



**Asia-Pacific  
Economic Cooperation**

# **APEC**

## **ENERGY STATISTICS**

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# **2019**

**ENERGY WORKING GROUP  
JULY 2022**

**ENERGY STATISTICS AND TRAINING OFFICE  
ASIA PACIFIC ENERGY RESEARCH CENTRE**



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## PREFACE

The APEC Energy Statistics 2019 consists of the following chapters:

1. Background information on APEC energy statistics
2. Overview of APEC energy situation
3. Member economy tables

The statistics cover the 21 APEC member economies, i.e. Australia; Brunei Darussalam; Canada; Chile; People's Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; The Republic of the Philippines; Russia; Singapore; Chinese Taipei; Thailand; The United States and Viet Nam.

**Chapter 1** describes the methodology for collecting and standardising the energy data and for producing the secondary data such as the energy balances and other tables. The preparation of socio-economic data is also explained.

**Chapter 2** provides an analysis of energy demand and supply in the APEC region and contains figures and tables showing trends of energy demand and supply.

**Chapter 3** consists of annual tables of each member economy. The annual tables contain energy balance tables for 2019 and 2018 and energy prices for 2019. The annual tables also include major energy indicators such as primary energy supply, final energy consumption, demand and supply by energy sources as well as major economic indicators such as population, GDP, balance of payments, foreign exchange rate, purchasing power parity, price indices and so on. These tables cover the data from 1990 to 2019. The objective is to report the most recently updated data.

APEC Energy Statistics 2019 is derived from the APEC energy database, the purpose of which is to establish a comprehensive and consistent energy database within the APEC region. This database will be used to assist in the identification of significant trends in energy supply and demand consistent with projects and priorities under the APEC Energy Working Group, which include final energy intensity and shares of renewable energy in total primary energy supply and total final energy consumption. It is prepared in close cooperation with member economies.

Inquiries about the data should be addressed to the EGEDA secretariat, the Energy Statistics and Training Office (ESTO) of the Asia Pacific Energy Research Centre (APEREC).

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**1**

# **Background Information on APEC Energy Statistics**

## Background

Data collection in APEC started in 1991 with the creation of the Expert Group on Energy Data and Analysis (EGEDA) under the Energy Working Group (EWG). This is in consideration of the importance of energy data collection for enhanced energy security and environmental sustainability in the APEC region. The expert group designated the Energy Data and Modeling Centre (EDMC) of the Institute of Energy Economics, Japan (IEEJ) as coordinating agency with the role of secretariat and implementer of data collection and maintenance of the APEC energy database. The role of secretariat was transferred to the Energy Statistics and Training Office (ESTO) of the Asia Pacific Energy Research Centre (APEREC) in 2015.

The secretariat compiled energy data as far back as 1970 from the 21 member economies depending on data availability. The APEC Energy Statistics was published annually since 1993 and this year's publication is the 29<sup>th</sup> edition.

This publication consists of energy data submitted by each member economy as well as socio-economic data collected by the secretariat for this APEC activity. The energy balance tables, which give detailed description of all energy products and flows, and other tables (primary energy supply, final energy consumption, etc.) included in the statistics, are secondary data compiled by ESTO.

## APEC energy data and APEC energy goals

APEC energy data has become essential in tracking the APEC energy intensity reduction and doubling the share of renewable energy goals. The EWG, based on the suggestions of APERC, approved the use of APEC energy data in tracking these goals.

### Energy intensity reduction goal

In the Honolulu Declaration in 2011, APEC leaders aspired to reduce APEC's aggregate energy intensity by 45 percent by 2035 based on the 2005 levels. APERC has been reporting the progress since 2011 but it was only in 2016 that the Energy Working Group (EWG) decided to track the progress using APEC energy data and World Bank's GDP data. It was decided that energy intensity would be measured based on final energy consumption excluding non-energy uses and GDP values at constant purchasing power parities (PPP).

### Doubling the share of renewables in the APEC energy mix, from 2010 levels by 2030

In 2014, during their 11<sup>th</sup> meeting, the APEC energy ministers set a goal of doubling the share of renewables in the APEC energy mix, including power generation, from 2010 levels by 2030. EGEDA proposed an indicator to track the progress of the doubling goal in October 2017 using APEC energy data. The indicator is the share of renewables in final energy consumption. Traditional biomass use in the commercial,

residential and agriculture sectors are excluded in the calculation of the total renewables share.

## Energy data

**A**PEC member economies regularly submit energy demand and supply data to the secretariat. These data are called “original data”. Details for collection of the data are given below:

### Collection format for original energy data

Most of the items found in the APEC energy statistics are based on data submitted by the APEC member economies using a set of questionnaires for oil, coal, natural gas, electricity and heat, as well as new and renewable energy (NRE). These questionnaires were developed in 2005 for the collection of annual data for the year 2004. These are simplified forms of the annual energy questionnaires of the International Energy Agency (IEA) through the harmonisation efforts of the secretariat with IEA. Slight revisions are made to the questionnaires from time to time to catch up with the developments in the energy sector. Tables 1.1a and 1.1b show the energy products and flows to be reported in the questionnaires. The definition of energy products and flows can be found in the Appendices.

Using the reporting format or the APEC annual energy questionnaires, the member economies submitted the following information:

- Supply and demand information for all types of energy products
- Power generating capacity by type of power plants

The data are reported in the following required units:

Coal and solid coal products	1000 Metric tons
Gaseous coal products	10 <sup>10</sup> kcal (gross)
Oil and oil products	1000 Metric tons
Natural gas	Million cubic meters
LNG	1000 Metric tons
Solid and liquid biofuels	1000 Metric tons
Biogas	10 <sup>10</sup> kcal (gross)
Electricity	GWh
Heat	10 <sup>10</sup> kcal (gross)

With regard to calorific values (both gross and net), the required units are the following:

Coal, oil, NRE	kcal/kg
Natural gas	kcal/cubic meter

Power generating capacity data are reported in megawatt (MW).

Table 1.1a • Energy products in the APEC energy database

<p><b>Coal</b></p> <ul style="list-style-type: none"> <li>Coking coal</li> <li>Other bituminous coal</li> <li>Sub-bituminous coal</li> <li>Anthracite</li> <li>Lignite</li> </ul> <p><b>Coal products</b></p> <ul style="list-style-type: none"> <li>Coke oven coke</li> <li>Coke oven gas</li> <li>Blast furnace gas</li> <li>Other recovered gases</li> <li>Patent fuel</li> <li>Coal tar</li> <li>BKB/PB</li> <li>Gas works gas</li> </ul> <p><b>Peat</b></p> <p><b>Crude Oil &amp; NGL</b></p> <ul style="list-style-type: none"> <li>Crude oil</li> <li>Natural gas liquids</li> <li>Refinery feedstocks</li> <li>Additives / oxygenates</li> <li>Other hydrocarbons</li> </ul>	<p><b>Petroleum Products</b></p> <ul style="list-style-type: none"> <li>Gasoline</li> <li>Motor gasoline</li> <li>Aviation gasoline</li> <li>Naphtha</li> <li>Jet fuel</li> <li>Gasoline type jet fuel</li> <li>Kerosene type jet fuel</li> <li>Other kerosene</li> <li>Gas/diesel oil</li> <li>Fuel oil</li> <li>LPG</li> <li>Refinery gas</li> <li>Ethane</li> <li>White spirit SBP</li> <li>Lubricants</li> <li>Bitumen</li> <li>Paraffin waxes</li> <li>Petroleum coke</li> <li>Other petroleum products</li> </ul> <p><b>Gas</b></p> <ul style="list-style-type: none"> <li>Natural gas</li> <li>LNG</li> </ul> <p><b>Nuclear</b></p>	<p><b>Hydro</b></p> <p><b>New and renewable energy</b></p> <ul style="list-style-type: none"> <li>Geothermal</li> <li>Solar</li> <li>Tide, wave and ocean</li> <li>Wind</li> <li>Fuelwood</li> <li>Wood waste</li> <li>Wood straw pellets/briquettes</li> <li>Bagasse</li> <li>Rise husks</li> <li>Straw</li> <li>Charcoal</li> <li>Other vegetal and agricultural wastes</li> <li>Other primary solid biomass</li> <li>Biogases</li> <li>Industrial wastes</li> <li>Municipal solid wastes</li> <li>Black liquor</li> <li>Liquid biofuels</li> </ul> <p><b>Electricity</b></p> <p><b>Heat<sup>1</sup></b></p>
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<sup>1</sup> Heat data in China, Japan and Korea include chilled water from district cooling facilities.

Table 1.1b • Energy flows in the APEC energy database

<p><b>Indigenous production</b></p> <p><b>Imports</b></p> <p><b>Exports</b></p> <p><b>International marine bunkers</b></p> <p><b>International aviation bunkers</b></p> <p><b>Stock changes</b></p> <p><b>Total primary energy supply</b></p> <p><b>Transfers</b></p> <ul style="list-style-type: none"> <li>Recycled products</li> <li>Inter-product transfers</li> <li>Products transferred</li> <li>Gas separation</li> </ul>	<p><b>Total transformation sector</b></p> <p><b>Main activity producer</b></p> <ul style="list-style-type: none"> <li>Electricity plants</li> <li>CHP plants</li> <li>Heat plants</li> <li>District cooling plants</li> </ul> <p><b>Autoproducer</b></p> <ul style="list-style-type: none"> <li>Electricity plants</li> <li>CHP plants</li> <li>Heat plants</li> <li>District cooling plants</li> </ul> <p><b>Gas Processing</b></p> <ul style="list-style-type: none"> <li>Gas works</li> <li>Liquefaction</li> <li>Re-gasification</li> <li>Natural gas blending plants</li> <li>Gas-to-liquid plants</li> </ul> <p><b>Refineries</b></p> <p><b>Coal transformation</b></p> <ul style="list-style-type: none"> <li>Coke ovens</li> <li>Blast furnaces</li> <li>Patent fuel plants</li> <li>BKB/PB plants</li> <li>Liquefaction (coal to oil)</li> </ul> <p><b>Petrochemical industry</b></p> <p><b>Biofuel processing</b></p> <p><b>Charcoal processing</b></p> <p><b>Non-specified transformation</b></p> <p><b>Losses and own-use</b></p> <ul style="list-style-type: none"> <li>Own-use</li> <li>Transmission and distribution losses</li> </ul>	<p><b>Total final energy consumption</b></p> <p><b>Industry sector</b></p> <ul style="list-style-type: none"> <li>Iron and steel</li> <li>Chemical including petrochemicals</li> <li>Non-ferrous metals</li> <li>Non-metallic minerals</li> <li>Transportation equipment</li> <li>Machinery</li> <li>Mining and quarrying</li> <li>Food, beverages and tobacco</li> <li>Pulp, paper and printing</li> <li>Wood and wood products</li> <li>Construction</li> <li>Textiles and leather</li> <li>Non-specified Industry</li> </ul> <p><b>Transport sector</b></p> <ul style="list-style-type: none"> <li>Domestic air transport</li> <li>Road</li> <li>Rail</li> <li>Inland waterways</li> <li>Pipeline transport</li> <li>Non-specified transport</li> </ul> <p><b>Other sector</b></p> <ul style="list-style-type: none"> <li>Commerce and public services</li> <li>Residential</li> <li>Agriculture</li> <li>Fishing</li> <li>Non-specified others</li> </ul> <p><b>Non-energy use</b></p> <ul style="list-style-type: none"> <li>Transformation sector</li> <li>Industry sector</li> <li>Transport sector</li> <li>Other sector</li> </ul>
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However, in 2017, ESTO decided to allow member economies to report data in the original units used by the respective economies. Primary and secondary oil products can be reported in litres, barrels and cubic meters or in any other volume or mass units. For example, gaseous products can be reported in joules, BTU, kilocalorie, etc. Calorific values can be reported in joules, BTU, kilocalorie per unit of volume or mass. The purpose of this flexibility is to minimise data errors resulting from conversion of original volume units to mass units. In order for ESTO to convert the original data to mass units, member economies were also requested to report the densities of each product.

For OECD member economies that also submit annual energy demand and supply data to IEA, ESTO accepts data submission using the IEA format and also downloads the revised questionnaires from IEA's Energy Validation Outlet (EVO). Computer programs were developed to transfer data from the IEA format to APEC format and to generate energy balance tables. This reduces the reporting burden of these economies to IEA, APEC and other international energy organisations.

### Collection schedule and actual dates of submission

ESTO set the deadline for submission of 2019 data on 31 March 2021. In principle, all 21 APEC members are expected to submit annual data by this deadline. Three economies were able to submit the five energy questionnaires on time. These were Hong Kong, China (preliminary data); Singapore and Chinese Taipei. ESTO does not require OECD member economies to submit on the set deadline in consideration of the fact that these economies are submitting data to IEA to reduce their reporting burden.

Data collection was completed by September 2021 with the submission of Hong Kong, China's final data.

### Method of data submission

ESTO developed an online data submission system for all the data collected from member economies. Several economies are now using the system, but some economies still submit the data files as email attachments. Correspondence for the improvement of data consistency and accuracy were conducted through email communication.

### Method of estimation

For economies that lack detailed data as well as those that did not submit the questionnaires, ESTO estimated the data, filled-out the questionnaires or adopted IEA estimates.

For instance, as Papua New Guinea was not able to submit its annual energy questionnaires, ESTO estimated its energy data using various references. The references include the JODI Oil and JODI Gas data, renewable energy data from the International Renewable Energy Agency (IRENA), Papua New Guinea Power Limited (PPL), and the annual report of Oil Search Limited, an oil company based in the economy, and information from the economy's privately-operated geothermal power plant. From those data and the economic indicators collected from the World Bank and Asian Development Bank (ADB) for the year 2019, ESTO estimated the final energy consumption, autoproducer electricity generation and inputs as well as imports of petroleum products. ESTO is hoping that Papua New Guinea would be able to produce its own energy statistics and balances in the future.

While Singapore submitted the questionnaires, Singapore was unable to provide a complete set of the energy balance due to data unavailability. Hence, ESTO referenced IEA's energy statistics and energy balance to bridge these data gaps.

## Standardisation

The APEC reporting format used in the collection of 2019 annual data, gives member economies the flexibility to report data in the original units used in their respective economies. The format also requires the submission of densities of each product to allow conversion of all data to a uniform mass unit. ESTO however, does not standardise the conversion factor from physical to energy units in view of the peculiarities in the thermal quantity of each energy product from the different economies. In this regard, calorific value data reported by each economy are used as opposed to using typical conversion factors.

### Conversion factors for fossil energy from physical to thermal units

Between two calorific values, namely gross and net calorific values, APEC adopted the net calorific value agreed from the third experts meeting held in Singapore in 1993, to facilitate comparisons with international energy statistics such as those of the IEA and United Nations Statistics Division. Therefore, gross calorific values used by some members must be converted to net calorific values. If only gross calorific values are reported, these are converted to net calorific values:

Coal / Oil	multiplying the value by 95%
Gas	multiplying the value by 90%

### Conversion factors for primary electricity

Table 1.2 shows the factors applied to convert primary electricity—power generated from non-fossil fuel sources such as hydro, nuclear, geothermal and other power generation—to primary energy units. To allow comparisons of primary energy supplies, in the light of differences in conversion coefficients, standardisation is required. APEC adopted the following efficiency of primary electricity generation for compatibility with IEA and UN statistics.

**Table 1.2 • Efficiency of primary electricity generation**

Primary Electricity	Efficiency
Hydro power	100%
Nuclear power	33%
Geothermal power*	10%
Other new power	100%

\*Excluding Mexico; New Zealand; and the United States. These economies can provide the primary energy equivalent of geothermal electricity outputs.

The original energy data contained in these statistics have been processed using the adjustments mentioned above.

### Secondary data

Using the original data submitted by the member economies, the following tables are prepared through the standardisation process.

- (1) Energy balance table
- (2) Primary energy supply table
- (3) Final energy consumption table
- (4) Demand and supply by energy source table
- (5) Electricity table



The energy balance table gives a detailed description of energy sources and their flows.

APEC energy statistics contains the five tables mentioned above. Tables 2 through 5 are collectively referred to as “other tables” and are compiled from the energy balance table and data obtained from the original data tables after adjustments. Tables 2 through 5 allow comparisons among member economies.

## Energy balance table

The structure of energy balance table, in principle, is the same as that of IEA's but with some differences. These are as follows:

APEC statistics are basically based on official data provided by national government agencies of the member economies, and thus, agencies exclude any data not reported to the government. It is assumed that IEA estimates these quantities.

For this reason, some data for private power generations are missing in some member economies. Likewise, some economies have no consumption of biomass in the residential sector.

The reporting period differs in APEC and IEA surveys.

## Other tables

Other tables such as primary energy supply, final energy consumption, demand and supply by energy source, and electricity, are all designed to allow comparisons among member economies.

The primary energy supply table constitutes information on the primary energy supply,

namely, production, imports, exports, stock change, and international marine and aviation bunkers in terms of calorific values (PJ), for each of the four categories of coal, petroleum, gas, and primary electricity (hydro, nuclear, geothermal power, etc.).

The final consumption table illustrates the consumption of coal (including coal products), petroleum, gas, electricity and other energy sources for each final consumption sector (agriculture, residential, commercial, industry and transport).

The demand and supply table for each energy source emphasises coal, petroleum and gas, and shows how the primary supply quantity is consumed in the transformation and final energy consumption sectors.

The electricity table illustrates the power generation and fossil fuel input for each of the five categories of thermal, hydro, nuclear, geothermal and other sources of power generation.

## Notes on member economies

### General notes

Most of the member economies' annual data are tallied by calendar year (1 January - 31 December) except for Australia and Japan. These economies account their energy statistics by fiscal year (1 July - 30 June for Australia and 1 April to 31 March for Japan).

In view of harmonisation efforts with the IEA, ESTO accepts submission from OECD members using the IEA format. Likewise, to reduce the burden of member economies' statisticians, ESTO decided to leave the verification of APEC

OECD member economies data to IEA and just used the processed and updated data from IEA.

### Specific notes

#### ***Papua New Guinea***

ESTO estimated the energy balance tables of Papua New Guinea from 2004 to 2019. Data were taken from the crude oil and natural gas production, refinery intake and output data as well as crude oil exports that PNG submits monthly to Joint Organisations Data Initiative (JODI). Data on geothermal electricity production were obtained via online research. On biomass use especially in the household sector, ESTO used the data obtained from IRENA.

### **Socio-economic data**

The socio-economic data of each member economy shown in the APEC Energy Statistics are not reported by the member economies. These were, obtained from the *World Development Indicators* of the World Bank and *The International Financial Statistics Yearbook* of the International Monetary Fund (IMF) and summarised by ESTO. Meanwhile, as macroeconomic data of Chinese Taipei are not available in these international data providers, statistics were derived from Chinese Taipei's national statistics website (DGBAS).

In addition to downloading GDP in Chinese Taipei's local currency and constant dollar values, ESTO/APERC provides estimates of Chinese Taipei's GDP in PPP, constant 2017 USD.

### **APEC energy database**

The online APEC energy database, which contains all the data in the APEC energy statistics can be accessed at: <https://www.egeda.ewg.apec.org/>.

The data are as follows:

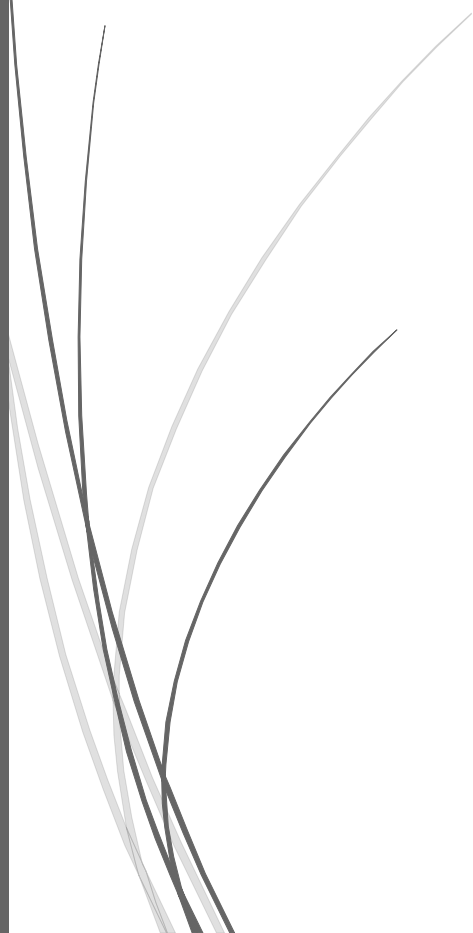
1. Annual energy supply and demand (energy balances)
2. Annual energy prices
3. Annual CO<sub>2</sub> emissions from energy combustion
4. Quarterly energy supply
5. Monthly oil and gas supply and demand





**2**

# **Overview of the APEC Energy Situation**



## Background

This chapter gives an overview of the energy demand and supply situation in APEC in 2019. It also included a general comparison of APEC situation as compared with the rest of the world in terms of gross domestic product (GDP), population and total primary energy supply (TPES). For a better understanding of the terms used in the Overview chapter, the readers may refer to the definitions of products and flows provided in the Appendices. In-synched with the analyses done in APEC Energy Demand and Supply Outlook, the APEC energy statistics publication considered China, Russia and the US, as regions in view of the big differences in scales with other APEC economies. Unless otherwise specified, analyses mostly referred to the above-mentioned APEC member economies were as region. Hence, this publication considered the following regional groupings:

- **Other Americas**

Canada; Chile; Mexico; and Peru

- **South-East Asia**

Brunei Darussalam; Indonesia; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam

- **Oceania**

Australia; New Zealand; and Papua New Guinea

- **Other north-east Asia**

Hong Kong, China; Japan; Korea; and Chinese Taipei

- **China**

- **Russia, and**

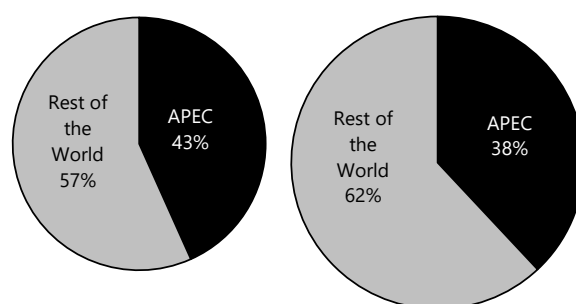
- **The United States**

This chapter also included analyses on the progress of APEC twin goals—the energy intensity reduction goal which was based on 2005 against 2019 and the RE doubling goal share, 2010 against 2019.

## APEC and the rest of the world

The world's population reached 7.7 billion people, maintaining the 1.1% increase from 2018 to 2019. Between 1990 to 2019, compound annual growth rate (CAGR) was 1.3%, the same rate for the last eight years. APEC's share to the world population in 2019 was maintained at 38%. It grew 0.5%—the lowest rate recorded for the last two decades—to reach 2.918 billion inhabitants in 2019. The CAGR between 1990 to 2019 was 0.8%; 0.1 percentage point lower than previous CAGR. The rest of the world increased 1.4% to 4.755 billion people in 2019 (Figure 2.1). The CAGR between 1990 to 2019 was maintained at 1.6%.

Figure 2.1 • World population, 1990 and 2019



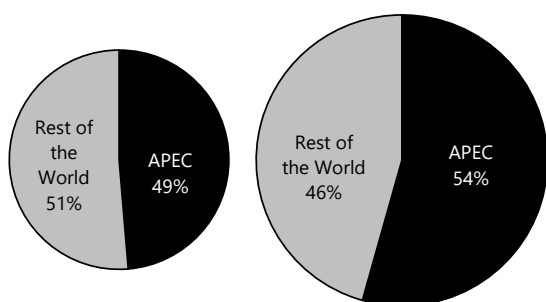
Sources: World Bank, ESTO analysis

Oceania remained to post the highest growth in 2019 at 1.6% although its share to total APEC population was the smallest (1%). Population in Russia and other north-east Asia in 2019, likewise, continued its decline by 0.05% and 0.04%, respectively.

Although the world economy grew slower in 2019 than 2018 (2.8% from 3.6%, respectively),

APEC consistently dominated global economic output. Its gross domestic product (GDP) measured in terms of purchasing power parities (PPP)<sup>1</sup> was USD 75 752 billion (PPP constant 2017 USD) in 2019. While it grew slower compared with 2018 (from 4.2% to 3.3% in 2019), it accounted for 55% of the world's GDP PPP (Figure 2.2). CAGR between 1990 to 2019 was maintained at 3.7%. The rest of the world grew 2.1% to USD 58 675 billion (PPP constant 2017 USD) in 2019.

Figure 2.2 • World GDP (PPP constant 2017 USD), 1990 and 2019



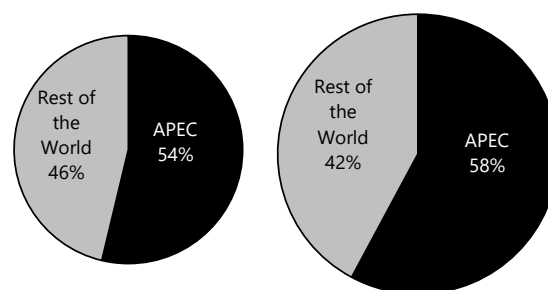
Sources: World Bank, ESTO analysis

China (32%), the United States [the US (29%)] and other north-East Asia (13%) were the top three regions in APEC in terms of economic output. Together they accounted for three-fourths of APEC GDP in 2019. This was the second year that China outstripped the US as APEC's largest economy in terms of GDP PPP. South-East Asia is not to be overlooked as it comprised 11% of APEC GDP PPP, the fourth largest. The region was also one of the biggest contributors to APEC's economic growth with 4.5%, the second fastest following China in 2019. Owing to its fast-growing member economies namely, Viet Nam (7%), the Philippines (6.1%) and Indonesia (5%).

<sup>1</sup> Purchasing power parity (PPP) is defined as the number of units of B's currency that are needed in B to purchase the same quantity of individual good or service as one unit of A's currency will purchase in A.

Similar pattern was observed in terms of energy supply. APEC accounted for 58% of the world's total energy supply in 2019 (Figure 2.3) but grew sluggishly than previous year. Total energy supply in APEC increased 1.7% to reach 350 793 PJ in 2019. The CAGR between 1990 to 2019 was 2.0% while that of the rest of the world was 1.4%.

Figure 2.3 • World TPES, 1990 and 2019



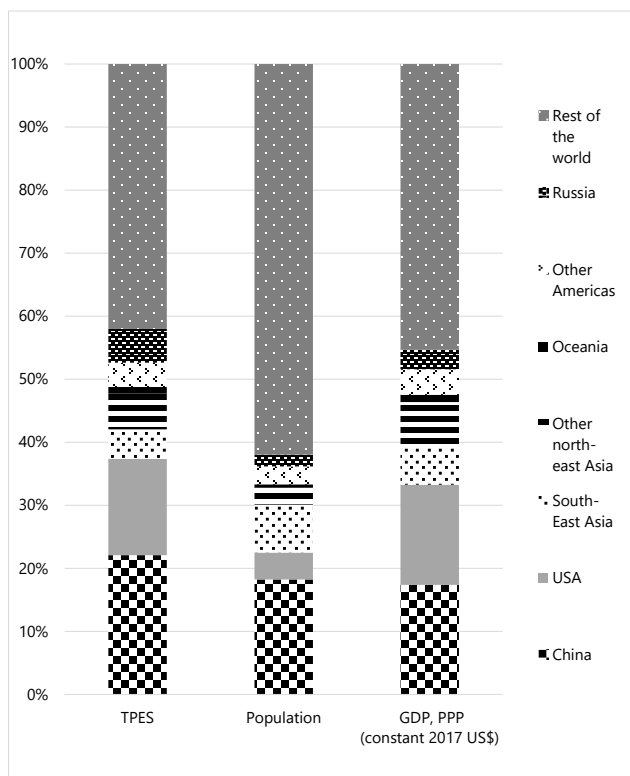
Sources: IEA and APEC (TPES), ESTO analysis

China, the US and other north-East Asia remained the three largest energy consuming regions in APEC. Together they accounted for 43% of the world's total energy supply. In terms of relative shares<sup>2</sup>, this was even one percentage point higher than the share of the rest of the world (Figure 2.4). Relatedly, these three regions' share of the global GDP PPP in 2019 was 40% while the rest of the world was 45%. These were almost of the same level considering that these three regions comprised only 25% of the world population.

Within APEC, the relative shares of these three regions varied with each other. For example, China overtook the US in terms of GDP PPP, however, the US accounted for only 4% of the world's population while China, accounted for 18%.

<sup>2</sup> Relative shares within the APEC regions differ from shares in the world total.

Figure 2.4 • Relative shares, 2019



Sources: APEC, IEA, WB, ESTO analysis

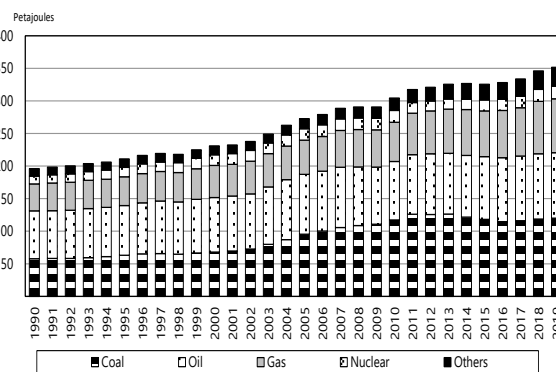
Key energy trends in APEC are discussed in the following sections.

## Energy supply trends

### Total primary energy supply

After a strong rebound from previous year (3.6% in 2018), APEC’s total primary energy supply in 2019 grew slower with 1.6% to 351 527 PJ (Figure 2.5).

Figure 2.5 • Total primary energy supply, 1990-2019



Sources: APEC data, ESTO analysis

China outpaced South-East Asia (SEA) as the main driver of APEC total primary energy supply (TPES) with a 4.4% increase to 133 886 PJ in 2019. Following the expansion of its economy, SEA remained as one of the main drivers of TPES and placed second to China. Total energy supply in SEA expanded 2.7% in 2019 to 28 482 PJ. In terms of fuel source, solar significantly drove the rise in APEC energy supply in 2019 with 21.4%.

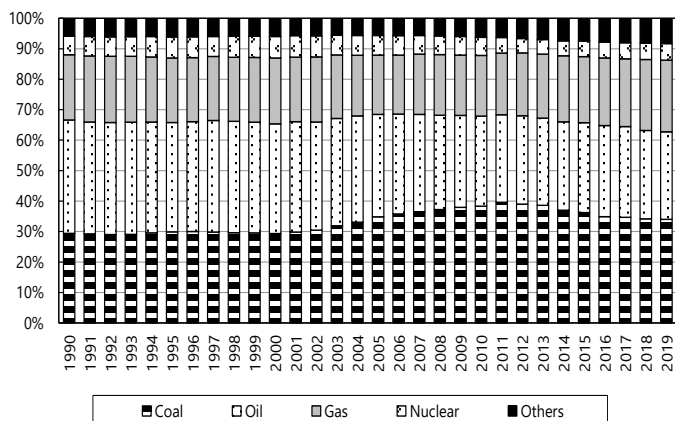
### Primary energy mix by source

APEC total primary energy supply (TPES) is consistently dominated by fossil fuels, accounting for 86% of TPES in 2019. (Figure 2.6).

Coal accounted for the lion’s share of energy supply in APEC. It comprised 34% of the total APEC energy supply but increased a modest 1.2% in 2019. The compound annual growth rate (CAGR) between 1990 to 2019 was 2.5%. The huge increase came from SEA (11.4%) and followed distantly by the growth in Russia (6.3%) and China (2.9%). These increases however, were

offset mostly by the large decrease posted by the US (-14.3%) then partly by Oceania (-2.3%) and other north-East Asia (-1.4%), hence, the sluggish growth of the total coal supply in APEC in 2019.

Figure 2.6 • Primary energy mix, 1990-2019



Sources: APEC data, ESTO analysis

Oil supply in APEC has been dwindling. From a 1% increase in previous year, oil supply in APEC in 2019 grew a modest 0.6% to 100 845 PJ. Nevertheless, oil continued to take up a significant share (29%) in APEC total energy supply. The CAGR between 1990 to 2019 was unchanged for the last ten years (1.1%).

After a strong gain in 2018, gas supply slightly increased 2.7% to 82 479 PJ in 2019. The decreases experienced by SEA (-4.5%) other north-East Asia (-2.5%) and other Americas (-1.2%) were more than offset by the robust growth of gas supply in China (9.3%) and the US (7%), two of the largest gas producers in APEC.

All other renewables (solar, wind and biomass combined) posted a 5.5% increase driving the overall growth of TPES in 2019. Among all other renewables, solar, for the last ten years, continuously provided huge increases (21.4% in 2019).

Nuclear supply remained stable after dropping significantly ten years ago. It partly contributed to the growth in APEC energy supply in 2019 with

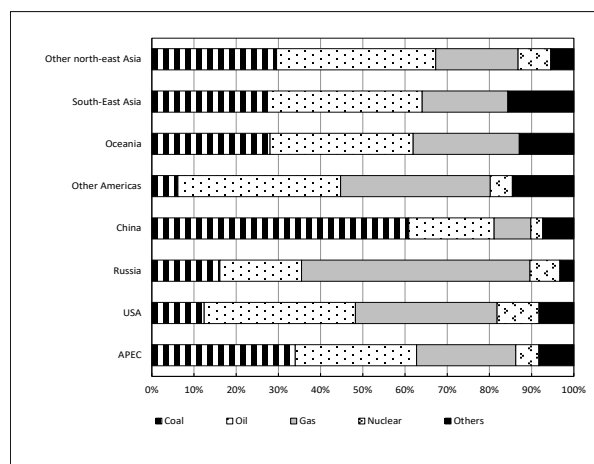
4.4%, the second highest rate next to all other renewable energy resources.

Primary supply from hydro grew slightly (1.3%) while geothermal (-0.6%) seen a drop in 2019 after recording significant increases from the last two years.

### Primary energy mix by region

The structure of energy mixes by region in 2019 was not changed. China (38%), the US (26%) and other north-East Asia (10%) continued to account for the largest energy supply in APEC. China’s energy supply mix was comprised of coal (61%). The US and other north-east Asia’s energy mixes were both dominated by oil with 36% and 37%, respectively. Russia’s energy mix remained to be gas-dominated (54%) and all other regions had more than one-third oil (Figure 2.7).

Figure 2.7 • Primary energy mix by region, 1990-2019



Sources: APEC data, ESTO analysis

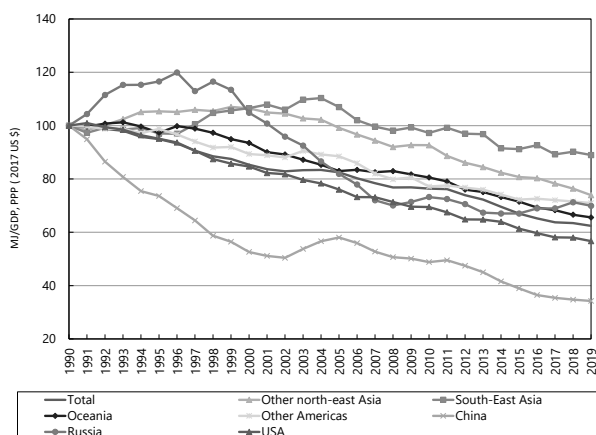
The sources of supply of all other fuels including renewable energy in APEC in 2019 were quite diverse. Aside for accounting for the largest hydropower supply (52%), China provided 30% of APEC solar, wind and biomass supply. South-East Asia accounted for the biggest geothermal supply (59%) and nuclear was attributable to the US (48%).



