.5%
Hungary	35	89	172	235	344	728	1400	2131	2968	4235	5835	37.8%	66.8%	0.4%
Italy	18190	18600	18907	19289	19688	20114	20871	21656	22600	24561	29795	21.3%	5.1%	2.1%
Lithuania	68	69	69	70	74	82	103	164	255	572	1165	103.7%	32.9%	0.1%
Netherlands	650	1007	1526	2135	2911	4608	7228	11110	14823	19600	23904	22.0%	43.4%	1.1%
Poland	2	27	108	187	287	562	1539	3955	7416	12170	15809	29.9%	141.0%	1.1%
Portugal	296	415	447	513	579	667	901	1100	1646	2646	3876	46.5%	29.3%	0.3%
Romania	761	1293	1326	1372	1374	1386	1398	1383	1394	1809	1917	6.0%	9.7%	0.1%
Slovakia	533	533	533	533	528	471	590	535	537	549	631	15.0%	1.7%	–
Slovenia	187	224	239	232	247	247	278	370	461	626	1034	65.2%	18.7%	0.1%
Spain	6994	7001	7008	7017	7027	7068	11111	12440	16019	25615	31016	21.1%	16.1%	2.2%
Sweden	43	60	104	153	244	428	714	1107	1606	2388	3488	46.1%	55.2%	0.2%
Switzerland	756	1061	1394	1664	1906	2173	2498	2973	3655	4340	5840	34.6%	22.7%	0.4%
Türkiye	19	41	250	834	3422	5064	5996	6668	7817	9426	11293	19.8%	89.7%	0.8%
Ukraine	748	819	841	955	1200	2003	5936	7331	8062	8062	8062	–	26.8%	0.6%
United Kingdom	2937	5528	9601	11914	12760	13060	13345	13551	13915	14651	15657	6.9%	18.2%	1.1%
Other Europe	221	331	404	500	647	817	1217	1758	2479	3713	6211	67.3%	39.6%	0.4%
Total Europe	84208	91133	99849	106962	115649	126483	148184	169308	198600	242999	299200	23.1%	13.5%	21.1%
Russian Federation	1	5	61	76	225	535	1276	1428	1661	1816	2170	19.5%	110.7%	0.2%
Kazakhstan	^	5	57	57	59	209	542	912	1038	1146	1306	13.9%	119.6%	0.1%
Other CIS	2	8	12	75	114	210	212	250	461	812	1209	49.0%	89.7%	0.1%
Total CIS	4	18	130	209	398	954	2030	2589	3160	3774	4685	24.2%	104.0%	0.3%
Israel	446	656	796	906	1006	1346	2138	2652	3591	4411	4524	2.6%	26.1%	0.3%
Jordan	^	^	57	311	418	760	971	1541	1811	1966	1990	1.2%	160.0%	0.1%
Saudi Arabia	22	24	24	24	34	84	109	439	440	440	2285	419.5%	58.8%	0.2%
United Arab Emirates	126	130	132	135	353	600	1935	2333	3002	3588	5925	65.1%	47.0%	0.4%
Other Middle East	38	72	145	245	438	744	923	1172	1417	3579	3819	6.7%	58.4%	0.3%
Total Middle East	633	883	1154	1621	2250	3535	6077	7807	10261	13983	18543	32.6%	40.2%	1.3%
Algeria	25	28	61	261	354	366	366	366	366	451	451	–	33.5%	–
Egypt	35	35	36	59	180	764	1647	1643	1663	1724	1856	7.7%	48.7%	0.1%
Morocco	35	40	200	202	204	734	734	774	854	854	934	9.4%	38.8%	0.1%
South Africa	262	1164	1353	2176	3451	4805	4908	5994	6316	6326	6164	-2.6%	37.1%	0.4%
Tunisia	10	17	28	38	47	64	80	95	95	197	506	156.8%	48.8%	–
Other Africa	307	384	493	610	870	1290	1677	1883	2342	3150	3568	13.3%	27.8%	0.3%
Total Africa	674	1668	2171	3346	5106	8023	9412	10756	11635	12702	13479	6.1%	34.9%	0.9%
Australia	4568	5287	5946	6689	7291	11365	16147	20838	25757	29958	33683	12.4%	22.1%	2.4%
China	17759	28399	43549	77819	130832	175262	204971	253864	306973	393032	609921	55.2%	42.4%	43.0%
India	1603	3776	5697	9982	18257	27485	35250	39705	49950	63390	73109	15.3%	46.5%	5.2%
Japan	13599	23339	34150	42040	49500	56162	63192	71868	78413	83057	87068	4.8%	20.4%	6.1%
Malaysia	139	205	266	344	394	545	894	1483	1787	1933	1933	–	30.1%	0.1%
Pakistan	101	165	265	589	655	680	756	855	1078	1244	1244	–	28.6%	0.1%
Philippines	3	28	172	784	908	919	982	1058	1378	1625	1675	3.0%	87.9%	0.1%
South Korea	1555	2620	3845	4882	6435	8921	12717	17323	21264	24078	27046	12.3%	33.1%	1.9%
Taiwan	410	636	884	1245	1768	2738	4150	5817	7700	9724	12418	27.7%	40.6%	0.9%
Thailand	829	1304	1425	2451	2702	2967	2988	2984	3065	3185	3186	–	14.4%	0.2%
Vietnam	5	5	5	5	8	105	4994	16661	16661	16698	17077	2.3%	127.9%	1.2%
Other Asia Pacific	303	400	600	747	1070	1301	2007	2541	3352	4255	5226	22.8%	32.9%	0.4%
Total Asia Pacific	40872	66164	96805	147578	219821	288450	349048	434998	517378	632180	873586	38.2%	35.8%	61.6%
Total World	141412	180759	229058	301186	396316	492641	595492	728405	873858	1073136	1418969	32.2%	25.9%	100.0%

Source: IRENA (2024), Renewable Capacity Statistics 2024, The International Renewable Energy Agency, Abu Dhabi.

* End of year.

^ Less than 0.05.



Renewable energy

Wind – Installed wind turbine capacity*

												Growth rate per annum		Share
Megawatts	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023
Canada	7801	9694	11214	11973	12250	12816	13220	13735	14259	15265	16989	11.3%	8.1%	1.7%
Mexico	2122	2569	3271	4051	4180	4180	6541	6995	7155	7318	7318	^	13.2%	0.7%
US	60198	64430	72767	81502	87831	94666	103836	118664	133019	141674	148020	4.5%	9.4%	14.6%
Total North America	70121	76693	87252	97526	104261	111662	123597	139394	154433	164257	172327	4.9%	9.4%	16.9%
Argentina	163	188	188	188	228	751	1609	2624	3292	3310	3706	12.0%	36.7%	0.4%
Brazil	2202	4888	7633	10129	12304	14843	15438	17198	21161	24163	29135	20.6%	29.5%	2.9%
Chile	295	732	907	1034	1305	1524	1620	2340	3137	3830	4510	17.8%	31.4%	0.4%
Costa Rica	148	196	278	319	378	408	411	394	390	390	408	4.5%	10.7%	0.4^
Uruguay	59	481	857	1211	1513	1513	1516	1516	1516	1516	1516	^	38.3%	0.1%
Other S. & Cent. America	675	962	1346	1569	1635	1864	2080	2147	2275	2519	2742	8.9%	15.1%	0.3%
Total S. & Cent. America	3542	7448	11209	14451	17363	20903	22675	26220	31772	35729	42018	17.6%	28.1%	4.1%
Austria	1675	2110	2489	2730	2887	3133	3224	3226	3408	3579	3977	11.1%	9.0%	0.4%
Belgium	1769	1933	2181	2334	2779	3305	3864	4673	4948	5303	5504	3.8%	12.0%	0.5%
Bulgaria	683	699	699	699	698	699	703	703	704	702	702	–	0.3%	0.1%
Denmark	4819	4886	5077	5245	5489	6123	6111	6259	7004	7084	7482	5.6%	4.5%	0.7%
Finland	447	627	1005	1565	2044	2041	2284	2586	3257	5677	6957	22.5%	31.6%	0.7%
France	8160	9201	10298	11567	13499	14900	16427	17535	18551	20811	22196	6.7%	10.5%	2.2%
Germany	33477	38614	44580	49435	55580	58721	60742	62201	63711	66163	69459	5.0%	7.6%	6.8%
Greece	1809	1978	2091	2370	2624	2877	3589	4119	4649	4702	5240	11.0%	11.2%	0.5%
Ireland	1923	2283	2451	2802	3319	3674	4126	4307	4339	4536	4807	6.0%	9.6%	0.5%
Italy	8542	8683	9137	9384	9737	10230	10679	10871	11254	11821	12308	4.1%	3.7%	1.2%
Netherlands	2713	2865	3391	4257	4202	4393	4484	6648	7674	8755	10749	22.8%	14.8%	1.1%
Norway	818	859	867	883	1207	1710	2914	3040	5049	5062	5065	0.1%	20.0%	0.5%
Poland	3429	3836	4886	5747	5759	5766	5838	6298	6967	8150	9307	14.2%	10.5%	0.9%
Portugal	4610	4857	4937	5124	5124	5172	5223	5122	5427	5538	5617	1.4%	2.0%	0.6%
Romania	2773	3244	3130	3025	3030	3032	3038	3013	3015	3015	3087	2.4%	1.1%	0.3%
Spain	22958	22925	22943	22990	23124	23405	25590	26819	27908	30114	31028	3.0%	3.1%	3.1%
Sweden	4194	5088	5819	6435	6611	7300	8681	9976	12116	14279	16252	13.8%	14.5%	1.6%
Türkiye	2760	3630	4509	5735	6516	7005	7591	8832	10607	11396	11697	2.6%	15.5%	1.1%
Ukraine	362	514	514	526	553	621	1258	1402	1761	1761	1761	–	17.1%	0.2%
United Kingdom	11282	13074	14305	16126	19585	21606	23887	24458	25748	28762	30215	5.1%	10.4%	3.0%
Other Europe	1724	1913	2193	2442	2700	3007	3358	3560	3936	4365	5318	21.8%	11.9%	0.5%
Total Europe	120927	133819	147496	161436	177068	188721	203610	216638	232034	251575	268708	6.8%	8.3%	26.4%
Russian Federation	10	10	11	11	11	52	102	945	1955	2218	2518	13.5%	73.8%	0.2%
Other CIS	12	14	33	81	103	162	182	182	181	188	192	2.4%	31.6%	^
Total CIS	22	24	44	92	114	214	284	1127	2136	2406	2710	12.6%	61.6%	0.3%
Iran	108	149	153	191	259	282	305	308	310	342	365	6.7%	13.0%	^
Jordan	1	1	118	184	198	295	384	529	632	614	614	–	83.7%	0.1%
Other Middle East	13	14	14	34	37	47	97	97	97	608	892	46.6%	53.2%	0.1%
Total Middle East	122	165	286	409	494	623	786	934	1040	1564	1871	19.6%	31.4%	0.2%
Egypt	555	555	755	755	755	1130	1132	1380	1640	1643	1890	15.1%	13.0%	0.2%
Morocco	495	797	797	902	1022	1225	1225	1435	1471	1558	1858	19.3%	14.1%	0.2%
South Africa	257	569	1079	1473	2094	2094	2094	2516	2495	3163	3442	8.8%	29.6%	0.3%
Tunisia	200	233	240	240	240	245	245	245	245	245	245	–	2.1%	^
Other Africa	235	245	449	461	467	777	832	938	1058	1136	1219	7.2%	17.9%	0.1%
Total Africa	1742	2399	3320	3831	4578	5471	5528	6514	6909	7745	8654	11.7%	17.4%	0.9%
Australia	3221	3797	4181	4324	5407	6409	7881	10207	10555	10555	11327	7.3%	13.4%	1.1%
China	76731	96819	131048	148517	164374	184665	209582	281993	328973	365964	441895	20.7%	19.1%	43.4%
India	18420	22465	25088	28700	32848	35288	37505	38559	40067	41930	44736	6.7%	9.3%	4.4%
Japan	2646	2753	2809	3205	3483	3498	3952	4120	4262	4372	5232	19.7%	7.1%	0.5%
New Zealand	623	682	689	690	690	690	690	690	913	994	1059	6.5%	5.4%	0.1%
Pakistan	106	206	308	591	789	1186	1236	1236	1335	1845	1845	–	33.1%	0.2%
Philippines	33	337	427	427	427	427	443	443	443	443	443	–	29.7%	^
South Korea	576	612	847	1067	1215	1420	1494	1645	1724	1908	2167	13.6%	14.2%	0.2%
Taiwan	614	637	647	682	692	713	845	937	1033	1581	2674	69.1%	15.8%	0.3%
Thailand	223	225	234	507	628	1103	1507	1507	1545	1545	1545	–	21.4%	0.2%
Other Asia Pacific	245	336	450	501	611	847	1160	1556	5427	6818	7988	17.2%	41.7%	0.8%
Total Asia Pacific	103438	128868	166727	189211	211165	236246	266294	342892	396278	437956	520912	18.9%	17.5%	51.2%
Total World	299914	349417	416335	466956	515045	563840	622773	733719	824602	901231	1017199	12.9%	13.0%	100.0%