### Primary energy intensity

Primary energy intensity is defined as the ratio of total primary energy (in petajoules) and GDP (PPP constant 2017 USD). In 2019 primary energy intensity improved 1.6% to 5 MJ/USD (PPP constant 2017 USD). Over the years, primary energy intensity has improved constantly, posting a 37.3% reduction from 1990 to 2019) (Figure 2.8).

Figure 2.8 • Primary energy intensity by region, 1990-2019

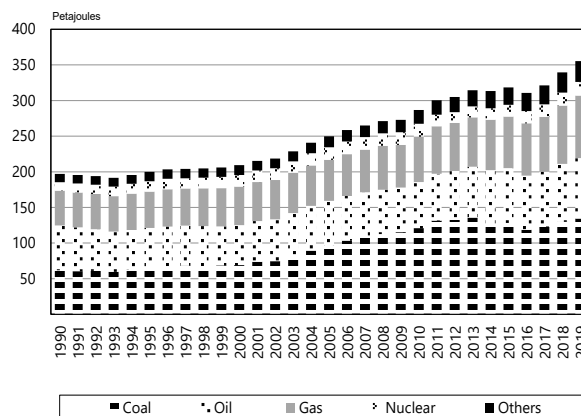


Sources: APEC data (TPES), World Bank (GDP), ESTO analysis

### Production

Production rose 4.6% to 355 331 PJ in 2019 (Figure 2.9). A slower than expected growth compared with 2018 but pushed the self-sufficiency level of APEC to 101% in 2019. This can be attributed to the 7.5% increase in gas production, by far the biggest growth observed in this fuel. Looking at by region, increases in production level of Oceania (7.7%) and the US (7%) contributed to the total production in APEC.

Figure 2.9 • APEC Indigenous production, 1990-2018

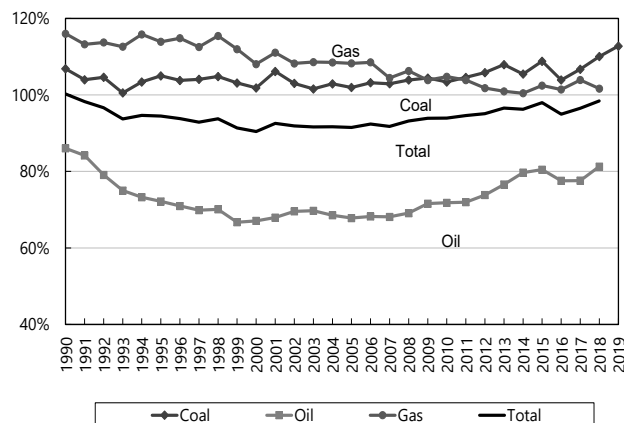


Sources: APEC data, ESTO analysis

### Self-sufficiency

While it grew at a slower pace than previous year, APEC for the first time, became more than self-sufficient in 2019 (101%) (Figure 2.10). Incidentally, the historic high expansion of gas production brought the gas sufficiency level back to 106%, a level not seen in almost one decade. As in the past, oil remained way below the sufficient level (84%) in 2019.

Figure 2.10 • APEC energy self-sufficiency, 1990-2019



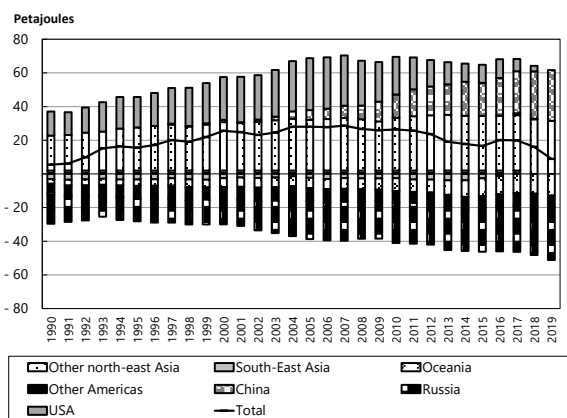
Sources: APEC data, ESTO analysis

### Net imports by region

APEC as a whole is a net importer. The net imports (Imports – Exports) in 2019 was much lower than the previous year and significant structural changes took place. In addition to the

44% drop to 9 121 PJ of total net imports, the US and SEA became net exporters in 2019 (Figure 2.11). While SEA has alternately been net importer or net exporter in the past, the US was historically a net importer. Other north-East Asia and China remained net importers and the rest of the regions, Oceania, other Americas and Russia, remained net exporters. The CAGR between 1990 to 2019 was slower at 1.6%, the lowest ever recorded for the last three decades.

Figure 2.11 • Net imports by region, 1990-2019



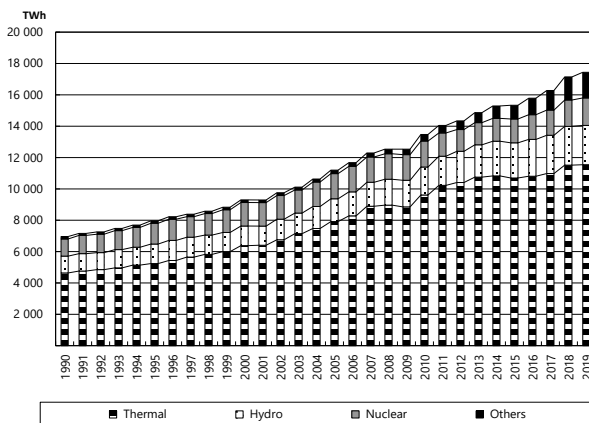
Sources: APEC data, ESTO analysis

## Power generation

Alongside the slower pace of APEC economy, power generation sluggishly grew from 5.3% in 2018 to 1.7% (17 436 TWh in 2019 (Figure 2.12).

The global race to low carbon future spurred the re-shaping of APEC generation mix. Low-carbon sources that exceeded the share of coal from the total power generation for the first time in 2015, had increased one percentage point further in 2019 from 2018. Electricity output from renewables such as geothermal, solar, wind and others continued to drive the increase in total power generation. Although way slower than the previous years, renewables expanded 14.3% to 1 317 TWh in in 2019. Electricity generation output from nuclear likewise increased a significant 4.4% to 1 755 TWh in 2019.

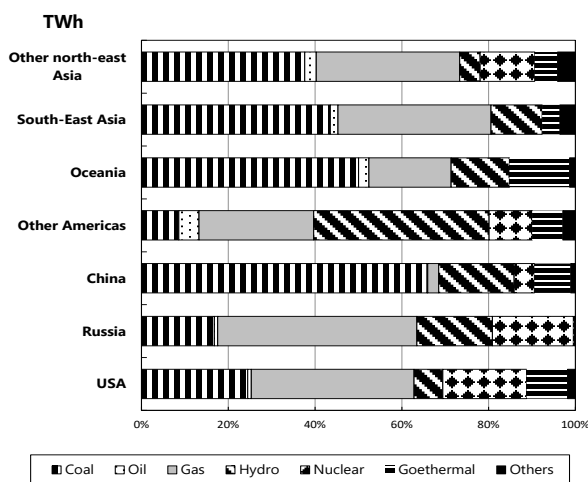
Figure 2.12 • Power generation by type, 1990-2019



Sources: APEC data, ESTO analysis

Regionally, the structure of power generation mixes in 2019 in APEC were unchanged. Except for other Americas, electricity output from fossil fuels remained the bulk of the regions' respective power generation mixes. Most of the regions' power generation mixes consisted of over 60% fossil fuels then followed by hydro—China (17%), Oceania (14%) and SEA (12%)—or nuclear [the US (19%), Russia (18%) and other north-east Asia (13%)]. In other Americas, electricity generation mix was dominated by fossil fuels and hydropower both accounting for 40% of the region's electricity generation (Figure 2.13).

Figure 2.13 • Power generation mix by region, 2019



Sources: APEC data, ESTO analysis

The increasing expansion of shale production created a favourable condition for coal-to-gas switching in 2019 in the US. Electricity output from gas rose four-percentage points more compared with the 2018 level. In addition to the market forces pushing a shift from coal to gas, the US power mix was re-shaped by government policy supporting wind and solar PV, as well as changes in weather.

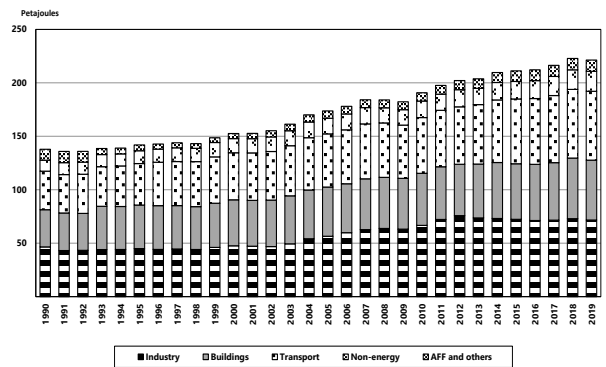
## Energy demand trends in APEC

Total final consumption (including non-energy use) dropped 0.7% to 221 064 PJ in 2019. The decreases observed in most of the sectors, except non-energy and transport, pushed down the overall demand growth in APEC in 2019. The non-energy sector which experienced notable increases in the past seen a sluggish 1.7% growth to 18 664 PJ in 2019. The US (35%) and other north-East Asia (24%) comprised the bulk of non-energy consumption in APEC, accounting for 59% of the total non-energy. The compound annual growth rate (CAGR) between 1990-2019 was 2.1% (Figure 2.14).

### Total final energy consumption by sector

Relatedly, total final energy consumption (excluding non-energy) experienced a significant dip, after a strong 3% increase in 2018 to 0.9% drop (to 202 666 PJ) in 2019. The contraction observed in the overall energy consumption in 2019 was not only a reflection of the slower economic growth but can also be explained by weather conditions, especially from large energy consuming regions in APEC

Figure 2.14 • Total final consumption in APEC by sector, 1990-2019



Sources: APEC data, ESTO analysis

Industry sector which was historically emerged as the leading sector in APEC accounted for one-third of total final energy consumption. In 2019, the sector fell 1.7% after showing slowly rebounding in the last two years. Electricity provided the largest fuel source in the sector in 2019, up by two percentage points since it replaced coal in 2017. It grew 1.7% to 24 081 PJ in 2019, but not enough to balance the sharp contraction seen in coal (-14.7%), the second biggest fuel source in industry. Activities in the chemical and petrochemical and iron and steel industries, two of the largest manufacturing sub-sectors of industry, may in part provided positive growths in the sector but not sufficient to balance the declines experienced by the majority of the sub-sectors of industry in APEC in 2019.

Transport was the only sector that consumption grew, albeit modestly, 0.3% to 64 926 PJ in 2019. South-East Asia (2.9%) drove the demand growth in the sector. Meanwhile, coal for transport use continued its descent as China, the only region consuming coal for transport, exert measures to shift to a more efficient or low carbon fuel source.

Demand growth in the buildings sector (residential and commercial sectors combined) in 2019 was well below the 5.3% increase observed and drove the consumption in 2018. While the share to total did not change, the buildings

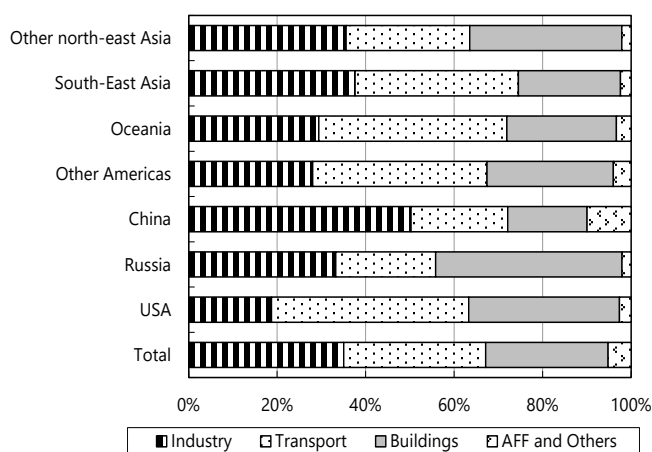
sector dropped 1.3% to 55 971 PJ in 2019. Slowing of activities in buildings, the services sector in particular, pushed the energy consumption down in the buildings sector in APEC.

All other sector (agriculture, fishing and forestry, and sector not elsewhere classified) likewise fell 1.3% in 2019, a decline not seen in the last nine years.

### Total final energy consumption by region

South-East Asia maintained its position as the overall driver of demand growths in APEC 2019. Energy consumption in the region was 4.2% up in 2019, brought about by the significant increases observed in most sectors, in particular industry (7.6%). The increase, however, was not enough to offset the decreases experienced by four regions in APEC, specifically, China (-2.6%), (Figure 2.15).

Figure 2.15 • Total final energy consumption in APEC by region by sector, 2019



Sources: APEC data, ESTO analysis

China and the US formed the bulk of energy consumption in APEC. Together they accounted for 65% of the total final energy consumption (TFEC), hence, contraction was evident in the overall demand growth in APEC. In particular, a milder summer in the US and China in 2019 lowered energy demand for cooling. Milder

winters in 2019 than in 2018, likewise pushed down energy consumption in APEC.

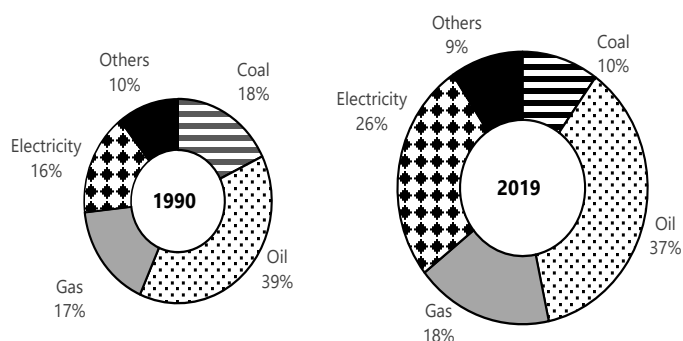
Russia and other north-East Asia comprised the third largest consumption (both at 9% share) in APEC in 2019. Russia posted a 0.9% rise to 18 373 PJ in 2019 brought by the increase in industry sector (5%). The commercial sector likewise posted a 10.8% surge but not enough to outpace the drop in residential sector, hence, a decline in total buildings consumption (-0.2%) in Russia. In contrast, fuel consumption in other north-East Asia seen a second consecutive year decline in 2019. Energy efficiency improvements may have been the main driving factor behind lower energy demand in 2019, particularly Japan and Korea, two of the largest consuming economies in other north-East Asia.

### Final energy consumption by energy source

The historic plunge of coal consumption (-16.7%) has pushed the overall energy demand down in APEC in 2019. The unprecedented decline prompted its share to fall back to a level not seen in the last two decades (10%). Fuel-switching from coal to gas was by far contributed to the staggering dip (Figure 2.16).

Gas which grew a record high in previous year slowed down in 2019. From a robust 10.5% increase in 2018, it just grew 3.3% to 35 880 PJ in 2019. Milder weather was the key factor in the slowdown on gas consumption growth.

**Figure 2.16 • Total final energy consumption by energy source, 1990 and 2019**



Sources: APEC data, ESTO analysis

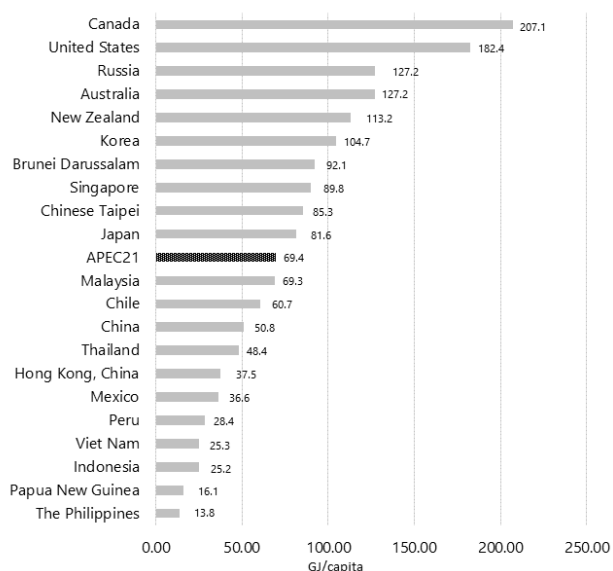
Oil continued to form the lion's share of TFEC in APEC in 2019 but seen a 0.1% drop compared with 2018. Russia spurred the expansion in oil consumption in 2019, with 5.2%. The US and China together comprised 65% of oil consumption in the region, for transport use in particular.

Renewables and electricity, which showed significant growths in 2018 (5.3% and 5.1%, respectively), grew sluggishly as well in 2019 with 0.8% and 1.8%, respectively. Heat which posted a robust growth from previous year also grew to just 0.3% in 2019.

### Final energy consumption per capita

Energy per capita in APEC seen a 1.3% reduction to 69.45 GJ in 2019. Canada (207.10 GJ) and the US (182.41 GJ) maintained their positions as the top two energy users in APEC in 2019. Russia (127.23 GJ) took over Australia as the third top energy consumers in APEC, which now placed as fourth. Eleven economies were well below the APEC average energy per capita, including China, in the 14<sup>th</sup> place with 50.82 GJ (Figure 2.17).

**Figure 2.17 • Energy consumption per capita, 2019**

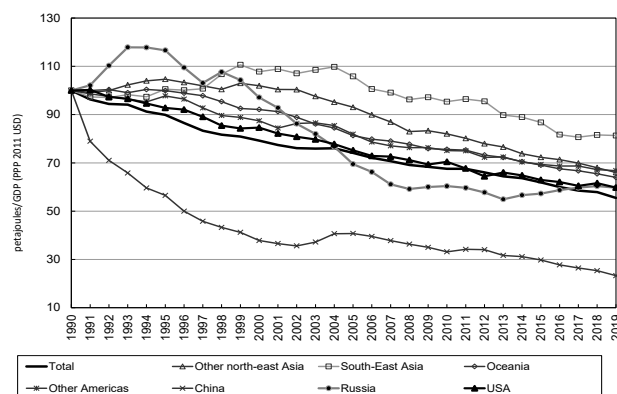


Sources: APEC data (TFEC), World Bank (Population), DGBAS (CT data), ESTO analysis

### Final energy intensity

Final energy intensity [Total final energy consumption (PJ)/GDP (PPP, constant 2017 USD)] in APEC continued to show improvement over the last two decades, albeit the 2019 reduction level was very minimal. Between the periods 1990 and 2019, energy intensity reduced 44.5% to 2.9 MJ/USD (PPP, constant 2017 (Figure 2.18). (**Note:** this is not the APEC energy intensity goal with 2005 as base year.)

**Figure 2.18 • Final energy intensity by region, 1990-2019**

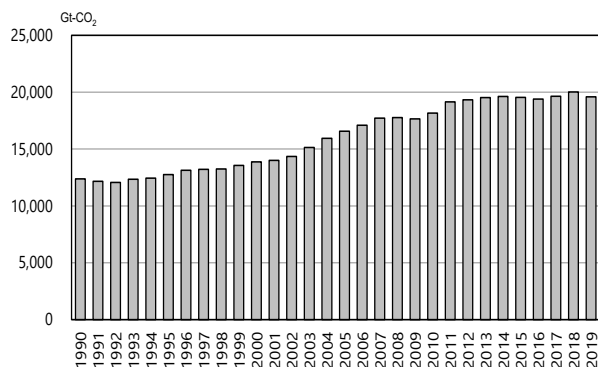


Sources: APEC data (TFEC), World Bank (GDP PPP), ESTO analysis

## CO<sub>2</sub> emissions

The slowdown in energy demand growth, combined with a shift in the fuel mix away from coal and toward natural gas and renewables, led to a considerable decrease of carbon emissions. CO<sub>2</sub> emissions in APEC seen a significant 2.2% decline to 19 588 gigatonnes (Gt) in 2019 from 20 027 Gt in 2018 (Figure 2.19). Thanks to the conscious efforts made by most of the regions in APEC to decarbonise moving forward. As expected, the declines in energy consumption in China, other north-East Asia and the US, reflected a 4.1%, 3.1%, 2.6% curbing of CO<sub>2</sub> emissions (total of 15 072 Gt) in the regions, respectively. The staggering 7.4% (1 573 Gt) increase of CO<sub>2</sub> emissions in South-East Asia implied the use of high-carbon fuel sources in 2019 and a need to exert efforts to reduce its carbon emissions.

**Figure 2.19 • CO<sub>2</sub> Emission in the APEC region, 1990-2019**



Sources: APEC data, ESTO analysis

## APEC goals

### Energy intensity goal

The APEC region has continued to make progress toward its 45% improvement in energy intensity goal by 2035 (relative to 2005). As of 2019, APEC-wide final energy intensity has improved 25.1%, leaving an additional 20% improvement needed to meet

the 2035 goal. Assuming these trends on final energy consumption and GDP continue, APEC goal of 45% energy intensity reduction will be achieved by 2032

### RE doubling goal

Progress has also been made in doubling the share of modern renewables in the energy mix by 2030 (relative to 2010). The race to low-carbon future spurred the increase in utilisation of renewables in APEC in 2019. The modern renewable share of final consumption has increased from 6.14% in 2010 to 9.1% in 2019. Given the fast growth of renewables utilisation, the APEC RE share doubling goal in the final energy demand will be achieved and will reach 12.6% in 2030.

In terms of total primary energy supply (TPES), RE share increased from 4.8% in 2010 to 7% in 2019. Assuming this trend continues, APEC RE share goal from TPES in 2030 will likely be met and reach exactly twice the 2010 level

Both assumptions on energy intensity and doubling the renewable share implied that the APEC twin goals will likely be met. But this does not mean that APEC will stop its efforts in energy efficiency improvements and in the deployment of RE. Related studies need to be conducted to address the challenges that may come along the way in achieving these goals.

## Energy balance table

This section presents the 2019 aggregate energy balance table (EBT) of APEC (*Table 2.1*). Note that the export/import row does not imply the volume of trade between APEC region and the rest of the world.

The format of the 2019 EBT was not changed and the improved version that started in 2018 was carried on. The APEC EBT maintained the detailed categories of products and unit of energy was expressed in petajoules (PJ).

Total final energy consumption includes industry, transport, buildings and agriculture sector, while total final consumption includes non-energy. The EBT is useful in briefly analysing the energy trends of an economy or the region. For example, the non-energy sector (row 22) made up 8% of the total final consumption (row 22 col 19 divided by row 20 col 19) or taking the renewable energy share by dividing total renewables column (row 21) by TFEC (row 21 col 19, which was 4.5% in 2019).

**Table 2.1 • APEC Energy balance table (PJ), 2019**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total	Total	
	Coal	Coal products	Peat	Peat products	Oil shale and oil sands	Crude Oil, NGL and condensate	Petroleum products	Gas	Nuclear	Hydro	Geothermal	Solar	Tide, Wave, Ocean	Wind	Solid Biomass	Others	Electricity	Heat	Total	Total	Renewables	
1 Indigenous production	134 441		10			77 089		72 222	16 603	8 063	1 583	677	2	1 592	8 658	5 033		2	355 331		27 613	
2 Import	19 893	454				55 433	21 956	15 284							68	168	453		124 900		236	
3 Export	-31 107	- 423	- 1			-24 534	-25 431	-16 393							- 55	- 243	- 475		-115 780		- 298	
4 International marine bunkers							-4 364									- 9					-4 748	- 9
5 International aviation bunkers							-3 239														-3 633	
6 Stock change	-3 232	- 56	1			- 650	- 177	- 795								- 13					-4 544	- 10
7 Total primary energy supply	119 995	- 25	10			107 338	-11 254	70 318	16 603	8 063	1 583	677	2	1 592	8 671	4 937	- 22	2	351 527		27 532	
8 Transfers						- 468	4 747														5 885	
9 Main activity producer	-73 278	- 416	- 6			- 213	-1 865	-25 685	-16 603	-7 866	-1 527	- 305	- 2	-1 548	-1 632	-1 368	60 243	8 666		-71 453	-16 716	
10 Autoproducter	-1 348	- 411	- 3			- 25	- 926	-4 879		- 197	- 25	- 186		- 45	- 626	- 386	2 529	3 128		-2 987	-1 307	
11 Gas processing	- 626	- 4					60	316													- 8	
12 Petroleum refineries						-105 808	102 045														-5 333	
13 Coal transformation	-23 659	5 656	- 1	1			- 16									- 5					-17 968	
14 Other transformation						948	- 671	- 407							- 234	- 244	- 15	18		-1 001	- 477	
15 Losses & own-use	- 187	- 552				- 541	-5 604	-7 032							- 6	- 17	-9 519	-2 030		-26 917	- 17	
16 Discrepancy	-4 969	- 167				- 603	-2 828	88							42	- 9	40			- 156	-10 681	29
17 Total final consumption	15 927	4 081		1		628	83 687	32 719			31	185			6 214	2 909	53 257	9 628	221 064		9 044	
18 Total final energy consumption	15 878	4 007		1		119	71 679	29 312			31	185			6 214	2 909	53 257	9 628	202 666		9 044	
19 Industry sector	13 059	3 671				116	6 693	12 138			5	1			3 199	353	24 081	4 981	71 733		3 280	
20 Transport sector	64	1					54 471	3 047							2 424	1 132			64 468		2 424	
21 Other sector	2 755	335		1		3	10 515	14 127			26	185			3 015	132	28 044	4 647	66 465		3 340	
21.1 Residential & commercial	1 670	317		1			5 867	13 807			23	181			2 743	97	23 969	4 346	55 971		3 047	
21.2 Agriculture	500	14					2 431	149			2				271	14	1 040	106	4 406		286	
21.3 Other	585	4				2	2 218	171			3				1	21	3 035	194	6 088		7	
22 Non-energy	50	74				509	12 008	3 407													18 664	

Sources: APEC data, ESTO analysis

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**3**

# **Energy Balances and Other Tables by Member Economy**







# Australia

## Energy balance table of Australia

	Coal and Peat	Coal and Peat products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	12 596		691						
Import	5	12	745	1 272	198		206	739	30
Export	-10 611	-18	-518	-111	-7		-1	-4	-9
International marine bunkers				-32				-3	-29
International aviation bunkers				-211			-211		
Stock changes	-240		-6	-16	-2	1	-8	-11	
<b>Total primary energy supply</b>	<b>1 750</b>	<b>-6</b>	<b>910</b>	<b>902</b>	<b>189</b>	<b>1</b>	<b>-15</b>	<b>721</b>	<b>-8</b>
Transfers			-9	152					
Total transformation sector	-1 644	60	-1 049	987	366	13	139	281	36
Main activity producers	-1 532			-9				-7	-1
Autoproducers				-39				-36	-1
Gas processing									
Petroleum refineries			-1 049	1 035	366	13	139	324	39
Coal transformation	-113	60							
Other transformation									
Losses & own use		-34	-2	-202				-127	-5
Discrepancy	-1		150	2	31	-15	-2	17	-15
<b>Total final consumption</b>	<b>105</b>	<b>21</b>	<b>1</b>	<b>1 842</b>	<b>586</b>		<b>122</b>	<b>891</b>	<b>9</b>
<b>Total final energy consumption</b>	<b>105</b>	<b>21</b>	<b>1</b>	<b>1 667</b>	<b>586</b>		<b>122</b>	<b>891</b>	<b>9</b>
Industry sector	105	21	1	165				136	3
Iron and steel	1	11		1				1	
Chemical & petrochemical	6	1		4				4	
Non-metallic minerals	19			7				1	
Other industries	79	9	1	152				131	3
Transport sector				1 370	580		122	647	6
Domestic air transport				124	2		122		
Road				1 157	566			576	
Rail				49				49	
Inland waterways				33	11			16	6
Other transport				8				7	
Other sector				133	6			108	
Residential				15					
Commerce and public services				29				28	
Agriculture				88	6			80	
Non-specified others									
Non-energy				174					
<b>2018</b>									
Production	12 035		612						
Import	6	6	767	1 281	208		216	724	29
Export	-10 318	-16	-458	-96	-5		-5	-3	-10
International marine bunkers				-24				-2	-21
International aviation bunkers				-200			-200		
Stock changes	84		4	-41	-3	-1	-1	-13	-6
<b>Total primary energy supply</b>	<b>1 807</b>	<b>-9</b>	<b>925</b>	<b>921</b>	<b>200</b>	<b>-1</b>	<b>11</b>	<b>705</b>	<b>-8</b>
Transfers			-8	151					
Total transformation sector	-1 696	68	-1 042	919	376	13	134	284	31
Main activity producers	-1 574			-8				-6	-1
Autoproducers				-40				-38	-1
Gas processing									
Petroleum refineries			-1 042	967	376	13	134	328	33
Coal transformation	-122	68							
Other transformation									
Losses & own use		-36	-2	-176				-118	-2
Discrepancy	-4		127	44	37	-12	-13	1	-15
<b>Total final consumption</b>	<b>106</b>	<b>23</b>	<b>1</b>	<b>1 859</b>	<b>614</b>		<b>131</b>	<b>867</b>	<b>6</b>
<b>Total final energy consumption</b>	<b>106</b>	<b>23</b>	<b>1</b>	<b>1 859</b>	<b>614</b>		<b>131</b>	<b>867</b>	<b>6</b>
Industry sector	106	23	1	1 686	614		131	867	6
Iron and steel	1	13		1					
Chemical & petrochemical	6	1		4				4	
Non-metallic minerals	20			7				1	
Other industries	80	9	1	1 674	614		131	861	5
Transport sector				1 372	606		131	612	2
Domestic air transport				133	2		131		
Road				1 158	592			547	
Rail				48				48	
Inland waterways				25	12			10	2
Other transport				8				7	
Other sector				152	7			122	
Residential				15					
Commerce and public services				36				29	
Agriculture				102	7			93	
Non-specified others									
Non-energy				173					

unit: Petajoules

LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal	Others	Electricity	Heat	Total	Total renewables
			4 938	56			342			18 623	394
20		80	182							2 216	
- 77		- 14	-3 685							-14 943	
										- 32	
										- 211	
1		2								- 262	
- 56		69	1 435	56			342			5 390	394
68		85								144	
25	39	87	- 511	- 56			- 163	949		-1 427	- 219
		- 2	- 315	- 56			- 93	816		-1 189	- 149
		- 2	- 196				- 70	133		- 172	- 70
25	39	90								- 66	
										- 53	
	- 39	- 31	- 372					- 130		- 740	
16		- 30	- 24							128	
52		181	528				179	772		3 447	175
42		16	481				179	772		3 226	175
8		16	254				108	274		927	104
			8					12		33	
			33				4	14		62	
4		2	46				3	12		87	3
4		15	167				101	236		744	101
16			19				5	23		1 417	5
										124	
15			3				5			1 166	5
								12		60	
			16					11		33	
										35	
19			207				66	476		881	66
15			152				65	211		443	65
1			54				1	257		341	1
2			1					8		97	
10		164	47							222	
			4 237	57			326			17 266	379
20		84	168							2 229	
- 59		- 14	-3 042							-13 929	
										- 24	
										- 200	
- 3		- 13								46	
- 42		56	1 363	57			326			5 389	379
67		84								144	
25	39	16	- 515	- 57			- 139	939		-1 523	- 196
		- 1	- 354	- 57			- 76	824		-1 245	- 133
		- 1	- 161				- 63	115		- 149	- 63
25	39	18								- 75	
										- 55	
	- 39	- 17	- 327					- 171		- 712	
8		43	15							182	
59		182	536				187	768		3 480	184
59		182	536				187	768		3 480	184
49		19	480				187	768		3 250	184
			9					13		36	
			35				4	14		64	
4		1	46				3	11		87	3
45		18	390				181	729		3 064	180
20			17				5	21		1 415	5
										133	
19			3				5			1 166	5
								12		59	
										25	
			14					10		32	
21		1	205				66	473		896	66
15			149				64	213		442	64
4		1	55				1	252		344	1
2			1					8		11	
10		163	56							229	

## Major energy indicators of Australia

petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	3 606	3 873	4 526	4 751	5 285	5 300	5 291	5 354	5 389	5 390
Production	6 595	7 825	9 779	11 102	13 538	16 033	16 204	16 978	17 266	18 623
Import	603	873	1 105	1 302	1 754	2 002	2 040	2 090	2 229	2 216
Export	-3 304	-4 609	-6 428	-7 530	-9 584	-12 476	-12 932	-13 366	-13 929	-14 943
Final energy consumption	2 207	2 430	2 728	2 815	3 009	3 154	3 176	3 210	3 250	3 226
Industry	809	882	996	933	939	933	928	925	939	927
Transport	884	966	1 074	1 136	1 256	1 355	1 372	1 396	1 415	1 417
Residential	314	348	379	389	429	439	443	441	442	443
Commerce & public services	146	174	211	261	292	328	331	338	344	341
Others	54	61	67	97	92	99	102	109	111	97
<b>Coal &amp; Peat</b>										
Primary energy supply	1 493	1 590	2 023	2 155	2 124	1 819	1 878	1 880	1 807	1 750
Production	4 442	5 352	6 891	8 440	10 323	12 501	12 224	12 264	12 035	12 596
Import					1	3	1	3	6	5
Export	-2 800	-3 698	-5 083	-6 322	-7 961	-10 609	-10 532	-10 235	-10 318	-10 611
Transformation sector	-1 393	-1 535	-1 868	-2 055	-2 039	-1 737	-1 796	-1 778	-1 696	-1 644
Power generation	-1 208	-1 354	-1 722	-1 898	-1 872	-1 622	-1 668	-1 651	-1 574	-1 532
Final energy consumption	106	106	109	102	89	80	93	96	106	105
Industry	100	100	105	93	84	80	93	95	106	105
Transport	3	4	4	8	4					
Residential										
Commerce & public services	3	2	1	1	1					
Others										
<b>Coal &amp; peat products</b>										
Primary energy supply	-32	-20	-7	-19	-11	-22	-15	-8	-9	-6
Production										
Import				1		4	6	5	6	12
Export	-16	-11	-1		-10	-25	-20	-13	-16	-18
Transformation sector	123	116	84	100	76	76	72	69	68	60
Power generation	-3	-2	-2	-5	-5	-1				
Final energy consumption	77	81	64	55	17	18	20	23	23	21
Industry	75	79	63	54	17	18	20	23	23	21
Transport										
Residential										
Commerce & public services	2	2	1	2						
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	1 385	1 477	1 531	1 422	1 336	1 082	939	890	925	910
Production	1 215	1 188	1 420	1 075	1 069	757	735	641	612	691
Import	427	737	934	895	925	847	682	697	767	745
Export	-245	-434	-811	-552	-634	-533	-489	-450	-458	-518
Transformation sector	-1 284	-1 453	-1 572	-1 427	-1 340	-1 176	-1 008	-978	-1 042	-1 049
Petroleum refineries	-1 284	-1 453	-1 572	-1 427	-1 340	-1 180	-1 013	-978	-1 042	-1 049
<b>Petroleum products</b>										
Primary energy supply	-78	-114	-102	123	406	695	858	907	921	902
Import	175	136	170	407	667	967	1 147	1 199	1 281	1 272
Export	-144	-120	-145	-138	-102	-80	-74	-96	-96	-111
Transformation sector	1 301	1 485	1 578	1 404	1 288	1 068	906	874	919	987
Power generation	-40	-33	-22	-35	-58	-57	-51	-51	-48	-48
Petroleum refineries	1 342	1 521	1 602	1 439	1 347	1 125	957	925	967	1 035
Final energy consumption	1 067	1 150	1 282	1 350	1 476	1 609	1 623	1 655	1 686	1 667
Industry	121	124	149	129	132	162	151	149	162	165
Transport	874	948	1 049	1 100	1 219	1 311	1 328	1 355	1 372	1 370
Residential	16	15	15	12	15	15	17	15	15	15
Commerce & public services	11	12	13	21	26	33	33	34	36	29
Others	46	51	57	88	83	89	94	101	102	88
<b>Gas</b>										
Primary energy supply	619	701	807	794	1 146	1 387	1 281	1 310	1 363	1 435
Production	718	1 047	1 195	1 313	1 862	2 436	2 894	3 696	4 237	4 938
Import					160	181	204	186	168	182
Export	-98	-346	-388	-518	-876	-1 229	-1 817	-2 572	-3 042	-3 685
Transformation sector	-163	-162	-182	-238	-409	-501	-508	-503	-515	-511
Power generation	-145	-149	-170	-226	-409	-498	-503	-503	-515	-511
Final energy consumption	351	414	465	493	485	491	485	480	480	481
Industry	238	272	300	321	299	280	267	260	258	254
Transport		8	13	15	13	13	15	16	17	19
Residential	81	95	107	116	130	146	149	149	149	152
Commerce & public services	31	39	45	40	44	51	53	54	55	54
Others						1	1	1	1	1
<b>Electricity</b>										
Power generation	555	622	756	822	909	905	923	928	939	949
Thermal	502	562	692	750	831	784	789	783	779	763
Hydro	51	57	59	55	49	48	54	58	57	56
Nuclear										
Others	3	3	4	17	30	72	80	87	103	130
Final energy consumption	465	522	622	681	756	758	762	760	768	772
Industry	213	234	277	267	295	273	278	270	273	274
Transport	7	7	8	12	13	21	22	21	21	23
Residential	139	152	176	197	218	213	213	213	213	211
Commerce & public services	98	119	150	196	220	242	242	249	252	257
Others	9	9	10	9	9	9	6	7	8	8

## Major economic indicators of Australia

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	17.07	19.15	20.39	22.03	23.82	24.19	24.60	24.98	25.37
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	631	875	1 026	1 181	1 352	1 389	1 421	1 463	1 495
GDP, billion USD (PPP, constant 2017)	530	734	861	991	1 135	1 166	1 193	1 228	1 254
Nominal, billion USD (current)	311	415	693	1 146	1 352	1 209	1 329	1 433	1 397
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	37 004	45 683	50 299	53 605	56 756	57 424	57 764	58 561	58 923
GDP, PPP (constant 2017 USD)	31 058	38 343	42 217	44 992	47 636	48 197	48 483	49 152	49 456
Nominal (current USD)	18 212	21 679	33 999	52 022	56 756	49 971	54 028	57 355	55 057
Nominal GDP & its components (billions of current AUD) <sup>11</sup>									
Gross domestic product	404	661	922	1 301	1 625	1 661	1 762	1 849	1 953
Households and NPISHs final consumption expenditure	223	384	531	731	929	967	1 000	1 043	1 080
General government final consumption expenditure	70	118	162	234	293	310	328	345	371
Gross fixed capital formation	112	172	250	353	426	420	422	450	454
Stock change	5	2	4	-3	1	1	2	3	-1
Exports of goods and services	61	128	168	258	325	320	374	403	471
Imports of goods and services	69	143	194	271	349	357	363	396	422
Real GDP & its components (billions of 2019 AUD) <sup>11</sup>									
Gross Domestic Product	825	1 143	1 340	1 543	1 766	1 815	1 857	1 911	1 953
Households and NPISHs final consumption expenditure	431	596	725	859	982	1 009	1 032	1 061	1 080
General government final consumption expenditure	152	206	240	278	311	325	341	354	371
Gross fixed capital formation	165	244	319	405	455	439	439	460	454
Stock change	8	3	8	-3	1	1	2	3	-1
Exports of goods and services	106	225	257	307	386	412	435	453	471
Imports of goods and services	77	150	218	309	375	374	392	421	422
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	3.0	3.2	3.0	2.8	2.6	2.4	2.6	2.4	2.1
Industry	28.9	24.6	24.6	25.2	23.6	22.3	23.5	24.2	25.4
Services, etc.	59.4	64.3	64.4	65.7	67.3	68.3	67.0	66.7	66.0
Industrial production index (2010=100) <sup>12</sup>	59.0	73.7	86.7	100.0	103.1	107.8	110.9	110.9	112.1
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	39.8	63.9	106.1	212.6	187.7	192.5	231.1	257.1	271.0
Imports, c.i.f.	42.0	71.5	125.3	201.6	208.5	196.3	228.8	235.4	221.6
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	0.5	-4.9	-14.3	11.3	-19.0	-5.8	10.5	20.8	48.1
Current account	-15.5	-15.5	-43.3	-44.7	-57.0	-41.2	-36.1	-29.9	7.7
Overall balance	1.3	-2.1	6.0	-0.5	0.7	4.0	10.9	-11.3	0.6
Foreign exchange rate (AUD/USD) <sup>11</sup>	1.28	1.72	1.31	1.09	1.33	1.35	1.30	1.34	1.44
PPP conversion factor, GDP (AUD/USD) <sup>11</sup>	1.39	1.38	1.46	1.55	1.55	1.53	1.56	1.56	1.56
Price Indices									
GDP Deflator (2019=100) <sup>13</sup>	49.0	57.8	68.8	84.3	92.0	91.5	94.9	96.7	100.0
Producer Price Index (2010=100) <sup>12</sup>	63.3	72.3	84.2	100.0	103.1	101.7	110.3	116.0	117.2
Consumer Price Index (2010=100) <sup>12</sup>	59.8	74.4	86.3	100.0	112.0	113.5	115.7	117.9	119.8
Growth rate (%) <sup>13</sup>									
Real GDP	3.6	3.9	3.2	2.1	2.2	2.8	2.3	2.9	2.2
Population	1.5	1.2	1.3	1.6	1.4	1.6	1.7	1.5	1.5
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	6.0	7.1	6.0	7.1	-4.9	-1.4	8.5	5.2	1.0
Consumer prices	7.3	4.5	2.7	2.9	1.5	1.3	1.9	1.9	1.6

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note : N.A. means "not available"

: AUD means Australian Dollar, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Australia

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency exchange rate	AUD / US Dollar	1.09	0.97	0.97	1.04	1.11	1.33	1.35	1.30	1.34	1.44
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	AUD/L	0.59	0.70	0.72	0.72	0.79	0.59	0.61	0.72	0.79	0.73
Naphtha											
Motor Gasoline											
Regular	AUD/L	1.53	1.43	1.43	1.45	1.47	1.28	1.17	1.29	1.43	1.42
Premium											
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil	AUD/L	1.28	1.48	1.50	1.52	1.55	1.29	1.18	1.30	1.50	1.47
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas											
Compressed Natural Gas											
<b>Electricity</b>											
Industrial											
Commercial											
Residential	AUD/MWh					314.27	282.48	271.81	309.36	332.64	333.85
Others											
<b>Other energy products</b>											



**Brunei**

**Darussalam**



## Energy balance table of Brunei Darussalam

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production			268						
Import	8		66	20	8		2		8
Export			-258	-37	-10		-6		-10
International marine bunkers									
International aviation bunkers				-5			-5		
Stock changes			3	-10			-2		-4
<b>Total primary energy supply</b>	<b>8</b>		<b>79</b>	<b>-32</b>	<b>-2</b>		<b>-11</b>		<b>-6</b>
<b>Transfers</b>									
Total transformation sector	-8		-85	60	15		11		18
Main activity producers				-1					-1
Autoproducers	-8								
Gas processing				4					
Petroleum refineries			-85	56	15		11		18
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy				-1					-1
<b>Total final consumption</b>				<b>25</b>	<b>13</b>				<b>11</b>
<b>Total final energy consumption</b>				<b>25</b>	<b>13</b>				<b>11</b>
<b>Industry sector</b>									
Iron and steel				6					5
Chemical & petrochemical									
Non-metallic minerals									
Other industries				5					5
<b>Transport sector</b>									
Domestic air transport				19	13				6
Road				19	13				6
Rail									
Inland waterways									
Other transport									
<b>Other sector</b>									
Residential				1					1
Commerce and public services				1					1
Agriculture									
Non-specified others									
<b>Non-energy</b>									
<b>2018</b>									
Production			246						
Import				16	6		1		8
Export			-224						
International marine bunkers									
International aviation bunkers				-4			-4		
Stock changes			-7						
<b>Total primary energy supply</b>			<b>16</b>	<b>12</b>	<b>7</b>		<b>-2</b>		<b>8</b>
<b>Transfers</b>									
Total transformation sector			-16	14	6		2		4
Main activity producers				-1					-1
Autoproducers									
Gas processing				1					
Petroleum refineries			-16	14	6		2		5
Coal transformation									
Other transformation									
Losses & own use				-1					
Discrepancy				1					1
<b>Total final consumption</b>				<b>27</b>	<b>13</b>				<b>13</b>
<b>Total final energy consumption</b>				<b>26</b>	<b>13</b>				<b>13</b>
<b>Industry sector</b>									
Iron and steel				5					5
Chemical & petrochemical									
Non-metallic minerals									
Other industries				5					5
<b>Transport sector</b>									
Domestic air transport				19	13				6
Road				19	13				6
Rail									
Inland waterways									
Other transport									
<b>Other sector</b>									
Residential				2					1
Commerce and public services				1					1
Agriculture									
Non-specified others				1					1
<b>Non-energy</b>									

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				427							695	
			1								94	
	- 2		- 8	- 286							- 581	
											- 5	
	- 1		- 3								- 7	
	- 4		- 10	140							195	
	1		- 1								5	
	3	1	12	- 85					18		- 100	
				- 47					14		- 33	
				- 6					3		- 11	
	3		1	- 31							- 27	
		1	11								- 29	
				- 31					- 4		- 35	
				20							19	
	1			45					14		84	
	1			1					14		40	
									3		8	
									2		2	
									1		6	
											19	
											19	
	1			1					12		13	
	1			1					5		6	
									7		7	
				44							44	
				446							692	
				- 281							16	
											- 505	
				- 2							- 4	
				163							- 8	
				163							192	
	1		- 1									
		1	1	- 94					15		- 81	
				- 49					14		- 35	
				- 6					2		- 4	
			1	- 40							- 39	
		1									- 2	
			- 1	- 46					- 4		- 50	
				28							29	
	1			51					12		90	
	1			1					12		39	
									1		6	
											6	
									1		19	
											19	
	1			1					11		14	
	1			1					5		6	
									6		6	
											1	
				50							51	

## Major energy indicators of Brunei Darussalam

petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	48	106	127	120	127	160	165	196	192	193
Production	655	781	858	921	809	725	690	712	692	695
Import	1	1	1	2	6	14	16	19	16	92
Export	-605	-670	-734	-797	-690	-576	-540	-535	-505	-581
Final energy consumption	16	23	24	28	34	38	36	38	39	40
Industry	3	4	3	3	5	6	5	6	6	8
Transport	8	11	12	14	17	19	18	19	19	19
Residential	4	5	5	6	7	6	6	6	6	6
Commerce & public services	1	3	5	5	5	7	6	6	6	7
Others								1	1	
<b>Coal &amp; Peat</b>										
Primary energy supply										6
Production										
Import										6
Export										
Transformation sector										-6
Power generation										-6
Final energy consumption										
Industry										
Transport										
Residential										
Commerce & public services										
Others										
<b>Coal &amp; peat products</b>										
Primary energy supply										
Production										
Import										
Export										
Transformation sector										
Power generation										
Final energy consumption										
Industry										
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	5	13	28	23	27	18	15	13	16	79
Production	340	391	451	488	366	280	270	250	246	268
Import					1					66
Export	-334	-375	-428	-462	-347	-267	-256	-240	-224	-258
Transformation sector	-14	-17	-24	-26	-25	-18	-11	-13	-16	-85
Petroleum refineries	-14	-17	-24	-26	-25	-18	-11	-13	-16	-85
<b>Petroleum products</b>										
Primary energy supply	-1	-2	-2	-2	1	10	13	15	12	-32
Import	1	1	1	2	5	13	16	19	16	20
Export										-37
Transformation sector	13	20	21	23	24	16	11	10	14	60
Power generation							-1	-1	-1	-1
Petroleum refineries	13	19	21	22	23	16	11	10	14	56
Final energy consumption	10	15	14	17	22	25	23	26	26	25
Industry	2	3	2	2	5	5	4	6	5	6
Transport	8	11	12	14	17	19	18	19	19	19
Residential	1	1	1	1	1	1	1	1	1	1
Commerce & public services										
Others								1	1	
<b>Gas</b>										
Primary energy supply	45	95	101	98	100	132	137	168	163	140
Production	316	390	407	433	443	445	419	463	446	427
Import										
Export	-271	-295	-306	-334	-343	-309	-284	-295	-281	-286
Transformation sector	-20	-35	-40	-47	-51	-52	-64	-87	-94	-85
Power generation	-20	-35	-40	-47	-51	-52	-50	-52	-54	-53
Final energy consumption	1	1	1	1	1	1	1	1	1	1
Industry										
Transport										
Residential	1	1	1	1	1	1	1	1	1	1
Commerce & public services										
Others										
<b>Electricity</b>										
Power generation	5	9	11	13	15	17	17	15	15	18
Thermal	5	9	11	13	15	17	17	15	15	18
Hydro										
Nuclear										
Others	0									
Final energy consumption	4	7	9	10	11	12	12	11	12	14
Industry	1	1	1	1	1	1	1	1	1	3
Transport										
Residential	2	3	3	4	5	5	5	5	5	5
Commerce & public services	1	3	5	5	5	7	6	6	6	7
Others										

## Major economic indicators of Brunei Darussalam

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	0.26	0.33	0.37	0.39	0.41	0.42	0.42	0.43	0.43
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	9	11	13	13	13	13	13	13	13
GDP, billion USD (PPP, constant 2017)	18	23	25	26	26	26	26	26	27
Nominal, billion USD (current)	4	6	10	14	13	11	12	14	13
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	35 154	34 064	34 441	33 437	31 164	30 039	30 102	29 803	30 646
GDP, PPP (constant 2017 USD)	71 233	69 023	69 788	67 753	63 147	60 867	60 995	60 389	62 098
Nominal (current USD)	13 608	18 013	26 105	35 271	31 164	27 158	28 572	31 628	31 086
Nominal GDP & its components (billions of current BND) <sup>11</sup>									
Gross domestic product	6	10	16	19	18	16	17	18	18
Households and NPISHs final consumption expenditure	2	3	4	3	4	3	3	4	4
General government final consumption expenditure	1	3	3	4	4	4	4	4	5
Gross fixed capital formation	1	1	2	4	6	5	6	7	7
Stock change									
Exports of goods and services	4	7	11	13	9	8	8	10	11
Imports of goods and services	2	4	4	5	7	6	6	8	9
Real GDP & its components (billions of 2010 BND) <sup>11</sup>									
Gross Domestic Product	13	16	18	19	19	18	18	18	19
Households and NPISHs final consumption expenditure	1	2	2	3	3	3	3	4	4
General government final consumption expenditure	2	3	3	4	4	4	4	5	5
Gross fixed capital formation	3	2	3	4	6	6	6	8	8
Stock change									
Exports of goods and services	11	15	16	13	10	10	10	10	12
Imports of goods and services	3	4	4	5	6	6	6	8	9
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	0.6	0.7	0.9	0.7	0.9	0.8	0.8	0.8	0.8
Industry	82.7	83.2	80.0	68.7	63.4	63.1	63.2	62.9	63.1
Services, etc.	25.2	24.8	26.3	32.5	37.7	38.0	37.9	38.2	38.0
Industrial production index (2010=100) <sup>12</sup>	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	2.2	3.9	6.2	8.9	6.4	4.9	5.6	6.6	7.0
Imports, c.i.f.	1.0	1.1	1.5	2.5	3.2	2.7	3.1	4.2	5.1
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	N.A.	N.A.	4.8	6.2	2.9	2.2	2.4	2.4	2.2
Current account	N.A.	N.A.	4.0	5.0	2.2	1.5	2.0	0.9	0.9
Overall balance	N.A.	N.A.	3.9	0.2	-2.4	-4.9	0.5	0.9	1.3
Foreign exchange rate (BND/USD) <sup>11</sup>	1.81	1.72	1.66	1.36	1.37	1.38	1.38	1.35	1.36
PPP conversion factor, GDP (BND/USD) <sup>11</sup>	1.12	1.03	0.91	0.86	0.76	0.73	0.70	0.69	0.67
Price Indices									
GDP Deflator (2010=100) <sup>13</sup>	48.8	63.4	87.7	100.0	95.6	86.8	91.1	99.5	96.2
Producer Price Index	N.A.	N.A.	N.A.	N.A.	N.A.	186.9	201.7	221.7	N.A.
Consumer Price Index (2010=100) <sup>12</sup>	78.0	95.0	95.5	100.0	99.9	99.7	98.4	99.4	99.0
Growth rate (%) <sup>13</sup>									
Real GDP	1.1	2.8	0.4	2.6	-0.4	-2.5	1.3	0.1	3.9
Population	2.9	2.1	1.6	1.2	1.3	1.2	1.1	1.1	1.0
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	7.9	9.9	N.A.
Consumer prices	2.1	1.6	1.2	0.4	-0.5	-0.3	-1.3	1.0	-0.4

## Sources

<sup>11</sup>: *World Development Indicators*, World Bank<sup>12</sup>: *International Financial Statistics*, International Monetary Fund<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

: N.A. means "not available"

: BND means Brunei Dollar, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Brunei Darussalam

## IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	BND										
Exchange Rate	/ US Dollar				1.25	1.27	1.41	1.40	1.38	1.38	1.36
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite	USD/tonne										63.73
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil	USD/tonne										513.71
Natural Gas Liquids											
Ethane											
LPG											
Naphtha	USD/tonne										595.27
Motor Gasoline						0.79					
Regular	USD/L				0.69						
Premium	USD/L				0.76						
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	USD/L				0.77	0.75					
Other Kerosene	USD/L				0.77						
Gas/Diesel Oil	USD/L				0.78	0.76					
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas											
Compressed Natural Gas											
<b>Electricity</b>											
Electricity											
<b>Other Energy Products</b>											

## Energy prices in Brunei Darussalam

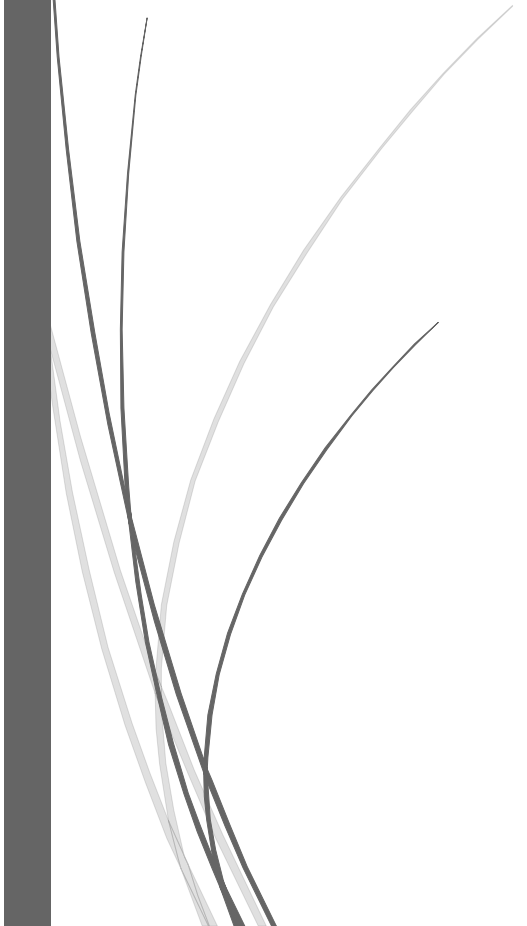
## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	BND										
Exchange Rate	/ US Dollar				1.25	1.27	1.41	1.40	1.38	1.38	1.36
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil	USD/barrel				115.03	104.44	53.88	44.63	55.93	73.17	68.45
Natural Gas Liquids											
Ethane											
LPG Cylinder 12 kg	BND/cylinder				10.00	10.00	10.00	10.00	10.00	10.00	10.00
Cylinder 44 kg	BND/cylinder				34.56	34.56	34.56	34.56	34.56	34.56	34.56
Naphtha											
Motor Gasoline RON97											
RON97	BND/L				0.53	0.53	0.53	0.53	0.53	0.53	0.53
RON92	BND/L					0.52	0.52	0.52	0.52	0.52	0.52
RON85	BND/L				0.36	0.36	0.36	0.36	0.36	0.36	0.36
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel					0.98	0.95					
Other Kerosene					0.20	0.20			0.18		
Gas/Diesel Oil	BND/L				0.31	0.31	0.31	0.31	0.31	0.31	0.31
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas (export)	USD/million Btu				16.38	16.61	9.63	7.27	8.28	10.45	9.14
Compressed Natural Gas											
<b>Electricity</b>											
<b>Industrial</b>											
Commercial - The first 10 units	BND/kVA				0.20	0.20	0.20	0.20	0.20	0.20	0.20
Next 100 units	BND/kVA				0.07	0.07	0.07	0.07	0.07	0.07	0.07
Next 100 units	BND/kVA				0.06	0.06	0.06	0.06	0.06	0.06	0.06
Remaining units	BND/kVA				0.05	0.05	0.05	0.05	0.05	0.05	0.05
Minimum charge	BND				0.20	0.20	2.00	2.00	2.00	2.00	2.00
Residential - 1-600 kWh	BND/kWh				0.25		0.01	0.01	0.01	0.01	0.01
601-2000 kWh	BND/kWh				0.15		0.08	0.08	0.08	0.08	0.08
2001-4000 kWh	BND/kWh				0.10		0.10	0.10	0.10	0.10	0.10
4001 kWh above	BND/kWh				0.05		0.12	0.12	0.12	0.12	0.12
Others (Government)	BND/kWh				0.10		0.10	0.10	0.10	0.10	0.10
Other Energy Products											





**Canada**





## Energy balance table of Canada

	Coal and Peat	Coal and Peat products	Crude oil & NGL	Total	Petroleum products					
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil	Fuel oil
<b>2019</b>										
Production	1 208		11 405							
Import	214	36	1 898	553	164	3	140	17	51	31
Export	- 865	- 1	- 8 552	- 953	- 341	- 9	- 47		- 325	- 77
International marine bunkers				- 23					- 5	- 19
International aviation bunkers				- 36			- 36			
Stock changes	- 16	3	- 41	59	10		7		32	
<b>Total primary energy supply</b>	<b>542</b>	<b>38</b>	<b>4 710</b>	<b>- 401</b>	<b>- 168</b>	<b>- 7</b>	<b>65</b>	<b>17</b>	<b>- 247</b>	<b>- 65</b>
<b>Transfers</b>			<b>79</b>	<b>92</b>	<b>215</b>	<b>- 18</b>	<b>- 9</b>	<b>6</b>	<b>21</b>	<b>- 14</b>
Total transformation sector	- 512	56	- 4 326	4 202	1 397	53	246	5	1 376	184
Main activity producers	- 424			- 51					- 8	- 18
Autoproducers		- 2		- 23					- 5	- 1
Gas processing										
Petroleum refineries			- 4 478	4 276	1 397	53	246	5	1 390	204
Coal transformation	- 88	58								
Other transformation			152							
Losses & own use				- 688	- 1	- 2			- 154	- 5
Discrepancy	10	- 27	- 462	696	119	15	- 11	- 8	173	- 50
<b>Total final consumption</b>	<b>40</b>	<b>67</b>		<b>3 901</b>	<b>1 562</b>	<b>42</b>	<b>290</b>	<b>19</b>	<b>1 169</b>	<b>49</b>
<b>Total final energy consumption</b>	<b>37</b>	<b>65</b>		<b>3 195</b>	<b>1 562</b>		<b>290</b>	<b>19</b>	<b>1 169</b>	<b>49</b>
Industry sector	37	65		263	38			1	170	20
Iron and steel	7	63								
Chemical & petrochemical				22						1
Non-metallic minerals	10	2								
Other industries	19			240	38			1	170	19
Transport sector				2 575	1 459		290		792	21
Domestic air transport				290	2		288			
Road				2 131	1 456				665	
Rail				94					94	
Inland waterways				53					32	21
Other transport				6	2		2		2	
Other sector				357	64			18	206	8
Residential				67				2	49	
Commerce and public services				75	16			15	8	1
Agriculture				215	49			1	149	7
Non-specified others										
<b>Non-energy</b>	<b>3</b>	<b>2</b>		<b>706</b>		<b>42</b>				
<b>2018</b>										
Production	1 220		11 188							
Import	199	30	1 827	566	180	1	129	3	92	24
Export	- 801	- 1	- 8 212	- 929	- 296	- 24	- 50		- 273	- 149
International marine bunkers				- 19					- 4	- 15
International aviation bunkers				- 37			- 37			
Stock changes	- 53	3	- 32	- 13	- 3		- 3	1	- 5	1
<b>Total primary energy supply</b>	<b>566</b>	<b>32</b>	<b>4 770</b>	<b>- 433</b>	<b>- 119</b>	<b>- 23</b>	<b>38</b>	<b>4</b>	<b>- 189</b>	<b>- 139</b>
<b>Transfers</b>			<b>- 317</b>	<b>474</b>	<b>185</b>	<b>- 2</b>	<b>- 4</b>		<b>24</b>	<b>- 14</b>
Total transformation sector	- 552	57	- 3 931	3 805	1 385	87	246	32	1 261	186
Main activity producers	- 461			- 57					- 9	- 21
Autoproducers		- 2		- 23					- 6	- 2
Gas processing										
Petroleum refineries			- 4 076	3 885	1 385	87	246	32	1 276	209
Coal transformation	- 91	59								
Other transformation			145							
Losses & own use				- 646	- 1	- 1			- 105	- 5
Discrepancy	28	- 18	- 522	768	118	44	4	- 19	186	20
<b>Total final consumption</b>	<b>42</b>	<b>71</b>		<b>3 968</b>	<b>1 568</b>	<b>105</b>	<b>284</b>	<b>16</b>	<b>1 177</b>	<b>49</b>
<b>Total final energy consumption</b>	<b>42</b>	<b>71</b>		<b>3 968</b>	<b>1 568</b>	<b>105</b>	<b>284</b>	<b>16</b>	<b>1 177</b>	<b>49</b>
Industry sector	38	69		3 193	1 568		284	16	1 177	49
Iron and steel	7	67								
Chemical & petrochemical				18						1
Non-metallic minerals	11	2								
Other industries	20			3 174	1 568		284	16	1 177	48
Transport sector				2 585	1 480		284		791	20
Domestic air transport				283	2		282			
Road				2 156	1 477				668	
Rail				93					93	
Inland waterways				48					28	20
Other transport				5	1		2		1	
Other sector				353	52			15	220	8
Residential				70				1	54	
Commerce and public services				55				13	7	
Agriculture				228	52			1	158	8
Non-specified others										
<b>Non-energy</b>	<b>3</b>	<b>2</b>		<b>776</b>		<b>105</b>				

unit: Petajoules

LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal	Others	Electricity	Heat	Total	Total renewables
			6 627	1 367	1 104		714			22 424	2 070
18		128	920				56	48		3 725	56
- 9		- 145	- 2 705				- 59	- 217		- 13 352	- 59
										- 23	
										- 36	
- 2		12	52							57	
8		- 5	4 894	1 367	1 104		711	- 169		12 795	2 067
154	213	- 475								171	
75	170	697	- 812	- 1 367	- 1 104		- 250	2 323	24	- 1 765	- 1 612
		- 25	- 408	- 1 263	- 1 104		- 163	2 103	23	- 1 286	- 1 421
	- 14	- 2	- 253	- 104			- 87	220	1	- 248	- 191
75	184	724	- 150							- 231	
										- 30	
- 6	- 382	- 137	- 1 435					- 201		- 2 324	
- 104		563	- 224					76		69	
126		643	2 206				461	1 907	24	8 605	454
83		21	2 097				461	1 907	24	7 785	454
11		21	671				229	681	23	1 969	223
			74					29		174	
			145					72	11	228	
		21	36				6	8		85	
11			416				223	572	11	1 482	223
11			152				92	28		2 847	92
										290	
11			2				92	4		2 230	92
										94	
										53	
			150					23		179	
61			1 273				139	1 198	1	2 970	139
15			658				137	620		1 482	137
36			576				1	540		1 193	1
10			39					38		292	
							2		1	3	2
43		622	109							820	
			6 910	1 389	1 099		708			22 514	2 087
9		127	818				56	48		3 543	56
- 6		- 131	- 2 816				- 58	- 221		- 13 038	- 58
										- 19	
										- 37	
		- 4	- 24							- 119	
4		- 8	4 889	1 389	1 099		705	- 174		12 844	2 084
156	256	- 127								157	
64	129	415	- 794	- 1 389	- 1 099		- 246	2 353	26	- 1 769	- 1 631
		- 27	- 389	- 1 283	- 1 099		- 165	2 130	25	- 1 298	- 1 443
	- 13	- 3	- 261	- 106			- 81	223	1	- 250	- 187
64	142	444								- 191	
										- 32	
			- 144							1	
- 18	- 398	- 119	- 1 756					- 328		- 2 730	
- 86	13	488	- 123					36	2	172	
121		648	2 216				460	1 888	28	8 673	453
121		648	2 216				460	1 888	28	8 673	453
78		20	2 097				460	1 888	28	7 773	453
			80					33		188	
			144					75	12	231	
		17	35				6	7		80	
78		3	1 838				453	1 772	16	7 274	453
11			151				90	29		2 855	90
										283	
11			2				90	4		2 253	90
										93	
										48	
			149					24		178	
57			1 275				138	1 197	2	2 966	138
15			661				136	621		1 489	136
33			574				1	539	1	1 170	1
9			39					37		304	
							2		1	3	2
43		628	119							900	

## Major energy indicators of Canada

petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	8 846	9 793	10 620	11 471	10 918	11 718	12 162	12 664	12 844	12 795
Production	11 575	14 736	15 696	16 829	16 680	19 781	20 306	21 625	22 514	22 424
Import	1 943	1 896	3 018	3 665	3 533	3 662	3 800	3 600	3 543	3 725
Export	-4 427	-6 907	-8 364	-9 085	-9 547	-11 528	-12 102	-12 572	-13 038	-13 352
Final energy consumption	6 005	6 522	7 010	7 177	6 900	7 304	7 286	7 519	7 773	7 785
Industry	1 978	2 146	2 313	2 139	1 792	1 888	1 910	1 938	1 953	1 969
Transport	1 805	2 000	2 183	2 459	2 539	2 663	2 676	2 755	2 855	2 847
Residential	1 316	1 357	1 375	1 390	1 384	1 451	1 397	1 441	1 489	1 482
Commerce & public services	770	859	962	972	948	1 017	1 016	1 092	1 170	1 193
Others	136	160	176	217	236	286	286	294	306	295
<b>Coal &amp; Peat</b>										
Primary energy supply	1 024	1 051	1 322	1 236	941	745	705	714	566	542
Production	1 588	1 710	1 441	1 447	1 421	1 292	1 223	1 294	1 220	1 208
Import	390	269	614	510	312	196	164	195	199	214
Export	-892	-978	-799	-703	-842	-764	-760	-774	-801	-865
Transformation sector	-973	-985	-1 245	-1 098	-909	-664	-664	-661	-552	-512
Power generation	-836	-869	-1 126	-977	-799	-581	-583	-580	-461	-424
Final energy consumption	43	45	54	58	58	48	38	42	38	37
Industry	41	43	52	56	57	47	38	42	38	37
Transport										
Residential	2	2	2	2	1					
Commerce & public services										
Others										
<b>Coal &amp; peat products</b>										
Primary energy supply	-8	11	5	24	26	29	28	40	32	38
Production										
Import	9	22	17	35	30	33	34	33	30	36
Export	-5	-9	-8	-7	-2	-2	-1		-1	-1
Transformation sector	84	74	70	79	59	51	46	45	57	56
Power generation	-1	-1	-3	-1		-2	-2	-2	-2	-2
Final energy consumption	77	88	85	85	68	58	63	65	69	65
Industry	77	88	85	85	68	58	63	65	69	65
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	3 467	3 525	4 048	4 305	4 357	4 843	4 499	4 830	4 770	4 710
Production	3 942	4 750	5 377	5 985	6 999	9 475	9 446	10 413	11 188	11 405
Import	1 136	1 276	1 965	2 056	1 773	2 159	2 173	1 898	1 827	1 898
Export	-1 583	-2 534	-3 284	-3 636	-4 350	-6 781	-7 149	-7 468	-8 212	-8 552
Transformation sector	-3 582	-3 525	-3 992	-4 209	-3 991	-3 770	-3 822	-4 037	-3 931	-4 326
Petroleum refineries	-3 596	-3 525	-3 989	-4 284	-4 108	-3 911	-3 953	-4 165	-4 076	-4 478
<b>Petroleum products</b>										
Primary energy supply	-263	-294	-401	-327	-326	-463	-353	-586	-433	-401
Import	321	278	308	657	542	501	560	484	566	553
Export	-496	-516	-624	-914	-857	-952	-902	-1 013	-929	-953
Transformation sector	3 469	3 522	3 931	4 179	4 067	3 717	3 778	3 942	3 805	4 202
Power generation	-159	-85	-101	-148	-87	-87	-81	-78	-80	-74
Petroleum refineries	3 628	3 607	4 032	4 327	4 155	3 804	3 859	4 020	3 885	4 276
Final energy consumption	2 267	2 317	2 541	2 894	2 936	2 998	3 003	3 106	3 193	3 195
Industry	284	241	270	250	213	230	234	256	254	263
Transport	1 672	1 774	1 962	2 257	2 373	2 410	2 417	2 501	2 585	2 575
Residential	195	144	136	131	114	80	77	71	70	67
Commerce & public services	31	52	56	94	60	66	62	58	55	75
Others	84	106	117	162	176	211	212	220	228	215
<b>Gas</b>										
Primary energy supply	2 292	2 810	3 109	3 398	3 169	3 577	4 336	4 659	4 889	4 894
Production	3 709	5 453	6 212	6 473	5 419	5 826	6 457	6 696	6 910	6 627
Import	22	23	56	328	784	693	786	892	818	920
Export	-1 383	-2 710	-3 462	-3 659	-3 314	-2 749	-2 975	-3 005	-2 816	-2 705
Transformation sector	-102	-241	-369	-415	-598	-762	-730	-687	-794	-812
Power generation	-78	-181	-308	-342	-484	-622	-601	-562	-650	-661
Final energy consumption	1 672	1 952	2 066	1 817	1 643	1 869	1 920	1 969	2 097	2 097
Industry	706	767	809	583	531	607	685	663	672	671
Transport	121	212	199	180	103	150	154	136	151	152
Residential	476	567	580	582	554	621	584	627	661	658
Commerce & public services	348	385	453	454	431	456	459	507	574	576
Others	21	21	25	18	24	35	37	36	39	39
<b>Electricity</b>										
Power generation	1 735	2 016	2 180	2 234	2 171	2 368	2 389	2 386	2 353	2 323
Thermal	390	434	597	566	503	485	475	433	430	419
Hydro	1 068	1 209	1 291	1 303	1 265	1 376	1 387	1 420	1 389	1 367
Nuclear	263	352	262	331	326	367	365	365	363	364
Others	14	21	31	34	76	141	162	168	172	173
Final energy consumption	1 505	1 608	1 733	1 758	1 716	1 794	1 779	1 849	1 888	1 907
Industry	605	665	732	741	632	628	628	656	662	681
Transport	12	14	16	15	15	24	27	28	29	28
Residential	467	474	498	544	578	613	598	604	621	620
Commerce & public services	390	421	453	421	457	492	492	526	539	540
Others	31	34	35	37	34	36	34	35	37	38