 Renewable energy

Solar & Wind – Installed capacity by type*

2022				2023			
Megawatts	Solar PV	CSP	Total	Solar PV	CSP	Total	
Canada	5312	–	5312	5757	–	5757	
Mexico	9347	17	9364	10893	17	10910	
US	112881	1480	114361	137725	1480	139205	
Total North America	127540	1497	129037	154376	1497	155873	
Argentina	1116	–	1116	1408	–	1408	
Brazil	25520	–	25520	37449	–	37449	
Chile	6417	108	6525	8366	108	8475	
Honduras	529	–	529	529	–	529	
The Dominican Republic	732	–	732	1073	–	1073	
Other S. & Cent. America	4039	–	4039	4669	–	4669	
Total S. & Cent. America	38354	108	38462	53495	108	53603	
Austria	3792	–	3792	6832	–	6832	
Belgium	6756	–	6756	8549	–	8549	
Bulgaria	1737	–	1737	2937	–	2937	
Czech Republic	2420	–	2420	2499	–	2499	
Denmark	3070	–	3070	3529	–	3529	
France	17341	9	17350	20542	9	20551	
Germany	67477	2	67479	81737	2	81739	
Greece	5430	–	5430	7030	–	7030	
Hungary	4235	–	4235	5835	–	5835	
Italy	24555	6	24561	29789	6	29795	
Lithuania	572	–	572	1165	–	1165	
Netherlands	19600	–	19600	23904	–	23904	
Poland	12170	–	12170	15809	–	15809	
Portugal	2646	–	2646	3876	–	3876	
Romania	1809	^	1809	1917	^	1917	
Slovakia	549	–	549	631	–	631	
Slovenia	626	–	626	1034	–	1034	
Spain	23311	2304	25615	28712	2304	31016	
Sweden	2388	–	2388	3488	–	3488	
Switzerland	4340	–	4340	5840	–	5840	
Türkiye	9425	1	9426	11292	1	11293	
Ukraine	8062	–	8062	8062	–	8062	
United Kingdom	14651	–	14651	15657	–	15657	
Other Europe	3713	–	3713	6211	–	6211	
Total Europe	240676	2322	242999	296878	2322	299200	
Russian Federation	1816	–	1816	2170	–	2170	
Kazakhstan	1146	–	1146	1306	–	1306	
Other CIS	812	–	812	1209	–	1209	
Total CIS	3774	–	3774	4685	–	4685	
Israel	4169	242	4411	4282	242	4524	
Jordan	1966	–	1966	1990	–	1990	
Saudi Arabia	390	50	440	2235	50	2285	
United Arab Emirates	3288	300	3588	5325	600	5925	
Other Middle East	3527	52	3579	3767	52	3819	
Total Middle East	13340	644	13983	17599	944	18543	
Algeria	426	25	451	426	25	451	
Egypt	1704	20	1724	1836	20	1856	
Morocco	314	540	854	394	540	934	
South Africa	5826	500	6326	5664	500	6164	
Tunisia	197	–	197	506	–	506	
Other Africa	3150	–	3150	3568	–	3568	
Total Africa	11617	1085	12702	12394	1085	13479	
Australia	29955	3	29958	33680	3	33683	
China	392462	570	393032	609351	570	609921	
India	63048	343	63390	72767	343	73109	
Japan	83057	–	83057	87068	–	87068	
Malaysia	1933	–	1933	1933	–	1933	
Pakistan	1244	–	1244	1244	–	1244	
Philippines	1625	–	1625	1675	–	1675	
South Korea	24078	–	24078	27046	–	27046	
Taiwan	9724	–	9724	12418	–	12418	
Thailand	3180	5	3185	3181	5	3186	
Vietnam	16698	–	16698	17077	–	17077	
Other Asia Pacific	4255	–	4255	5226	–	5226	
Total Asia Pacific	631259	921	632180	872665	921	873586	
Total World	1066559	6576	1073136	1412093	6876	1418969	

Source: IRENA (2024), Renewable Capacity Statistics 2024, The International Renewable Energy Agency, Abu Dhabi.
* End of year.
^ Less than 0.05.
Note: Capacity figures in this table for both onshore and offshore wind are on an AC basis.

2022				2023			
Megawatts	Onshore	Offshore	Total	Onshore	Offshore	Total	
Canada	15265	–	15265	16989	–	16989	
Mexico	7318	–	7318	7318	–	7318	
US	141633	41	141674	147979	41	148020	
Total North America	164215	41	164257	172286	41	172327	
Argentina	3310	–	3310	3706	–	3706	
Brazil	24163	–	24163	29135	–	29135	
Chile	3830	–	3830	4510	–	4510	
Costa Rica	390	–	390	408	–	408	
Uruguay	1516	–	1516	1516	–	1516	
Other S. & Cent. America	2519	–	2519	2742	–	2742	
Total S. & Cent. America	35729	–	35729	42018	–	42018	
Austria	3579	–	3579	3977	–	3977	
Belgium	3042	2262	5303	3242	2262	5504	
Bulgaria	702	–	702	702	–	702	
Denmark	4778	2306	7084	4832	2650	7482	
Finland	5604	73	5677	6884	73	6957	
France	20809	2	20811	22194	2	22196	
Germany	58014	8149	66163	61052	8407	69459	
Greece	4702	–	4702	5220	–	5220	
Ireland	4511	25	4536	4782	25	4807	
Italy	11821	–	11821	12308	–	12308	
Netherlands	6185	2570	8755	6771	3978	10749	
Norway	5060	2	5062	5063	2	5065	
Poland	8150	–	8150	9307	–	9307	
Portugal	5513	25	5538	5592	25	5617	
Romania	3015	–	3015	3087	–	3087	
Spain	30109	5	30114	31021	7	31028	
Sweden	14086	193	14279	16059	193	16252	
Türkiye	11396	–	11396	11697	–	11697	
Ukraine	1761	–	1761	1761	–	1761	
United Kingdom	14835	13928	28762	15470	14746	30215	
Other Europe	4365	–	4365	5318	–	5318	
Total Europe	222036	29539	251575	236338	32369	268708	
Russian Federation	2218	–	2218	2518	–	2518	
Other CIS	188	–	188	192	–	192	
Total CIS	2406	–	2406	2710	–	2710	
Iran	342	–	342	365	–	365	
Jordan	614	–	614	614	–	614	
Other Middle East	608	–	608	892	–	892	
Total Middle East	1564	–	1564	1871	–	1871	
Egypt	1643	–	1643	1890	–	1890	
Morocco	1558	–	1558	1858	–	1858	
South Africa	3163	–	3163	3442	–	3442	
Tunisia	245	–	245	245	–	245	
Other Africa	1136	–	1136	1219	–	1219	
Total Africa	7745	–	7745	8654	–	8654	
Australia	10555	–	10555	11327	–	11327	
China	335504	30460	365964	404605	37290	441895	
India	41930	–	41930	44736	–	44736	
Japan	4320	52	4372	5079	154	5232	
New Zealand	994	–	994	1059	–	1059	
Pakistan	1845	–	1845	1845	–	1845	
Philippines	443	–	443	443	–	443	
South Korea	1772	136	1908	2031	136	2167	
Taiwan	836	745	1581	1105	1569	2674	
Thailand	1545	–	1545	1545	–	1545	
Other Asia Pacific	5824	994	6818	6884	1104	7988	
Total Asia Pacific	405569	32387	437956	480659	40253	520912	
Total World	839263	61967	901231	944536	72663	1017199	

 Renewable energy

Generation by source*

	2022					2023					2023 Growth rate				
Terawatt-hours	Wind	Solar	Hydro	Other renewables†	Total	Wind	Solar	Hydro	Other renewables†	Total	Wind	Solar	Hydro	Other renewables†	Total
Canada	38.4	7.1	397.7	9.1	452.3	38.9	7.6	364.2	10.4	421.2	1.5%	8.4%	-8.4%	13.8%	-6.9%
Mexico	20.5	20.3	35.6	6.7	83.1	21.7	27.1	20.4	7.1	76.3	5.5%	33.4%	-42.6%	6.0%	-8.2%
US	438.7	207.2	251.3	71.5	968.6	429.5	240.5	236.3	67.3	973.7	-2.1%	16.1%	-6.0%	-5.9%	0.5%
Total North America	497.6	234.5	684.6	87.3	1504.0	490.1	275.3	620.9	84.8	1471.1	-1.5%	17.4%	-9.3%	-2.9%	-2.2%
Argentina	14.2	2.9	22.8	2.4	42.2	14.5	3.3	29.9	2.3	49.9	2.2%	11.3%	31.3%	-3.3%	18.2%
Brazil	81.6	30.1	427.1	55.0	593.9	95.5	51.5	428.7	55.8	631.5	17.0%	70.9%	0.4%	1.5%	6.3%
Chile	8.9	15.7	20.4	6.1	51.1	9.8	18.2	24.0	6.0	58.0	9.6%	15.7%	17.9%	-0.7%	13.5%
Colombia	0.1	0.5	64.3	2.9	67.8	0.2	1.2	59.8	3.1	64.3	171.9%	138.7%	-7.0%	6.3%	-5.2%
Ecuador	0.1	^	24.6	0.4	25.1	0.2	^	25.3	0.4	26.0	244.2%	-0.4%	2.9%	-8.0%	3.3%
Peru	1.9	0.9	29.7	0.5	33.1	2.4	1.1	29.1	0.5	33.0	21.9%	16.5%	-2.3%	2.5%	-0.3%
Trinidad & Tobago	^	^	-	-	^	^	^	-	-	^	-	-	-	-	-
Venezuela	^	^	68.5	-	68.5	^	^	65.6	-	65.6	-	14.8%	-4.3%	-	-4.3%
Central America	3.6	3.2	31.4	9.8	48.0	4.3	3.3	25.4	9.7	42.7	18.0%	4.8%	-19.3%	-0.8%	-11.1%
Other Caribbean	2.2	2.4	2.0	1.2	7.8	2.1	3.0	1.6	1.2	8.0	-4.8%	29.0%	-17.2%	-1.9%	2.8%
Other South America	5.2	0.9	54.2	3.3	63.6	5.2	1.0	60.5	4.0	70.8	0.4%	1.8%	11.7%	24.0%	11.2%
Total S. & Cent. America	117.9	56.7	745.1	81.5	1001.1	134.2	82.6	749.9	83.0	1049.7	13.8%	45.6%	0.6%	1.9%	4.8%
Austria	7.2	3.8	34.0	4.7	49.7	8.0	5.2	38.9	4.6	56.6	10.9%	36.2%	14.4%	-3.0%	13.9%
Belgium	12.4	6.9	0.3	4.9	24.4	15.7	7.3	0.4	3.5	26.9	26.9%	6.6%	44.7%	-29.6%	10.0%
Bulgaria	1.5	2.1	3.8	2.2	9.6	1.6	3.4	3.1	1.9	10.0	5.7%	63.8%	-17.7%	-15.8%	4.1%
Croatia	2.1	0.2	5.5	1.2	9.0	2.3	0.4	8.2	1.1	12.0	9.9%	148.1%	49.7%	-11.6%	33.6%
Cyprus	0.2	0.6	-	0.1	0.9	0.2	0.8	-	^	1.1	-7.0%	37.2%	-	-14.9%	22.6%
Czech Republic	0.6	2.3	2.1	5.4	10.4	0.7	2.2	2.3	5.2	10.4	9.4%	-4.6%	11.9%	-4.5%	-0.4%
Denmark	19.0	2.2	^	7.3	28.5	19.4	3.5	^	6.7	29.6	1.9%	57.9%	31.7%	-8.1%	3.7%
Estonia	0.7	0.6	^	1.6	2.9	0.7	0.7	^	1.4	2.9	4.2%	22.8%	15.5%	-10.9%	-0.2%
Finland	12.0	0.4	13.5	12.8	38.7	15.0	0.7	15.2	11.0	41.9	25.1%	69.6%	12.5%	-13.9%	8.2%
France	37.9	19.1	44.3	9.7	111.0	52.3	22.2	55.5	9.7	139.8	38.0%	16.2%	25.4%	-0.3%	25.9%
Germany	124.8	60.3	17.6	51.9	254.6	142.1	61.2	19.6	49.5	272.4	13.8%	1.5%	11.4%	-4.6%	7.0%
Greece	10.9	7.1	3.9	0.6	22.4	11.0	8.5	3.9	0.7	24.2	1.2%	19.0%	2.4%	23.2%	7.6%
Hungary	0.6	4.7	0.2	2.1	7.7	0.6	6.5	0.2	1.5	8.9	5.6%	38.1%	24.7%	-29.3%	16.4%
Iceland	^	^	14.2	5.9	20.1	^	^	14.2	6.0	20.2	26.3%	374.3%	0.2%	1.5%	0.6%
Ireland	11.2	0.1	0.7	1.0	13.1	11.6	0.4	0.9	0.9	13.9	3.4%	180.0%	33.2%	-7.2%	6.2%
Italy	20.5	28.1	28.4	23.5	100.5	23.5	31.2	38.9	20.3	114.0	14.8%	11.0%	37.1%	-13.4%	13.5%
Latvia	0.2	^	2.7	0.8	3.8	0.3	^	3.8	0.6	4.7	40.5%	13.9%	38.2%	-22.0%	25.3%
Lithuania	1.5	0.3	0.5	0.7	3.0	2.5	0.4	0.5	0.5	3.8	65.8%	4.7%	-3.0%	-31.8%	25.5%
Luxembourg	0.3	0.3	0.1	0.4	1.0	0.5	0.3	0.1	0.2	1.1	48.9%	9.3%	40.9%	-43.0%	5.0%
Netherlands	21.4	17.1	^	9.8	48.3	28.9	21.2	0.1	8.0	58.2	35.0%	24.0%	36.0%	-17.9%	20.4%
North Macedonia	0.1	0.1	1.3	^	1.6	0.2	0.3	1.6	0.1	2.2	46.4%	234.6%	20.6%	80.2%	36.2%
Norway	14.8	0.3	127.6	0.2	143.0	14.0	0.5	136.1	0.3	150.9	-5.7%	72.0%	6.6%	42.0%	5.6%
Poland	19.8	8.3	2.0	7.6	37.7	24.1	11.7	2.4	8.2	46.4	22.0%	40.4%	21.8%	8.2%	23.2%
Portugal	13.2	3.5	6.5	4.3	27.6	13.2	5.5	12.1	3.5	34.3	-0.7%	55.6%	84.8%	-17.7%	24.1%
Romania	7.0	2.0	14.0	0.6	23.6	7.6	1.9	18.2	0.3	28.0	9.0%	-6.3%	30.5%	-55.6%	18.7%
Slovakia	^	0.7	3.7	1.5	5.8	^	0.6	4.7	1.9	7.2	-	-7.1%	29.0%	27%	24.5%
Slovenia	^	0.6	3.1	0.3	4.1	^	1.1	5.0	0.3	6.4	12.1%	67.2%	57.9%	15.67%	56.5%
Spain	62.8	35.7	17.6	6.8	122.8	64.2	46.8	25.5	5.4	142.0	2.3%	31.1%	44.8%	-19.9%	15.6%
Sweden	33.1	2.0	69.8	13.1	117.9	34.3	3.1	66.0	11.3	114.8	3.8%	57.8%	-5.4%	-13.4%	-2.7%
Switzerland	0.2	3.9	29.6	2.0	35.6	0.2	6.0	37.0	2.0	45.2	12.0%	56.7%	25.1%	-1.2%	27.0%
Türkiye	34.9	16.9	66.8	19.2	137.8	34.1	20.5	63.9	19.5	137.9	-2.5%	21.5%	-4.4%	1.5%	0.1%
Ukraine	1.6	5.2	11.1	0.8	18.6	0.9	5.7	12.7	1.0	20.4	-39.2%	9.8%	14.6%	34.5%	9.6%
United Kingdom	80.3	13.3	5.6	35.8	135.0	82.0	13.8	5.2	34.0	135.0	2.2%	4.1%	-7.9%	-5.1%	†
Other Europe	2.2	0.6	33.6	0.4	36.9	2.4	1.1	42.4	0.4	46.2	5.9%	72.2%	26.0%	-1.1%	25.3%
Total Europe	555.1	249.4	564.1	239.2	1607.8	614.1	294.9	638.7	221.6	1769.3	10.6%	18.2%	13.2%	-7.4%	10.0%
Azerbaijan	0.1	0.1	1.6	0.1	1.8	0.1	0.1	1.8	0.1	2.0	-32.1%	30.4%	10.5%	8.6%	9.1%
Belarus	0.2	0.2	0.4	0.5	1.3	0.2	0.2	0.3	0.5	1.1	-1.7%	26.5%	-18.9%	-2.6%	-11.1%
Kazakhstan	2.3	1.8	9.2	^	13.3	3.7	2.0	8.8	^	14.4	58.0%	10.4%	-4.4%	52.6%	8.4%
Russian Federation	4.2	2.4	197.7	0.8	205.1	4.7	2.6	200.9	0.8	209.1	13.0%	9.8%	1.6%	0.9%	1.9%
Turkmenistan	-	^	^	-	^	-	^	^	-	^	-	-	-	-	-
Uzbekistan	-	0.2	5.3	-	5.5	-	0.3	7.0	-	7.3	-	73.4%	31.7%	-	33.1%
Other CIS	0.1	0.6	34.1	^	34.8	0.2	0.8	34.3	^	35.3	22.8%	46.7%	0.6%	-	1.5%
Total CIS	6.9	5.2	248.2	1.5	261.8	8.8	6.0	253.0	1.5	269.3	27.3%	15.1%	1.9%	0.3%	2.9%
Iran	1.2	0.7	14.0	^	16.0	1.3	0.8	22.7	^	24.8	6.7%	10.3%	61.8%	-	55.1%
Iraq	^	0.4	2.7	-	3.1	-	0.4	3.4	-	3.8	-	-	27.8%	-	24.0%
Israel	0.2	6.1	^	0.1	6.4	0.4	7.5	^	0.1	8.1	132.1%	23.5%	-1.0%	-	26.2%
Kuwait	^	0.1	-	-	0.2	^	0.1	-	-	0.2	-	-10.3%	-	-	-8.3%
Oman	0.1	1.4	-	-	1.6	0.1	1.5	-	-	1.6	-	2.6%	-	-	2.4%
Qatar	-	0.3	-	0.1	0.4	-	1.3	-	0.1	1.5	-	386.7%	-	-	258.6%
Saudi Arabia	1.5	0.8	-	-	2.3	1.5	4.3	-	-	5.8	-	419.5%	-	-	152.9%
United Arab Emirates	^	7.7	-	^	7.8	0.1	13.7	-	^	13.8	100.0%	77.6%	-	159.6%	78.4%
Other Middle East	1.8	6.1	1.5	^	9.3	1.7	6.2	1.5	^	9.4	-4.4%	1.9%	2.9%	†	0.9%
Total Middle East	4.8	23.7	18.2	0.3	47.0	5.1	35.9	27.6	0.3	68.9	6.5%	51.3%	51.9%	6.8%	46.7%
Algeria	^	0.6	^	-	0.7	^	0.6	0.1	-	0.7	-	-	329.9%	-	7.8%
Egypt	5.5	5.4	13.3	-	24.2	5.7	5.2	13.8	-	24.8	4.1%	-2.6%	4.0%	-	2.6%
Morocco	5.4	1.4	0.4	-	7.2	6.5	2.1	0.2	-	8.8	22.2%	45.8%	-53.5%	-	23.3%
South Africa	9.7	6.2	3.1	0.4	19.4	11.6	6.4	1.7	0.4	20.1	19.3%	3.3%	-45.6%	-	3.4%
Eastern Africa	2.8	1.7	79.6	7.3	91.3	2.6	1.9	82.1	8.5	95.2	-7.6%	14.8%	3.2%	17.4%	4.2%
Middle Africa	^	0.5	32.8	0.1	33.3	^	0.6	33.7	0.1	34.4	-	30.2%	2.9%	-5.1%	3.3%
Western Africa	0.6	1.2	25.6	0.3	27.7	1.0	1.4	28.0	0.3	30.7	64.8%	13.0%	9.3%	0.2%	10.5%
Other Northern Africa	0.3	^	-	-	0.7	0.3	0.4	^	-	0.7	5.0%	19.6%	-38.3%	-	11.2%
Other Southern Africa	-	0.4	1.5	0.3	2.3	-	0.5	2.1	0.3	2.9	-	20.3%	34.8%	4.5%	27.9%
Total Africa	24.3	17.8	156.3	8.4	206.8	27.8	19.2	161.6	9.7	218.4	14.3%	8.0%	3.4%	15.1%	5.6%
Australia	30.1	37.5	16.7	3.2	87.4	31.9	45.0	15.3	3.1	95.2	6.0%	19.8%	-8.40%	-1.9%	8.9%
Bangladesh	^	0.9	0.8	^	1.6	^	1.3	0.7	^	2.0	226.4%	46.5%	-11.80%	-	19.5%
China	762.7	427.3	1298.1	182.5	2670.6	885.9	584.2	1226.0	198.1	2894.1	16.2%	36.7%	-5.56%	8.5%	8.4%
China Hong Kong SAR	^	0.2	-	0.1	0.3	^	0.2	-	0.1	0.4	-	3.4%	-	8.0%	4.9%
India	70.0	95.2	174.9	38.6	378.7	82.1	113.4	149.2	37.3	382.0	17.2%	19.2%	-14.7%	-3.3%	0.9%
Indonesia	0.4	0.4	27.3	37.3	65.4	0.5	0.7	24.6	39.4	65.2	35.1%	60.7%	-9.9%	5.7%	-0.3%
Japan	9.4	91.1	74.9	37.8	213.2	10.0	97.0	74.5	42.0	223.5	6.3%	6.5%	-0.5%	11.1%	4.9%
Malaysia	-	2.8	31.8	1.2	35.8	-	3.2	31.5	1.2	36.0	-	17.7%	-0.9%	-	0.6%
New Zealand	2.9	0.3	26.3	9.0	38.6	3.2	0.4	26.5	8.9	39.1	12.7%	33.9%	0.9%	-2.7%	1.1%
Pakistan	4.6	0.8	34.5	1.0	41.0	4.4	1.2	37.4	0.7	43.7	-5.6%	45.8%	8.4%	-29.5%	6.7%
Philippines	1.1	1.8	10.1	11.7	24.8	1.3	2.5	10.2	11.8	25.7	23.0%	37.3%	0.5%	0.1%	4.0%
Singapore	-	0.7	-	1.0	1.6	-	0.9	-	0.8	1.8	-	39.7%	-	-13.7%	8.1%
South Korea	3.4	30.7	3.5	17.8	55.5	3.4	29.4	3.7							