## Major economic indicators of Canada

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	27.69	30.69	32.24	34.00	35.70	36.11	36.55	37.07	37.59
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	810	1 047	1 244	1 399	1 557	1 572	1 620	1 659	1 690
GDP, billion USD (PPP, constant 2017)	891	1 142	1 356	1 526	1 697	1 714	1 766	1 809	1 843
Nominal, billion USD (current)	594	745	1 173	1 617	1 557	1 528	1 649	1 722	1 742
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	29 237	34 122	38 573	41 155	43 596	43 537	44 325	44 766	44 958
GDP, PPP (constant 2017 USD)	32 163	37 202	42 056	44 871	47 532	47 468	48 328	48 807	49 017
Nominal (current USD)	21 448	24 271	36 383	47 562	43 596	42 316	45 129	46 455	46 327
Nominal GDP & its components (billions of current CAD) <sup>11</sup>									
Gross domestic product	693	1 106	1 422	1 666	1 990	2 026	2 141	2 231	2 311
Households and NPISHs final consumption expenditure	388	603	772	950	1 151	1 185	1 241	1 293	1 335
General government final consumption expenditure	157	211	271	358	416	426	443	462	482
Gross fixed capital formation	151	217	310	391	475	461	486	503	515
Stock change	- 3	11	11		- 1		18	14	16
Exports of goods and services	174	489	524	486	634	638	673	722	738
Imports of goods and services	173	426	468	517	683	686	720	764	774
Real GDP & its components (billions of 2015 CAD) <sup>11</sup>									
Gross Domestic Product		1 339	1 590	1 790	1 990	2 010	2 071	2 122	2 161
Households and NPISHs final consumption expenditure	583	753	882	1 025	1 151	1 175	1 218	1 249	1 270
General government final consumption expenditure	296	314	351	403	416	423	432	445	453
Gross fixed capital formation	233	303	399	440	475	453	468	476	478
Stock change	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of goods and services	245	554	577	522	634	643	652	676	685
Imports of goods and services	227	449	528	591	683	683	715	739	742
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	N.A.	2.1	2.0	1.7	1.9	1.9	1.9	1.9	2.0
Industry	N.A.	30.4	28.1	24.0	24.4	23.8	24.0	24.2	23.7
Services, etc.	N.A.	70.3	68.4	66.9	67.0	67.6	67.5	67.5	67.8
Industrial production index (2010=100) <sup>12</sup>	81.1	111.9	113.1	100.0	111.2	111.1	117.2	121.0	132.5
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	127.6	276.6	360.5	387.5	410.1	390.0	420.7	450.7	446.6
Imports, c.i.f.	123.2	244.8	322.4	402.7	430.1	412.9	443.7	470.5	463.8
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	9.4	44.4	50.6	-9.4	-18.6	-19.2	-19.1	-15.3	-11.6
Current account	-20.3	18.5	21.9	-58.2	-54.7	-47.3	-46.2	-40.4	-35.7
Overall balance	2.5	8.0	2.7	3.8	6.0	3.8	-1.2	-7.1	1.4
Foreign exchange rate (CAD/USD) <sup>11</sup>	1.17	1.49	1.21	1.03	1.28	1.33	1.30	1.30	1.26
PPP conversion factor, GDP (CAD/USD) <sup>11</sup>	1.30	1.27	1.26	1.30	1.34	1.30	1.30	1.28	1.31
Price Indices									
GDP Deflator (2015=100) <sup>13</sup>	N.A.	82.6	89.4	93.1	100.0	100.8	103.3	105.2	106.9
Producer Price Index (2010=100) <sup>12</sup>	71.2	90.0	94.2	100.0	110.3	110.1	113.5	117.9	117.9
Consumer Price Index (2010=100) <sup>12</sup>	67.3	81.9	91.9	100.0	108.7	110.2	112.0	114.5	116.8
Growth rate (%) <sup>13</sup>									
Real GDP	N.A.	4.9	5.0	3.1	0.7	1.0	3.0	2.4	1.9
Population	3.6	9.7	6.4	6.0	-0.2	1.8	5.7	4.2	3.6
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	9.6	8.5	4.6	3.7	2.8	2.6	4.0	4.3	4.1
Consumer prices	-8.0	8.3	11.1	12.3	-6.7	-4.8	7.3	1.0	0.9

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note

: N.A. means "not available"

: CAD means Canadian Dollar, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Canada

### IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency Exchange Rate	CAD / US Dollar										
<b>Coal and Coal Products</b>											
Coking Coal						109.86	140.91				
Anthracite	USD/tonne					127.37	178.58				
Other bituminous coal	USD/tonne					91.63	98.03				
Sub-bituminous Coal	USD/tonne					24.76	15.12				
Lignite	USD/tonne					47.92	58.26				
Peat	USD/tonne										
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil	CAD/Imp BBL*		94.88	94.05	97.98	102.62	71.89				
Natural Gas Liquids	CAD Cents/L					56.00	32.00				
Ethane	CAD Cents/L					10.00	9.00				
LPG	CAD Cents/L					39.00	21.00				
Naphtha	CAD Cents/L					72.00	72.00				
Motor Gasoline	CAD Cents/L					82.00	82.00				
Aviation Gasoline											
Gasoline Type Jet Fuel	USD/L					1.21	1.21				
Kerosene Type Jet Fuel	CAD Cents/L					81.00	81.00				
Other Kerosene	CAD Cents/L					88.00	88.00				
Gas/Diesel Oil	CAD Cents/L					87.00	87.00				
Fuel Oil	CAD Cents/L					67.00	67.00				
White Spirit SBP	USD/L					1.26	1.26				
Lubricants	USD/L					1.98	1.98				
Bitumen	CAD Cents/kg					64.00	64.00				
Paraffin Waxes											
Petroleum Coke	USD/tonne					174.97	174.97				
<b>Natural Gas</b>											
Natural Gas	CAD Cents/m <sup>3</sup>					25.00	16.00				
Liquefied Natural Gas	USD/m <sup>3</sup>					4.34	4.07				
Compressed Natural Gas	CAD Cents/m <sup>3</sup>					23.00	15.00				
Electricity	USD/MWh					48.52	35.14				

\* USD/BBL in 2011 and 2012

## Energy prices in Canada

### WHOLESALE PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency Exchange Rate	CAD / US Dollar										
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil	CAD/BBL					93.99	48.66				
Natural Gas Liquids											
Ethane	CAD/BBL					12.46	7.49				
Propane	CAD/BBL					44.42					
Butane	CAD/BBL					68.02					
Naphtha											
Motor Gasoline	CAD Cents/L		78.01	80.61	81.08	80.50	61.70				
Aviation Gasoline											
Gasoline Type Jet Fuel							63.00				
Kerosene Type Jet Fuel						88.90	63.00				
Other Kerosene											
Gas/Diesel Oil	CAD Cents/L		83.64	85.28	87.78	91.30	65.90				
Fuel Oil	CAD Cents/L		63.65	84.99	86.43	86.60	64.07				
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	CAD Cents/m <sup>3</sup>					18.64	13.70				
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity	CAD Cents/kWh					7.31	6.86				

## Energy prices in Canada

### CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	CAD										
Exchange Rate	/ US Dollar										
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	CAD Cents/L					78.80	59.13				
Naphtha											
Motor Gasoline (regular)	CAD Cents/L		124.94	126.59	128.15	128.27	108.82				
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil	CAD Cents/L		124.08	126.06	128.53	134.10	109.22				
Fuel Oil	CAD Cents/L					125.30	105.03				
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	CAD Cents/m <sup>3</sup>		36.71	34.34	34.83	40.87	36.19				
Liquefied Natural Gas (export)											
Compressed Natural Gas	CAD Cents/kg					118.74					
<b>Electricity</b>											
Industrial	CAD Cents/kWh					9.43	8.74				
Commercial	CAD Cents/kWh					13.79	13.82				
Residential	CAD Cents/kWh					11.04	11.85				
Others											
Other Energy Products											



**Chile**



## Energy balance table of Chile

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	24		22						
Import	314		410	329	12	1	21		238
Export		-2		-22	-3				-1
International marine bunkers				-4					
International aviation bunkers				-32			-32		
Stock changes	7	1	-1	-9	-1	-1			
<b>Total primary energy supply</b>	<b>345</b>	<b>-1</b>	<b>431</b>	<b>262</b>	<b>8</b>	<b>1</b>	<b>-12</b>		<b>238</b>
Transfers			37	-36	-1	-7		-2	-8
Total transformation sector	-331	11	-469	428	149	6	39	7	126
Main activity producers	-315			-12					-5
Autoproducers				-4					-2
Gas processing									
Petroleum refineries			-469	444	149	6	39	7	133
Coal transformation	-16	11							
Other transformation									
Losses & own use		-7		-16					
Discrepancy	-8		2	4	-4				1
<b>Total final consumption</b>	<b>6</b>	<b>4</b>		<b>642</b>	<b>152</b>		<b>28</b>	<b>5</b>	<b>358</b>
<b>Total final energy consumption</b>	<b>6</b>	<b>4</b>		<b>640</b>	<b>152</b>		<b>28</b>	<b>5</b>	<b>358</b>
Industry sector	6	4		150			2	1	116
Iron and steel		3							
Chemical & petrochemical									
Non-metallic minerals				9					
Other industries	6			141			2	1	115
Transport sector				398	152		26		213
Domestic air transport				27			26		
Road				355	152				203
Rail				2					2
Inland waterways				14					8
Other transport									
Other sector				92				4	30
Residential				46				4	
Commerce and public services				28					18
Agriculture				9					5
Non-specified others				10					7
Non-energy				2					
<b>2018</b>									
Production	38		17						
Import	274		377	356	25	7	27		238
Export	-7	-1		-31	-1				
International marine bunkers				-5					
International aviation bunkers				-28			-28		
Stock changes	-5	-1	2	-2		-1	1		
<b>Total primary energy supply</b>	<b>300</b>	<b>-2</b>	<b>397</b>	<b>288</b>	<b>23</b>	<b>6</b>			<b>238</b>
Transfers			40	-39	-2	-9		-2	-10
Total transformation sector	-294	12	-440	402	133	3	28	7	125
Main activity producers	-279			-12					-5
Autoproducers				-4					-2
Gas processing									
Petroleum refineries			-440	419	133	3	28	7	132
Coal transformation	-15	12							
Other transformation									
Losses & own use		-6		-14					
Discrepancy	1		3	13	-6		-3		5
<b>Total final consumption</b>	<b>7</b>	<b>3</b>		<b>650</b>	<b>149</b>		<b>25</b>	<b>5</b>	<b>358</b>
<b>Total final energy consumption</b>	<b>7</b>	<b>3</b>		<b>639</b>	<b>149</b>		<b>25</b>	<b>5</b>	<b>358</b>
Industry sector	7	3		151			2	1	115
Iron and steel		3							
Chemical & petrochemical									
Non-metallic minerals				9					
Other industries	6	1		142			2	1	114
Transport sector				392	149		23		211
Domestic air transport				23			23		
Road				351	148				201
Rail				2					2
Inland waterways				16					7
Other transport									
Other sector				96				4	33
Residential				46				4	
Commerce and public services				30					22
Agriculture				9					5
Non-specified others				10					7
Non-energy				12					

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				54	81		51	341			572	473
1	47		8	169							1 222	
-7	-6		-4								-23	
-4											-4	
-2	-3		-2	-2				2			-32	2
-13	39		1	220	81		51	343			1 732	474
-2	-3		-13								1	
38	26	12	25	-110	-81		-48	-190	304		-486	-319
			-7	-106	-81		-48	-31	281		-312	-160
-2				-4				-153	23		-138	-153
40	26	12	32								-26	
											-5	
								-5			-5	-5
-2	-2	-12		-11					-24		-58	
3	3			1				10	-13		-3	10
23	63		13	100			3	163	267		1 185	166
23	63		11	67			3	163	267		1 150	166
13	9		11	39				84	160		442	84
				1					3		7	
				6							6	
			9						2		12	
13	8		2	32				84	155		418	84
7	1			1					5		403	
											27	
	1			1					3		359	
									2		4	
6											14	
4	54			28			3	80	102		304	83
	42			21				78	49		194	78
	9			6				1	44		79	1
1	3			1					8		18	
3							3		1		13	3
			2	33							36	
				44	84		42	345			571	471
1	51		7	145							1 151	
-16	-5		-9	-6							-45	
-5											-5	
											-28	
	-2							-1			-8	-1
-20	43		-2	183	84		42	345			1 636	471
-1	-2		-13								1	
44	21	10	31	-91	-84		-39	-196	296		-434	-320
			-7	-86	-84		-39	-25	271		-255	-148
-2				-5				-165	25		-149	-165
46	21	10	39								-21	
											-3	
								-6			-6	-6
-1	-2	-10		-12					-24		-56	
7	4		5	4				19	-10		30	19
29	64		21	84			2	168	263		1 177	170
29	64		10	65			2	168	263		1 146	170
15	9		10	36				88	159		443	88
				5					2		6	
											5	
			9						2		11	
15	9		1	31				88	154		422	88
9	1			1					4		397	
											23	
	1			1					2		354	
									2		4	
9											16	
5	53			28			2	80	100		306	82
	42			21				78	48		193	78
	8			6				1	43		80	1
1	3			1				1	9		20	1
3							2				13	2
			12	19							31	

## Major energy indicators of Chile

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	587	768	1 054	1 188	1 292	1 487	1 583	1 605	1 636	1 732
Production	332	348	359	391	386	506	525	543	571	572
Import	303	458	780	931	960	1 049	1 145	1 143	1 151	1 222
Export	-9	-5	-37	-73	-26	-36	-50	-45	-45	-23
Final energy consumption	426	598	753	813	956	1 038	1 086	1 103	1 146	1 150
Industry	143	202	278	305	365	439	444	424	443	442
Transport	128	191	237	258	299	354	370	383	397	403
Residential	131	172	204	205	223	166	183	184	193	194
Commerce & public services	20	27	26	39	57	67	75	84	80	79
Others	5	6	8	6	12	11	13	29	33	31
<b>Coal</b>										
Primary energy supply	104	94	128	112	188	276	299	309	300	345
Production	61	29	10	11	11	53	42	41	38	24
Import	46	61	122	100	159	238	278	280	274	314
Export						-14	-15	-15	-7	
Transformation sector	-84	-78	-107	-92	-176	-290	-307	-304	-294	-331
Power generation	-70	-58	-87	-72	-161	-274	-291	-290	-279	-315
Final energy consumption	21	16	21	18	14	7	6	9	7	6
Industry	18	15	20	17	14	7	6	9	7	6
Transport										
Residential	1									
Commerce & public services										
Others	2	1								
<b>Coal products</b>										
Primary energy supply	1	4	1	1	-1	-2	-2	-1	-2	-1
Production										
Import	1	1	1	2		-1	-4	-1	-1	-2
Export		-1	-1	-1						
Transformation sector	7	11	9	11	9	10	11	10	12	11
Power generation										
Final energy consumption	4	9	4	7	3	2	3	3	3	4
Industry	4	9	4	7	3	2	3	3	3	4
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	275	352	426	456	388	375	373	385	397	431
Production	49	28	18	15	26	12	11	13	17	22
Import	233	327	418	441	363	364	360	373	377	410
Export										
Transformation sector	-263	-341	-419	-471	-414	-432	-424	-422	-440	-469
Petroleum refineries	-263	-341	-419	-471	-414	-432	-424	-423	-440	-469
<b>Petroleum products</b>										
Primary energy supply	-4	40	13	28	240	265	302	284	288	262
Import	23	69	81	159	307	316	354	343	356	329
Export	-9	-2	-36	-72	-26	-20	-19	-21	-31	-22
Transformation sector	241	320	389	422	298	383	373	393	402	428
Power generation	-20	-21	-19	-41	-73	-32	-32	-22	-17	-16
Petroleum refineries	263	343	408	464	372	415	405	415	419	444
Final energy consumption	222	334	381	393	494	575	607	623	639	640
Industry	56	87	86	87	127	165	163	151	151	150
Transport	127	190	236	256	297	349	365	379	392	398
Residential	32	45	46	37	39	34	42	44	46	46
Commerce & public services	5	7	7	10	19	18	26	30	30	28
Others	3	4	7	4	12	9	11	18	19	19
<b>Gas</b>										
Primary energy supply	48	48	218	285	187	167	182	182	183	220
Production	59	60	67	67	65	35	42	43	44	54
Import			154	221	126	131	153	147	145	169
Export		-2					-13	-7	-6	
Transformation sector	-1	-1	-70	-114	-73	-81	-89	-97	-91	-110
Power generation	-3	-3	-69	-113	-73	-81	-89	-95	-91	-110
Final energy consumption	9	11	43	53	69	58	60	62	65	67
Industry			28	33	46	32	34	34	36	39
Transport				1	1	1	1	1	1	1
Residential	7	9	11	15	17	19	19	20	21	21
Commerce & public services	1	1	3	4	5	6	5	7	6	6
Others				1				1	1	1
<b>Electricity</b>										
Power generation	66	101	144	189	218	271	286	286	296	304
Thermal	31	28	74	87	130	153	162	160	159	163
Hydro	32	66	67	95	78	86	84	77	84	81
Nuclear										
Others	3	7	3	6	10	32	40	49	53	61
Final energy consumption	56	87	132	174	197	241	253	251	263	267
Industry	37	60	92	117	129	152	157	149	159	160
Transport	1	1	1	1	2	4	4	3	4	5
Residential	16	23	22	30	34	42	49	45	48	49
Commerce & public services	3	4	16	26	32	42	43	46	43	44
Others			1					7	9	9

## Major economic indicators of Chile

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>1</sup>	13.27	15.34	16.18	17.06	17.97	18.21	18.47	18.73	18.95
Gross domestic product <sup>3</sup>									
Real term, billion USD (constant 2015)	73	133	167	201	244	248	251	260	263
GDP, billion USD (PPP, constant 2017)	131	240	302	363	439	447	452	469	473
Nominal, billion USD (current)	33	78	123	219	244	250	277	298	279
GDP per capita <sup>3</sup>									
Real term (constant 2015 USD)	5 470	8 685	10 350	11 809	13 574	13 625	13 591	13 901	13 867
GDP, PPP (constant 2017 USD)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Nominal (current USD)	2 495	5 075	7 599	12 808	13 574	13 754	14 999	15 888	14 742
Nominal GDP & its components (billions of current CLP) <sup>1</sup>									
Gross domestic product	10 096	42 005	68 832	111 509	159 553	169 537	179 749	190 826	196 379
Households and NPISHs final consumption expenditure	6 246	26 906	40 528	65 037	101 221	107 485	113 984	121 614	124 128
General government final consumption expenditure	985	5 075	7 280	13 502	20 732	23 362	25 363	27 459	28 729
Gross fixed capital formation	2 421	8 833	15 248	24 035	37 934	38 545	37 781	40 972	44 989
Stock change	199	457	- 215	1 768	17	- 887	429	1 367	160
Exports of goods and services	3 281	12 825	27 643	42 089	46 871	47 722	51 115	54 399	55 032
Imports of goods and services	2 953	12 091	21 652	34 923	47 221	46 690	48 923	54 985	56 658
Real GDP & its components (billions of 2013 CLP) <sup>1</sup>									
Gross Domestic Product	42 735	78 419	98 564	118 578	143 545	146 001	147 730	153 217	154 660
Households and NPISHs final consumption expenditure	21 402	43 078	54 733	71 982	90 567	93 018	96 190	99 870	100 876
General government final consumption expenditure	7 227	10 186	12 073	15 520	18 453	19 776	20 684	21 376	21 335
Gross fixed capital formation	5 119	11 693	18 821	25 610	32 452	32 018	31 026	32 623	34 060
Stock change	N.A.	710	- 281	1 589	29	- 717	373	1 382	709
Exports of goods and services	11 180	27 009	37 060	40 623	43 778	43 999	43 331	45 613	44 423
Imports of goods and services	5 568	15 357	24 598	36 576	41 778	42 142	44 066	47 633	46 493
Sectoral shares of Real GDP (%) <sup>1</sup>									
Agriculture, Fishery and Forestry	3.9	3.5	3.9	3.7	3.5	3.5	3.5	3.5	3.4
Industry	42.7	41.9	36.5	32.3	30.4	29.8	29.3	29.3	29.0
Services, etc.	47.9	49.8	51.8	55.7	57.7	58.2	58.5	58.5	58.9
Industrial production index (2010=100) <sup>2</sup>	N.A.	78.4	98.1	100.0	111.7	110.6	109.9	N.A.	N.A.
External trade (billions of current USD) <sup>1</sup>									
Exports, f.o.b	8.4	19.2	41.3	71.1	62.0	60.7	68.8	75.2	69.9
Imports, c.i.f.	7.9	18.5	32.7	59.2	62.4	59.4	65.2	74.7	69.8
Balance of payments (billions of current USD) <sup>2</sup>									
Trade balance	1.3	2.2	11.3	15.9	3.4	4.9	7.4	4.2	3.0
Current account	-0.5	-0.9	1.8	3.1	-5.7	-5.0	-6.4	-11.6	-10.5
Overall balance	2.4	-0.1	2.7	3.9	0.2	-0.1	-4.4	1.1	-0.7
Foreign exchange rate (CLP/USD) <sup>1</sup>	304.90	539.59	559.77	510.25	0.00	0.00	0.00	0.00	0.00
PPP conversion factor, GDP (CLP/USD) <sup>1</sup>	203.78	362.56	387.36	373.25	447.27	452.92	463.23	487.67	463.43
Price Indices									
GDP Deflator (2013=100) <sup>3</sup>	23.6	53.6	69.8	94.0	111.2	116.1	121.7	124.5	127.0
Producer Price Index (2010=100) <sup>2</sup>	N.A.	N.A.	1.4	100.0	91.8	91.1	100.0	104.9	106.9
Consumer Price Index (2010=100) <sup>2</sup>	30.0	73.7	83.7	100.0	118.4	122.9	125.6	128.6	131.9
Growth rate (%) <sup>3</sup>									
Real GDP	3.3	5.3	5.7	5.8	2.3	1.7	1.2	3.7	0.9
Population	1.7	1.2	1.0	1.0	1.2	1.3	1.4	1.4	1.2
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	N.A.	N.A.	N.A.	23.0	-1.2	-0.7	9.7	4.9	1.9
Consumer prices	26.0	3.8	3.1	1.4	4.3	3.8	2.2	2.4	2.6

Source <sup>1</sup>: *World Development Indicators*, World Bank

<sup>2</sup>: *International Financial Statistics*, International Monetary Fund

<sup>3</sup>: Calculated from <sup>1</sup> and <sup>2</sup> by ESTO

Note : N.A. means "not available"

: CLP means Chilean Peso, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Chile

## IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	CHP										
Exchange Rate	/ US Dollar		483.67	486.00							
<b>Coal and Coal Products</b>											
Coking Coal	USD/tonne		269.22	222.36							
Anthracite											
Other bituminous coal	USD/tonne		106.95	96.22							
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil	USD/m <sup>3</sup>		651.19	647.92							
<b>Natural Gas Liquids</b>											
Ethane											
LPG											
Naphtha											
Motor Gasoline											
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil											
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity											

\* USD/BBL in 2011 and 2012

## Energy prices in Chile

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	CHP										
Exchange Rate	/ US Dollar		483.67	486.0							
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	CHP/L		563.00	565.14							
Naphtha											
Motor Gasoline (regular)	CHP/L		733.80	786.11							
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene	CHP/L		585.74	609.35							
Gas/Diesel Oil	CHP/L		579.58	606.73							
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	CHP/MWh		66 649	60 753							
Liquefied Natural Gas (export)											
Compressed Natural Gas											
<b>Electricity</b>											
Industrial	CHP/MWh		74 614	61 573							
Commercial	CHP/MWh		105 632	95 068							
Residential	CHP/MWh		101 902	90 093							
Others											
Other Energy Products											





**China**



## Energy balance table of China

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	78 453		7 997						
Import	5 345	15	21 172	2 710	17	353	184		60
Export	- 150	- 186	- 34	-3 470	- 822		- 885		-1 074
International marine bunkers				- 242					- 26
International aviation bunkers				- 240			- 240		
Stock changes	-1 907	- 49	- 662	- 161	208	- 22	- 5		48
<b>Total primary energy supply</b>	<b>81 741</b>	<b>- 220</b>	<b>28 473</b>	<b>-1 403</b>	<b>- 598</b>	<b>331</b>	<b>- 946</b>		<b>- 992</b>
Transfers			5 162	127				127	
Total transformation sector	-65 563	2 410	-33 175	29 294	7 462	2 560	2 674		8 640
Main activity producers	-47 279	- 21	- 7	- 259		- 88			- 15
Autoproducers									
Gas processing	- 554	- 5		- 2					
Petroleum refineries			-33 169	29 555	7 462	2 648	2 674		8 654
Coal transformation	-17 731	2 435							
Other transformation									
Losses & own use	- 151	- 9	- 150	-2 291	- 19	- 773		- 4	- 112
Discrepancy	-4 397	- 213	- 310	-5 538	- 33	-2 117	- 158		- 215
<b>Total final consumption</b>	<b>11 630</b>	<b>1 967</b>	<b>1</b>	<b>20 190</b>	<b>6 812</b>		<b>1 571</b>	<b>123</b>	<b>7 321</b>
<b>Total final energy consumption</b>	<b>11 630</b>	<b>1 967</b>	<b>1</b>	<b>20 190</b>	<b>6 812</b>		<b>1 571</b>	<b>123</b>	<b>7 321</b>
Industry sector	8 955	1 826	1	2 988	348			13	730
Iron and steel	1 808	172		37	2				26
Chemical & petrochemical	2 708	817	1	1 691	13			1	29
Non-metallic minerals	2 936	400		274	7				158
Other industries	1 504	437		986	326			11	517
Transport sector	64			13 026	5 211		1 571		5 365
Domestic air transport				1 571			1 571		
Road				8 853	4 714				4 056
Rail	64			208	7				198
Inland waterways				1 633	112				738
Other transport				761	378				373
Other sector	2 611	142		4 175	1 253			110	1 226
Residential	1 474	83		1 446				12	
Commerce and public services	57	38		112					6
Agriculture	496	17		878	127			6	741
Non-specified others	585	3		1 739	1 126			93	479
<b>Non-energy</b>									
<b>2018</b>									
Production	75 305		7 927						
Import	5 030	3	19 338	2 799	22	375	207		36
Export	- 123	- 279	- 110	-3 049	- 647	- 2	- 737		- 931
International marine bunkers				- 233					- 10
International aviation bunkers				- 241			- 241		
Stock changes	- 595	- 152	- 423	- 261	7	- 39	- 26		- 4
<b>Total primary energy supply</b>	<b>79 618</b>	<b>- 428</b>	<b>26 732</b>	<b>- 985</b>	<b>- 618</b>	<b>335</b>	<b>- 797</b>		<b>- 910</b>
Transfers			4 746	100				100	
Total transformation sector	-62 905	2 338	-30 967	27 510	7 158	2 367	2 397		9 189
Main activity producers	-45 936	- 6	- 6	- 241		- 72			- 16
Autoproducers									
Gas processing	- 453			- 2					
Petroleum refineries			-30 960	27 753	7 158	2 439	2 397		9 205
Coal transformation	-16 516	2 345							
Other transformation									
Losses & own use	-1 474	- 96	- 156	-2 038	- 19	- 744		- 4	- 115
Discrepancy	904	169	- 354	-4 581	8	-1 957	- 126	- 1	- 74
<b>Total final consumption</b>	<b>16 142</b>	<b>1 983</b>	<b>1</b>	<b>20 006</b>	<b>6 529</b>		<b>1 474</b>	<b>95</b>	<b>8 091</b>
<b>Total final energy consumption</b>	<b>16 142</b>	<b>1 983</b>	<b>1</b>	<b>20 006</b>	<b>6 529</b>		<b>1 474</b>	<b>95</b>	<b>8 091</b>
Industry sector	12 499	1 713	1	2 531	373			20	740
Iron and steel	2 123	142		35	2				26
Chemical & petrochemical	3 324	806	1	1 201	19			1	34
Non-metallic minerals	5 129	302		277	9				142
Other industries	1 923	463		1 017	343			18	538
Transport sector	72			13 214	4 947		1 474		6 051
Domestic air transport				1 474			1 474		
Road				9 116	4 476				4 574
Rail	72			232	7				224
Inland waterways				1 603	106				832
Other transport				788	359				421
Other sector	3 570	271		4 261	1 209			75	1 300
Residential	1 737	86		1 594				12	
Commerce and public services	622	152		63				8	6
Agriculture	532	29		867	122			2	738
Non-specified others	680	3		1 737	1 087			52	556
<b>Non-energy</b>									

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				6 805	4 696	3 800	2 270	2 947			106 969	9 277
746	1 060		291	4 967					17		34 227	
- 562	- 71		- 56	- 131					- 78		- 4 049	
- 216											- 242	
											- 240	
- 68	- 9		- 312								- 2 778	
- 99	980		- 78	11 642	4 696	3 800	2 270	2 947	- 60		133 886	9 277
											5 290	
1 061	1 812	850	4 235	- 1 997	- 4 696	- 3 800	- 2 270	- 1 213	27 012	5 651	- 48 347	- 7 540
- 37	- 2	- 104	- 12	- 2 130	- 4 696	- 3 800	- 2 270	- 1 213	27 012	5 651	- 29 010	- 7 540
											- 427	
					133						- 3 614	
1 098	1 816	955	4 247								- 15 296	
- 1	- 553	- 808	- 22	- 1 265				- 6	- 4 289	- 880	- 9 041	- 6
16	- 301	- 30	- 2 699	238				2	12	- 152	- 10 357	- 2
976	1 939	12	1 436	8 618				1 730	22 675	4 619	71 430	1 730
976	1 939	12	1 436	8 225				1 730	22 675	4 619	71 038	1 730
110	340	12	1 436	4 517				288	14 091	3 041	35 706	288
	5	1	3	540				30	2 325	195	5 107	30
25	280	12	1 331	1 359				43	2 778	1 700	11 097	43
48	31		29	721				26	1 354	25	5 736	26
36	24		72	1 896				189	7 634	1 121	13 766	189
801	78			1 246				539	631		15 506	539
											1 571	
5	78			1 137				539	136		10 665	539
2									356		627	
784											1 633	
10				109					139		1 010	
65	1 520			2 462				903	7 953	1 578	19 825	903
	1 434			1 930				686	3 829	1 288	10 737	686
60	46			314				20	1 388	97	2 025	20
1	4			5				198	481	1	2 075	198
5	36			214					2 255	192	4 988	
				392							392	
				6 132	4 434	3 211	1 957	3 071			102 038	8 686
837	988		333	4 648					20		31 839	
- 618	- 57		- 57	- 125					- 75		- 3 761	
- 223											- 233	
											- 241	
44	- 18		- 226								- 1 431	
40	913		51	10 655	4 434	3 211	1 957	3 071	- 55		128 211	8 686
											4 845	
763	1 700	782	3 154	- 2 074	- 4 434	- 3 211	- 1 957	- 1 344	25 798	5 244	- 46 002	- 6 960
- 38	- 2	- 106	- 7	- 1 953	- 4 434	- 3 211	- 1 957	- 1 344	25 798	5 244	- 28 047	- 6 960
											- 576	
801	1 704	888	3 161	- 121							- 3 207	
											- 14 172	
- 9	- 369	- 745	- 32	- 1 294				- 6	- 4 535	- 741	- 10 342	- 6
38	- 272	- 24	- 2 174	107				- 2	395	- 13	- 3 374	- 1
832	1 973	13	999	7 394				1 719	21 603	4 490	73 338	1 719
832	1 973	13	999	7 022				1 719	21 603	4 490	72 966	1 719
142	244	13	999	3 695				276	13 643	2 953	37 311	276
	5		2	407				21	2 211	184	5 124	21
27	181	12	927	958				39	2 754	1 600	10 683	39
74	32		20	519				15	1 262	18	7 524	15
40	27		50	1 811				200	7 416	1 151	13 981	200
680	63			1 018				501	579		15 384	501
											1 474	
4	63			922				501	125		10 665	501
2									326		631	
665											1 603	
9				96					128		1 012	
11	1 666			2 309				942	7 381	1 537	20 271	942
	1 581			1 806				736	3 621	1 217	10 796	736
6	44			283				28	1 255	128	2 531	28
1	4			5				178	447	1	2 059	178
5	37			216					2 058	191	4 886	
				372							372	

## Major energy indicators of China

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	28 092	36 868	39 859	70 164	100 876	117 896	117 870	122 393	128 211	133 886
Production	30 453	37 588	39 361	63 943	88 887	98 232	92 788	96 559	102 038	106 969
Import	374	1 482	4 033	7 688	15 853	22 246	25 689	28 534	31 839	34 227
Export	-1 717	-1 905	-2 614	-1 934	-2 085	-2 638	-3 350	-3 557	-3 761	-4 049
Final energy consumption	21 909	22 083	22 351	38 419	53 424	70 224	69 960	71 355	72 966	71 038
Industry	14 026	13 704	13 125	23 450	33 226	38 283	36 664	36 675	37 311	35 706
Transport	1 245	1 623	2 960	5 205	7 603	13 821	14 229	14 889	15 384	15 506
Residential	4 401	4 080	3 537	5 237	6 699	9 247	9 925	10 464	10 796	10 737
Commerce & public services	277	320	564	1 029	1 378	2 377	2 461	2 497	2 531	2 025
Others	1 959	2 355	2 165	3 497	4 518	6 497	6 681	6 830	6 944	7 063
<b>Coal</b>										
Primary energy supply	22 321	29 027	28 617	52 608	73 987	78 832	75 952	77 157	79 618	81 741
Production	23 636	29 630	30 051	51 557	71 214	74 753	68 742	71 438	75 305	78 453
Import	50	41	54	654	3 963	3 639	4 557	4 831	5 030	5 345
Export	-398	-664	-1 205	-411	-433	-133	-219	-202	-123	-150
Transformation sector	-9 135	-15 412	-18 208	-33 778	-46 796	-55 691	-56 713	-59 100	-62 905	-65 563
Power generation	-6 461	-10 770	-13 829	-25 081	-33 092	-39 427	-40 480	-43 116	-45 936	-47 279
Final energy consumption	13 916	13 323	9 193	16 316	21 101	22 470	20 418	18 348	16 142	11 630
Industry	8 349	8 777	6 286	12 393	17 110	17 777	15 766	13 941	12 499	8 955
Transport	464	283	189	175	130	111	91	79	72	64
Residential	3 933	3 164	1 806	2 118	1 959	2 167	2 137	2 090	1 737	1 474
Commerce & public services	241	222	331	596	689	888	880	794	622	57
Others	930	877	581	1 034	1 213	1 527	1 544	1 444	1 212	1 081
<b>Coal products</b>										
Primary energy supply	-69	-347	-367	-407	14	-231	145	161	-428	-220
Production										
Import					3	1	1		3	15
Export	-37	-252	-433	-364	-95	-277	-291	-231	-279	-186
Transformation sector	2 021	1 621	1 215	1 452	1 586	2 429	2 057	1 814	2 338	2 410
Power generation						-80	-2		-6	-21
Final energy consumption	1 904	611	748	895	1 178	1 984	1 799	1 863	1 983	1 967
Industry	1 875	516	539	653	1 038	1 678	1 503	1 587	1 713	1 826
Transport	1	3	3			1	1	2		
Residential	8	46	170	201	116	105	107	86	86	83
Commerce & public services	2	7	11	20	7	182	169	174	152	38
Others	18	38	24	21	16	18	19	14	33	20
<b>Crude oil &amp; NGL</b>										
Primary energy supply	4 928	6 194	8 953	12 598	17 983	22 857	24 004	25 108	26 732	28 473
Production	5 791	6 282	6 824	7 593	8 531	8 983	8 360	8 018	7 927	7 997
Import	122	716	2 942	5 310	9 951	14 046	15 952	17 562	19 338	21 172
Export	-1 004	-763	-431	-338	-127	-120	-123	-204	-110	-34
Transformation sector	-4 650	-6 037	-8 543	-12 177	-17 564	-26 343	-27 716	-29 379	-30 967	-33 175
Petroleum refineries	-4 589	-6 009	-8 501	-12 159	-17 562	-26 335	-27 711	-29 373	-30 960	-33 169
<b>Petroleum products</b>										
Primary energy supply	-121	337	318	705	-184	-172	-524	-485	-985	-1 403
Import	194	723	1 032	1 706	1 783	2 259	2 377	2 591	2 799	2 710
Export	-278	-204	-392	-670	-1 211	-1 919	-2 523	-2 719	-3 049	-3 470
Transformation sector	3 832	5 095	7 509	10 855	15 806	23 796	24 846	25 863	27 510	29 294
Power generation	-607	-713	-620	-623	-320	-215	-219	-221	-241	-259
Petroleum refineries	4 456	5 829	8 140	11 484	16 126	24 011	25 067	26 086	27 753	29 555
Final energy consumption	3 036	4 044	6 310	9 411	12 228	18 458	18 795	19 667	20 006	20 190
Industry	1 405	1 365	2 184	2 569	3 124	2 374	2 308	2 527	2 531	2 988
Transport	735	1 261	2 584	4 630	6 567	12 003	12 280	12 779	13 214	13 026
Residential	125	296	462	679	781	1 295	1 498	1 634	1 594	1 446
Commerce & public services	4	15	39	63	55	64	62	70	63	112
Others	768	1 107	1 041	1 470	1 701	2 721	2 646	2 657	2 604	2 617
<b>Gas</b>										
Primary energy supply	570	669	897	1 727	3 552	7 186	7 824	9 034	10 655	11 642
Production	570	669	1 013	1 838	3 569	5 028	5 169	5 639	6 132	6 805
Import						2 280	2 780	3 527	4 648	4 967
Export			-117	-111	-150	-121	-126	-132	-125	-131
Transformation sector	-37	-39	-151	-420	-344	-1 451	-1 706	-1 893	-2 074	-1 997
Power generation	-37	-39	-151	-405	-798	-1 410	-1 649	-1 780	-1 953	-2 130
Final energy consumption	543	352	825	1 864	2 566	4 731	5 091	5 942	7 022	8 225
Industry	463	256	637	1 336	1 102	2 086	2 314	2 884	3 695	4 517
Transport	2	2	15	115	362	842	899	1 003	1 018	1 246
Residential	73	86	156	336	902	1 430	1 486	1 630	1 806	1 930
Commerce & public services	1	2	14	43	101	200	209	224	283	314
Others	5	6	3	34	99	173	184	202	220	218
<b>Electricity</b>										
Power generation	2 236	3 668	4 880	9 001	15 146	20 932	22 079	23 776	25 798	27 012
Thermal	1 780	2 896	4 011	7 370	11 995	15 163	15 694	16 790	18 016	18 503
Hydro	456	686	801	1 429	2 600	4 069	4 263	4 312	4 434	4 696
Nuclear		46	60	191	266	615	768	893	1 060	1 254
Others	0	40	8	10	285	1 085	1 355	1 780	2 288	2 559
Final energy consumption	1 767	2 760	3 729	7 173	12 420	17 393	18 333	19 857	21 603	22 675
Industry	1 302	1 966	2 539	4 946	8 611	11 553	11 863	12 797	13 643	14 091
Transport	38	66	101	155	264	405	451	510	579	631
Residential	173	362	523	1 039	1 845	2 723	3 031	3 266	3 621	3 829
Commerce & public services	27	72	151	271	465	926	1 013	1 104	1 255	1 388
Others	227	294	416	762	1 234	1 785	1 975	2 180	2 505	2 736

## Major economic indicators of China

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	1 135.19	1 262.65	1 303.72	1 337.71	1 371.22	1 378.67	1 386.40	1 392.73	1 397.72
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	1 027	2 770	4 421	7 554	11 062	11 819	12 640	13 493	14 296
GDP, billion USD (PPP, constant 2017)	1 616	4 358	6 955	11 885	17 403	18 595	19 887	21 229	22 492
Nominal, billion USD (current)	361	1 211	2 286	6 087	11 062	11 233	12 310	13 895	14 280
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	905	2 194	3 391	5 647	8 067	8 573	9 117	9 688	10 228
GDP, PPP (constant 2017 USD)	1 424	3 452	5 335	8 885	12 692	13 488	14 344	15 243	16 092
Nominal (current USD)	318	959	1 753	4 550	8 067	8 148	8 879	9 977	10 217
Nominal GDP & its components (billions of current CNY) <sup>11</sup>									
Gross domestic product	1 887	10 028	18 732	41 212	68 886	74 640	83 204	91 928	98 652
Households and NPISHs final consumption expenditure	944	4 686	7 415	14 147	26 020	28 867	32 069	35 412	38 719
General government final consumption expenditure	258	1 689	2 772	6 012	11 172	12 214	13 583	15 201	16 544
Gross fixed capital formation	453	3 267	7 385	18 104	28 997	31 014	34 830	39 385	42 245
Stock change	192	100	172	1 083	786	805	959	874	423
Exports of goods and services	257	2 095	6 337	11 204	14 710	14 618	16 385	17 569	18 247
Imports of goods and services	201	1 857	5 316	9 698	12 475	12 920	14 927	16 863	17 107
Real GDP & its components (billions of 2015 CNY) <sup>11</sup>									
Gross Domestic Product	6 398	17 251	27 529	47 043	68 886	73 604	78 717	84 030	89 030
Households and NPISHs final consumption expenditure	N.A.	6 436	9 572	16 028	26 020	28 346	31 048	33 632	35 795
General government final consumption expenditure	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Gross fixed capital formation	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Stock change	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of goods and services	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Imports of goods and services	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	34.4	18.4	13.9	10.1	8.4	8.1	7.9	7.6	7.4
Industry	28.3	37.2	39.0	40.7	40.8	40.5	40.1	39.8	39.4
Services, etc.	47.0	46.3	47.9	49.3	50.8	51.4	52.0	52.6	53.2
Industrial production index (2010=100) <sup>14</sup>	9.3	11.2	15.9	100.0	158.4	168.0	179.3	186.6	N.A.
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	62.1	249.2	762.0	1577.8	2273.5	2097.6	2263.3	2486.7	2499.5
Imports, c.i.f.	53.3	225.1	660.0	1396.2	1679.6	1587.9	1843.8	2135.7	2078.4
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	9.2	-13.6	130.1	238.1	576.2	488.9	475.9	380.1	393.0
Current account	12.0	20.5	132.4	237.8	293.0	191.3	188.7	24.1	102.9
Overall balance	15.3	22.5	227.7	524.7	-141.1	-225.1	298.1	196.2	109.9
Foreign exchange rate (CNY/USD) <sup>11</sup>	4.78	8.28	8.19	6.77	6.23	6.64	6.76	6.62	6.91
PPP conversion factor, GDP (CNY/USD) <sup>11</sup>	2.44	3.71	3.49	3.61	4.03	4.10	4.15	4.13	4.18
Price Indices									
GDP Deflator (2015=100) <sup>14</sup>	29.5	58.1	68.0	87.6	100.0	101.4	105.7	109.4	110.8
Producer Price Index (2000=100) <sup>13</sup>	101.3	100.0	102.0	105.5	94.8	98.6	106.3	103.5	N.A.
Consumer Price Index (2010=100) <sup>12</sup>	40.4	81.0	86.5	100.0	114.9	117.2	119.1	121.6	125.1
Growth rate (%) <sup>13</sup>									
Real GDP <sup>14</sup>	3.9	8.5	11.4	10.6	7.0	6.8	6.9	6.7	5.9
Population <sup>14</sup>	1.5	0.8	0.6	0.5	0.5	0.5	0.6	0.5	0.4
Price <sup>14</sup>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices <sup>13</sup>	-12.2	5.3	-1.1	14.6	-3.4	4.0	7.8	-2.6	N.A.
Consumer prices	3.1	0.3	1.8	3.2	1.4	2.0	1.6	2.1	2.9

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

<sup>14</sup>: Calculated from <sup>11</sup>, <sup>12</sup> and <sup>13</sup> by ESTO

Note : N.A. means "not available"

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)





# **Hong Kong, China**

Energy balance table of Hong Kong, China

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production									
Import	265			876	20	11	275		275
Export				- 12	- 1				- 4
International marine bunkers				- 410					- 143
International aviation bunkers				- 280			- 280		
Stock changes	- 6			- 11	1	2	5		- 15
<b>Total primary energy supply</b>	<b>258</b>			<b>163</b>	<b>20</b>	<b>12</b>			<b>113</b>
<b>Transfers</b>									
Total transformation sector	- 258			- 17		- 12			- 2
Main activity producers	- 258			- 4					- 2
Autoproducers									
Gas processing				- 12		- 12			
Petroleum refineries									
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy				- 55	6				- 61
<b>Total final consumption</b>				<b>92</b>	<b>26</b>				<b>50</b>
<b>Total final energy consumption</b>				<b>92</b>	<b>26</b>				<b>50</b>
<b>Industry sector</b>									
Iron and steel				3					3
Chemical & petrochemical									
Non-metallic minerals									
Other industries				3					3
<b>Transport sector</b>									
Domestic air transport				84	26				46
Road				76	24				40
Rail									
Inland waterways				7	2				6
Other transport									
<b>Other sector</b>									
Residential				5					2
Commerce and public services				3					
Agriculture				2					2
Non-specified others									
<b>Non-energy</b>									
<b>2018</b>									
Production									
Import	287			909	21	13	282		273
Export				- 9	- 1				- 5
International marine bunkers				- 464					- 150
International aviation bunkers				- 288			- 288		
Stock changes	- 17			11			7		- 8
<b>Total primary energy supply</b>	<b>270</b>			<b>159</b>	<b>20</b>	<b>13</b>			<b>110</b>
<b>Transfers</b>									
Total transformation sector	- 270			- 16		- 13			- 3
Main activity producers	- 270			- 3					- 3
Autoproducers									
Gas processing				- 13		- 13			
Petroleum refineries									
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy				- 51	5				- 57
<b>Total final consumption</b>				<b>92</b>	<b>25</b>				<b>51</b>
<b>Total final energy consumption</b>				<b>92</b>	<b>25</b>				<b>51</b>
<b>Industry sector</b>									
Iron and steel				3					3
Chemical & petrochemical									
Non-metallic minerals									
Other industries				3					3
<b>Transport sector</b>									
Domestic air transport				82	25				46
Road				75	24				41
Rail									
Inland waterways				7	2				5
Other transport									
<b>Other sector</b>									
Residential				6					2
Commerce and public services				4					
Agriculture				2					2
Non-specified others									
<b>Non-energy</b>									

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
280	16			128				5	45		5	5
- 8											1 313	
- 267											- 12	
											- 410	
- 5	1										- 280	
	17			128				5	45		- 17	
											599	5
	- 2			- 115				- 3	133		- 259	- 3
	- 2			- 115					132		- 245	
								- 2			- 2	- 2
											- 12	
									- 16		- 16	
				12							- 42	
15				25				2	162		282	2
15				25				2	162		282	2
				1					7		12	
				1					7		12	
12									3		87	
12											76	
									3		3	
											7	
3				24				2	151		183	2
3				13					43		59	
				11				2	108		123	2
303	17			123				5	45		5	5
- 4									- 2		1 365	
- 314											- 11	
											- 464	
14	- 2										- 288	
	15			123				5	43		- 6	
											600	5
				- 110				- 3	132		- 266	- 3
				- 110					131		- 251	
								- 2			- 2	- 2
											- 13	
									- 15		- 15	
				13							- 39	
15				26				2	159		280	2
15				26				2	159		280	2
				1					8		13	
				1					8		13	
11									3		86	
11											75	
									3		3	
											7	
4				25				2	148		181	2
4				14					42		59	
1				11				2	106		122	2



## Major energy indicators of Hong Kong, China

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	392	457	579	589	559	558	603	600	600	594
Production				3	2	2	2	4	4	4
Import	567	973	896	1 055	1 333	1 273	1 318	1 347	1 365	1 308
Export	-93	-345	-68	-74	-30	-34	-20	-17	-11	-12
Final energy consumption	214	277	374	282	278	287	281	278	281	279
Industry	65	59	74	24	16	14	14	12	12	12
Transport	64	103	159	98	90	89	88	87	86	87
Residential	31	40	47	54	56	61	58	57	57	58
Commerce & public services	51	72	91	106	115	122	121	122	125	122
Others	2	2	3							
<b>Coal</b>										
Primary energy supply	264	253	182	287	261	280	280	263	270	258
Production										
Import	236	241	160	285	272	295	294	277	287	265
Export										
Transformation sector	-264	-253	-181	-287	-261	-280	-280	-263	-270	-258
Power generation	-264	-253	-181	-287	-261	-280	-280	-263	-270	-258
Final energy consumption										
Industry										
Transport										
Residential										
Commerce & public services										
Others										
<b>Coal products</b>										
Primary energy supply										
Production										
Import			1							
Export			-1							
Transformation sector										
Power generation										
Final energy consumption										
Industry										
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply										
Production										
Import										
Export										
Transformation sector										
Petroleum refineries										
<b>Petroleum products</b>										
Primary energy supply	134	181	247	190	134	112	155	166	159	163
Import	331	704	581	645	901	811	855	899	909	876
Export	-87	-339	-63	-58	-21	-29	-15	-12	-9	-12
Transformation sector	-22	-31	-30	-32	-15	-13	-18	-17	-16	-17
Power generation	-6	-7	-2	-2	-2	-2	-4	-4	-3	-4
Petroleum refineries										
Final energy consumption	113	149	218	112	100	99	98	95	95	92
Industry	40	38	56	9	4	4	4	3	3	3
Transport	61	100	155	93	87	86	85	84	82	84
Residential	8	7	5	5	3	4	3	2	3	3
Commerce & public services	3	3	2	6	6	5	6	6	7	2
Others										
<b>Gas</b>										
Primary energy supply		1	117	85	132	125	127	126	123	123
Production										
Import		1	117	85	119	125	127	126	123	123
Export										
Transformation sector	12	17	-96	-61	-107	-99	-104	-103	-100	-100
Power generation		-1	-117	-85	-117	-107	-115	-113	-110	-110
Final energy consumption	12	18	21	25	25	26	23	23	24	23
Industry		1	1	1	1	1	1	1	1	1
Transport										
Residential	6	8	10	14	14	14	12	12	12	12
Commerce & public services	5	7	8	10	10	11	10	10	10	10
Others	1	2	2							
<b>Electricity</b>										
Power generation	104	100	113	139	138	137	142	133	132	133
Thermal	104	100	113	139	138	137	142	133	131	132
Hydro										
Nuclear										
Others	0									
Final energy consumption	88	110	134	144	151	161	159	158	159	162
Industry	25	20	18	15	11	9	9	8	8	7
Transport	3	3	4	5	3	3	3	3	3	3
Residential	17	24	32	36	39	44	43	42	42	43
Commerce & public services	43	62	81	89	98	105	104	105	106	108
Others										

## Major economic indicators of Hong Kong, China

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>1</sup>	5.70	6.67	6.81	7.02	7.29	7.34	7.39	7.45	7.51
Gross domestic product <sup>3</sup>									
Real term, billion USD (constant 2015)	122	180	221	268	309	316	328	337	332
GDP, billion USD (PPP, constant 2017)	164	242	298	361	417	426	442	455	447
Nominal, billion USD (current)	77	172	182	229	309	321	341	362	363
GDP per capita <sup>3</sup>									
Real term (constant 2015 USD)	21 357	26 933	32 401	38 090	42 432	43 085	44 385	45 285	44 190
GDP, PPP (constant 2017 USD)	28 798	36 317	43 690	51 361	57 216	58 096	59 849	61 063	59 586
Nominal (current USD)	13 486	25 757	26 650	32 550	42 432	43 731	46 166	48 543	48 354
Nominal GDP & its components (billions of current HKD) <sup>1</sup>									
Gross domestic product	599	1 338	1 412	1 776	2 398	2 490	2 659	2 835	2 845
Households and NPISHs final consumption expenditure	344	784	812	1 090	1 593	1 650	1 784	1 936	1 973
General government final consumption expenditure	41	125	131	157	231	248	261	281	309
Gross fixed capital formation	157	355	302	387	537	535	576	612	521
Stock change	6	14	- 5	38	- 21		11	11	- 3
Exports of goods and services	703	1 686	2 506	3 647	4 698	4 658	5 024	5 340	5 054
Imports of goods and services	652	1 627	2 333	3 543	4 641	4 601	4 997	5 346	5 010
Real GDP & its components (billions of 2019 HKD) <sup>1</sup>									
Gross Domestic Product	1 045	1 539	1 893	2 294	2 653	2 710	2 813	2 893	2 845
Households and NPISHs final consumption expenditure	664	1 004	1 100	1 374	1 756	1 791	1 889	1 989	1 973
General government final consumption expenditure	119	184	204	229	266	275	283	295	309
Gross fixed capital formation	250	399	430	500	584	584	602	612	521
Stock change	10	21	- 7	49	- 20		12	11	- 3
Exports of goods and services	876	2 016	3 189	4 198	4 876	4 908	5 195	5 385	5 054
Imports of goods and services	835	2 028	3 007	4 059	4 807	4 849	5 170	5 402	5 010
Sectoral shares of Real GDP (%) <sup>1</sup>									
Agriculture, Fishery and Forestry	N.A.	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Industry	N.A.	N.A.	N.A.	N.A.	7.1	7.5	7.2	6.5	6.3
Services, etc.	N.A.	84.0	88.4	89.8	89.0	89.1	88.9	89.1	90.0
Manufacturing production index (2010=100) <sup>2</sup>	162.5	135.6	112.0	100.0	98.1	97.7	98.1	99.3	N.A.
External trade (billions of current USD) <sup>1</sup>									
Exports, f.o.b.	82.4	202.7	292.1	400.7	510.5	516.6	549.9	568.5	534.9
Imports, c.i.f.	84.7	214.0	300.2	441.4	558.8	546.5	588.9	626.6	577.8
Balance of payments (billions of current USD) <sup>2</sup>									
Trade balance	N.A.	20.5	31.1	3.3	-22.9	-16.7	-22.9	-32.3	-15.4
Current account	N.A.	7.5	21.6	16.0	10.3	12.7	15.6	13.5	21.2
Overall balance	N.A.	12.5	0.4	12.2	30.0	0.8	38.0	-7.8	-10.2
Foreign exchange rate (HKD/USD) <sup>1</sup>	7.79	7.79	7.78	7.77	7.75	7.76	7.79	7.84	7.84
PPP conversion factor, GDP (HKD/USD) <sup>1</sup>	5.26	6.72	5.53	5.53	6.20	6.29	6.24	6.24	6.30
Price Indices									
GDP Deflator (2019=100) <sup>3</sup>	57.4	86.9	74.6	77.4	90.4	91.9	94.5	98.0	100.0
Producer Price Index (2010=100) <sup>2</sup>	89.5	87.7	86.2	100.0	100.5	101.8	105.6	107.7	108.8
Consumer Price Index (2010=100) <sup>2</sup>	57.0	95.9	89.5	100.0	123.0	125.9	127.8	130.9	134.6
Growth rate (%) <sup>3</sup>									
Real GDP	3.8	7.7	7.4	6.8	2.4	2.2	3.8	2.8	-1.7
Population	0.3	0.9	0.4	0.7	0.9	0.6	0.8	0.8	0.8
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	N.A.	0.2	0.8	6.0	-2.7	1.3	3.8	2.0	1.0
Consumer prices	10.4	-3.7	0.8	2.3	3.0	2.4	1.5	2.4	2.9

Source <sup>1</sup>: *World Development Indicators*, World Bank

<sup>2</sup>: *International Financial Statistics*, International Monetary Fund

<sup>3</sup>: Calculated from <sup>1</sup> and <sup>2</sup> by ESTO

Note

: N.A. means "not available"

: HKD means Hong Kong Dollar, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Hong Kong, China

## IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency Exchange Rate	HKD / US Dollar										
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite	HKD/tonne	1 875	6 275	5 373	2 180	2 373	2 407			6 133	3 073
Other bituminous coal	HKD/tonne	594	726	654	572	519	447	397	584	683	535
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil											
<b>Natural Gas Liquids</b>											
Ethane											
LPG	HKD/kg	5.95	7.40	7.89	7.58	7.16	4.58	3.64	4.50	4.89	4.21
Naphtha											
Motor Gasoline	HKD/L	4.71	6.33	6.58	6.34	5.93	4.16	3.16	3.73	4.35	4.08
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	HKD/L	4.41	6.10	6.25	6.04	5.65	3.30	2.56	3.19	4.16	3.74
Other Kerosene											
Gas/Diesel Oil											
Fuel Oil	HKD/L	3.58	4.95	5.21	4.78	4.43	2.36	1.71	2.46	3.22	3.12
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	HKD/kg	2.33	2.57	3.13	4.09	4.64	4.58	3.47	3.47	4.12	4.29
Liquefied Natural Gas											
Compressed Natural Gas											
<b>Electricity</b>											
<b>Other energy</b>											
Gas oil, diesel oil and naphtha	HKD/L	4.39	6.12	6.24	5.99	5.61	3.37	2.60	3.26	4.19	4.29

## Energy prices in Hong Kong, China

CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	HKD										
Exchange Rate	/ US Dollar										
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
<b>Natural Gas Liquids</b>											
Ethane											
LPG	HKD/kg	18.14	20.01	21.78	22.94	24.33	23.47	23.47	24.07	25.75	27.74
Naphtha											
Motor Gasoline (regular)	HKD/L	13.55	15.29	15.82	15.69	15.62	13.70	13.70	13.19	13.96	15.66
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil*	HKD/L	9.68	11.61	12.16	12.46	12.56	10.86	10.67	11.87	13.50	14.29
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas (export)											
Compressed Natural Gas											
<b>Electricity</b>											
Industrial											
Commercial											
Residential											
Others											
Other Energy Products											

\*Environmental diesel oil (road)





# Indonesia

## Energy balance table of Indonesia

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	15 169		1 638						
Import	182		524	1 394	656		10		148
Export	-11 189		- 152	- 95			- 5		
International marine bunkers									
International aviation bunkers									
Stock changes	23		37	134	10		- 6	- 21	122
<b>Total primary energy supply</b>	<b>4 184</b>		<b>2 046</b>	<b>1 432</b>	<b>665</b>		<b>- 21</b>		<b>271</b>
<b>Transfers</b>									
Total transformation sector	-2 426		-2 006	1 871	556		174	41	689
Main activity producers	-2 426			- 143					- 116
Autoproducers				106					
Gas processing				106					
Petroleum refineries			-2 006	2 020	556	112	174	41	806
Coal transformation									
Other transformation				- 112		- 112			
Losses & own use			- 39	- 5	- 2				- 2
Discrepancy									
<b>Total final consumption</b>	<b>1 758</b>			<b>3 298</b>	<b>1 219</b>		<b>174</b>	<b>20</b>	<b>958</b>
<b>Total final energy consumption</b>	<b>1 758</b>			<b>3 163</b>	<b>1 219</b>		<b>174</b>	<b>20</b>	<b>958</b>
Industry sector	1 758			150				1	76
Iron and steel	248								
Chemical & petrochemical									
Non-metallic minerals	554								
Other industries	956			150				1	76
Transport sector				2 215	1 207		174		833
Domestic air transport				174			174		
Road				2 041	1 207				833
Rail									
Inland waterways									
Other transport									
Other sector				798	12			19	48
Residential				707				17	
Commerce and public services				31				1	11
Agriculture									
Non-specified others				60	12			1	38
<b>Non-energy</b>				<b>135</b>					
<b>2018</b>									
Production	13 731		1 696						
Import	135		739	1 513	642		52		249
Export	-8 774		- 437	- 85					
International marine bunkers									
International aviation bunkers									
Stock changes	-1 504		44	150	28		1	- 12	99
<b>Total primary energy supply</b>	<b>3 588</b>		<b>2 043</b>	<b>1 578</b>	<b>670</b>		<b>53</b>	<b>- 12</b>	<b>347</b>
<b>Transfers</b>									
Total transformation sector	-2 244		-2 004	1 766	510		144	33	668
Main activity producers	-2 244			- 240					- 192
Autoproducers				106					
Gas processing				106					
Petroleum refineries			-2 004	2 016	510	116	144	33	861
Coal transformation									
Other transformation				- 116		- 116			
Losses & own use			- 39	- 5	- 2				- 2
Discrepancy									
<b>Total final consumption</b>	<b>1 344</b>			<b>3 340</b>	<b>1 178</b>		<b>197</b>	<b>21</b>	<b>1 013</b>
<b>Total final energy consumption</b>	<b>1 344</b>			<b>3 202</b>	<b>1 178</b>		<b>197</b>	<b>21</b>	<b>1 013</b>
Industry sector	1 344			199				1	111
Iron and steel	43								
Chemical & petrochemical									
Non-metallic minerals	468								
Other industries	833			199				1	111
Transport sector				2 198	1 167		197		832
Domestic air transport				198			197		
Road				2 000	1 167				832
Rail									
Inland waterways									
Other transport									
Other sector				805	11			20	71
Residential				690				18	
Commerce and public services				35				1	16
Agriculture									
Non-specified others				80	11			1	55
<b>Non-energy</b>				<b>137</b>					

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				2 420	70		510	954			20 760	1 534
15	530		36						6		2 105	
			- 90	- 1 076				- 50			- 12 562	- 50
20	8							- 26			167	- 26
34	538		- 54	1 343	70		510	878	6		10 470	1 458
39	182		189	- 197	- 70		- 510	- 454	1 058		- 2 735	- 1 034
- 26				- 606	- 70		- 510	- 211	1 058		- 2 908	- 791
66	106			409							514	
	76		189								14	
				- 528				- 243			- 356	- 243
				64					- 129		- 701	
									9		73	
73	720		135	683				424	943		7 106	424
73	720			538				424	943		6 826	424
62	10			528				289	339		3 065	289
				27							275	
				207							207	
				44							598	
62	10			251				289	339		1 985	289
1				1					1		2 217	
											174	
1				1							2 042	
									1		1	
10	710			8				135	603		1 544	135
	690			7				126	374		1 214	126
	19			1				9	229		270	9
10											60	
				135	145						547	
				2 615	73		506	898			19 519	1 476
36	516		17						5		2 392	
- 13			- 72	- 1 379				- 69			- 10 743	- 69
38	- 3							- 23			- 1 333	- 23
61	513		- 55	1 236	73		506	806	5		9 835	1 384
30	188		193	- 59	- 73		- 506	- 344	1 016		- 2 446	- 922
- 48				- 557	- 73		- 506	- 201	1 016		- 2 805	- 780
78	106			498							604	
	82		193								12	
				- 516				- 143			- 258	- 143
				28					- 116		- 676	
									17		44	
91	701		137	688				462	922		6 756	462
91	701			543				462	922		6 474	462
77	10			534				291	337		2 705	291
				28							71	
				188							188	
				45							513	
77	10			272				291	337		1 932	291
2				1					1		2 200	
											198	
2				1							2 002	
									1		1	
12	691			8				171	584		1 568	171
	672			7				162	370		1 229	162
	19			1				9	214		260	9
12											80	
				137	145						549	



## Major energy indicators of Indonesia

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	3 248	3 707	4 912	6 054	6 960	7 594	8 406	8 398	9 229	9 943
Production	6 515	7 902	8 591	9 880	13 072	16 873	16 905	16 896	19 471	20 720
Import	427	662	996	1 675	1 683	2 256	2 186	2 429	2 316	2 024
Export	-3 425	-4 472	-4 479	-5 381	-7 679	-11 161	-10 279	-8 999	-10 580	-12 561
Final energy consumption	2 129	2 719	3 468	4 063	4 786	5 301	5 230	5 405	5 998	6 620
Industry	858	1 121	1 401	1 712	2 073	1 711	1 581	1 627	1 957	2 273
Transport	344	518	680	972	1 357	2 059	2 106	2 230	2 484	2 674
Residential	830	922	1 103	1 057	1 057	1 174	1 184	1 201	1 224	1 259
Commerce & public services	33	77	129	162	188	239	251	258	266	332
Others	63	82	155	160	112	118	107	89	68	82
<b>Coal</b>										
Primary energy supply	143	227	550	1 018	1 654	2 137	2 229	2 389	2 833	3 408
Production	266	1 030	1 897	3 760	6 774	11 363	11 231	11 355	13 731	15 169
Import	15	16	3	2	1	74	96	116	135	182
Export	-106	-771	-1 439	-2 727	-5 125	-9 007	-8 152	-7 064	-8 774	-11 189
Transformation sector	-109	-138	-339	-633	-848	-1 726	-1 857	-2 044	-2 244	-2 426
Power generation	-109	-138	-338	-632	-847	-1 725	-1 856	-2 043	-2 244	-2 426
Final energy consumption	34	88	211	385	806	412	372	345	589	981
Industry	34	88	211	385	806	412	372	345	589	981
Transport										
Residential										
Commerce & public services										
Others										
<b>Coal products</b>										
Primary energy supply										
Production										
Import										
Export										
Transformation sector		1	1	1	1		1	1		
Power generation										
Final energy consumption		1	1	1	1		1	1		
Industry		1	1	1	1		1	1		
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	1 672	1 994	2 188	2 156	1 824	1 672	2 511	1 985	2 043	2 046
Production	3 162	3 472	3 067	2 283	2 057	1 731	1 889	1 766	1 696	1 638
Import	271	406	461	693	593	801	870	830	663	441
Export	-1 690	-1 769	-1 310	-936	-788	-674	-736	-602	-437	-151
Transformation sector	-1 640	-1 956	-2 145	-2 114	-1 789	-1 641	-2 464	-1 947	-2 004	-2 006
Petroleum refineries	-1 640	-1 956	-2 145	-2 114	-1 789	-1 641	-2 464	-1 947	-2 004	-2 006
<b>Petroleum products</b>										
Primary energy supply	-607	-657	-241	407	789	1 295	1 198	1 513	1 613	1 723
Import	141	240	531	979	1 089	1 381	1 218	1 478	1 514	1 395
Export	-581	-676	-517	-353	-220	-205	-77	-90	-85	-94
Transformation sector	1 600	1 920	2 024	1 675	1 650	1 941	2 030	1 962	2 001	2 049
Power generation	-167	-117	-196	-383	-362	-203	-180	-139	-144	-103
Petroleum refineries	1 787	2 074	2 252	2 146	2 121	2 210	2 305	2 210	2 261	2 264
Final energy consumption	949	1 252	1 733	1 993	2 218	3 016	2 990	3 149	3 333	3 476
Industry	273	298	398	390	303	243	243	232	199	150
Transport	344	518	680	972	1 349	2 023	1 991	2 131	2 340	2 430
Residential	255	317	435	403	415	590	608	658	690	707
Commerce & public services	14	38	66	67	40	42	41	40	35	106
Others	63	82	155	160	112	118	107	89	68	82
<b>Gas</b>										
Primary energy supply	1 095	1 102	1 319	1 386	1 557	1 461	1 390	1 365	1 395	1 340
Production	2 143	2 359	2 531	2 751	3 103	2 724	2 686	2 600	2 611	2 416
Import										
Export	-1 048	-1 256	-1 212	-1 364	-1 546	-1 263	-1 296	-1 236	-1 216	-1 076
Transformation sector	-309	-623	-670	-698	-693	-333	-258	-182	-311	-423
Power generation	-40	-224	-233	-310	-420	-428	-464	-408	-392	-370
Final energy consumption	166	268	273	489	493	532	432	499	550	545
Industry	166	267	271	487	487	523	424	491	541	535
Transport										
Residential				1	1	1	1	2	2	3
Commerce & public services			1	1	5	8	7	7	7	7
Others										
<b>Electricity</b>										
Power generation	119	195	328	459	611	842	869	917	1 021	1 051
Thermal	92	157	282	397	514	755	769	802	847	860
Hydro	23	30	36	39	63	49	63	67	78	88
Nuclear										
Others	4	8	10	24	34	38	37	48	96	103
Final energy consumption	100	179	285	386	533	730	778	803	922	952
Industry	51	89	122	153	184	231	245	260	337	317
Transport						1	1	1	1	1
Residential	32	61	110	148	215	319	337	340	370	424
Commerce & public services	16	29	53	84	133	180	194	202	214	209
Others										