Renewable energy Biofuels production*

													Growth rate per annum		Share
Thousand barrels of oil equivalent per day	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	2023
Canada	19	22	22	23	22	21	23	22	22	22	23		8.8%	2.3%	1.1%
Mexico	–	–	–	0	0	0	0	0	1	1	1		–	–	†
US	562	597	614	655	678	701	693	632	685	729	804		10.3%	3.6%	38.8%
Total North America	580	618	637	679	701	723	717	655	708	751	828		10.2%	3.6%	40.0%
Argentina	38	49	38	53	58	51	46	27	38	43	25		-42.0%	-4.3%	1.2%
Brazil	313	329	353	331	334	401	429	411	391	390	455		16.6%	3.8%	21.9%
Colombia	12	13	13	13	12	14	13	12	15	14	16		8.0%	2.5%	0.8%
Other S. & Cent. America	6	7	7	8	7	8	10	9	11	11	11		0.8%	6.4%	0.5%
Total S. & Cent. America	369	398	410	404	411	475	498	459	456	458	506		10.5%	3.2%	24.4%
Austria	6	7	8	7	7	7	7	7	7	8	7		-7.7%	2.2%	0.3%
Belgium	8	11	7	7	8	8	8	9	8	8	8		1.6%	-0.5%	0.4%
Finland	6	7	11	4	4	11	13	13	14	15	17		13.3%	10.4%	0.8%
France	46	47	49	45	44	50	47	43	36	35	34		-3.2%	-3.0%	1.6%
Germany	58	64	59	60	61	63	66	63	66	67	72		7.5%	2.2%	3.5%
Italy	9	10	10	10	12	13	15	17	21	20	23		14.7%	10.2%	1.1%
Netherlands	28	33	32	28	37	35	38	37	39	37	37		0.2%	3.0%	1.8%
Poland	13	14	15	17	17	17	18	18	19	20	20		0.6%	4.5%	1.0%
Portugal	5	6	6	6	6	6	7	6	5	6	6		-7.2%	0.7%	0.3%
Spain	14	19	21	22	35	40	39	33	31	31	28		-9.4%	7.3%	1.4%
Sweden	4	4	4	4	3	7	8	8	9	9	7		-22.8%	5.1%	0.3%
United Kingdom	9	7	6	10	14	13	11	12	12	13	14		4.0%	3.6%	0.7%
Other Europe	26	26	28	30	32	35	40	39	39	40	41		2.8%	4.8%	2.0%
Total Europe	232	255	256	250	281	305	316	305	307	308	313		1.5%	3.0%	15.1%
Total CIS	0	0	0	0	0	0	0	^	^	^	^		29.0%	-10.6%	†
Total Middle East	0	0	0	0	0	0	0	0	1	1	2		44.3%	17.9%	0.1%
Total Africa	2	2	2	2	2	1	2	2	2	2	2		14.0%	-1.0%	0.1%
Australia	5	5	4	2	2	2	3	2	2	2	2		4.4%	-6.7%	0.1%
China	42	47	40	39	31	44	53	56	58	72	78		8.5%	6.3%	3.8%
India	5	5	10	12	11	19	21	23	35	44	49		9.9%	26.9%	2.4%
Indonesia	41	59	24	54	50	91	124	126	151	174	194		11.1%	16.7%	9.4%
South Korea	7	7	8	8	8	13	13	13	11	13	13		-2.2%	6.1%	0.6%
Thailand	30	34	36	33	36	40	44	44	39	36	39		9.3%	2.7%	1.9%
Other Asia Pacific	28	33	37	33	31	35	53	45	46	46	47		2.8%	5.3%	2.3%
Total Asia Pacific	158	189	159	180	170	243	311	310	342	388	422		8.9%	10.3%	20.4%
Total World	1342	1463	1465	1516	1564	1748	1844	1731	1815	1907	2072		8.6%	4.4%	100.0%
of which: OECD	832	895	914	948	998	1053	1054	980	1036	1079	1163		7.7%	3.4%	56.1%
Non-OECD	510	569	551	568	566	695	790	751	780	828	909		9.8%	5.9%	43.9%
European Union	220	246	248	237	262	288	300	290	291	291	295		1.4%	3.0%	14.2%

Biofuels production by fuel type

Thousand barrels of oil equivalent per day	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2023	2013–23	
Biogasoline															
Canada & Mexico	16	17	16	17	17	17	18	16	16	17	17		1.4%	0.4%	1.5%
US	479	516	534	554	575	580	569	501	542	554	563		1.7%	1.6%	50.7%
Brazil	269	278	294	275	270	322	341	315	291	297	343		15.5%	2.4%	30.8%
Other S. & Cent. America	13	16	18	19	20	22	22	18	22	22	23		4.7%	5.7%	2.1%
Europe	52	51	52	52	55	56	55	52	57	59	61		2.8%	1.6%	5.5%
CIS	^	^	^	^	^	^	^	^	^	0	0		29.0%	61.7%	†
Middle East	0	0	0	0	–	–	–	–	–	–	–		–	-100.0%	–
Africa	2	2	2	2	2	1	2	2	2	2	2		14.0%	-0.9%	0.2%
Asia Pacific	47	53	57	52	58	69	80	76	86	98	102		4.3%	8.1%	9.2%
Total World	879	934	974	971	997	1067	1087	980	1015	1049	1112		6.0%	2.4%	100.0%
of which: OECD	554	591	608	628	652	661	647	575	620	634	647		1.9%	1.6%	58.2%
Non-OECD	326	343	365	343	345	407	439	405	395	415	465		12.2%	3.6%	41.8%
European Union	46	45	48	46	48	50	50	48	52	54	55		1.7%	1.8%	4.9%
Biodiesel															
Canada & Mexico	2	5	6	7	6	5	5	7	6	5	7		30.4%	11.7%	0.7%
US	82	80	80	101	104	121	124	131	144	175	240		37.6%	11.3%	25.0%
Brazil	43	51	58	56	64	79	88	95	100	93	112		20.4%	9.9%	11.6%
Other S. & Cent. America	43	53	40	54	57	52	47	30	43	46	28		-38.8%	-4.2%	2.9%
Europe	180	204	204	199	225	249	262	253	250	249	252		1.2%	3.4%	26.2%
CIS	0	0	0	0	0	0	0	–	–	–	–		–	-100.0%	–
Middle East	^	^	0	0	0	0	0	0	1	1	2		44.3%	48.5%	0.2%
Africa	^	^	0	0	^	^	^	^	^	^	^		–	-19.0%	†
Asia Pacific	111	136	102	128	112	174	231	235	256	290	320		10.4%	11.1%	33.3%
Total World	463	529	491	545	567	681	758	751	800	858	960		11.9%	7.6%	100.0%
of which: OECD	278	304	306	320	347	392	407	406	416	445	516		16.0%	6.4%	53.7%
Non-OECD	185	225	186	225	221	289	351	346	384	413	444		7.5%	9.2%	46.3%
European Union	174	201	200	191	214	238	250	242	239	237	240		1.4%	3.3%	25.0%

Source: Includes data from S&P Global Commodity Insights; US Energy Information Administration.
* Includes biogasoline (such as ethanol) and biodiesel. Volumes have been adjusted for energy content.
^ Less than 0.5.
† Less than 0.05%.
Note: Annual changes and shares of total are calculated using thousand barrels a day oil equivalent figures.



Renewable energy Biofuels consumption*

												Growth rate per annum		Share
Thousand barrels of oil equivalent per day	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023
Canada	35	36	34	32	38	39	40	37	39	47	54	14.7%	4.6%	2.6%
Mexico	2	3	3	3	4	4	4	5	4	4	4	2.0%	8.9%	0.2%
US	573	581	608	658	661	652	670	608	670	705	799	13.2%	3.4%	37.6%
Total North America	609	620	645	693	703	695	715	650	714	757	857	13.2%	3.5%	40.4%
Argentina	19	22	24	26	30	28	29	16	17	23	21	-8.8%	0.7%	1.0%
Brazil	278	305	357	324	332	385	426	396	392	390	429	10.0%	4.4%	20.2%
Colombia	12	13	13	13	12	15	16	13	15	16	20	20.5%	4.9%	0.9%
Other S. & Cent. America	15	15	17	18	19	18	19	18	20	18	18	0.8%	1.9%	0.8%
Total S. & Cent. America	324	356	411	380	393	447	489	442	444	446	487	9.0%	4.1%	22.9%
Austria	8	8	9	9	9	8	8	7	8	7	7	-3.3%	-1.6%	0.3%
Belgium	6	8	5	8	9	9	9	12	13	14	14	-0.8%	7.9%	0.6%
Finland	4	8	8	3	7	6	7	7	12	10	7	-33.4%	5.7%	0.3%
France	49	52	53	53	54	53	55	50	56	65	63	-3.4%	2.6%	2.9%
Germany	50	53	50	50	51	53	52	63	56	56	58	3.5%	1.5%	2.7%
Italy	24	20	25	25	25	26	15	21	22	20	23	14.9%	-0.3%	1.1%
Netherlands	6	7	6	5	6	10	13	15	15	19	22	17.3%	14.2%	1.1%
Poland	14	13	12	8	11	17	18	19	20	21	22	3.0%	4.7%	1.0%
Portugal	5	5	7	5	5	5	5	5	6	5	6	21.1%	2.2%	0.3%
Spain	22	23	24	27	31	41	40	36	36	35	32	-8.3%	3.9%	1.5%
Sweden	10	12	14	18	17	20	20	21	23	28	27	-2.3%	10.3%	1.3%
United Kingdom	19	22	17	18	17	24	31	29	29	37	41	9.8%	7.9%	1.9%
Other Europe	38	37	38	42	50	51	60	62	62	61	68	11.3%	5.9%	3.2%
Total Europe	256	269	267	270	291	324	334	346	358	379	390	2.9%	4.3%	18.4%
Total CIS	^	^	^	^	2	2	3	3	5	6	8	27.3%	33.7%	0.4%
Total Middle East	^	^	^	^	1	1	1	1	1	1	1	9.9%	24.0%	0.1%
Total Africa	1	1	1	1	1	2	1	1	2	1	1	1.0%	3.4%	0.1%
Australia	5	5	4	3	3	3	2	2	2	2	2	-4.2%	-7.8%	0.1%
China	57	60	44	45	42	54	58	44	46	47	50	5.6%	-1.4%	2.3%
India	6	5	6	12	9	17	21	20	32	45	55	22.6%	25.9%	2.6%
Indonesia	15	27	13	44	38	55	94	123	137	154	181	17.6%	27.9%	8.5%
South Korea	10	9	8	8	8	13	13	13	11	13	14	11.2%	3.3%	0.7%
Thailand	23	28	30	31	34	37	42	42	38	34	38	10.4%	5.0%	1.8%
Other Asia Pacific	16	18	22	24	25	27	31	33	34	37	39	5.5%	9.4%	1.8%
Total Asia Pacific	132	151	127	167	158	206	261	276	300	332	379	14.1%	11.1%	17.8%
Total World	1323	1397	1451	1513	1547	1676	1805	1720	1823	1923	2124	10.4%	4.8%	100.0%
of which: OECD	890	914	936	987	1015	1048	1075	1019	1095	1163	1279	10.0%	3.7%	60.2%
Non-OECD	433	483	515	526	532	628	729	701	728	760	845	11.1%	6.9%	39.8%
European Union	226	241	243	242	258	286	287	304	316	329	332	0.9%	3.9%	15.6%

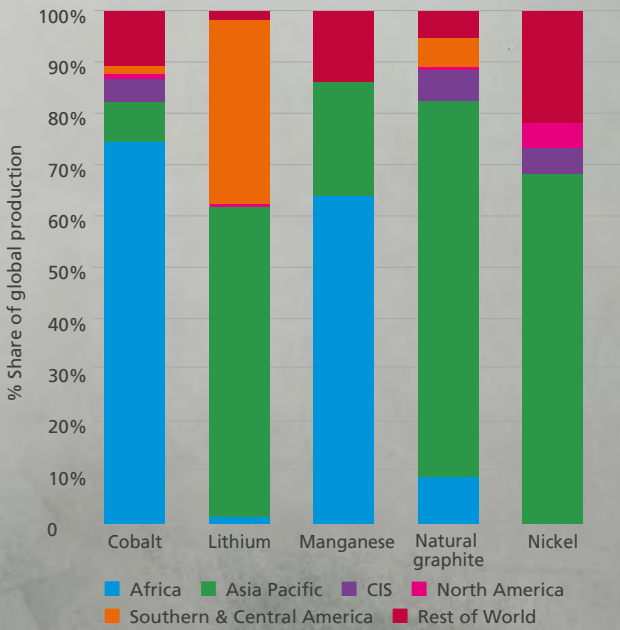
Key minerals

Whilst production of copper has grown at an average rate of just under 2% over the past ten years (it dropped by 1.6% in 2023), production of other minerals critical to the global energy system, continued to grow on average at around 4% per annum. The Asia Pacific region produced nearly 70% of the metals and materials critical to the manufacture of Li-ion batteries. Within this, China was both the world’s leading producer of refined cobalt and the world’s leading consumer of it, with nearly 87% of consumption used by the lithium-ion battery industry. As well as producing nearly 20% of the world’s lithium production, China also produced around 74% of its graphite supply.