## Major economic indicators of Indonesia

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>1</sup>	181.41	211.51	226.29	241.83	258.38	261.56	264.65	267.67	270.63
Gross domestic product <sup>3</sup>									
Real term, billion USD (constant 2015)	270	395	498	658	861	904	950	999	1 049
GDP, billion USD (PPP, constant 2017)	822	1 203	1 516	2 004	2 622	2 754	2 894	3 044	3 197
Nominal, billion USD (current)	106	165	286	755	861	932	1 016	1 042	1 119
GDP per capita <sup>3</sup>									
Real term (constant 2015 USD)	1 488	1 868	2 199	2 720	3 332	3 457	3 590	3 733	3 877
GDP, PPP (constant 2017 USD)	4 533	5 689	6 699	8 287	10 150	10 531	10 936	11 372	11 812
Nominal (current USD)	585	780	1 263	3 122	3 332	3 563	3 838	3 894	4 135
Nominal GDP & its components (trillions of current IDR) <sup>1</sup>									
Gross domestic product	195 597	1389 770	2774 281	6864 133	11526 333	12401 729	13589 826	14838 756	15832 535
Households and NPISHs final consumption expenditure	124 184	856 798	1785 596	3858 822	6621 880	7171 523	7783 651	8455 108	9171 931
General government final consumption expenditure	18 649	90 780	224 981	618 178	1123 750	1181 613	1239 470	1338 639	1394 795
Gross fixed capital formation	59 758	275 881	655 854	2127 841	3782 012	4040 202	4370 575	4791 211	5121 372
Stock change	4 217	33 283	39 975	129 095	144 179	158 867	210 636	338 634	226 923
Exports of goods and services	53 409	569 490	945 122	1667 918	2438 993	2367 365	2742 061	3116 546	2920 518
Imports of goods and services	50 046	423 318	830 083	1537 720	2394 879	2273 528	2606 283	3275 145	3008 574
Real GDP & its components (trillions of 2010 IDR) <sup>1</sup>									
Gross Domestic Product	2816 408	4121 726	5192 501	6864 133	8982 517	9434 613	9912 928	10425 852	10949 038
Households and NPISHs final consumption expenditure	1510 655	2527 173	3078 760	3858 822	4980 431	5231 670	5492 293	5774 426	6072 426
General government final consumption expenditure	260 623	285 633	423 592	618 178	775 398	774 305	790 756	828 877	855 931
Gross fixed capital formation	870 587	1060 872	1513 165	2127 841	2911 356	3041 585	3228 763	3444 310	3597 664
Stock change	5273 750	-7109 153	-7157 321	129 095	112 848	133 400	126 884	197 370	129 954
Exports of goods and services	458 032	883 948	1231 826	1667 918	2004 467	1971 183	2146 565	2286 395	2266 679
Imports of goods and services	477 155	782 932	1183 138	1537 720	1862 939	1818 133	1964 819	2203 270	2040 354
Sectoral shares of Real GDP (%) <sup>1</sup>									
Agriculture, Fishery and Forestry	19.6	16.5	15.3	13.9	13.0	12.8	12.7	12.5	12.4
Industry	42.1	47.7	45.8	42.8	41.0	40.5	40.2	39.8	39.4
Services, etc.	39.2	49.2	45.1	45.1	49.5	52.4	54.2	54.8	56.4
Industrial production index (2010=100) <sup>2</sup>	43.3	74.3	88.3	100.0	126.1	131.2	137.4	144.9	N.A.
External trade (billions of current USD) <sup>1</sup>									
Exports, f.o.b.	25.7	65.4	87.0	157.8	150.4	144.5	168.8	180.2	167.7
Imports, c.i.f.	21.8	43.6	75.7	135.7	142.7	135.7	156.9	188.7	171.3
Balance of payments (billions of current USD) <sup>2</sup>									
Trade balance	5.4	25.0	17.6	31.0	14.0	15.3	18.8	-0.2	3.5
Current account	-3.0	8.0	0.3	5.1	-17.5	-17.0	-16.2	-30.6	-30.3
Overall balance	1.5	0.1	-2.0	31.7	-0.7	12.4	12.5	-5.4	6.3
Foreign exchange rate (IDR/USD) <sup>1</sup>	1 842.81	8 421.78	9 704.74	9 090.43	13 389.41	13 308.33	13 380.83	14 236.94	14 147.67
PPP conversion factor, GDP (IDR/USD) <sup>1</sup>	804.73	2 124.13	2 922.67	3 810.97	4 720.82	4 877.71	5 089.69	5 127.23	5 188.59
Price Indices									
GDP Deflator (2010=100) <sup>3</sup>	6.9	33.7	53.4	100.0	128.3	131.4	137.1	142.3	144.6
Producer Price Index (2010=100) <sup>2</sup>	14.8	58.6	88.8	100.0	81.0	87.4	91.5	96.5	N.A.
Consumer Price Index (2010=100) <sup>2</sup>	12.7	44.0	68.7	100.0	132.3	137.0	142.2	146.7	151.2
Growth rate (%) <sup>3</sup>									
Real GDP	7.2	4.9	5.7	6.2	4.9	5.0	5.1	5.2	5.0
Population	1.8	1.4	1.3	1.3	1.3	1.2	1.2	1.1	1.1
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	10.0	12.5	15.9	4.8	4.4	7.9	4.6	5.5	N.A.
Consumer prices	7.8	3.7	10.5	5.1	6.4	3.5	3.8	3.2	3.0

Source <sup>1</sup>: *World Development Indicators*, World Bank  
<sup>2</sup>: *International Financial Statistics*, International Monetary Fund  
<sup>3</sup>: Calculated from <sup>1</sup> and <sup>2</sup> by ESTO

Note : N.A. means "not available"  
: IDR means Rupiah, USD means United States Dollar  
: PPP means Purchasing Power Parity  
: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.  
The values shown are midyear estimates. (from WB)

## Energy prices in Indonesia

## IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	IDR										
Exchange Rate	/ US Dollar							13 436	13 436	14 038	13 901
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal	USD/tonne						108.09	104.13	157.56	83.27	161.78
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil											
<b>Natural Gas Liquids</b>											
Ethane											
LPG											
Naphtha											
Motor Gasoline											
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil											
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity											

\* USD/BBL in 2011 and 2012

## Energy prices in Indonesia

## WHOLESALE PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	IDR										
Exchange Rate	/ US Dollar							13 436	13 436	14 038	13 901
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal	USD/tonne						60.13	66.30	85.92	98.96	77.89
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil	USD/BBL						49.21	40.13	51.19	67.47	62.37
Natural Gas Liquids											
Ethane											
Propane											
Butane											
Naphtha											
Motor Gasoline											
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil											
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity											

## Energy prices in Indonesia

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	IDR										
Exchange Rate	/ US Dollar							13 436	13 436	14 038	13 901
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal	USD/BOE						11.23	10.64	13.51	12.78	12.90
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG (12 kg)	USD/BOE						0.10	0.10	97.00	103.76	104.78
Naphtha											
Motor Gasoline (regular)	USD/BOE						90.50				
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	USD/BOE						113.21				
Other Kerosene											
Gas/Diesel Oil	USD/BOE						97.30				
Fuel Oil											
White Spirit SBP	USD/BOE						37.59				
Lubricants	USD/BOE						37.59				
Bitumen	USD/BOE						37.59				
Paraffin Waxes	USD/BOE						37.59				
Petroleum Coke	USD/BOE						37.59				
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas (export)											
Compressed Natural Gas											
<b>Electricity</b>											
Industrial	USD/BOE						135.13	127.71	131.10	126.12	129.17
Commercial	USD/BOE						151.86	145.84	149.99	144.56	147.67
Residential	USD/BOE						98.98	102.44	127.15	128.11	128.95
Others											
Other Energy Products											



**Japan**

Energy balance table of Japan

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	18		18						
Import	4 837	21	6 221	1 719	81	841	7	55	33
Export		- 47		- 798	- 102		- 109	- 35	- 385
International marine bunkers				- 188					- 5
International aviation bunkers				- 261			- 261		
Stock changes		1	- 36	- 3	- 4	- 3			3
<b>Total primary energy supply</b>	<b>4 855</b>	<b>- 25</b>	<b>6 203</b>	<b>468</b>	<b>- 26</b>	<b>838</b>	<b>- 363</b>	<b>19</b>	<b>- 354</b>
<b>Transfers</b>			<b>- 58</b>	<b>68</b>		<b>30</b>	<b>- 3</b>	<b>- 4</b>	<b>5</b>
Total transformation sector	-4 331	656	-6 166	5 771	1 607	401	544	459	1 862
Main activity producers	-2 476	- 137	- 7	- 207				- 2	- 15
Autoproducers	- 176	- 113		- 161				- 2	- 10
Gas processing				- 73					
Petroleum refineries			-6 337	6 411	1 607	542	544	462	1 887
Coal transformation	-1 678	906		- 14					
Other transformation			178	- 185		- 141			
Losses & own use	- 10	- 114	- 2	- 283		- 1		- 1	- 2
Discrepancy	- 120	- 42	25	- 53	4	- 66		1	37
<b>Total final consumption</b>	<b>394</b>	<b>476</b>	<b>2</b>	<b>5 971</b>	<b>1 585</b>	<b>1 202</b>	<b>179</b>	<b>474</b>	<b>1 548</b>
<b>Total final energy consumption</b>	<b>394</b>	<b>442</b>		<b>4 629</b>	<b>1 585</b>	<b>257</b>	<b>179</b>	<b>447</b>	<b>1 543</b>
Industry sector	394	438		731		257		42	190
Iron and steel	96	384		52				4	9
Chemical & petrochemical	108	30		355		257		5	23
Non-metallic minerals	121	14		85				2	23
Other industries	69	10		239				31	134
Transport sector				2 821	1 585		148		969
Domestic air transport					148		148		
Road				2 535	1 585				920
Rail				7					7
Inland waterways				131					42
Other transport									
Other sector	1	4		1 078			32	405	384
Residential				476				282	
Commerce and public services	1	4		455			32	107	254
Agriculture				98				16	81
Non-specified others				49					48
Non-energy		34	2	1 342		945		26	5
<b>2018</b>									
Production	22		17						
Import	4 878	47	6 373	1 833	70	869	53	63	27
Export	- 1	- 42		- 741	- 109		- 111	- 24	- 337
International marine bunkers				- 187					- 6
International aviation bunkers				- 304			- 304		
Stock changes		- 2	- 25	3	- 1	11	5	- 4	- 8
<b>Total primary energy supply</b>	<b>4 900</b>	<b>3</b>	<b>6 365</b>	<b>603</b>	<b>- 40</b>	<b>880</b>	<b>- 358</b>	<b>35</b>	<b>- 324</b>
<b>Transfers</b>			<b>- 58</b>	<b>66</b>		<b>33</b>	<b>- 9</b>	<b>1</b>	<b>4</b>
Total transformation sector	-4 360	637	-6 313	5 825	1 671	378	543	459	1 873
Main activity producers	-2 502	- 143	- 21	- 283				- 1	- 14
Autoproducers	- 171	- 112		- 165				- 2	- 12
Gas processing				- 73					
Petroleum refineries			-6 489	6 566	1 671	535	543	462	1 899
Coal transformation	-1 687	892		- 15					
Other transformation			196	- 204		- 157			
Losses & own use	- 11	- 114		- 287		- 1		- 1	- 2
Discrepancy	- 121	- 48	10	- 100	2	- 94	- 2	13	35
<b>Total final consumption</b>	<b>409</b>	<b>479</b>	<b>4</b>	<b>6 108</b>	<b>1 633</b>	<b>1 195</b>	<b>173</b>	<b>505</b>	<b>1 586</b>
<b>Total final energy consumption</b>	<b>409</b>	<b>443</b>	<b>1</b>	<b>4 758</b>	<b>1 633</b>	<b>255</b>	<b>173</b>	<b>478</b>	<b>1 580</b>
Industry sector	408	439	1	765		255		45	205
Iron and steel	96	387		54				4	11
Chemical & petrochemical	109	31	1	357		255		5	26
Non-metallic minerals	129	12		89				3	25
Other industries	74	9		264				33	143
Transport sector				2 872	1 633		148		966
Domestic air transport				148			148		
Road				2 585	1 633				918
Rail				7					7
Inland waterways				132					41
Other transport									
Other sector	1	4		1 121			25	433	409
Residential				461				283	
Commerce and public services	1	4		513			25	134	279
Agriculture				98				16	81
Non-specified others				49					48
Non-energy		36	3	1 349		940		27	6

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				88	287	696	391	590			2 086	1 022
20	498	183	3 767					69			16 633	69
- 127	- 3	- 38									- 845	
- 182		- 1									- 188	
											- 261	
10	- 7	- 1	1								- 37	
- 278	489	144	3 855	287	696	391	658				17 388	1 090
- 3	- 26	69									10	
497	34	187	180	- 2 600	- 287	- 696	- 378	- 392	3 731	23	- 4 669	- 890
- 69	- 8	- 31	- 81	- 2 521	- 276	- 696	- 152	- 265	3 138	16	- 3 583	- 561
- 44	- 7	- 57	- 41	- 149	- 11		- 226	- 122	597		- 362	- 329
		- 5	70								- 4	
610	162	281	316								74	
			- 14					- 5			- 791	
	- 44							- 1	- 4	7	- 4	- 1
- 41	- 5	- 195	- 38	- 44				- 6	- 377		- 836	- 6
16	7	8	- 59	- 2				- 1	- 14		- 207	- 1
191	498	295	1 209			13	258	3 340	23		11 686	193
173	336	109	1 199			13	258	3 340	23		10 299	193
72	61	109	463					149	1 233		3 408	105
3	13	22	98					2	243		875	
24		47	84					7	201		784	
20	7	33	31					30	63		345	6
26	41	7	250					111	726		1 404	99
89	31		1					17	63		2 903	17
											148	
	31		1					17			2 554	17
									63		70	
89											131	
12	245	1	735			13	92	2 043	23		3 989	70
	195		366			9		900	1		1 753	10
12	50		369			3	70	1 133	22		2 056	59
								9			107	
								22	1		72	1
18	162	185	9								1 386	
			94	291	708	357	589				2 080	973
74	506	172	3 966					58			17 155	58
- 116	- 3	- 41									- 784	
- 180		- 1									- 187	
											- 304	
- 5	4	16									- 7	
- 227	507	130	4 077	291	708	357	647				17 952	1 031
- 6	- 23	68									9	
455	47	188	213	- 2 758	- 291	- 708	- 343	- 377	3 816	23	- 4 850	- 825
- 132	- 9	- 56	- 71	- 2 683	- 280	- 708	- 145	- 239	3 237	16	- 3 751	- 512
- 40	- 7	- 59	- 45	- 144	- 12		- 199	- 133	583		- 352	- 312
	- 70	- 3	69								- 4	
628	179	306	343								77	
			- 15					- 4			- 815	
	- 47							- 1	- 4	7	- 5	- 1
- 43	- 4	- 194	- 41	- 47				- 6	- 382		- 847	- 6
4	- 2	6	- 61	- 54					- 30		- 342	- 1
183	525	307	1 218			14	263	3 405	23		11 922	198
165	366	108	1 208			14	263	3 405	23		10 524	198
70	82	107	477					153	1 252		3 495	109
4	16	20	108					2	251		897	
21	2	47	86					6	201		790	
20	9	33	33					29	65		358	6
26	56	7	251					116	735		1 449	103
91	34		2					18	63		2 955	18
											148	
	34		2					18			2 605	18
									63		70	
91											132	
4	249	1	730			14	92	2 090	23		4 074	71
	178		361			10		939	1		1 772	10
4	71		369			3	70	1 141	22		2 122	59
								9			107	
								22	1		72	1
18	159	200	9								1 398	



## Major energy indicators of Japan

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	18 310	20 557	21 610	21 772	20 941	18 154	17 977	18 190	17 952	17 388
Production	3 106	4 074	4 374	4 259	4 232	1 321	1 447	1 705	2 080	2 086
Import	15 985	17 490	18 164	18 600	17 877	18 022	17 733	17 682	17 155	16 633
Export	- 213	- 483	- 265	- 426	- 751	- 796	- 804	- 775	- 784	- 845
Final energy consumption	10 800	12 085	12 569	12 704	11 668	10 779	10 636	10 731	10 524	10 299
Industry	4 516	4 536	4 329	4 271	3 831	3 541	3 465	3 480	3 495	3 408
Transport	3 011	3 585	3 726	3 634	3 292	3 049	3 016	2 991	2 955	2 903
Residential	1 593	1 900	2 040	2 107	2 094	1 846	1 848	1 924	1 772	1 753
Commerce & public services	1 404	1 805	2 193	2 402	2 199	2 117	2 069	2 117	2 122	2 056
Others	276	260	280	291	251	226	238	220	180	180
<b>Coal</b>										
Primary energy supply	3 269	3 599	4 077	4 626	4 851	4 986	4 936	4 977	4 900	4 855
Production	187	148	64	27	25	31	31	32	22	18
Import	3 081	3 455	4 015	4 599	4 826	4 955	4 905	4 944	4 878	4 837
Export									- 1	
Transformation sector	-2 972	-3 150	-3 473	-4 086	-4 223	-4 430	-4 436	-4 473	-4 360	-4 331
Power generation	- 799	-1 165	-1 629	-2 249	-2 393	-2 746	-2 723	-2 771	-2 672	-2 653
Final energy consumption	419	439	427	448	423	428	408	419	409	394
Industry	418	439	427	447	415	423	405	416	408	394
Transport										
Residential										
Commerce & public services		1	1	1	8	5	3	3	1	1
Others										
<b>Coal products</b>										
Primary energy supply	- 40	- 92	- 4	15	14	57	27	4	3	- 25
Production										
Import	15	18	76	81	30	80	60	38	47	21
Export	- 57	- 104	- 78	- 49	- 20	- 23	- 30	- 36	- 42	- 47
Transformation sector	888	793	629	693	666	564	612	635	637	656
Power generation	- 333	- 347	- 325	- 289	- 305	- 296	- 278	- 264	- 254	- 250
Final energy consumption	655	534	416	459	489	445	439	454	443	442
Industry	653	533	416	459	487	442	435	450	439	438
Transport										
Residential	3	2								
Commerce & public services										
Others					2	3	4	4	4	4
<b>Crude oil &amp; NGL</b>										
Primary energy supply	8 500	9 520	9 127	8 937	7 698	7 051	6 952	6 745	6 365	6 203
Production	23	31	26	31	29	20	19	18	17	18
Import	8 605	9 599	9 182	8 935	7 664	6 980	6 871	6 667	6 373	6 221
Export										
Transformation sector	-8 215	-9 332	-8 897	-8 844	-7 543	-6 969	-6 892	-6 652	-6 313	-6 166
Petroleum refineries	-7 538	-8 964	-8 905	-8 853	-7 624	-6 949	-6 991	-6 784	-6 489	-6 337
<b>Petroleum products</b>										
Primary energy supply	1 917	1 492	1 470	1 150	724	663	471	644	603	468
Import	2 513	2 272	2 229	2 138	1 883	1 880	1 705	1 871	1 833	1 719
Export	- 156	- 379	- 187	- 376	- 731	- 773	- 774	- 739	- 741	- 798
Transformation sector	5 970	7 444	7 578	7 567	6 747	6 187	6 171	6 010	5 825	5 771
Power generation	-1 400	-1 210	- 920	- 899	- 650	- 598	- 617	- 545	- 448	- 368
Petroleum refineries	7 683	9 100	8 958	8 876	7 746	7 059	7 078	6 838	6 566	6 411
Final energy consumption	6 249	7 051	7 143	6 752	5 548	5 008	4 898	4 854	4 758	4 629
Industry	1 642	1 730	1 572	1 337	973	851	790	761	765	731
Transport	2 950	3 517	3 658	3 562	3 214	2 968	2 934	2 908	2 872	2 821
Residential	574	669	728	690	612	508	505	541	461	476
Commerce & public services	821	892	943	923	541	492	467	460	513	455
Others	262	244	242	240	207	189	201	184	147	147
<b>Gas</b>										
Primary energy supply	1 847	2 226	2 748	2 958	3 596	4 196	4 258	4 224	4 077	3 855
Production	80	86	96	121	134	100	103	107	94	88
Import	1 771	2 144	2 657	2 841	3 460	4 096	4 154	4 112	3 966	3 767
Export										
Transformation sector	-1 248	-1 458	-1 861	-1 816	-2 366	-2 959	-3 056	-2 903	-2 758	-2 600
Power generation	-1 411	-1 632	-2 005	-1 907	-2 432	-3 021	-3 119	-2 972	-2 827	-2 670
Final energy consumption	557	751	885	1 088	1 198	1 192	1 176	1 229	1 208	1 199
Industry	183	270	305	434	453	438	452	453	477	463
Transport			1	4	4	3	3	2	2	1
Residential	309	359	377	392	384	360	368	386	361	366
Commerce & public services	66	121	202	258	357	391	353	389	369	369
Others										
<b>Electricity</b>										
Power generation	3 102	3 516	3 798	3 958	4 190	3 796	3 833	3 865	3 820	3 734
Thermal	1 951	2 057	2 217	2 437	2 665	3 128	3 089	3 006	2 823	2 703
Hydro	316	284	303	277	302	314	286	302	291	287
Nuclear	728	1 049	1 159	1 097	1 038	34	65	118	234	230
Others	106	127	119	147	186	321	392	439	472	515
Final energy consumption	2 753	3 138	3 502	3 689	3 728	3 418	3 423	3 473	3 405	3 340
Industry	1 525	1 476	1 507	1 466	1 362	1 242	1 235	1 248	1 252	1 233
Transport	61	68	67	68	66	63	63	63	63	63
Residential	656	818	901	997	1 078	964	962	984	939	900
Commerce & public services	501	765	1 017	1 147	1 210	1 138	1 152	1 167	1 141	1 133
Others	11	11	11	11	12	11	11	12	10	10

## Major economic indicators of Japan

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>1</sup>	123.48	126.84	127.77	128.07	127.14	126.99	126.79	126.53	126.26
Gross domestic product <sup>3</sup>									
Real term, billion USD (constant 2015)	3 520	3 987	4 229	4 219	4 445	4 478	4 553	4 579	4 591
GDP, billion USD (PPP, constant 2017)	4 015	4 548	4 824	4 812	5 070	5 108	5 194	5 223	5 237
Nominal, billion USD (current)	3 133	4 968	4 831	5 759	4 445	5 004	4 931	5 037	5 149
GDP per capita <sup>3</sup>									
Real term (constant 2015 USD)	28 508	31 431	33 099	32 942	34 961	35 265	35 915	36 189	36 362
GDP, PPP (constant 2017 USD)	32 519	35 852	37 754	37 576	39 878	40 225	40 967	41 279	41 477
Nominal (current USD)	25 371	39 169	37 813	44 968	34 961	39 401	38 891	39 808	40 778
Nominal GDP & its components (billions of current JPY) <sup>1</sup>									
Gross domestic product	453 609	526 706	524 133	500 354	531 320	535 537	545 897	547 126	552 120
Households and NPISHs final consumption expenditure	232 097	286 589	291 543	288 956	300 612	298 240	302 642	304 428	305 013
General government final consumption expenditure	61 445	88 761	94 958	97 527	105 297	106 575	107 107	108 335	110 686
Gross fixed capital formation	154 919	144 237	128 942	106 724	126 403	124 953	129 892	131 971	134 171
Stock change	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of goods and services	46 358	55 960	73 444	75 237	93 571	87 113	96 907	101 355	96 898
Imports of goods and services	42 834	48 432	65 533	67 929	95 797	81 806	91 829	100 078	95 953
Real GDP & its components (billions of 2015 JPY) <sup>1</sup>									
Gross Domestic Product	417 308	474 562	503 252	505 718	531 320	534 093	545 674	547 437	548 917
Households and NPISHs final consumption expenditure	229 820	267 390	284 613	292 119	300 612	299 825	303 765	303 725	302 805
General government final consumption expenditure	62 824	84 520	93 189	98 044	105 297	106 803	106 974	107 895	109 926
Gross fixed capital formation	141 195	135 937	129 843	109 253	126 403	125 985	129 704	130 462	131 603
Stock change	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of goods and services	33 393	52 744	71 119	82 819	93 571	95 173	101 675	105 159	103 659
Imports of goods and services	44 820	62 549	75 470	76 248	95 797	94 245	97 430	100 715	100 303
Sectoral shares of Real GDP (%) <sup>1</sup>									
Agriculture, Fishery and Forestry	N.A.	1.7	1.3	1.2	1.1	1.0	1.0	1.0	1.0
Industry	N.A.	31.0	29.9	29.1	29.0	28.9	29.6	29.9	28.7
Services, etc.	N.A.	68.5	69.7	69.3	69.3	69.5	68.9	68.9	69.3
Industrial production index (2010=100) <sup>2</sup>	103.9	103.2	105.9	100.0	97.3	97.2	100.0	101.0	98.3
External trade (billions of current USD) <sup>1</sup>									
Exports, f.o.b.	287.6	479.2	594.9	769.8	624.9	645.1	698.3	738.1	705.6
Imports, c.i.f.	235.4	379.5	515.9	694.1	648.1	607.7	672.1	748.5	721.0
Balance of payments (billions of current USD) <sup>2</sup>									
Trade balance	N.A.	118.0	107.0	108.5	-7.3	51.2	43.8	10.6	1.4
Current account	N.A.	130.7	170.1	220.9	136.5	197.0	203.2	177.3	176.2
Overall balance	N.A.	32.1	38.6	12.9	-41.6	-79.6	56.5	16.2	-29.6
Foreign exchange rate (JPY/USD) <sup>1</sup>	144.79	107.77	110.22	87.78	121.04	108.79	112.17	110.42	109.01
PPP conversion factor, GDP (JPY/USD) <sup>1</sup>	209.91	176.47	142.94	121.03	108.96	114.93	115.98	114.14	113.52
Price Indices									
GDP Deflator (2015=100) <sup>3</sup>	108.7	111.0	104.1	98.9	100.0	100.3	100.0	99.9	100.6
Producer Price Index (2010=100) <sup>2</sup>	107.7	99.5	97.2	100.0	102.7	99.1	101.4	103.9	N.A.
Consumer Price Index (2010=100) <sup>2</sup>	94.5	102.6	100.4	100.0	103.6	103.5	104.0	105.0	105.5
Growth rate (%) <sup>3</sup>									
Real GDP	4.9	2.8	1.7	4.2	1.2	0.5	2.2	0.3	0.3
Population	0.3	0.2	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	1.5	0.0	1.7	-0.1	-2.3	-3.5	2.3	2.5	N.A.
Consumer prices	3.1	-0.7	-0.3	-0.7	0.8	-0.1	0.5	1.0	0.5

Source <sup>1</sup>: *World Development Indicators*, World Bank

<sup>2</sup>: *International Financial Statistics*, International Monetary Fund

<sup>3</sup>: Calculated from <sup>1</sup> and <sup>2</sup> by ESTO

Note

: N.A. means "not available"

: JPY means Yen, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Japan

## IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	JPY										
Exchange Rate	/ US Dollar		78.98	82.64	99.95	109.20	120.38		111.06	110.63	108.78
<b>Coal and Coal Products</b>											
Coking Coal	JPY/tonne		18 680	14 319	13 492	11 856	10 553		16 251	17 716	14 980
Anthracite											
Other bituminous coal	JPY/tonne		11 334	10 493	10 776	10 103	9 095		11 375	13 346	11 018
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil	JPY/kL		56 684	59 358	69 225	61 269	37 016		39 822	50 272	46 388
<b>Natural Gas Liquids</b>											
Ethane											
LPG	JPY/tonne		73 100	80 213	93 177	80 549	52 955		57 814	61 587	50 171
Naphtha	JPY/kL		52 957	55 253	65 444	61 147	40 841		39 822	47 764	40 906
Motor Gasoline	JPY/kL				74 635	70 614	48 321		46 164	55 432	47 972
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	JPY/kL									60 899	54 260
Other Kerosene	JPY/kL				89 145	66 245	46 297		55 005	61 089	55 220
Gas/Diesel Oil	JPY/kL				79 522	75 779	42 980		51 495	63 009	53 219
Fuel Oil	JPY/kL		62 351	64 234	71 150	65 601	42 972				
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas	JPY/tonne		64 970	71 538	83 697	87 307	54 418		48 544	60 362	53 527
Compressed Natural Gas											
Electricity											

\* USD/BBL in 2011 and 2012

## Energy prices in Japan

WHOLESALE PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	JPY										
Exchange Rate	/ US Dollar		78.98	82.64	99.95	109.20	120.38		111.06	110.63	108.78
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	JPY/kg		138.0	146.80	160.10	155.10	126.70		150.70	137.36	131.40
Naphtha	JPY/kL		58 088	63 156	75 432	59 208	39 771		38 652	51 182	44,886
Motor Gasoline	JPY/kL		132 183	133 880	143 076	141 577	114 892		117 943	128 527	123,620
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene	JPY/kL		78 059	80 500	89 250	85 869	59 310		64 080	76 410	72,491
Gas/Diesel Oil	JPY/kL		110 404	111 244	120 799	118 374	92 247		95 298	108 735	104,681
Fuel Oil	JPY/kL		55 004	56 634	64 715	70 962	46 997		52 203	50 336	47,426
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity											

## Energy prices in Japan

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	JPY										
Exchange Rate	/ US Dollar		78.98	82.64	99.95	109.20	120.38		111.06	110.63	108.78
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	JPY/m <sup>3</sup>		728.80	750.60	762.80	798.60	774.90		762.40	772.40	779.60
Naphtha											
Motor Gasoline (regular)	JPY/L		147.00	149.00	157.00	158.00	132.00		136.00	150.00	147.00
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene	JPY/L		98.22	100.56	107.89	108.10	84.80		88.30	100.60	100.06
Gas/Diesel Oil	JPY/L		127.00	129.00	137.00	137.00	112.00		115.00	129.00	128.00
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas (export)											
Compressed Natural Gas											
<b>Electricity</b>											
Industrial											
Commercial											
Residential	JPY/kWh				25.55	27.55	26.15		23.10	24.30	
Others											
<b>Other Energy Products</b>											



**Korea**

## Energy balance table of Korea

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	21		34						
Import	3 343	9	6 126	1 739	1	1 150			10
Export			- 5	-2 898	- 460	- 241	- 643	- 23	-1 116
International marine bunkers				- 348					- 62
International aviation bunkers				- 236			- 236		
Stock changes	- 22		- 71	31	7	17	- 5	- 1	4
<b>Total primary energy supply</b>	<b>3 342</b>	<b>9</b>	<b>6 084</b>	<b>-1 712</b>	<b>- 452</b>	<b>926</b>	<b>- 884</b>	<b>- 24</b>	<b>-1 164</b>
<b>Transfers</b>			<b>331</b>	<b>- 296</b>	<b>7</b>	<b>- 241</b>	<b>- 10</b>	<b>5</b>	<b>6</b>
Total transformation sector	-3 179	303	-6 472	6 256	880	1 155	958	119	2 098
Main activity producers	-2 060	- 82		- 45					- 8
Autoproducers	- 140	- 94		- 64		- 32			
Gas processing				- 4					
Petroleum refineries			-6 982	6 836	880	1 588	958	119	2 106
Coal transformation	- 979	480							
Other transformation			510	- 466		- 401			
Losses & own use		- 132		- 248					
Discrepancy	- 6	- 7	57	82	- 2	- 13		- 7	30
<b>Total final consumption</b>	<b>157</b>	<b>174</b>		<b>4 082</b>	<b>433</b>	<b>1 828</b>	<b>64</b>	<b>92</b>	<b>970</b>
<b>Total final energy consumption</b>	<b>157</b>	<b>152</b>		<b>1 899</b>	<b>433</b>		<b>64</b>	<b>92</b>	<b>970</b>
Industry sector	157	140		153				3	49
Iron and steel	54	131		3					
Chemical & petrochemical	3			32					1
Non-metallic minerals	90			24					5
Other industries	11	9		93				3	43
Transport sector				1 447	433		46		816
Domestic air transport				46			46		
Road				1 381	433				802
Rail				4					4
Inland waterways				16					10
Other transport									
Other sector		12		299			18	89	104
Residential		12		130				67	23
Commerce and public services				69				12	10
Agriculture				15				5	9
Non-specified others				86			18	4	62
<b>Non-energy</b>		<b>22</b>		<b>2 184</b>		<b>1 828</b>			
<b>2018</b>									
Production	22		34						
Import	3 332	9	6 406	1 716	1	1 112			10
Export			- 26	-2 944	- 460	- 221	- 647	- 36	-1 090
International marine bunkers				- 400					- 47
International aviation bunkers				- 222			- 222		
Stock changes	9		89	- 33	- 10	- 13	- 3	- 3	- 9
<b>Total primary energy supply</b>	<b>3 363</b>	<b>9</b>	<b>6 504</b>	<b>-1 884</b>	<b>- 469</b>	<b>878</b>	<b>- 873</b>	<b>- 39</b>	<b>-1 135</b>
<b>Transfers</b>			<b>139</b>	<b>- 120</b>	<b>9</b>	<b>- 141</b>	<b>- 8</b>	<b>28</b>	<b>4</b>
Total transformation sector	-3 305	329	-6 521	6 220	875	1 128	959	117	2 054
Main activity producers	-2 156	- 83		- 65					- 6
Autoproducers	- 151	- 98		- 75		- 48			
Gas processing				- 9					
Petroleum refineries			-7 041	6 850	875	1 596	959	117	2 060
Coal transformation	- 998	510							
Other transformation			520	- 481		- 420			
Losses & own use		- 123		- 247					
Discrepancy	125	- 2	- 121	- 6	2	- 39	- 1	- 3	- 1
<b>Total final consumption</b>	<b>183</b>	<b>212</b>		<b>3 963</b>	<b>417</b>	<b>1 825</b>	<b>77</b>	<b>103</b>	<b>922</b>
<b>Total final energy consumption</b>	<b>183</b>	<b>191</b>		<b>1 856</b>	<b>417</b>		<b>77</b>	<b>103</b>	<b>922</b>
Industry sector	183	172		153				3	50
Iron and steel	66	163		3					
Chemical & petrochemical	3			32					1
Non-metallic minerals	96			21					6
Other industries	18	9		97				2	43
Transport sector				1 383	417		56		765
Domestic air transport				56			56		
Road				1 309	417				751
Rail				4					4
Inland waterways				13					9
Other transport									
Other sector		19		320			21	100	107
Residential		19		142				76	28
Commerce and public services				78				13	13
Agriculture				12				4	7
Non-specified others				88			20	6	59
<b>Non-energy</b>		<b>21</b>		<b>2 106</b>		<b>1 825</b>			