Portugal holds the largest lithium reserve in Europe (around 60,000 metric tons). Whilst historically it has primarily focused on ceramics for glassware production, it is increasingly looking to enter the lithium market.

Although prices for metals and materials have fallen across the board from their 2022 highs, lithium carbonate prices sat at around 400% higher than their 2019 pre-COVID levels and copper some 140% above its.

In 2023, the Asia Pacific region produced nearly 70% of the metals and materials critical to the manufacture of Li-ion batteries



Global production and prices of key metals and minerals now sit above their 2019 pre-COVID levels



Key minerals Production and reserves

Cobalt production and reserves
Mine production

												Growth rate per annum		Share at end of			
Thousand tonnes	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023 2013–23	2023	2023	Share R/P ratio		
Australia	6.4	6.2	6.0	5.5	5.8	4.9	5.7	5.6	5.3	5.8	4.6	-20.6%	-3.2%	2.3%	1700	16.0%	370
Canada	4.0	3.9	4.3	4.2	3.7	3.5	3.3	4.5	4.4	3.1	2.1	-31.4%	-6.3%	1.1%	230	2.2%	110
China	2.6	2.8	2.6	2.3	2.5	2.0	2.5	2.2	2.2	1.8	1.8	0.0%	-3.9%	0.9%	140	1.3%	80
DR Congo	76.6	76.5	84.4	69.0	90.3	109.4	78.0	86.6	93.1	115.4	139.8	21.2%	6.2%	71.0%	6000	56.4%	43
Cuba	4.0	3.7	4.0	3.9	3.9	3.5	3.8	3.8	4.0	3.8	3.2	-14.6%	-2.1%	1.6%	500	4.7%	154
Madagascar	2.4	3.4	4.0	3.8	3.1	2.9	2.9	0.8	2.0	3.3	3.6	9.1%	4.1%	1.8%	100	0.9%	28
Morocco	2.0	2.2	2.3	2.7	2.5	1.8	2.4	2.4	1.8	1.7	1.7	0.0%	-1.7%	0.9%	13	0.1%	8
New Caledonia	3.2	4.0	3.6	3.2	2.8	2.1	1.7	2.2	1.5	1.8	1.8	0.0%	-5.7%	0.9%	56	0.5%	32
Papua New Guinea	1.0	2.1	2.5	2.2	3.3	3.3	2.9	2.9	3.0	3.0	2.9	-3.0%	11.1%	1.5%	49	0.5%	17
Philippines	2.8	4.6	4.3	4.0	4.6	4.8	5.1	4.9	4.3	4.7	4.5	-3.8%	4.8%	2.3%	260	2.4%	58
Russian Federation	6.3	6.3	6.2	5.5	5.9	6.1	6.3	9.7	8.0	9.2	8.8	-4.3%	3.4%	4.5%	250	2.3%	28
South Africa	3.0	3.0	2.9	2.3	2.3	2.3	2.1	1.8	1.2	1.0	1.0	0.0%	-10.4%	0.5%	37	0.3%	37
Zambia	5.9	4.6	3.0	5.0	2.6	1.6	0.4	0.3	0.2	0.3	0.3	0.0%	-27.1%	0.1%	270	2.5%	1071
Rest of World	11.4	7.5	7.1	4.8	4.0	2.8	3.0	3.7	6.5	13.7	20.9	52.8%	6.3%	10.6%	1037	9.7%	50
Total World	131.6	130.7	137.2	118.4	137.3	150.9	120.0	131.5	137.5	168.3	196.9	17.0%	4.1%	100.0%	10642	100.0%	54

Sources: includes data from US Geological Survey, British Geological Survey ©UKRI and World Mining Data.
^ less than 0.05%. Rest of World is the sum of only recorded reserves.

Lithium production and reserves
Mine production

												Growth rate per annum		Share		at end of	
Thousand tonnes of Lithium content	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023	2023	Share	R/P ratio
Argentina	2.5	3.2	3.6	5.8	5.7	6.4	6.3	5.9	6.0	6.4	9.6	50.5%	14.4%	4.8%	3600	13.8%	375
Australia	10.1	12.4	11.9	14.0	21.3	57.0	45.0	39.7	55.3	74.7	86.0	15.1%	23.9%	43.4%	6200	23.8%	72
Brazil	0.4	0.2	0.1	0.2	0.3	1.0	2.2	1.4	1.7	2.6	4.9	86.3%	28.5%	2.5%	390	1.5%	80
Chile	10.5	10.8	9.8	13.6	14.2	17.0	19.2	21.6	28.2	48.8	56.5	15.8%	18.3%	28.5%	9300	35.7%	165
China	4.7	2.3	2.0	2.3	6.8	7.1	10.8	13.3	14.0	22.6	33.0	46.0%	21.5%	16.7%	3000	11.5%	91
Portugal	0.3	0.3	0.3	0.4	0.8	1.2	0.9	0.3	0.9	0.4	0.4	0.0%	2.4%	0.2%	60	0.2%	158
US	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.6	0.6	0.0%	-3.4%	0.3%	1100	4.2%	1789
Zimbabwe	1.0	0.9	0.9	1.0	0.8	1.6	1.2	0.4	0.7	1.0	3.4	230.1%	13.0%	1.7%	310	1.2%	91
Rest of World	–	^	–	^	0.1	3.0	0.4	0.1	0.1	0.7	3.6	447.1%	–	1.8%	2068	7.9%	576
Total World	30.4	31.0	29.5	38.2	50.9	95.1	86.9	83.7	107.9	157.8	198.0	25.5%	20.6%	100.0%	26028	100.0%	131

Sources: includes data from US Geological Survey, British Geological Survey ©UKRI and World Mining Data.
^ less than 0.05. Rest of World is the sum of only recorded reserves.

Natural Graphite production and reserves
Mine production

												Growth rate per annum		Share		at end of	
Thousand tonnes	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023	2023	Share	R/P ratio
Brazil ¹	91.9	87.0	75.1	61.7	79.8	95.0	96.0	95.0	95.0	96.0	96.0	0.0%	0.4%	5.8%	74000	20.3%	771
Canada	20.0	30.0	30.0	21.0	14.0	11.0	11.0	7.6	12.0	13.0	3.5	-73.1%	-16.0%	0.2%	5700	1.6%	1629
China	750.0	780.0	725.0	625.0	625.0	693.0	700.0	762.0	820.0	1210.0	1230.0	1.7%	5.1%	73.7%	78000	21.4%	63
India ²	146.4	116.7	134.6	137.3	46.4	44.5	30.5	31.8	57.3	82.4	82.4	0.0%	-5.6%	4.9%	8600	2.4%	104
Madagascar	4.3	5.3	8.1	9.2	13.3	48.1	53.4	48.5	91.1	116.7	55.2	-52.7%	29.1%	3.3%	24000	6.6%	435
Mexico	7.0	9.2	6.5	3.8	1.7	4.1	1.6	1.5	1.8	1.7	2.0	16.8%	-11.7%	0.1%	3100	0.9%	1538
Mozambique	–	–	–	–	0.3	104.0	153.0	12.0	72.0	163.0	94.0	-42.3%	–	5.6%	25000	6.9%	266
Norway	6.2	8.3	9.2	9.6	9.6	12.0	9.8	5.5	6.3	10.4	6.5	-37.5%	0.4%	0.4%	600	0.2%	93
Russian Federation	20.2	17.6	15.9	19.4	19.5	11.9	17.5	12.9	15.3	14.3	16.0	11.7%	-2.3%	1.0%	25645	7.0%	1603
Sri Lanka	3.1	4.0	4.2	4.0	3.5	4.0	4.0	4.0	3.0	2.6	2.2	-15.4%	-3.5%	0.1%	1500	0.4%	682
Türkiye	28.7	3.9	–	–	–	16.8	10.0	15.2	28.3	27.7	27.7	0.0%	-0.4%	1.7%	69000	18.9%	2490
Ukraine	2.0	8.0	7.9	6.1	13.9	12.2	1.5	4.1	3.2	1.0	2.0	100.0%	0.0%	0.1%	13750	3.8%	6875
Rest of World ³	45.7	57.8	56.5	59.0	59.4	56.6	51.1	53.5	53.9	50.9	50.8	-0.2%	1.1%	3.0%	35500	9.7%	699
Total World	1125.6	1127.8	1073.0	956.2	886.4	1113.1	1139.4	1053.6	1259.1	1789.8	1668.3	-6.8%	4.0%	100.0%	364395	100.0%	218

Sources: includes data from US Geological Survey, British Geological Survey ©UKRI and World Mining Data.
^ less than 0.05. *Including beneficiated and directly shipped material. *Run of the mine. *Rest of World is the sum of only recorded reserves.

Rare Earth metals production and reserves
Mine production

												Growth rate per annum		Share		at end of	
Thousand tonnes¹	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023	2023	Share	R/P ratio
Australia	1.3	6.2	11.9	13.9	17.3	18.6	17.6	21.1	22.5	16.0	16.8	5.1%	29.5%	4.7%	5700	4.9%	340
Brazil	0.3	–	0.9	2.7	1.7	1.2	0.7	0.6	0.5	0.1	0.1	0.0%	-13.2%	0.0%	21000	18.2%	262500
China	93.8	105.0	105.0	105.0	105.0	120.0	132.0	140.0	168.0	210.0	240.0	14.3%	9.9%	67.9%	44000	38.1%	183
India	0.3	1.7	1.0	1.1	1.4	2.1	2.5	2.5	2.6	2.6	2.6	0.0%	24.3%	0.7%	6900	6.0%	2654
Madagascar	–	–	–	–	–	2.0	4.0	2.8	3.9	2.6	2.6	0.0%	–	0.7%	162	0.1%	62
Russian Federation	1.4	2.1	2.3	3.1	2.5	2.6	2.6	2.6	2.6	2.6	2.6	0.0%	6.1%	0.7%	10000	8.7%	3846
Thailand	0.1	1.9	0.8	1.6	1.3	1.0	1.9	3.6	8.2	7.1	7.1	0.0%	49.2%	2.0%	–	0.0%	–
US	5.5	5.4	5.9	–	–	18.0	28.0	39.0	42.0	42.0	43.0	2.4%	22.8%	12.2%	1800	1.6%	42
Rest of World²	0.3	0.2	0.9	4.8	15.4	25.5	26.6	32.1	35.6	13.5	38.9	188.0%	63.8%	11.0%	26040	22.5%	669
Total World	103.0	122.6	128.6	132.2	144.6	191.0	215.9	244.3	286.0	296.5	353.7	19.3%	13.1%	100.0%	115602	100.0%	327

Sources: includes data from US Geological Survey, British Geological Survey ©UKRI and World Mining Data.
^ less than 0.05. ¹Thousand tonnes of rare earth oxide equivalent. ²Rest of World is the sum of only recorded reserves.