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				9	10	1 592	69	288		2	2 025	235
202	376			2 018							13 235	
- 113	- 23		- 279								- 2 903	
- 286											- 348	
											- 236	
13	- 3		- 1	19							- 43	
- 184	350		- 279	2 046	10	1 592	69	288		2	11 731	235
- 95	11	23	- 3								34	
326	92	205	424	- 1 044	- 10	- 1 592	- 58	- 130	2 081	235	- 3 608	- 157
- 38				- 983	- 10	- 1 592	- 54	- 81	1 966	91	- 2 849	- 136
			- 32	- 61			- 4	- 49	114	145	- 154	- 21
	- 4										- 4	
363	137	227	457								- 146	
											- 499	
	- 42	- 23								- 1	44	
- 14	- 9	- 212	- 14	- 5					- 205	- 7	- 596	
19	13		43	- 85				6	10	- 1	56	6
51	456	16	171	912			11	164	1 886	230	7 617	83
51	265	16	8	912			11	164	1 886	230	5 412	83
34	43	16	8	311				100	981	133	1 976	25
	3			65					191		444	
10	5	16		37				17	191	86	367	
11	1		8	25				30	45		214	
13	34			183				53	555	47	950	24
6	146			50				27	11		1 535	27
	146			50				27	1		1 458	27
6									10		14	
											16	
12	76			552			11	36	893	97	1 901	32
8	31			384			2	7	243	83	862	9
2	44			167			7	29	589	13	875	21
1							1		51		67	2
1	1								11		97	
	192		164								2 205	
				11	12	1 456	54	302		2	1 894	230
281	311		1	2 078							13 542	
- 172	- 21		- 297								- 2 970	
- 353											- 400	
											- 222	
- 2	10		- 3	- 100							- 35	
- 246	300		- 300	1 990	12	1 456	54	302		2	11 809	230
- 48	19	24	- 6								19	
376	98	186	427	- 1 087	- 12	- 1 456	- 44	- 124	2 110	249	- 3 641	- 138
- 59				- 1 014	- 12	- 1 456	- 40	- 72	1 982	97	- 2 821	- 118
			- 27	- 73			- 4	- 52	128	153	- 171	- 20
	- 8	- 1									- 9	
435	139	210	460								- 190	
											- 488	
	- 33	- 24	- 5							- 1	38	
- 34	- 3	- 198	- 13	- 6					- 204	- 7	- 588	
16	- 6		27	42					7	- 12	31	
64	409	11	135	938			11	178	1 913	232	7 630	92
64	261	11	2	938			11	178	1 913	232	5 503	92
46	42	11	2	315				109	1 004	132	2 069	30
	2			65					200		498	
15	4	11		45				18	191	87	375	
13	1		2	24				31	46		218	
17	34			181				61	567	45	978	29
4	141			51				27	11		1 472	27
											56	
	141			51				27			1 387	27
4									11		15	
											13	
14	79			572			10	42	899	100	1 962	35
9	29			400			2	7	244	86	899	9
3	48			172			7	32	595	14	898	22
1							1	3	50		67	4
1	1								10		98	
	148		133								2 128	



## Major energy indicators of Korea

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	3 890	6 061	7 878	8 804	10 468	11 417	11 824	11 817	11 809	11 731
Production	947	885	1 442	1 799	1 882	2 152	2 153	2 055	1 894	2 025
Import	3 096	6 301	8 653	8 847	11 173	12 552	13 012	13 237	13 542	13 235
Export	- 159	- 659	- 1 714	- 1 496	- 1 917	- 2 628	- 2 691	- 2 798	- 2 970	- 2 903
Final energy consumption	2 436	3 671	4 274	4 609	4 996	5 271	5 391	5 472	5 503	5 412
Industry	806	1 223	1 611	1 635	1 883	2 013	2 002	2 028	2 069	1 976
Transport	610	1 016	1 100	1 222	1 254	1 418	1 462	1 492	1 472	1 535
Residential	542	403	630	771	832	797	868	895	899	862
Commerce & public services	364	776	721	805	858	876	903	891	898	875
Others	114	253	213	176	169	167	155	166	165	164
<b>Coal</b>										
Primary energy supply	1 063	1 114	1 756	2 070	3 057	3 373	3 401	3 449	3 363	3 342
Production	317	103	152	53	40	33	32	29	22	21
Import	658	1 179	1 639	1 956	3 036	3 385	3 397	3 410	3 332	3 343
Export										
Transformation sector	- 991	- 912	- 1 610	- 2 034	- 2 851	- 3 199	- 3 187	- 3 303	- 3 305	- 3 179
Power generation	- 164	- 388	- 1 024	- 1 421	- 2 051	- 2 181	- 2 178	- 2 313	- 2 307	- 2 200
Final energy consumption	113	200	267	174	189	201	211	170	183	157
Industry	111	200	267	174	189	201	211	170	183	157
Transport										
Residential										
Commerce & public services										
Others	1									
<b>Coal products</b>										
Primary energy supply				9	18	11	10	10	9	9
Production										
Import				9	18	11	10	10	9	9
Export										
Transformation sector	439	187	202	175	293	371	308	311	329	303
Power generation	- 86	- 108	- 109	- 100	- 144	- 179	- 176	- 181	- 182	- 176
Final energy consumption	378	110	113	150	194	228	160	171	191	152
Industry	16	53	89	110	158	201	137	151	172	140
Transport										
Residential	362	57	24	40	36	27	23	21	19	12
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	1 810	3 764	5 296	4 974	5 066	5 903	6 218	6 407	6 504	6 084
Production			28	22	29	28	29	32	34	34
Import	1 787	3 736	5 267	4 913	5 090	5 950	6 250	6 399	6 406	6 126
Export		- 1	- 4		- 20	- 14	- 22	- 15	- 26	- 5
Transformation sector	- 1 780	- 3 776	- 5 141	- 4 968	- 4 939	- 5 784	- 6 083	- 6 382	- 6 521	- 6 472
Petroleum refineries	- 1 780	- 3 840	- 5 358	- 5 190	- 5 232	- 6 193	- 6 526	- 6 885	- 7 041	- 6 982
<b>Petroleum products</b>										
Primary energy supply	272	51	- 1 149	- 1 102	- 1 083	- 1 604	- 1 621	- 1 840	- 1 884	- 1 712
Import	538	1 040	1 031	875	1 383	1 574	1 697	1 593	1 716	1 739
Export	- 159	- 658	- 1 710	- 1 496	- 1 897	- 2 614	- 2 669	- 2 782	- 2 944	- 2 898
Transformation sector	1 634	3 373	4 713	4 652	4 652	5 476	5 685	6 032	6 220	6 256
Power generation	- 189	- 414	- 337	- 271	- 213	- 177	- 200	- 133	- 141	- 110
Petroleum refineries	1 823	3 850	5 260	5 167	5 169	6 050	6 321	6 630	6 850	6 836
Final energy consumption	1 546	2 535	2 296	2 063	1 839	1 822	1 871	1 898	1 856	1 899
Industry	456	580	459	334	247	143	150	150	153	153
Transport	606	1 010	1 092	1 199	1 189	1 343	1 381	1 409	1 383	1 447
Residential	80	106	162	133	125	127	148	153	142	130
Commerce & public services	296	607	388	248	144	99	99	81	78	69
Others	108	232	194	150	133	110	94	105	100	100
<b>Gas</b>										
Primary energy supply	114	348	712	1 146	1 618	1 647	1 730	1 809	1 990	2 046
Production				18	20	7	6	13	11	9
Import	112	346	715	1 093	1 645	1 630	1 658	1 827	2 078	2 018
Export										
Transformation sector	- 85	- 174	- 241	- 464	- 739	- 803	- 860	- 896	- 1 087	- 1 044
Power generation	- 85	- 174	- 241	- 464	- 754	- 803	- 860	- 896	- 1 087	- 1 044
Final energy consumption	28	167	457	669	862	858	901	928	938	912
Industry	3	22	121	175	297	310	314	313	315	311
Transport				14	43	49	50	50	51	50
Residential	19	112	261	351	374	342	371	393	400	384
Commerce & public services	6	33	76	130	148	157	166	172	172	167
Others				1						
<b>Electricity</b>										
Power generation	379	652	1 039	1 396	1 788	1 976	2 011	2 025	2 110	2 081
Thermal	166	400	632	853	1 229	1 339	1 364	1 416	1 537	1 445
Hydro	23	10	14	13	13	8	10	10	12	10
Nuclear	190	241	392	528	535	593	583	534	481	525
Others	0	1		2	10	36	53	65	80	100
Final energy consumption	340	588	947	1 287	1 618	1 783	1 862	1 884	1 913	1 886
Industry	208	335	541	662	821	945	955	988	1 004	981
Transport	4	6	7	9	8	8	10	10	11	11
Residential	64	102	134	183	221	230	248	240	244	243
Commerce & public services	59	133	246	407	532	548	592	588	595	589
Others	5	12	19	25	36	53	58	58	60	62

## Major economic indicators of Korea

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	42.87	47.01	48.18	49.55	51.01	51.22	51.36	51.61	51.71
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	401	799	1 021	1 261	1 466	1 509	1 557	1 602	1 635
GDP, billion USD (PPP, constant 2017)	543	1 079	1 380	1 704	1 981	2 039	2 104	2 165	2 209
Nominal, billion USD (current)	283	576	935	1 144	1 466	1 500	1 624	1 725	1 647
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	9 365	16 992	21 193	25 451	28 732	29 462	30 307	31 041	31 611
GDP, PPP (constant 2017 USD)	12 656	22 964	28 641	34 394	38 829	39 815	40 957	41 948	42 719
Nominal (current USD)	6 610	12 257	19 403	23 087	28 732	29 289	31 617	33 423	31 846
Nominal GDP & its components (billions of current KRW) <sup>11</sup>									
Gross domestic product	200 556	651 634	957 448	1 322 611	1 658 020	1 740 780	1 835 698	1 898 193	1 919 040
Households and NPISHs final consumption expenditure	100 738	355 141	500 911	667 061	804 812	834 805	872 791	911 576	931 670
General government final consumption expenditure	22 008	71 028	123 149	187 875	250 088	265 295	283 046	304 693	329 296
Gross fixed capital formation	74 874	206 895	291 800	399 786	481 002	517 350	578 457	576 587	575 071
Stock change	4 452	7 451	19 449	30 752	8 600	7 368	14 255	21 100	26 511
Exports of goods and services	50 128	221 159	337 817	622 999	712 776	698 621	751 429	791 799	766 602
Imports of goods and services	51 655	209 540	316 357	585 862	599 257	582 659	664 279	707 562	710 990
Real GDP & its components (billions of 2015 KRW) <sup>11</sup>									
Gross Domestic Product	454 146	903 551	1 155 130	1 426 618	1 658 020	1 706 880	1 760 812	1 812 005	1 848 959
Households and NPISHs final consumption expenditure	279 924	511 607	617 417	725 119	804 812	825 676	848 589	875 578	890 168
General government final consumption expenditure	77 174	115 735	151 963	205 739	250 088	261 162	271 429	285 893	304 760
Gross fixed capital formation	175 602	306 030	369 229	425 635	481 002	512 635	562 777	550 387	534 829
Stock change	6 575	10 058	17 797	17 171	8 600	7 662	13 945	18 509	21 360
Exports of goods and services	55 318	218 958	359 712	549 438	712 776	729 685	747 784	777 515	790 874
Imports of goods and services	84 743	231 805	343 052	485 464	599 257	630 267	686 089	697 841	693 413
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	4.9	3.0	2.3	2.2	2.0	1.8	1.8	1.8	1.8
Industry	28.9	24.6	24.6	25.2	23.6	22.3	23.5	24.2	25.4
Services, etc.	53.4	54.9	54.6	54.6	55.6	55.6	55.3	55.8	56.2
Industrial production index (2010=100) <sup>12</sup>	22.9	53.6	71.6	100.0	108.4	110.5	114.0	115.7	115.2
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	65.0	172.3	284.4	466.4	526.8	495.4	573.7	604.9	542.2
Imports, c.i.f.	69.8	160.5	261.2	425.2	436.5	406.2	478.5	535.2	503.3
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	-3.7	15.4	32.5	47.9	120.3	116.5	113.6	110.1	79.8
Current account	-2.8	10.2	12.2	28.0	105.1	97.9	75.2	77.5	59.7
Overall balance	-0.5	24.5	13.5	33.3	14.2	5.6	-5.0	18.8	1.9
Foreign exchange rate (KRW/USD) <sup>11</sup>	707.77	1 130.36	1 024.33	1 156.46	1 130.95	1 160.77	1 131.00	1 100.16	1 165.36
PPP conversion factor, GDP (KRW/USD) <sup>11</sup>	519.77	824.43	879.37	907.90	959.68	967.11	992.07	979.21	974.22
Price Indices									
GDP Deflator (2015=100) <sup>13</sup>	44.2	72.1	82.9	92.7	100.0	102.0	104.3	104.8	103.8
Producer Price Index (2010=100) <sup>12</sup>	57.6	80.8	84.2	100.0	103.1	101.2	104.7	106.7	106.7
Consumer Price Index (2010=100) <sup>12</sup>	44.6	73.1	86.2	100.0	109.8	110.9	113.1	114.7	115.2
Growth rate (%) <sup>13</sup>									
Real GDP	9.9	9.1	4.3	6.8	2.8	2.9	3.2	2.9	2.0
Population	1.0	0.8	0.2	0.5	0.5	0.4	0.3	0.5	0.2
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	4.2	2.1	6.0	7.1	-4.0	-1.8	3.5	1.9	0.0
Consumer prices	8.6	2.3	2.8	2.9	0.7	1.0	1.9	1.5	0.4

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note : N.A. means "not available"

: KRW means Won, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Korea

## IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	KRW										
Exchange Rate	/ US Dollar		1 152		1 055	1 099			1 130	1 101	
<b>Coal and Coal Products</b>											
Coking Coal	USD/tonne		250.20		150.30	125.43			184.31	146.24	
Anthracite	USD/tonne		201.20		134.70	111.04			133.23	95.0	
Other bituminous coal	USD/tonne				88.70	81.99			83.61	.0	
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil	USD/BBL		108.0		108.27	101.24			53.36	71.48	
<b>Natural Gas Liquids</b>											
Ethane											
LPG	USD/BBL		72.50		77.28	76.43			41.07	48.0	
Naphtha	USD/BBL		103.70		102.95	101.78			54.16	70.59	
Motor Gasoline											
Aviation Gasoline	USD/BBL				184.57	176.31			158.67	151.33	
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene	USD/BBL		130.39		126.67	125.68			62.81	62.86	
Gas/Diesel Oil	USD/BBL		125.45		127.25	122.55			68.67	86.59	
Fuel Oil	USD/BBL		102.43		101.33	95.51			54.62	70.70	
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas	USD/tonne		650.37			846.26			416.01	526.84	
Compressed Natural Gas											
Electricity											

## Energy prices in Korea

## WHOLESALE PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency Exchange Rate	KRW / US Dollar		1 152		1 055	1 099			1 130	1 101	
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	KRW/kg				1 217	1 155					
Naphtha											
Motor Gasoline	KRW/L				1 797	1 685			1 380	1 456	
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene	KRW/L				1 127	964			650	765	
Gas/Diesel Oil	KRW/L				1 609	1 485			1 161	1 277	
Fuel Oil	KRW/L				919	853			565	659	
White Spirit SBP	KRW/L				829	782					
Lubricants											
Bitumen	KRW/kg				717	611			404	533	
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	KRW/MJ				19.48	20.50			12.47	13.23	
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity											

## Energy prices in Korea

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	KRW										
Exchange Rate	/ US Dollar		1 152		1 055	1 099			1 130	1 101	
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG											
Naphtha											
Motor Gasoline (regular)	KRW/L		1 929		1 943	1 827			1 491	1 581	
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene	KRW/L		1 321		1 367	1 297			853	942	
Gas/Diesel Oil	KRW/L		1 746		1 730	1 637			1 283	1 392	
Fuel Oil	KRW/L		987			886			620	724	
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	KRW/MJ*		815.78		20.58	21.60			13.82	14.58	
Liquefied Natural Gas (export)											
Compressed Natural Gas											
<b>Electricity</b>											
Industrial	KRW/kWh								107.41	106.46	
Commercial	KRW/kWh								130.42	129.97	
Residential	KRW/kWh								108.50	106.87	
Others											
<b>Other Energy Products</b>											

\* KRW/m<sup>3</sup> in 2011



**Malaysia**

## Energy balance table of Malaysia

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	91		1 339						
Import	822		435	739	368		24		260
Export			- 523	- 493	- 15		- 28	- 2	- 216
International marine bunkers				- 17					- 6
International aviation bunkers									
Stock changes	- 28		- 86	79	8		- 6		59
<b>Total primary energy supply</b>	<b>885</b>		<b>1 165</b>	<b>308</b>	<b>362</b>		<b>- 10</b>	<b>- 2</b>	<b>98</b>
Transfers			- 88	88					
Total transformation sector	- 810		- 1 058	960	223		145	2	335
Main activity producers	- 810			- 22					- 22
Autoproducers				- 3					- 3
Gas processing				19				2	4
Petroleum refineries			- 1 058	966	223		145		355
Coal transformation									
Other transformation									
Losses & own use				- 7					
Discrepancy	- 4		- 18	- 17	- 6		1		11
<b>Total final consumption</b>	<b>71</b>			<b>1 333</b>	<b>578</b>		<b>137</b>	<b>1</b>	<b>443</b>
<b>Total final energy consumption</b>	<b>71</b>			<b>1 215</b>	<b>578</b>		<b>137</b>	<b>1</b>	<b>443</b>
Industry sector	71			116	4				90
Iron and steel									
Chemical & petrochemical									
Non-metallic minerals									
Other industries	71			116	4				90
Transport sector				1 014	572		137		305
Domestic air transport				137			137		
Road				877	572				305
Rail									
Inland waterways									
Other transport									
Other sector				86	2				48
Residential				26					
Commerce and public services				23					14
Agriculture				9					9
Non-specified others				28	2				25
Non-energy									118
<b>2018</b>									
Production	70		1 424						
Import	868		388	827	446		22		287
Export			- 629	- 671	- 129		- 35	- 2	- 303
International marine bunkers				- 18					- 4
International aviation bunkers									
Stock changes	8		- 19	20					34
<b>Total primary energy supply</b>	<b>947</b>		<b>1 165</b>	<b>159</b>	<b>317</b>		<b>- 12</b>	<b>- 2</b>	<b>14</b>
Transfers			- 85	85					
Total transformation sector	- 857		- 1 071	1 041	231		144	3	396
Main activity producers	- 857			- 9					- 8
Autoproducers				- 6					- 6
Gas processing				23				2	5
Petroleum refineries			- 1 071	1 033	231		144	1	405
Coal transformation									
Other transformation									
Losses & own use				- 6					
Discrepancy	- 14		- 9	- 5	- 2		- 2		- 1
<b>Total final consumption</b>	<b>76</b>			<b>1 273</b>	<b>546</b>		<b>131</b>		<b>408</b>
<b>Total final energy consumption</b>	<b>76</b>			<b>1 156</b>	<b>546</b>		<b>131</b>		<b>408</b>
Industry sector	76			102	5				75
Iron and steel									
Chemical & petrochemical									
Non-metallic minerals									
Other industries	76			102	5				75
Transport sector				961	538		131		293
Domestic air transport				131			131		
Road				830	538				293
Rail									
Inland waterways									
Other transport									
Other sector				92	3				40
Residential				33					
Commerce and public services				19					3
Agriculture				13					12
Non-specified others				28	3				25
Non-energy									118

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				2 573	94		5	69			4 171	168
3	19		65	305							2 301	
- 17	- 25		- 191	- 1 235				- 26	- 6		- 2 284	- 26
- 11											- 17	
- 9	23		3					- 3			- 38	- 3
- 34	17		- 123	1 642	94		5	39	- 6		4 133	139
	88											
57	25	6	167	- 688	- 94		- 5	- 12	642		- 1 066	- 112
- 1				- 547	- 94		- 5	- 6	618		- 867	- 105
				- 56				- 7	25		- 41	- 7
	1		12	- 85							- 66	
58	23	6	155								- 92	
		- 6	- 1	- 34					- 55		- 96	
- 5	- 3		- 14	314					- 10		265	
19	126		30	1 234				27	571		3 236	27
19	38			328				27	571		2 213	27
16	5			323					283		792	
16	5			323					283		792	
				4				27	2		1 047	27
											137	
				4				27			909	27
									2		2	
2	33			1					287		374	
	26								114		140	
2	7			1					171		195	
									2		11	
											28	
	88		30	906							1 024	
				2 477	95		2	45			4 113	142
4	22		46	291							2 376	
- 57	- 19		- 126	- 1 144				- 17	- 5		- 2 466	- 17
- 13											- 18	
- 22	5		3					6			15	6
- 88	8		- 77	1 624	95		2	34	- 5		4 020	131
	85											
101	40	5	120	- 684	- 95		- 2	- 16	614		- 1 070	- 113
- 1				- 483	- 95		- 2	- 5	588		- 862	- 102
				- 53				- 11	26		- 45	- 11
	2		14	- 148							- 124	
102	38	5	107								- 39	
		- 5	- 1	- 35					- 51		- 92	
	6		- 9	322					- 7		287	
16	139		33	1 227				18	551		3 145	18
16	54			352				18	551		2 152	18
15	7			346					274		797	
15	7			346					274		797	
				5				18	2		986	18
											131	
				5				18			854	18
									2		2	
2	47			1					275		368	
	33								107		140	
1	14			1					166		186	
									2		15	
											28	
	85		33	875							993	



## Major energy indicators of Malaysia

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	857	1 391	1 999	2 745	2 848	3 748	3 905	3 948	4 020	4 133
Production	1 948	2 605	3 170	3 926	3 493	4 087	4 176	4 301	4 113	4 171
Import	406	466	681	1 009	1 552	1 946	2 101	2 078	2 376	2 301
Export	-1 490	-1 651	-1 827	-2 198	-2 202	-2 292	-2 399	-2 413	-2 466	-2 284
Final energy consumption	514	791	1 149	1 512	1 582	1 922	2 030	2 092	2 152	2 213
Industry	221	337	478	652	541	585	671	731	797	792
Transport	226	328	505	640	705	981	1 005	1 006	986	1 047
Residential	31		69	91	111	132	138	157	140	140
Commerce & public services	37	107	93	124	180	186	200	170	186	195
Others		19	4	4	45	37	17	28	43	39
<b>Coal</b>										
Primary energy supply	57	67	97	286	611	733	785	868	947	885
Production	3	4	10	18	63	68	64	79	70	91
Import	60	66	81	277	547	672	716	803	868	822
Export	-1	-2	-1	-2	-3	-7	-1	-16		
Transformation sector	-34	-40	-63	-232	-542	-654	-710	-794	-857	-810
Power generation	-34	-40	-63	-232	-542	-654	-710	-794	-857	-810
Final energy consumption	21	30	41	56	76	74	75	76	76	71
Industry	21	30	41	56	76	74	75	76	76	71
Transport										
Residential										
Commerce & public services										
Others										
<b>Coal products</b>										
Primary energy supply										
Production										
Import										
Export										
Transformation sector										
Power generation										
Final energy consumption										
Industry										
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	420	811	947	1 120	1 046	1 086	1 237	1 244	1 165	1 165
Production	1 282	1 549	1 353	1 568	1 443	1 407	1 475	1 456	1 424	1 339
Import	94	89	323	342	340	351	456	428	388	435
Export	-961	-830	-722	-795	-723	-675	-697	-627	-629	-523
Transformation sector	-418	-710	-928	-1 025	-951	-1 030	-1 152	-1 144	-1 071	-1 058
Petroleum refineries	-418	-710	-928	-1 025	-951	-1 030	-1 152	-1 144	-1 071	-1 058
<b>Petroleum products</b>										
Primary energy supply	82	-8	-80	-8	97	177	152	81	159	308
Import	253	310	277	333	434	595	642	555	827	739
Export	-164	-304	-357	-353	-353	-428	-511	-463	-671	-493
Transformation sector	311	618	844	916	895	1 018	1 053	1 143	1 041	960
Power generation	-125	-98	-40	-24	-31	-18	-15	-20	-15	-25
Petroleum refineries	436	699	877	898	888	1 017	1 042	1 140	1 033	966
Final energy consumption	402	595	789	937	937	1 141	1 160	1 180	1 156	1 215
Industry	146	207	221	232	117	91	101	113	102	116
Transport	226	327	505	636	693	953	979	983	961	1 014
Residential	31		28	33	30	28	25	47	33	26
Commerce & public services		42	30	32	52	32	39	11	19	23
Others		19	4	4	44	36	15	26	41	36
<b>Gas</b>										
Primary energy supply	285	498	1 010	1 334	1 072	1 676	1 635	1 641	1 624	1 642
Production	648	1 031	1 782	2 318	1 964	2 524	2 533	2 641	2 477	2 573
Import				56	231	327	286	293	291	305
Export	-364	-513	-747	-1 040	-1 123	-1 176	-1 185	-1 293	-1 144	-1 235
Transformation sector	-100	-427	-784	-1 000	-750	-1 027	-793	-752	-684	-688
Power generation	-57	-269	-507	-552	-572	-633	-601	-541	-537	-603
Final energy consumption	19	25	98	228	192	213	260	293	352	328
Industry	19	24	97	223	180	201	251	286	346	323
Transport				4	10	11	9	6	5	4
Residential										
Commerce & public services			1	1	1	1	1	1	1	1
Others										
<b>Electricity</b>										
Power generation	83	140	231	315	398	540	564	592	614	642
Thermal	68	117	206	293	374	487	488	492	512	539
Hydro	14	22	25	22	23	50	72	96	95	94
Nuclear										
Others	0				1	4	4	4	7	9
Final energy consumption	72	141	220	291	377	477	519	528	551	571
Industry	35	76	117	141	167	218	244	257	274	283
Transport					1	1	1	2	2	2
Residential			41	58	81	103	112	109	107	114
Commerce & public services	37	65	62	91	126	153	160	158	166	171
Others					1	2	2	2	2	2

## Major economic indicators of Malaysia

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	18.03	23.19	25.69	28.21	30.27	30.68	31.10	31.53	31.95
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	75	148	187	233	301	315	333	349	364
GDP, billion USD (PPP, constant 2017)	186	369	465	579	750	784	829	869	906
Nominal, billion USD (current)	44	94	144	255	301	301	319	359	365
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	4 139	6 393	7 275	8 248	9 955	10 258	10 708	11 068	11 392
GDP, PPP (constant 2017 USD)	10 306	15 917	18 114	20 536	24 788	25 542	26 662	27 558	28 364
Nominal (current USD)	2 442	4 044	5 587	9 041	9 955	9 818	10 259	11 378	11 414
Nominal GDP & its components (billions of current MYR) <sup>11</sup>									
Gross domestic product	119	356	544	821	1 177	1 250	1 372	1 447	1 511
Households and NPISHs final consumption expenditure	62	156	240	395	635	685	760	831	904
General government final consumption expenditure	16	36	62	103	154	157	167	173	177
Gross fixed capital formation	39	90	121	184	304	319	344	350	347
Stock change	- 1	6	1	8	- 5	6	7	- 4	- 29
Exports of goods and services	89	427	614	714	817	834	961	993	985
Imports of goods and services	86	359	494	583	729	751	867	895	873
Real GDP & its components (billions of 2015 MYR) <sup>11</sup>									
Gross Domestic Product	291	579	730	909	1 177	1 229	1 301	1 363	1 421
Households and NPISHs final consumption expenditure	137	236	328	451	635	672	719	776	835
General government final consumption expenditure	31	53	85	111	154	156	164	170	173
Gross fixed capital formation	78	142	157	205	304	312	331	336	328
Stock change	5	50	- 3	34	- 5		1	- 9	- 15
Exports of goods and services	163	523	679	756	817	828	900	917	906
Imports of goods and services	135	398	528	625	729	739	815	827	806
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	20.2	11.1	10.3	9.4	8.3	7.6	7.6	7.3	7.1
Industry	48.5	51.3	49.0	40.1	38.4	38.4	38.0	37.5	36.7
Services, etc.	31.6	38.5	41.4	49.4	52.0	52.6	53.0	54.1	55.0
Industrial production index (2010=100) <sup>12</sup>	31.6	78.4	100.0	100.0	121.5	126.5	132.1	136.1	N.A.
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	29.5	98.2	141.6	198.6	200.0	189.7	218.1	247.5	238.2
Imports, c.i.f.	29.3	82.0	114.3	164.6	176.0	168.7	195.4	217.6	205.0
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	2.5	20.7	33.0	38.4	27.9	24.5	27.3	28.4	30.1
Current account	-0.9	8.5	20.0	25.6	9.1	7.1	9.0	8.0	12.8
Overall balance	0.9	2.2	10.2	19.6	-5.8	7.3	7.9	11.0	3.7
Foreign exchange rate (MYR/USD) <sup>11</sup>	2.70	3.80	3.79	3.22	3.91	4.15	4.30	4.04	4.14
PPP conversion factor, GDP (MYR/USD) <sup>11</sup>	1.50	1.62	1.55	1.59	1.64	1.65	1.73	1.70	1.68
Price Indices									
GDP Deflator (2015=100) <sup>13</sup>	40.9	61.5	74.5	90.4	100.0	101.7	105.5	106.2	106.3
Producer Price Index (2010=100) <sup>12</sup>	50.4	69.0	82.4	100.0	102.2	101.1	107.9	106.7	N.A.
Consumer Price Index (2010=100) <sup>12</sup>	56.8	80.5	87.8	100.0	112.8	115.1	119.6	120.7	121.5
Growth rate (%) <sup>13</sup>									
Real GDP	9.0	8.9	5.3	7.4	5.1	4.4	5.8	4.8	4.3
Population	2.9	2.4	2.0	1.7	1.4	1.4	1.4	1.4	1.3
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	0.7	3.1	6.9	5.6	-7.5	-1.1	6.7	-1.1	N.A.
Consumer prices	2.6	1.5	3.0	1.6	2.1	2.1	3.9	0.9	0.7

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note : N.A. means "not available"

: MYR means Malaysian Ringgit, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Malaysia

## IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	MYR										
Exchange Rate	/ US Dollar	3.08						4.15	4.00	7.84	3.08
<b>Coal and Coal Products</b>											
Coking Coal	MYR/tonne	1 485									
Anthracite	MYR/tonne	1 295									
Other bituminous coal	MYR/tonne	295									
Sub-bituminous Coal	MYR/tonne							248	332	336	383
Lignite	MYR/tonne	865									
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil	MYR/tonne	2 029						1 184	1 627	2 169	1 976
Natural Gas Liquids	MYR/tonne	24 510									
Ethane	MYR/tonne	8 114									
LPG	MYR/tonne	3 000								5 708	2 977
Naphtha	MYR/tonne	1 963									
Motor Gasoline	MYR/tonne	2 463								5 708	
Aviation Gasoline											2 977
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	MYR/tonne	7 380								2 806	2 662
Other Kerosene										2 772	5 091
Gas/Diesel Oil	MYR/tonne	2 240								2 469	2 424
Fuel Oil	MYR/tonne	1 625								1 580	1 729
White Spirit SBP											
Lubricants	MYR/tonne	13 678								5 162	5 162
Bitumen	MYR/tonne	1 471									
Paraffin Waxes	MYR/tonne	7 569									
Petroleum Coke	MYR/tonne	2 910									
<b>Natural Gas</b>											
Natural Gas	MYR/tonne	492						1 377	1 525	1 436	1 526
Liquefied Natural Gas	MYR/tonne							1 540	1 844	2 258	2 222
Compressed Natural Gas											
Electricity											

## Energy prices in Malaysia

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	MYR										
Exchange Rate	/ US Dollar	3.08						4.15	4.00	7.84	3.08
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	MYR/L	1.85									
Naphtha											
Motor Gasoline	MYR/L	1.90									
RON97	MYR/L								2.43	2.55	2.50
RON95	MYR/L								2.15	2.22	2.04
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil	MYR/L	1.75							2.09	2.20	2.17
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas											
Compressed Natural Gas											
<b>Electricity</b>											
Industrial	MYR/kWh	0.2546									
Commercial	MYR/kWh	0.3284									
Residential	MYR/kWh	0.2726									
Others											





**Mexico**

## Energy balance table of Mexico

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	207		4 109						
Import	237	34	18	2 296	1 093	26	117		518
Export			-2 586	-246		-59			-26
International marine bunkers				-33					-30
International aviation bunkers				-174			-174		
Stock changes	16		86	66	31		14		18
<b>Total primary energy supply</b>	<b>460</b>	<b>34</b>	<b>1 628</b>	<b>1 908</b>	<b>1 123</b>	<b>-32</b>	<b>-42</b>		<b>481</b>
Transfers			-167	197		-26			
Total transformation sector	-343	12	-1 548	1 033	368	97	55		347
Main activity producers	-302			-342					-30
Autoproducers		-2		-56					-5
Gas processing				-30					
Petroleum refineries			-1 552	1 463	368	99	55		382
Coal transformation	-40	15							
Other transformation			4	-2		-2			
Losses & own use		-13		-170					-22
Discrepancy	-46	1	88	-71	-35	4	-13		-70
<b>Total final consumption</b>	<b>71</b>	<b>34</b>		<b>2 897</b>	<b>1 457</b>	<b>42</b>			<b>737</b>
<b>Total final energy consumption</b>	<b>71</b>	<b>31</b>		<b>2 735</b>	<b>1 457</b>		<b>1</b>		<b>737</b>
Industry sector	71	31		229			1		39
Iron and steel		31		4					1
Chemical & petrochemical				10			1		4
Non-metallic minerals	4			132					
Other industries	67			84					35
Transport sector				2 089	1 457				570
Domestic air transport						1			
Road				2 033	1 456				517
Rail				27					27
Inland waterways				29					26
Other transport									
Other sector				417					127
Residential				226					
Commerce and public services				62					1
Agriculture				129					125
Non-specified others									
Non-energy		3		162			41		
<b>2018</b>									
Production	252		4 425						
Import	227	34	31	2 321	1 077		112		588
Export		-1	-2 768	-302		-66			-8
International marine bunkers				-34					-31
International aviation bunkers				-175			-174		
Stock changes	3		-68	-15	-7		-12		-3
<b>Total primary energy supply</b>	<b>482</b>	<b>32</b>	<b>1 620</b>	<b>1 795</b>	<b>1 069</b>	<b>-65</b>	<b>-74</b>		<b>545</b>
Transfers			-212	246					
Total transformation sector	-357	16	-1 576	1 137	388	90	71		321
Main activity producers	-309			-288					-36
Autoproducers		-3		-54					-5
Gas processing				-33					
Petroleum refineries			-1 580	1 515	388	92	71		361
Coal transformation	-48	19							
Other transformation			4	-3		-3			
Losses & own use		-15		-148					-21
Discrepancy	-52	1	167	-85	6	21	3		-94
<b>Total final consumption</b>	<b>72</b>	<b>35</b>		<b>2 945</b>	<b>1 463</b>	<b>45</b>			<b>752</b>
<b>Total final energy consumption</b>	<b>72</b>	<b>32</b>		<b>2 769</b>	<b>1 463</b>		<b>1</b>		<b>752</b>
Industry sector	72	32		233			1		52
Iron and steel		32		5					1
Chemical & petrochemical				14			1		5
Non-metallic minerals	6			105					
Other industries	66			109					45
Transport sector				2 091	1 463				564
Domestic air transport						1			
Road				2 037	1 462				514
Rail				27					27
Inland waterways				27					24
Other transport									
Other sector				445					136
Residential				241					
Commerce and public services				64					1
Agriculture				140					135
Non-specified others									
Non-energy		3		177			44		