Copper production and reserves
Mine production

												Growth rate per annum		Share	at end of		
Thousand tonnes	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023 2013–23	2023	2023	Share	R/P ratio	
Australia	990	1000.0	971.0	970.0	860.0	950.0	934.0	885.0	900.0	819.0	810.0	-1.1%	-2.0%	3.8%	100000	10.0%	123
Chile	5780	5800.0	5760.0	5500.0	5500.0	5800.0	5790.0	5730.0	5600.0	5330.0	5000.0	-6.2%	-1.4%	23.2%	190000	19.0%	38
China	1600	1620.0	1710.0	1740.0	1710.0	1600.0	1680.0	1720.0	1800.0	1940.0	1700.0	-12.4%	0.6%	7.9%	41000	4.1%	24
Democratic Republic of Congo	970	1100.0	1020.0	910.0	1090.0	1200.0	1290.0	1600.0	1800.0	2350.0	2500.0	6.4%	9.9%	11.6%	80000	8.0%	32
Indonesia	504	400.0	474.0	548.0	622.0	780.0	642.5	505.0	810.0	941.0	840.7	-10.7%	5.2%	3.9%	24000	2.4%	29
Peru	1380	1400.0	1700.0	2300.0	2450.0	2400.0	2460.0	2150.0	2200.0	2450.0	2600.0	6.1%	6.5%	12.1%	120000	12.0%	46
United States	1250	1370.0	1380.0	1410.0	1260.0	1200.0	1260.0	1200.0	1200.0	1230.0	1100.0	-10.6%	-1.3%	5.1%	50000	5.0%	45
Rest of World	5780	6035.0	7793.1	7826.1	8277.5	8400.3	6947.0	6766.0	6670.0	6843.0	7000.0	2.3%	1.9%	32.5%	395600	39.5%	57
Total World	18254.0	18725.0	20808.1	21204.1	21769.5	22330.3	21003.5	20556.0	20980.0	21903.0	21550.0	-1.6%	1.7%	100.0%	1000600	100.0%	46



Key minerals

Production and reserves

Platinum group metals production and reserves*

Mine production

												Reserves					
												Growth rate per annum		Share		at end of	
Thousand tonnes	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023	2023	Share	R/P ratio
Canada	23.5	28.5	28.6	33.6	26.5	26.5	27.8	27.0	21.0	21.5	21.5	0.0%	-0.9%	5.6%	310	0.4%	14
Russian Federation	105.5	106.0	103.0	102.4	107.0	106.0	122.0	116.0	107.0	107.0	115.0	7.5%	0.9%	30.1%	5500	7.7%	48
South Africa	206.0	152.4	222.0	209.3	229.8	178.0	213.7	185.5	226.3	197.1	191.0	-3.1%	-0.8%	50.1%	63000	88.0%	330
United States	16.3	16.1	16.2	17.0	17.6	18.1	18.5	18.8	17.7	13.1	12.7	-3.1%	-2.5%	3.3%	820	1.1%	65
Zimbabwe	22.0	22.6	22.6	26.9	26.0	26.0	24.9	27.9	27.1	31.3	34.0	8.6%	4.4%	8.9%	1200	1.7%	35
Rest of World	12.7	14.8	12.3	11.5	17.3	17.1	6.2	7.0	6.8	7.3	7.3	0.3%	-5.4%	1.9%	800	1.1%	110
Total World	386.0	340.4	404.7	400.7	424.2	371.7	413.0	382.2	405.9	377.3	381.5	1.1%	-0.1%	100.0%	71630	100.0%	188

Sources: includes data from US Geological Survey and Kearney Energy Transition Institute.
* Platinum and Palladium. ^ less than 0.05. Rest of World is the sum of only recorded reserves.

Manganese production and reserves

Mine production

												Reserves					
												Growth rate per annum		Share		at end of	
Thousand tonnes	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023	2023	Share	R/P ratio
Australia	3.0	3.1	2.5	2.2	2.8	3.5	3.2	3.3	3.3	3.0	3.0	-1.3%	0.1%	15.1%	500	26.2%	167
China	3.0	3.0	3.0	2.3	1.7	1.2	1.3	1.0	1.0	0.7	0.7	-0.4%	-13.1%	3.7%	280	14.7%	378
Gabon	2.0	1.9	2.0	1.6	2.2	2.3	2.5	4.3	4.6	4.7	4.6	-1.5%	8.9%	23.2%	61	3.2%	13
Ghana	0.5	0.4	0.4	0.6	0.8	1.4	1.6	0.9	0.9	0.8	0.8	-0.5%	4.7%	4.2%	13	0.7%	15
India	0.9	0.9	0.9	0.7	0.7	1.0	0.8	0.5	0.5	0.7	0.7	-0.1%	-2.4%	3.6%	34	1.8%	47
South Africa	4.3	5.2	5.9	5.3	5.4	5.8	5.8	7.2	7.2	7.3	7.2	-1.4%	5.3%	36.3%	600	31.4%	83
Rest of World	4.0	4.1	3.7	3.8	4.6	3.9	4.2	2.9	2.5	2.7	2.7	-0.1%	-3.6%	13.8%	420	22.0%	153
Total World	17.7	18.6	18.4	16.6	18.2	19.0	19.3	20.0	20.0	20.1	19.8	-1.1%	1.2%	100.0%	1908	100.0%	96

Sources: includes data from US Geological Survey and Kearney Energy Transition Institute.
^ less than 0.05. Rest of World is the sum of only recorded reserves.

Nickel production and reserves

Mine production

												Reserves					
												Growth rate per annum		Share		at end of	
Thousand tonnes	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023	2023	Share	R/P ratio
Australia	234.0	245.0	234.0	204.0	190.0	170.0	180.0	160.0	151.0	155.0	160.0	3.2%	-3.7%	4.2%	24000	16.6%	150
Canada	223.0	235.0	240.0	236.0	210.0	176.0	180.0	130.0	134.0	143.0	180.0	25.9%	-2.1%	4.7%	2200	1.5%	12
Indonesia	440.0	177.0	170.0	199.0	400.0	606.0	800.0	1000.0	1040.0	1580.0	1800.0	13.9%	15.1%	47.3%	55000	38.0%	31
New Caledonia	164.0	178.0	190.0	207.0	210.0	216.0	220.0	190.0	186.0	200.0	230.0	15.0%	3.4%	6.0%	7100	4.9%	31
Philippines	446.0	523.0	530.0	347.0	230.0	345.0	420.0	370.0	387.0	345.0	400.0	15.9%	-1.1%	10.5%	4800	3.3%	12
Russian Federation	275.0	239.0	240.0	222.0	180.0	272.0	270.0	250.0	205.0	222.0	200.0	-9.9%	-3.1%	5.3%	8300	5.7%	42
Rest of World	885.6	900.2	974.2	671.0	686.6	871.8	873.8	892.5	924.2	910.3	836.9	-8.1%	-0.6%	22.0%	43470	30.0%	52
Total World	2667.6	2497.2	2578.2	2086.0	2106.6	2656.8	2943.8	2992.5	3027.2	3555.3	3806.9	7.1%	3.6%	100.0%	144870	100.0%	38

Sources: includes data from US Geological Survey and Kearney Energy Transition Institute.
^ less than 0.05. Rest of World is the sum of only recorded reserves.



Key minerals

Prices

Minerals, materials, and battery prices

Year	USD\$1000/te						USD\$/KWh				
	Cobalt ¹	Lithium carbonate ²	Nickel Sulphate ³	Pet Needle Coke ⁴	Natural Graphite ⁵	Copper ⁶	Lithium Iron Phosphate Cells ⁷	Lithium Nickel Manganese Cobalt Oxide Cells ⁸			
2000	33.42	4.47				1.81					
2001	23.26	1.49				1.58					
2002	15.23	1.59				1.56					
2003	23.37	1.55				1.78					
2004	52.76	1.72				2.86					
2005	35.19	1.46				3.68					
2006	37.96	2.32				6.73					
2007	67.35	3.53				7.13					
2008	86.00	4.44				6.96					
2009	39.38	5.94			0.91	5.16					
2010	45.97	5.19			1.08	7.54					
2011	39.66	5.10			1.35	8.82					
2012	31.02	5.42			1.43	7.96					
2013	27.07	5.70			0.99	7.33					
2014	30.79	5.72			0.92	6.86					
2015	28.46	6.55			0.69	5.51					
2016	25.47	12.02			0.58	4.87					
2017	55.79	17.04			0.65	6.17					
2018	81.17	13.04			0.78	6.53					
2019	35.91	10.29	17.47		0.67	6.01					
2020	33.95	6.49	16.63		0.53	6.17					
2021	52.93	15.17	24.42	1.02	0.56	9.32			0.07		0.10
2022	67.06	59.43	27.11	1.38	0.76	8.83			0.10		0.14
2023	35.44	40.30	20.39	0.89	0.65	8.49			0.09		0.10

¹ 2000-2012 spot grade for cathodes, source US Geological Survey. 2013-2017 source London Metal Exchange. Data from 2018 onwards: min purity 99.8%, Cobalt metal EXW Europe, min. 99.8% purity, source Benchmark Mineral Intelligence.

² 2000-2008 unit value, data series 140, source US Geological Survey. Data from 2009 onwards: Lithium carbonate global weighted average, min 99% purity, source Benchmark Mineral Intelligence.

³ Nickel sulphate CIF Asia, min 22% (100% Nickel contained basis), source Benchmark Mineral Intelligence.

⁴ Pre-calcined pet needle coke DDP China, sulphur <0.5%, source Benchmark Mineral Intelligence.

⁵ Flake graphite FOB China, -194 mesh, source Benchmark Mineral Intelligence

⁶ Copper, grade A cathode, LME spot price, CIF European ports, source International Monetary Fund (IMF)

⁷ Global weighted LFP cell, source Benchmark Mineral Intelligence.

⁸ Global weighted NCM cell, source Benchmark Mineral Intelligence

Methodology

The Statistical Review provides a globally consistent data time series. Here we outline the definitions, conversion factors and calculations we use to produce the report.

Primary energy

Traditionally, in the Statistical Review of World Energy, the primary energy of non-fossil based electricity (nuclear, hydro, wind, solar, geothermal, biomass in power and other renewables sources) has been calculated on an ‘input-equivalent’ basis – i.e. based on the equivalent amount of fossil fuel input required to generate that amount of electricity in a standard thermal power plant. For example, if nuclear power output for a country was 100 TWh, and the efficiency of a standard thermal power plant was 38%, the input equivalent primary energy would be 100/0.38 = 263 TWh or about 0.95 EJ.

For many years, the efficiency of this standard power plant has been assumed to be 38%. However, in reality, the world average efficiency of fossil fuel-based power changes over time and has risen from around 36% in 2000 to over 40% today. Moreover, given the much higher efficiency of the most modern power plant (e.g. the thermal efficiency of a modern gas turbine plant is above 55%), the global average is expected to increase in the future.

Therefore, to better assess primary energy trends, we use a time-dependent thermal equivalence model. The conversion factor used each year to calculate the ‘input-equivalent’ consumption for a given level of generation is based on a simplified representation of measured average efficiency levels:

1965-2000: assumed constant efficiency of 36%

2000-2017: a linear increase from 36% to 40% based on observed data

2018 onwards: the annual rate of efficiency improvement is based on the simplified assumption that efficiency will increase linearly to 45% by 2050.

The table below quantifies these assumptions (rounded to 1 decimal place):

Thermal equivalent efficiency factors used to convert non-fossil electricity (excluding biomass powered electricity) to primary energy.

Thermal equivalent efficiency factors used to convert non-fossil electricity to primary energy			
Year(s)	Efficiency factor	Year(s)	Efficiency factor
2001	36.2%	2013	39.1%
2002	36.5%	2014	39.3%
2003	36.7%	2015	39.5%
2004	36.9%	2016	39.8%
2005	37.2%	2017	40.0%
2006	37.4%	2018	40.2%
2007	37.6%	2019	40.4%
2008	37.9%	2020	40.5%
2009	38.1%	2021	40.7%
2010	38.4%	2022	40.8%
2011	38.6%	2023	41.0%
2012	38.8%		

*1965-2000 = 36.0%

In this year’s Statistical Review, we use the updated thermal equivalent efficiency factor to convert electricity generation from biomass to primary energy equivalent. Prior to 2022, the same factor was used for biomass as for all non-fossil electricity. From 2022 onwards, we assume a constant efficiency of 32% for biomass power to better reflect the actual efficiency of biomass power plants.

Primary energy consumption is reported in net terms. The gross calorific value to net calorific value adjustment is fuel-specific.

Fuels used as inputs for conversion technologies (gas-to-liquids, coal-to-liquids and coal-to-gas) are counted as production for the source fuel and the outputs are counted as consumption for the converted fuel.

Oil

Oil reserves

Total proved reserves of oil are generally taken to be those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known reservoirs under existing economic and geological conditions.

The data series for proved oil reserves in this year’s review does not necessarily meet the definitions, guidelines and practices used for determining proved reserves at company level, for instance as published by the US Securities and Exchange Commission nor does it necessarily represent the EI’s view of proved reserves by country. Rather the data series has been compiled using a combination of primary official sources and third-party data.

Oil reserves include field condensate and natural gas liquids as well as crude oil. This inclusive approach helps to develop consistency with the oil production numbers published in the Review, which also include these categories of oil. The reserves and R/P ratio for Canada includes Canadian oil sands and the reserves and R/P ratio for Venezuela includes the Orinoco Belt.

Liquid hydrocarbon fuels from non-hydrocarbon sources, such as ethanol from corn or sugar or synthetic oil derived from natural gas (so-called GTL or gas-to-liquids), are not included in either the reserves or production series.

We have provided a detailed explanatory note on reserves clarifying current definitions and terminology.

R/P ratios represent the length of time that those remaining reserves would last if production were to continue at the previous year’s rate. They are calculated by dividing remaining reserves at the end of the year by the production in that year.

Reserves-to-production (R/P) ratios are available by country and feature in the table of oil reserves. There is a time series of crude oil reserves from 1980, which can be found in the Excel workbook. Data are measured in thousand million barrels.

Please note that these reserves tables have not been updated this year.

Oil production

Oil production data includes crude oil, shale oil, oil sands, condensates (lease condensate or gas condensates that require further refining) and NGLs (natural gas liquids – ethane, LPG and naphtha separated from the production of natural gas). Excludes liquid fuels from other sources such as biofuels and synthetic derivatives of coal and natural gas. This also excludes liquid fuel adjustment factors such as refinery processing gain. Excludes oil shales/kerogen extracted in solid form.

The split of crude/condensate and natural gas liquids figures are available. The crude condensate table includes crude oil, shale/ tight oil, oil sands, lease condensate or gas condensates that require further refining. Excludes liquid fuels from other sources such as biomass and synthetic derivatives of coal and natural gas. The NGL’s table includes ethane, LPG and naphtha separated from the production of natural gas. Excludes condensates.

World oil production tables are available in both thousand barrels daily and million tonnes.

Liquids, oil and oil product consumption

Oil consumption as defined in previous Statistical Reviews (i.e. including biofuels) has been renamed ‘liquids’ consumption and a table is still included on this original basis. In addition, more granularity has been included on the product split of both oil products and biofuels (breaking out ethane & LPG and naphtha in oil products and the ethanol/biodiesel split of biofuels).

Total liquids consumption comprises inland demand plus international aviation and marine bunkers and refinery fuel and loss. Consumption of biogasoline (such as ethanol), biodiesel and derivatives of coal and natural gas are also included.

Oil consumption figures include inland demand plus international aviation and marine bunkers and refinery fuel and loss. Consumption of biogasoline (such as ethanol), biodiesel and derivatives of coal and natural gas are excluded. Derivatives of coal and natural gas are included.

Oil product consumption – Gasoline includes motor and aviation gasoline, gasolines and light distillate feedstock (LDF). Diesel/gasoil includes marine gasoil. ‘Fuel oil’ includes marine bunkers and crude oil used directly for fuel. ‘Others’ consists of refinery gas, solvents, petroleum coke, lubricants, bitumen, wax, other refined products and refinery fuel and loss.

Data are supplied in both exajoules and thousand barrels daily figures.

Oil prices

The key crudes quoted are Brent, West Texas Intermediate (WTI), Nigerian Focados and Dubai in US\$ per barrel.

The spot crude price history from 1972 and annual crude price history from 1861 are available in the historical data Excel workbook.

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Refining

The refinery capacity data presented in this Review represents the sum of reported atmospheric crude distillation and condensate splitting capacity. Capacity should comprise the amount of input that a distillation facility can process under usual operating conditions, taking into account scheduled downtime. Figures are in thousand barrels daily at year end per calendar day.

Refinery throughputs are based on the quantity of crude and condensate processed in atmospheric distillation units and condensate splitters. Figures are in thousands of barrels per day.

The refining margins presented are benchmark margins for three major global refining centres: US Gulf Coast (USGC), North West Europe (NWE – Rotterdam) and Singapore. In each case they are based on a single crude oil appropriate for that region and have optimised product yields based on a generic refinery configuration (cracking, hydrocracking or coking), again appropriate for that region. The margins are on a semi-variable basis, i.e. the margin after all variable costs and fixed energy costs.

Methodology

Oil trade movements

The tables exclude the intra-area movements of oil (for example, crude oil and products moving between countries within Europe). They do not include biofuels. Bunkers fuel is not included as exports. Crude imports and exports include condensates. Saudi Arabian exports from 1980 are also available in the oil trade movements table in the Excel workbook. The split of crude oil and products are detailed. Data in the tables are in million tonnes and thousand barrels per day.

Natural gas

Natural gas reserves

Total proved reserves of natural gas are generally taken to be those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known reservoirs under existing economic and operating conditions.

The data series for proved natural gas reserves in this year’s Review does not necessarily meet the definitions, guidelines and practices used for determining proved reserves at company level, for instance as published by the US Securities and Exchange Commission nor does it necessarily represent the EI’s view of proved reserves by country. Rather, the data series has been compiled using a combination of primary official sources and third-party data.

Although every effort is made to come up with a consistent series for reserves based on a common definition, different countries use different methodologies and the data have varying levels of reliability.

R/P ratios represent the length of time that those remaining reserves would last if production were to continue at the previous year’s rate. They are calculated by dividing remaining reserves at the end of the year by the production in that year.

As far as possible, the data represents standard cubic metres (measured at 15°C and 1013 mbar) and have been standardised using a gross calorific value (GCV) of 40 MJ/m³.

There is a time series of natural gas reserves, which can be found in the Excel workbook. Data are measured in billion cubic metres.

Please note that these reserves tables have not been updated this year.

Natural gas production

Gas production comprises marketed production and excludes gas flared or recycled gas. Includes natural gas produced for gas-to-liquids transformation.

As far as possible, the data above represents standard cubic metres (measured at 15°C and 1013 mbar); as they are derived directly from tonnes of oil equivalent using an average conversion factor and have been standardised using a gross calorific value (GCV) of 40 MJ/m³, they do not necessarily equate with gas volumes expressed in specific national terms.

Natural gas production is provided in three different units of measurement to accommodate regional customary usage. World natural gas production PDF tables are in both billion cubic metres, and exajoules. Data in the Excel workbook are also in billion cubic feet per day (bcf/d).

Natural gas consumption

Natural gas consumption excludes natural gas converted to liquid fuels but includes derivatives

of coal as well as natural gas consumed in gas-to-liquids transformation.

As far as possible, the data above represents standard cubic metres (measured at 15°C and 1013 mbar); as they are derived directly from tonnes of oil equivalent using an average conversion factor and have been standardised using a gross calorific value (GCV) of 40 MJ/m³ they do not necessarily equate with gas volumes expressed in specific national terms. The difference between these world consumption figures and the world production statistics is due to variations in stocks at storage facilities and liquefaction plants, together with unavoidable disparities in the definition, measurement or conversion of gas supply and demand data.

Consumption data in the PDF data table is in billion cubic metres (bcm) and exajoules, data in billion cubic feet per day (bcf/d) can be found in the Excel workbook.

Natural gas prices

Annual prices are given for benchmark natural gas hubs together with contracted pipeline and LNG imports. The benchmark hub prices incorporate US (Henry Hub), Canada (Alberta), Netherlands TTF index and the UK (NBP). Contract prices are represented by LNG imports into Japan, the Japan Korea Marker (JKM) and Average German Import Prices.

The prices for LNG and European border are calculated as CIF prices, where CIF = cost + insurance + freight (average freight prices) in US dollars per million British thermal units (Btu).

Natural gas trade movements

Trade flows are on a contractual basis and may not correspond to physical gas flows in all cases. The data illustrates the flow of pipeline natural gas and LNG between sources of production and the regions of consumption. LNG trade. As far as possible, the data represents standard cubic metres (measured at 15°C and 1013 mbar) and has been standardised using a gross calorific value (GCV) of 40 MJ/m³.

Coal

Coal reserves

Total proved reserves of coal are generally taken to be those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known deposits under existing economic and operating conditions.

Total proved coal reserves are shown for anthracite and bituminous (including brown coal) and sub-bituminous and lignite.

Reserves-to-production (R/P) ratios represent the length of time that those remaining reserves would last if production were to continue at the previous year’s rate. They are calculated by dividing remaining reserves at the end of the year by the production in that year. The R/P ratios are calculated excluding other solid fuels in reserves and production.

R/P ratios are available by country and feature in the table of coal reserves. R/P ratios for the region and the world are depicted in the chart above and the Energy charting tool.

Coal reserve data is in million tonnes.

Please note that these reserves tables have not been updated this year.

Coal production

Coal production includes data for commercial solid fuels only. Included in the hard coal

category are bituminous and anthracite (hard coal). The sub-bituminous coal includes lignite and brown coal. Other commercial solid fuels are also included. The data includes coal produced for coal-to-liquids and coal-to-gas transformations.

In the coal production PDF table, the units are in exajoules. The data can also be downloaded from the Excel workbook in million tonnes.

Coal consumption

Coal consumption includes data for solid fuels only. Included in the hard coal category are bituminous and anthracite. The sub-bituminous coal includes lignite and brown coal. Other commercial solid fuels are also included. The figures exclude coal converted to liquid or gaseous fuels, but includes coal consumed in transformation processes.

Differences between world consumption figures and the world production statistics are accounted for by stock changes, and unavoidable disparities in the definition, measurement or conversion of coal supply and demand data.

Coal prices

Annual prices quoted include the Northwest Europe marker price, Japan steam spot CIF price, China Qinhuangdao spot price and the US Central Appalachian coal spot price index. Coal prices except for the US Central Appalachian price are calculated as CIF prices, where CIF = cost + insurance + freight (average freight prices). The US Central Appalachian price is FOB = free on board. All prices are quoted in US dollars per tonne.

IHS Northwest Europe prices for 1996-2000 are the average of the monthly marker, 2001-2017 the average of weekly prices. IHS Japan prices basis = 6,000 kilocalories per kilogram NAR CIF. Chinese prices are the average monthly price for 2000-2005, weekly prices 2006-2017, 5,500 kilocalories per kilogram NAR, including cost and freight (CFR).

Coal trade movements

Commercial solid fuels only, i.e. bituminous coal and anthracite (hard coal), and lignite and brown (sub-bituminous) coal, and other commercial solid fuels. Intra-area movements (for example, between countries in Europe, Other CIS, Other Africa, Other Asia Pacific) are excluded.

Nuclear energy

The data are based on gross generation and not accounting for cross-border electricity supply. ‘Input-equivalent’ energy is the amount of fuel that would be required by thermal power stations to generate the reported electricity output. Details on thermal efficiency assumptions are available online.

Data for the units are in exajoules in the PDF. The data are available in the Excel workbook in terawatt–hours (TWh).

Hydroelectricity

The data are based on gross generation and not accounting for cross-border electricity supply. ‘Input-equivalent’ energy is the amount of fuel that would be required by thermal power stations to generate the reported electricity output.

Details on thermal efficiency assumptions are available online.

In the hydroelectricity consumption PDF table, the units are in exajoules. The data are available in the Excel workbook in terawatt-hours (TWh).

Methodology

Renewable energy

The data are based on gross generation and not accounting for cross-border electricity supply. ‘Input-equivalent’ energy is the amount of fuel that would be required by thermal power stations to generate the reported electricity output. Details on thermal efficiency assumptions are available online.

Renewable power is based on gross generation from renewable sources including wind, geothermal, solar, biomass and waste, and not accounting for cross-border electricity supply.

Biofuels production and consumption

The data includes biogasoline (such as ethanol) and biodiesel. Volumes have been adjusted for energy content.

The biofuels PDF tables are in thousand barrels of oil equivalent per day figures. The data are available in additional units in the Excel workbook.

Electricity

Electricity generation is based on gross output.

Carbon

Carbon emissions from primary energy use are estimated by applying the Default CO₂ Emission Factors for Combustion to the consumption of each energy product type (coal, natural gas and various oil products) from the list of IPCC emission factors. Biofuels are considered as not emitting CO₂, consistent with the practice of the IEA. Second, the revised method takes account of fuel consumption used for non-combustion purposes, such as the use of oil products and natural gas in the petrochemicals industry or of oil to produce bitumen for road construction. Estimates of the share of non-combusted fossil

fuels taken from the IEA’s energy balances are subtracted from the total consumption of fossil fuels before applying the relevant emission factors.

Carbon emissions from flared natural gas are calculated using data series on volumes of gas flared from two sources: Cedigaz up to 2012, and the Payne Institute for Public Policy, Colorado School of Mines, from 2013 onward. Payne Institute’s data include flaring from upstream, downstream oil and gas, while Cedigaz include flaring from upstream only. Volumes of gas flared have been standardised using a Gross Calorific Value (GCV) of 40 MJ/ m³. The IPCC Default CO₂ Emission Factor for Combustion for natural gas (56,100 kg CO₂ per TJ) is used and perfect combustion has been assumed. These emissions represent around 1% of total CO₂ emissions.

Data for methane emissions associated with the production, transportation and distribution of fossil fuels for 1990-2020 are sourced, where available, from IEA (2023) Greenhouse Gas Emissions from Energy (all rights reserved). For countries not covered by the IEA, additional data has been sourced from Kayros. For a selected number of fossil fuel producing countries where methane emission data is not currently available through either provider, an estimate of historical methane emissions has been derived using regional average methane intensity of production. For 2023, methane emission estimates are derived for all countries using methane intensity of fossil fuel production in 2022. Total methane emissions at a global and regional level show a discrepancy with IEA data due to non-inclusion of residual emissions i.e. emissions which have not been allocated to named countries. There is a wide range

Appendices Approximate conversion factors

Crude oil*		To				
From		tonnes (metric)	kilolitres	barrels	US gallons	tonnes per year
Multiply by						
Tonnes (metric)	1	1.165	7.33	307.86	–	–
Kilolitres	0.8581	1	6.2898	264.17	–	–
Barrels	0.1364	0.159	1	42	–	–
US gallons	0.00325	0.0038	0.0238	1	–	–
Barrels/day	–	–	–	–	–	49.8
*Based on worldwide average gravity.						

Oil products		To convert					
From		barrels to tonnes	tonnes to barrels	kilolitres to tonnes	tonnes to kilolitres	tonnes to gigajoules	tonnes to barrels oil equivalent
Multiply by							
Ethane	0.059	16.850	0.373	2.679	49.400	8.073	
Liquefied petroleum gas (LPG)	0.086	11.600	0.541	1.849	46.150	7.542	
Gasoline	0.120	8.350	0.753	1.328	44.750	7.313	
Kerosene	0.127	7.880	0.798	1.253	43.920	7.177	
Gas oil/diesel	0.134	7.460	0.843	1.186	43.380	7.089	
Residual fuel oil	0.157	6.350	0.991	1.010	41.570	6.793	
Product basket	0.124	8.058	0.781	1.281	43.076	7.039	
*Based on worldwide average gravity.							

Natural gas (NG) and liquefied natural gas (LNG)		To convert					
From		billion cubic metres NG	billion cubic feet NG	petajoules NG	million toe	million tonnes LNG	tonnes to barrels oil equivalent
Multiply by							
1 billion m³ NG	1.000	35.315	36.000	0.860	0.735	34.121	5.883
1 billion ft³ NG	0.028	1.000	1.019	0.024	0.021	0.966	0.167
1 petajoule NG	0.028	0.981	1.000	0.024	0.021	0.952	0.164
1 million toe	1.163	41.071	41.868	1.000	0.855	39.683	6.842
1 million tonnes LNG	1.360	48.028	48.747	1.169	1.000	46.405	8.001
1 trillion Btu	0.029	1.035	1.050	0.025	0.022	1.000	0.172
1 million boe	0.170	6.003	6.093	0.146	0.125	5.800	1.000

of uncertainty with respect to both current estimates of methane emissions and the global warming potential of methane emissions. To ensure alignment with financial and government reporting standards, the methane to CO₂e factor is a 100-year Global Warming Potential (GWP) of 25, recommended by the IPCC in AR4. Carbon emissions from industrial processes refer only to non-energy CO₂ emissions from cement production and are sourced for 1990-2023 from Andrew, R. M. (2019) Global CO₂ emissions from cement production, 1928-2018. Earth System Science Data 11, 1675-1710, (updated dataset May 2023).

Minerals

Total proved reserves of minerals are generally taken to be those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known resources under existing economic and geological conditions.

The data series for mineral reserves in this year’s review does not necessarily meet the definitions, guidelines and practices used for determining proved reserves at company level nor does it necessarily represent the EI’s view of proved reserves by country. Rather the data series has been compiled using a combination of primary official sources and third-party data.

Revisions and corrections

Each year revisions are made to historical data when updated or more reliable data sources become available. Corrections are also made when errors are identified in data. In this Statistical Review corrections have been made to the emissions, biofuels, historic oil prices and oil refinery throughput tables.

Units	
1 metric tonne	= 2204.62 lb. = 1.1023 short tons
1 kilolitre	= 6.2898 barrels
1 kilolitre	= 1 cubic metre
1 kilocalorie (kcal)	= 4.1868 kJ = 3.968 Btu
1 kilojoule (kJ)	= 1,000 joules = 0.239 kcal = 0.948 Btu
1 petajoule (PJ)	= 1 quadrillion joules (1 x 1015)
1 exajoule (EJ)	= 1 quintillion joules (1 x 1018)
1 British thermal unit (Btu)	= 0.252 kcal = 1.055 kJ
1 barrel of oil equivalent (boe)	= 5.8 million Btu = 6.119 million kJ
1 kilowatt-hour (kWh)	= 860 kcal = 3600 kJ = 3412 Btu

Calorific equivalents	
One exajoule equals approximately:	
Heat units	239 trillion kilocalories 948 trillion Btu
Solid fuels	40 million tonnes of hard coal 95 million tonnes of lignite and sub-bituminous coal
Gaseous fuels	See Natural gas and LNG table
Electricity	278 terawatt-hours

All fuel energy content is net or lower heating value (i.e., net of heat of vaporisation of water generated from combustion).

1 barrel of ethanol = 0.58 barrels of oil equivalent
1 barrel of biodiesel = 0.86 barrels of oil equivalent
1 tonne of ethanol = 0.68 tonne of oil equivalent
1 tonne of biodiesel = 0.88 tonne of oil equivalent

Other terms
Tonnes: Metric equivalent of tons

Percentages
Calculated before rounding of actuals.

Rounding differences
Because of rounding, some totals may not agree exactly with the sum of their component parts.

Definitions

Regional definitions

Country groupings are made purely for statistical purposes and are not intended to imply any judgment about political or economic standings.

North America

US (excluding US territories), Canada, Mexico.

Caribbean

Atlantic islands between the US Gulf Coast and South America, including Puerto Rico, US Virgin Islands and Bermuda.

Central America

Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama.

South and Central America

Caribbean (including Puerto Rico and US Virgin Islands), Bermuda, Central and South America.

Europe

European members of the OECD plus Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Georgia, Gibraltar, Latvia, Lithuania, Malta, Montenegro, North Macedonia, Romania, Serbia and Ukraine.

Commonwealth of Independent States (CIS)

Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Uzbekistan.

Middle East

Arabian Peninsula, Iran, Iraq, Israel, Jordan, Lebanon, Syria.

Northern Africa

Territories on the north coast of Africa from Egypt to Western Sahara.

Eastern Africa

Territories on the east coast of Africa from Sudan to Mozambique. Also Madagascar, Malawi, Uganda, Zambia, Zimbabwe.

Middle Africa

Angola, Cameroon, Central African Republic, Chad, Democratic Republic of Congo, Republic of Congo, Equatorial Guinea, Gabon, Sao Tome & Principe.

Western Africa

Territories on the west coast of Africa from Mauritania to Nigeria, including Burkina Faso, Cape Verde, Mali and Niger.

Southern Africa

Botswana, Eswatini, Lesotho, Namibia, South Africa.

Asia Pacific

Brunei, Cambodia, China[†], China Hong Kong SAR*, China Macau SAR*, Indonesia, Japan, Laos, Malaysia, Mongolia, North Korea, Philippines, Singapore, South Asia (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka), Myanmar, South Korea, Taiwan, Thailand, Vietnam, Australia, New Zealand, Papua New Guinea and Oceania.

[†] Mainland China

* Special Administrative Region

Australasia

Australia, New Zealand.

OECD members (Organization For Economic Co-operation and Development)

Europe: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye, UK.

Other member countries: Australia, Canada, Chile, Colombia, Costa Rica, Israel, Japan, Mexico, New Zealand, South Korea, US.

OPEC members (Organization of the Petroleum Exporting Countries)

Middle East: Iran, Iraq, Kuwait, Saudi Arabia, United Arab Emirates.

North Africa: Algeria, Libya.

West Africa: Angola, Equatorial Guinea, Gabon, Nigeria, Republic of Congo.

South America: Venezuela.

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Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Republic of Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

Non-OECD (Organization for Economic Co-operation and Development)

All countries that are not members of the OECD.

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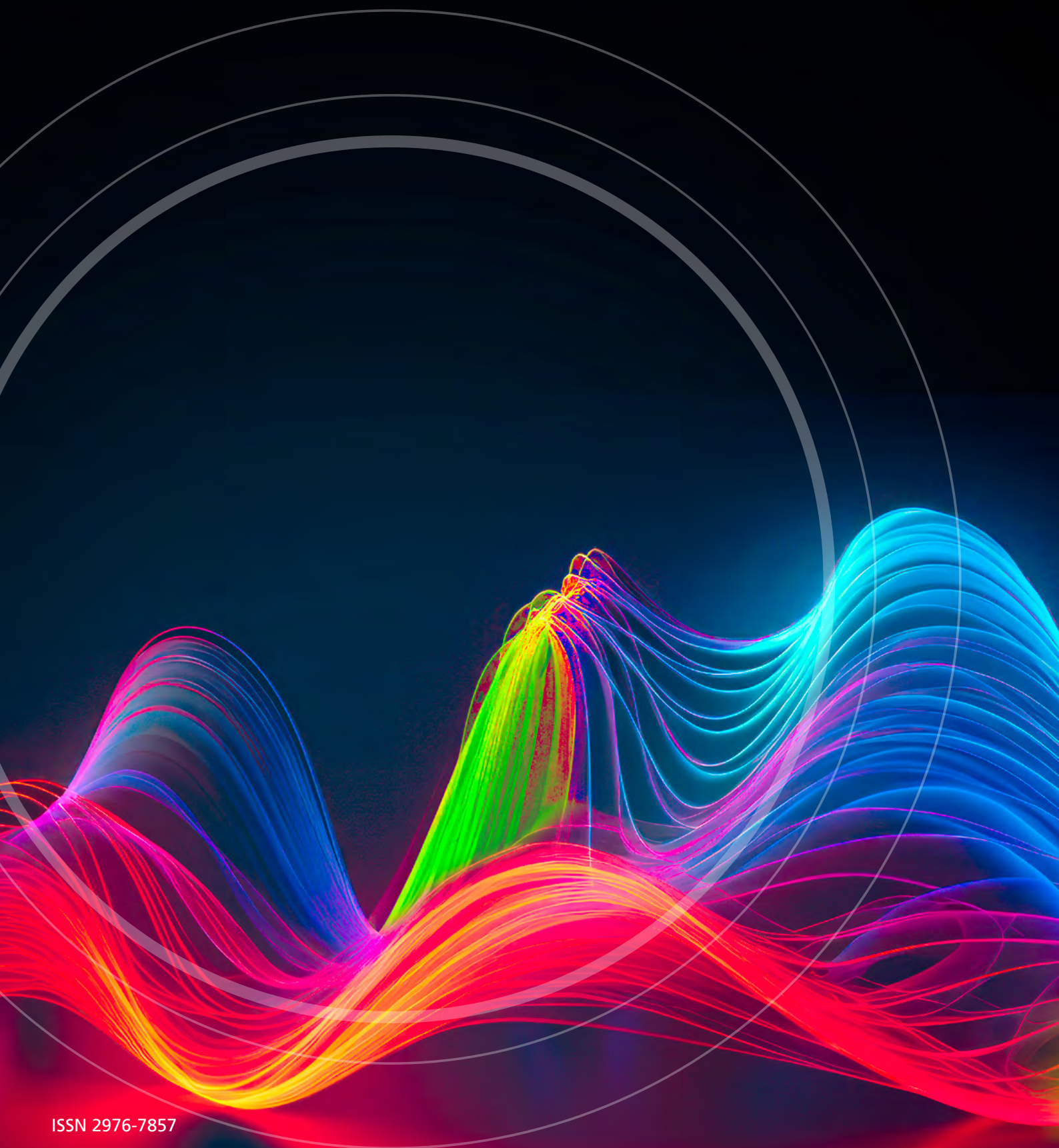
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