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				1 148	85	122	213	365			6 250	662
95	331		116	1 717					14		4 316	
- 161	- 1								- 11		-2 843	
- 3											- 33	
											- 174	
3	- 1		1	9							177	
- 66	328		116	2 874	85	122	213	365	3		7 692	662
	144		79								29	
17	- 20	112	58	-1 342	- 85	- 122	- 199	- 84	1 239		-1 439	- 367
- 312				-1 064	- 83	- 122	- 153		1 023		-1 043	- 236
- 12			- 39	- 287	- 3		- 46	- 84	216		- 261	- 131
	- 30			9							- 22	
341	11	112	97								- 88	
											- 26	
											1	
- 33		- 112	- 3	- 630					- 207		-1 020	
97	- 74		19	- 387				26	- 26		- 415	26
14	379		269	515			14	308	1 008		4 847	322
14	377		150	503			14	308	1 008		4 670	322
11	27		150	464			1	60	552		1 409	61
1			2	154					19		208	
1			3	109					21		139	
			131	49					38		223	
9	27		14	152			1	60	474		838	61
2	60			2					4		2 095	
											1	
	60			2							2 035	
									4		31	
2											29	
	290			37			13	248	452		1 166	261
	226			27			8	248	232		741	256
	61			10			5		103		180	5
	3								47		176	
									69		69	
1			119	13							177	
				1 174	117	149	177	360			6 655	653
94	293		157	1 849					13		4 475	
- 224	- 4								- 9		-3 081	
- 3											- 34	
											- 175	
3	2		2	12							- 67	
- 130	290		160	3 035	117	149	177	360	4		7 773	653
	159		87								34	
160	- 18	87	39	-1 520	- 117	- 149	- 164	- 90	1 287		-1 533	- 371
- 253				-1 109	- 114	- 149	- 125		1 055		-1 040	- 239
- 12			- 37	- 420	- 3		- 39	- 90	233		- 376	- 132
	- 33			9							- 24	
424	15	87	76								- 65	
											- 29	
											1	
- 36		- 87	- 4	- 583					- 222		- 967	
17	- 15		- 23	- 420				37	- 85		- 438	37
10	416		260	512			13	307	985		4 869	319
10	414		129	500			13	307	985		4 677	319
7	44		129	460			1	58	527		1 383	58
			4	139					20		196	
1	1		6	128					21		163	
1			104	48					38		198	
5	43		15	145			1	58	448		825	58
3	61			2					4		2 097	
											1	
	61			2							2 039	
									4		30	
3											27	
	309			38			12	249	454		1 198	261
	241			27			7	249	228		752	256
	63			11			5		103		183	5
	5								45		184	
									78		78	
2			131	12							192	



## Major energy indicators of Mexico

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	5 179	5 518	6 315	7 561	7 475	7 741	7 742	7 565	7 773	7 692
Production	8 187	8 541	9 601	11 032	9 317	7 938	7 556	6 928	6 655	6 250
Import	244	367	1 076	1 327	2 009	2 959	3 536	3 939	4 475	4 316
Export	-3 172	-3 267	-4 105	-4 660	-3 698	-3 024	-3 151	-3 066	-3 081	-2 843
Final energy consumption	3 108	3 268	3 683	4 190	4 602	4 793	4 872	4 928	4 677	4 670
Industry	1 078	1 059	1 166	1 291	1 372	1 480	1 468	1 589	1 383	1 409
Transport	1 185	1 271	1 501	1 852	2 139	2 139	2 217	2 153	2 097	2 095
Residential	659	725	755	740	745	744	744	740	752	741
Commerce & public services	62	117	143	143	148	167	166	165	183	180
Others	123	95	119	164	197	263	278	281	263	245
<b>Coal</b>										
Primary energy supply	169	229	270	498	544	459	487	500	482	460
Production	157	189	238	296	335	242	291	276	252	207
Import	7	24	65	193	207	202	204	254	227	237
Export					-3					
Transformation sector	-169	-228	-269	-428	-433	-439	-433	-395	-357	-343
Power generation	-72	-140	-183	-345	-341	-366	-380	-345	-309	-302
Final energy consumption				78	131	126	44	110	72	71
Industry				78	131	126	44	110	72	71
Transport										
Residential										
Commerce & public services										
Others										
<b>Coal products</b>										
Primary energy supply	3	12	18	11	11	20	32	31	32	34
Production										
Import	4	12	18	11	11	20	32	34	34	34
Export								-3	-1	
Transformation sector	60	33	31	43	45	33	17	17	16	12
Power generation		-17	-16	-7	-7	-6	-5	-4	-3	-2
Final energy consumption	39	34	32	34	32	32	30	29	32	31
Industry	39	34	32	34	32	32	30	29	32	31
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	3 449	3 569	3 234	3 851	3 263	2 907	2 484	1 999	1 620	1 628
Production	6 418	6 598	7 167	8 270	6 500	5 483	5 220	4 721	4 425	4 109
Import	10	10	16	14	14	17	21	26	31	18
Export	-2 966	-3 031	-3 910	-4 429	-3 253	-2 608	-2 752	-2 724	-2 768	-2 586
Transformation sector	-3 114	-3 195	-2 927	-3 286	-3 003	-2 753	-2 411	-1 969	-1 576	-1 548
Petroleum refineries	-3 117	-3 202	-2 929	-3 290	-3 008	-2 762	-2 416	-1 972	-1 580	-1 552
<b>Petroleum products</b>										
Primary energy supply	-66	-96	506	421	690	875	1 197	1 594	1 795	1 908
Import	207	255	873	788	1 247	1 451	1 782	2 122	2 321	2 296
Export	-198	-221	-186	-215	-405	-407	-391	-332	-302	-246
Transformation sector	2 226	2 265	1 757	2 258	2 226	2 063	1 800	1 477	1 137	1 033
Power generation	-633	-683	-973	-678	-444	-318	-341	-377	-343	-398
Petroleum refineries	2 862	3 004	2 780	2 983	2 707	2 420	2 157	1 889	1 515	1 463
Final energy consumption	1 861	1 990	2 292	2 608	2 836	2 847	2 949	2 857	2 769	2 735
Industry	312	275	313	307	246	262	296	268	233	229
Transport	1 182	1 267	1 497	1 847	2 134	2 134	2 212	2 147	2 091	2 089
Residential	275	321	320	288	276	252	243	241	241	226
Commerce & public services	23	56	73	64	63	67	65	65	64	62
Others	70	71	90	102	117	131	133	135	140	129
<b>Gas</b>										
Primary energy supply	968	1 041	1 486	1 930	2 271	2 707	2 771	2 621	3 035	2 874
Production	953	988	1 398	1 610	1 783	1 439	1 274	1 112	1 174	1 148
Import	15	61	101	322	529	1 263	1 489	1 495	1 849	1 717
Export		-8	-9	-9	-33	-1	-1	-1		
Transformation sector	-144	-184	-410	-810	-1 200	-1 428	-1 506	-1 603	-1 520	-1 342
Power generation	-144	-226	-449	-847	-1 227	-1 448	-1 516	-1 604	-1 528	-1 351
Final energy consumption	487	483	491	459	524	563	576	617	500	503
Industry	453	453	465	420	482	519	534	574	460	464
Transport				1		1	1	2	2	2
Residential	34	22	19	31	32	33	31	30	27	27
Commerce & public services		7	6	7	9	11	11	11	11	10
Others										
<b>Electricity</b>										
Power generation	417	548	740	903	992	1 119	1 154	1 159	1 287	1 239
Thermal	303	388	564	727	806	906	939	934	998	952
Hydro	85	99	119	100	134	111	111	115	117	85
Nuclear	11	30	30	39	21	42	38	39	49	40
Others	18	31	27	37	31	60	67	71	123	161
Final energy consumption	361	430	523	683	776	927	973	979	985	1 008
Industry	192	246	298	394	442	504	525	531	527	552
Transport	3	4	4	4	4	4	4	4	4	4
Residential	73	102	130	153	175	202	212	213	228	232
Commerce & public services	39	54	63	70	75	86	86	85	103	103
Others	53	24	28	62	81	132	145	146	123	116

## Major economic indicators of Mexico

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	83.94	98.90	106.01	114.09	121.86	123.33	124.78	126.19	127.58
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	626	876	941	1 013	1 172	1 203	1 228	1 255	1 254
GDP, billion USD (PPP, constant 2017)	1 255	1 756	1 886	2 030	2 348	2 410	2 461	2 515	2 513
Nominal, billion USD (current)	261	708	877	1 058	1 172	1 078	1 159	1 222	1 269
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	7 461	8 862	8 878	8 879	9 617	9 752	9 842	9 946	9 832
GDP, PPP (constant 2017 USD)	14 949	17 757	17 789	17 790	19 269	19 539	19 721	19 928	19 701
Nominal (current USD)	3 112	7 158	8 278	9 271	9 617	8 745	9 288	9 687	9 946
Nominal GDP & its components (billions of current MXN) <sup>11</sup>									
Gross domestic product	735	6 694	9 563	13 366	18 572	20 129	21 934	23 523	24 443
Households and NPISHs final consumption expenditure	514	4 548	6 563	8 735	12 148	13 189	14 305	15 234	15 859
General government final consumption expenditure	62	637	1 006	1 573	2 288	2 418	2 548	2 722	2 776
Gross fixed capital formation	132	1 438	1 980	2 885	4 166	4 590	4 846	5 185	5 052
Stock change	39	98	90	162	164	165	178	162	103
Exports of goods and services	137	1 701	2 509	3 970	6 412	7 456	8 259	9 235	9 492
Imports of goods and services	146	1 809	2 649	4 152	6 791	7 854	8 656	9 716	9 553
Real GDP & its components (billions of 2013 MXN) <sup>11</sup>									
Gross Domestic Product	9 241	12 933	13 887	14 948	17 292	17 747	18 122	18 520	18 510
Households and NPISHs final consumption expenditure	5 779	8 398	9 635	10 052	11 349	11 764	12 139	12 447	12 522
General government final consumption expenditure	1 300	1 657	1 635	1 853	2 075	2 129	2 143	2 204	2 175
Gross fixed capital formation	1 810	2 664	2 774	3 163	3 730	3 761	3 716	3 751	3 578
Stock change	90	156	123	172	156	146	143	127	78
Exports of goods and services	1 349	3 104	3 691	4 381	5 910	6 122	6 377	6 760	6 859
Imports of goods and services	1 132	3 477	4 014	4 647	5 928	6 097	6 485	6 902	6 851
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	3.9	3.2	3.2	3.3	3.1	3.2	3.2	3.2	3.2
Industry	36.8	36.3	35.2	32.9	31.1	30.4	29.7	29.2	28.7
Services, etc.	55.2	56.7	57.8	59.9	61.7	62.1	62.7	63.2	63.6
Industrial production index (2010=100) <sup>12</sup>	68.0	95.7	100.2	100.0	109.5	109.7	109.7	110.1	108.3
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	40.7	166.4	214.2	298.3	380.6	373.9	409.4	450.7	460.7
Imports, c.i.f.	43.5	179.5	228.2	310.2	405.3	397.5	432.2	476.5	467.3
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	-4.4	-8.4	-7.7	-2.9	-14.6	-13.1	-11.0	-13.8	5.2
Current account	-7.5	-18.8	-9.1	-4.8	-31.1	-24.4	-20.4	-25.1	-3.9
Overall balance	1.0	6.6	6.2	43.4	-10.7	8.5	8.8	7.2	14.5
Foreign exchange rate (MXN/USD) <sup>11</sup>	2.81	9.46	10.90	12.64	15.85	18.66	18.93	19.24	19.26
PPP conversion factor, GDP (MXN/USD) <sup>11</sup>	1.48	6.75	7.65	8.72	9.43	9.46	10.14	10.48	10.74
Price Indices									
GDP Deflator (2013=100) <sup>13</sup>	8.0	51.8	68.9	89.4	107.4	113.4	121.0	127.0	132.1
Producer Price Index (2010=100) <sup>12</sup>	11.9	57.7	77.8	100.0	117.9	124.6	133.2	140.5	N.A.
Consumer Price Index (2010=100) <sup>12</sup>	11.8	63.3	80.5	100.0	119.4	122.8	130.2	136.6	141.5
Growth rate (%) <sup>13</sup>									
Real GDP <sup>13</sup>	5.2	4.9	2.3	5.1	3.3	2.6	2.1	2.2	-0.1
Population <sup>13</sup>	1.9	1.5	1.4	1.4	1.2	1.2	1.2	1.1	1.1
Price <sup>12</sup>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	21.7	7.8	4.7	4.2	2.9	5.7	6.9	5.5	N.A.
Consumer prices	26.7	9.5	4.0	4.2	2.7	2.8	6.0	4.9	3.6

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note

: N.A. means "not available"

: MXN means Mexican Nuevo Peso, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

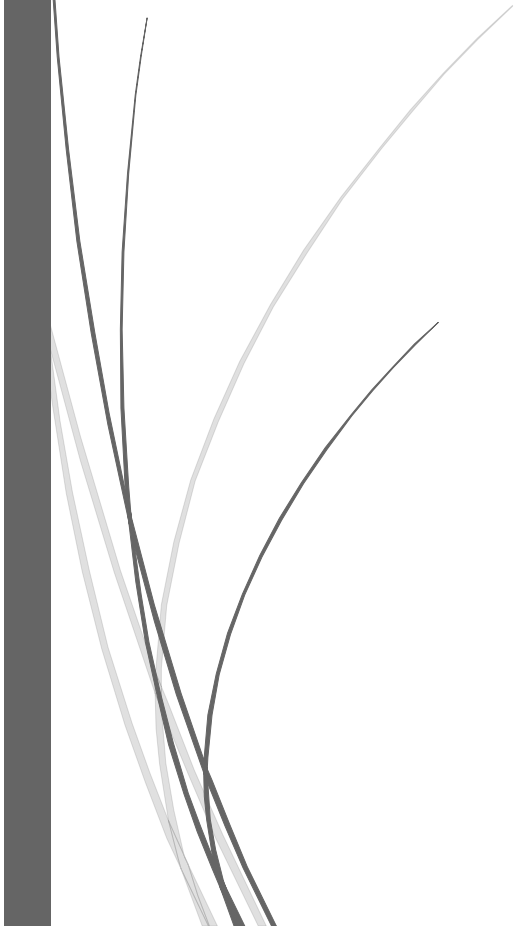
## Energy prices in Mexico

## WHOLESALE PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency Exchange Rate	MXN / US Dollar			13.31	12.77	13.31					
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	MXN/tonne			7.36	8.29	9.03					
Naphtha											
Motor Gasoline											
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil	MXN/L			9.16	10.22	11.43					
Fuel Oil	MXN/tonne			7 927	7 160	6 006					
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	MXN/GJ			33.78	30.92	53.19					
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity											



# **New Zealand**



## Energy balance table of New Zealand

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	76		56						
Import	26		219	119	43		9		54
Export	-42		-48	-5					-1
International marine bunkers				-14					-2
International aviation bunkers				-54			-54		
Stock changes	3		7	-1	-4				-2
<b>Total primary energy supply</b>	<b>63</b>		<b>235</b>	<b>44</b>	<b>39</b>		<b>-45</b>		<b>48</b>
<b>Transfers</b>									
Total transformation sector	-35	5	-256	263	66		59		86
Main activity producers	-15								
Autoproducers		-8							
Gas processing									
Petroleum refineries			-256	263	66		59		86
Coal transformation	-20	12							
Other transformation									
Losses & own use	-1	-3		-15					
Discrepancy	-2		8	9	8				2
<b>Total final consumption</b>	<b>26</b>	<b>2</b>		<b>291</b>	<b>108</b>		<b>14</b>		<b>136</b>
<b>Total final energy consumption</b>	<b>26</b>	<b>2</b>		<b>271</b>	<b>108</b>		<b>14</b>		<b>136</b>
<b>Industry sector</b>									
Iron and steel		2		19					15
Chemical & petrochemical									
Non-metallic minerals	4								
Other industries	19			19					15
<b>Transport sector</b>									
Domestic air transport				226	106		14		103
Road				14			14		
Rail				205	106				99
Inland waterways				2					2
Other transport				4					2
<b>Other sector</b>									
Residential	3			26	2				18
Commerce and public services				4					
Agriculture	1			7	1				4
Non-specified others	2			13	1				12
Non-specified others				2					2
<b>Non-energy</b>				<b>20</b>					
<b>2018</b>									
Production	78		55						
Import	14		227	119	44		12		54
Export	-37		-47	-8	-1				
International marine bunkers				-13					-1
International aviation bunkers				-54			-54		
Stock changes	-3		2	-14	2		-5		2
<b>Total primary energy supply</b>	<b>52</b>		<b>238</b>	<b>29</b>	<b>46</b>		<b>-48</b>		<b>54</b>
<b>Transfers</b>									
Total transformation sector	-28	4	-239	233	61		59		76
Main activity producers	-9								
Autoproducers		-7							
Gas processing									
Petroleum refineries			-239	233	61		59		76
Coal transformation	-19	11							
Other transformation									
Losses & own use	-1	-2		-14					
Discrepancy	1		9	24	1		4		6
<b>Total final consumption</b>	<b>25</b>	<b>2</b>		<b>281</b>	<b>108</b>		<b>15</b>		<b>135</b>
<b>Total final energy consumption</b>	<b>25</b>	<b>2</b>		<b>268</b>	<b>108</b>		<b>15</b>		<b>135</b>
<b>Industry sector</b>									
Iron and steel		2		19					15
Chemical & petrochemical									
Non-metallic minerals	3								
Other industries	19			19					15
<b>Transport sector</b>									
Domestic air transport				224	106		15		101
Road				15			15		
Rail				203	106				97
Inland waterways				2					2
Other transport				4					3
<b>Other sector</b>									
Residential	3			26	2				19
Commerce and public services				4					
Agriculture	1			7	1				4
Non-specified others	2			13	1				12
Non-specified others				2					2
<b>Non-energy</b>				<b>13</b>					

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				167	92		205	48			644	343
1	1		11					3			366	3
-4											-95	
-12											-14	
			5	1							10	
-15	1		16	168	92		205	51			858	346
	8		-13								2	
18		12	21	-45	-92		-196	-8	161		-203	-295
				-43	-92		-194	-2	156		-190	-288
				-2			-2	-6	6	1	-11	-6
18		12	21								7	
											-7	
											-1	
		-12	-2	-10					-18		-46	
1			-1	5					-2		19	
3	9		20	118			8	43	141		630	52
3	9			73			8	43	141		564	52
1	4			58			5	34	51		191	39
				28					5		7	
				2					1		29	
1	4			28			5	34	44		148	39
2											226	
											14	
											206	
											2	
2											4	
	5			15			4	9	90		146	12
	4			6			1	9	46		65	9
	2			8			2		34		53	3
				1					9		26	
									1		3	
			20	46							66	
				155	95		199	49			631	341
	1		8					2			362	2
-7											-92	
-12											-13	
											-54	
			-12	6							-8	
-19			-4	161	95		199	51			826	343
	9											
20		12	5	-48	-95		-191	-8	160		-212	-292
				-43	-95		-189	-2	155		-183	-286
				-2			-2	-6	5	1	-10	-6
20		12	5								-5	
											-8	
											-5	
		-12	-2	-9					-18	-1	-44	
			13						-2		32	
1	9		13	104			8	43	140		603	51
1	9			62			8	43	140		548	51
	3			49			5	35	50		180	40
				2					5		8	
				26					1		27	
				2					1		6	
	3			20			5	35	43		139	40
1											224	
											15	
											203	
											2	
1											4	
	5			13			4	8	90		143	12
	3			5			1	8	46		63	8
	2			6			2		34		51	3
				1					8		25	
									2		4	
			13	43							55	

## Major energy indicators of New Zealand

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	538	624	717	709	756	850	839	840	826	858
Production	483	531	599	538	693	677	659	648	631	644
Import	160	214	249	311	302	330	355	350	362	366
Export	-71	-86	-108	-104	-180	-125	-111	-104	-92	-95
Final energy consumption	383	429	473	502	505	536	539	551	548	564
Industry	152	163	177	171	172	184	185	185	180	191
Transport	124	153	170	190	191	202	206	219	224	226
Residential	51	52	58	61	62	62	62	63	63	65
Commerce & public services	34	35	39	48	48	52	52	52	51	53
Others	23	25	29	32	32	36	33	32	29	29
<b>Coal</b>										
Primary energy supply	50	48	46	92	54	57	48	48	52	63
Production	60	90	87	132	130	81	68	69	78	76
Import				24	5	9	10	10	14	26
Export	-10	-41	-47	-70	-71	-41	-36	-35	-37	-42
Transformation sector	-19	-22	-24	-67	-31	-30	-23	-24	-28	-35
Power generation	-6	-7	-10	-51	-13	-12	-5	-6	-9	-15
Final energy consumption	28	25	19	22	24	25	22	23	25	26
Industry	22	21	17	19	20	21	20	19	21	23
Transport										
Residential	4	1	1	1	1					
Commerce & public services	1	1	1	1	1	1	1	1	1	1
Others		1	1	1	2	2	1	3	2	2
<b>Coal products</b>										
Primary energy supply										
Production										
Import										
Export										
Transformation sector	6	7	4	4	4	4	4	4	4	5
Power generation	-1	-2	-6	-7	-8	-8	-7	-7	-7	-8
Final energy consumption		1	1	2	2	2	2	2	2	2
Industry		1	1	2	2	2	2	2	2	2
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	183	214	227	218	229	249	238	236	238	235
Production	82	79	81	45	115	90	77	70	55	56
Import	138	174	198	202	219	228	233	230	227	219
Export	-40	-44	-53	-27	-103	-76	-66	-59	-47	-48
Transformation sector	-177	-206	-218	-216	-224	-243	-238	-238	-239	-256
Petroleum refineries	-204	-218	-218	-216	-224	-243	-238	-238	-239	-256
<b>Petroleum products</b>										
Primary energy supply	-36	2	12	38	30	35	38	41	29	44
Import	22	39	51	84	77	91	110	108	119	119
Export	-21	-1	-9	-8	-6	-8	-9	-10	-8	-5
Transformation sector	208	205	220	227	225	245	241	233	233	263
Power generation		-1								
Petroleum refineries	208	205	220	227	225	245	241	234	233	263
Final energy consumption	155	188	209	238	229	246	252	264	268	271
Industry	12	13	14	18	15	18	19	18	19	19
Transport	121	151	170	190	191	201	205	219	224	226
Residential	1	2	2	3	3	3	3	4	4	4
Commerce & public services	7	6	5	6	5	6	6	7	7	7
Others	15	16	18	21	16	18	18	16	16	15
<b>Gas</b>										
Primary energy supply	162	160	212	135	156	171	176	178	161	168
Production	162	160	212	135	161	169	177	175	155	167
Import										
Export										
Transformation sector	-83	-58	-79	-72	-74	-51	-44	-54	-48	-45
Power generation	-52	-44	-79	-72	-74	-51	-44	-54	-44	-45
Final energy consumption	63	65	70	44	51	68	70	69	62	73
Industry	51	54	56	29	39	52	55	55	49	58
Transport	2	1								
Residential	3	4	7	6	5	6	6	6	5	6
Commerce & public services	4	5	6	7	6	8	7	7	6	8
Others	2	2	2	2	1	1	1	1	1	1
<b>Electricity</b>										
Power generation	116	130	141	154	162	160	158	160	160	161
Thermal	23	21	40	55	43	32	25	30	26	29
Hydro	83	99	88	84	89	88	93	91	95	92
Nuclear										
Others	10	10	13	16	30	40	40	39	39	40
Final energy consumption	103	111	123	136	144	143	141	140	140	141
Industry	41	46	50	55	55	50	50	50	50	51
Transport										
Residential	37	38	40	44	45	45	45	45	46	46
Commerce & public services	19	21	25	30	32	34	34	34	34	34
Others	5	6	8	8	12	14	12	11	10	10

## Major economic indicators of New Zealand

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	3.33	3.86	4.13	4.35	4.61	4.71	4.81	4.90	4.98
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	88	119	145	154	178	185	191	198	201
GDP, billion USD (PPP, constant 2017)	94	127	154	164	189	196	204	210	214
Nominal, billion USD (current)	45	53	115	147	178	189	207	212	213
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	26 408	30 875	35 064	35 407	38 631	39 182	39 758	40 304	40 315
GDP, PPP (constant 2017 USD)	28 087	32 837	37 293	37 657	41 086	41 672	42 285	42 866	42 878
Nominal (current USD)	13 663	13 641	27 751	33 677	38 631	40 080	42 993	43 306	42 755
Nominal GDP & its components (billions of current NZD) <sup>11</sup>									
Gross domestic product	76	120	163	203	255	271	291	307	323
Households and NPISHs final consumption expenditure	46	69	95	118	146	157	167	177	186
General government final consumption expenditure	14	20	29	40	47	49	52	56	61
Gross fixed capital formation	16	25	40	40	59	62	67	73	76
Stock change		1	1	1	1	1	2	2	
Exports of goods and services	20	43	46	62	71	72	80	85	87
Imports of goods and services	20	39	48	57	69	70	77	86	88
Real GDP & its components (billions of 2015 NZD) <sup>11</sup>									
Gross Domestic Product	126	171	208	221	255	265	274	283	288
Households and NPISHs final consumption expenditure	69	90	113	124	146	156	164	171	176
General government final consumption expenditure	26	30	37	43	47	48	50	52	55
Gross fixed capital formation	21	30	47	43	59	60	64	68	69
Stock change	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of goods and services	26	46	54	61	71	72	75	77	77
Imports of goods and services	20	34	50	54	69	72	78	81	82
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	5.9	5.5	5.0	4.1	4.5	4.3	4.0	4.1	4.0
Industry	26.6	24.4	23.8	22.2	21.1	20.9	21.0	20.9	20.8
Services, etc.	60.1	62.4	63.1	65.6	66.0	66.2	66.4	66.3	66.5
Manufacturing production index (2010=100) <sup>12</sup>	74.5	90.3	102.0	100.0	102.4	104.4	106.5	N.A.	N.A.
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	9.4	13.3	21.7	31.4	34.4	33.8	38.1	39.7	39.5
Imports, c.i.f.	9.5	13.9	26.2	30.6	36.6	36.1	40.1	43.8	42.4
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	N.A.	0.5	-3.0	2.0	-1.3	-1.9	-1.5	-3.5	-2.4
Current account	N.A.	-1.7	-8.0	-3.4	-4.7	-4.1	-5.8	-8.1	-6.0
Overall balance	N.A.	0.7	3.3	1.0	-6.5	5.8	-1.9	-8.0	-1.9
Foreign exchange rate (NZD/USD) <sup>11</sup>	1.68	2.20	1.42	1.39	1.43	1.44	1.41	1.45	1.52
PPP conversion factor, GDP (NZD/USD) <sup>11</sup>	1.56	1.51	1.60	1.59	1.63	1.59	1.58	1.55	1.56
Price Indices									
GDP Deflator (2015=100) <sup>13</sup>	60.4	70.2	78.4	92.1	100.0	102.5	106.1	108.3	112.3
Producer Price Index (2010=100) <sup>12</sup>	61.4	73.1	82.1	100.0	105.1	105.6	110.4	115.0	117.6
Consumer Price Index (2010=100) <sup>12</sup>	64.7	77.0	87.0	100.0	107.9	108.6	110.7	112.4	114.2
Growth rate (%) <sup>13</sup>									
Real GDP	0.2	2.9	3.3	1.5	3.7	3.7	3.6	3.2	1.6
Population	0.9	0.6	1.1	1.1	2.1	2.3	2.1	1.8	1.6
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	4.6	7.6	4.6	2.7	-2.1	0.5	4.5	4.2	2.2
Consumer prices	6.1	2.6	3.0	2.3	0.3	0.6	1.9	1.6	1.6

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note

: N.A. means "not available"

: NZD means New Zealand Dollar, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)



## Energy prices in New Zealand

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency Exchange Rate	NZD / US Dollar									7.84	
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG											
Naphtha											
Motor Gasoline (regular)	NZD/L			2.09		2.21				2.25	
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil	NZD/L			1.50		1.41				1.43	
Fuel Oil	NZD/tonne*			856.40		769.53				0.70	
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Households	NZD/GJ			132.76		36.81				39.93	
Industry	NZD/GJ			28.15		7.44				7.41	
<b>Electricity</b>											
Industrial	NZD/MWh									142.65	
Commercial	NZD/MWh									168.46	
Residential	NZD/MWh			263.51		284.63				290.51	
Others											
Other Energy Products											

\* NZD/L in 2018



# **Papua New Guinea**

## Energy balance table of Papua New Guinea

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production			28						
Import			55	59	4		4		28
Export			-28	-21		-20			
International marine bunkers									
International aviation bunkers									
Stock changes				1					
<b>Total primary energy supply</b>			<b>55</b>	<b>40</b>	<b>4</b>	<b>-20</b>	<b>4</b>		<b>29</b>
<b>Transfers</b>									
Total transformation sector			-55	18	1	-1	2	-2	
Main activity producers				-6					-1
Autoproducers				-24					-5
Gas processing				2		2			
Petroleum refineries			-55	47		19		5	18
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy			1						
<b>Total final consumption</b>				<b>57</b>	<b>5</b>		<b>6</b>	<b>2</b>	<b>41</b>
<b>Total final energy consumption</b>				<b>57</b>	<b>5</b>		<b>6</b>	<b>2</b>	<b>41</b>
<b>Industry sector</b>									
Iron and steel				25					22
Chemical & petrochemical									
Non-metallic minerals									
Other industries				25					22
<b>Transport sector</b>									
Domestic air transport				26	5		6		14
Road				6			6		
Rail				19	5				14
Inland waterways									
Other transport									
<b>Other sector</b>									
Residential				7				2	4
Commerce and public services				1				1	
Agriculture				1				1	
Non-specified others				4					4
<b>Non-energy</b>									
<b>2018</b>									
Production			41						
Import			56	54			3		26
Export			-41	-16		-15			
International marine bunkers									
International aviation bunkers									
Stock changes			-2		1				
<b>Total primary energy supply</b>			<b>54</b>	<b>38</b>	<b>1</b>	<b>-16</b>	<b>3</b>		<b>26</b>
<b>Transfers</b>									
Total transformation sector			-53	20	3	-3	3	-3	
Main activity producers				-7					-1
Autoproducers				-25					-5
Gas processing									
Petroleum refineries			-53	51	1	19		5	20
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy			-1	-3					-1
<b>Total final consumption</b>				<b>55</b>	<b>5</b>		<b>6</b>	<b>2</b>	<b>39</b>
<b>Total final energy consumption</b>				<b>55</b>	<b>5</b>		<b>6</b>	<b>2</b>	<b>39</b>
<b>Industry sector</b>									
Iron and steel				24					21
Chemical & petrochemical									
Non-metallic minerals									
Other industries				24					21
<b>Transport sector</b>									
Domestic air transport				25	5		6		14
Road				6			6		
Rail				18	5				14
Inland waterways									
Other transport									
<b>Other sector</b>									
Residential				7				2	4
Commerce and public services				1				1	
Agriculture				1				1	
Non-specified others				4					4
<b>Non-energy</b>									

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				463	3		15	70			580	88
23											114	
			- 1	- 445							- 494	
											1	
23			- 1	18	3		15	70			201	88
- 21	1		1	- 6	- 3		- 15	- 1	16		- 47	- 19
- 5				- 1	- 2				5		- 5	- 3
- 19				- 6	- 1		- 15		11		- 35	- 16
											1	
3	1		1								- 8	
								- 1			- 1	- 1
				- 12					- 1		- 14	
											1	
2	1							69	15		141	69
2	1							69	15		141	69
2	1							3	11		38	3
2	1							3	11		38	3
											26	
											6	
											19	
								66	4		77	66
								56	2		59	56
								10	3		13	10
											4	
				402	3		15	69			531	88
24											110	
			- 1	- 386							- 443	
											- 2	
24			- 1	16	3		15	69			195	88
- 20	1		1	- 7	- 3		- 15	- 1	16		- 43	- 19
- 5				- 2	- 2				5		- 6	- 3
- 20				- 4	- 1		- 15		11		- 34	- 16
5	1		1								- 2	
								- 1			- 1	- 1
				- 9					- 1		- 10	
											- 3	
2	1							68	15		138	68
2	1							68	15		138	68
1	1							3	10		37	3
1	1							3	10		37	3
											25	
											6	
											18	
								66	4		76	66
								56	2		59	56
								10	2		13	10
											4	

## Major energy indicators of Papua New Guinea

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply		90	116	141	165	184	190	193	195	201
Production		270	221	179	127	543	569	584	531	580
Import		28	49	78	84	85	99	110	110	114
Export		-208	-154	-116	-44	-444	-482	-499	-443	-494
Final energy consumption		83	97	111	124	134	136	138	138	141
Industry		13	20	26	31	35	36	37	37	38
Transport		11	12	15	19	23	24	25	25	26
Residential		46	50	54	57	59	59	59	59	59
Commerce & public services		10	11	12	13	13	13	13	13	13
Others		3	4	4	5	4	4	4	4	4
<b>Coal</b>										
Primary energy supply										
Production										
Import										
Export										
Transformation sector										
Power generation										
Final energy consumption										
Industry										
Transport										
Residential										
Commerce & public services										
Others										
<b>Coal products</b>										
Primary energy supply										
Production										
Import										
Export										
Transformation sector										
Power generation										
Final energy consumption										
Industry										
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply				43	41	26	59	56	54	55
Production		209	154	103	37	51	49	43	41	28
Import				38	42	26	58	59	56	55
Export		-208	-154	-98	-37	-51	-49	-43	-41	-28
Transformation sector		-2		-42	-40	-26	-60	-59	-53	-55
Petroleum refineries		-2		-42	-40	-26	-60	-59	-53	-55
<b>Petroleum products</b>										
Primary energy supply		28	49	22	34	54	24	29	38	40
Import		28	49	40	43	59	42	51	54	59
Export				-18	-7	-5	-20	-22	-16	-21
Transformation sector		-5	-20	15	10	-2	30	26	20	18
Power generation		-5	-20	-26	-29	-27	-27	-32	-31	-31
Petroleum refineries				41	39	25	57	57	51	47
Final energy consumption		24	30	37	44	52	54	55	55	57
Industry		8	12	16	19	23	24	24	24	25
Transport		11	12	15	19	23	24	25	25	26
Residential		1	1	1	1	1	1	1	1	1
Commerce & public services		1	1	1	1	1	1	1	1	1
Others		3	4	4	5	4	4	4	4	4
<b>Gas</b>										
Primary energy supply		3	5	5	5	17	20	21	16	18
Production		3	5	5	5	405	432	454	402	463
Import										
Export						-387	-412	-433	-386	-445
Transformation sector		-3	-5	-5	-5	-7	-8	-9	-7	-6
Power generation		-3	-5	-5	-5	-7	-8	-9	-7	-6
Final energy consumption										
Industry										
Transport										
Residential										
Commerce & public services										
Others										
<b>Electricity</b>										
Power generation		5	9	12	15	15	15	16	16	16
Thermal		3	6	9	10	10	11	11	11	11
Hydro		3	3	3	3	3	3	3	3	3
Nuclear										
Others		0		1	2	2	2	2	2	2
Final energy consumption		5	8	11	14	14	14	14	15	15
Industry		3	6	9	10	10	10	10	10	11
Transport										
Residential			1	1	1	2	2	2	2	2
Commerce & public services		2	2	2	2	2	2	2	2	3
Others										

## Major economic indicators of Papua New Guinea

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	4.62	5.85	6.49	7.31	8.11	8.27	8.44	8.61	8.78
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	7	11	12	16	22	23	24	24	25
GDP, billion USD (PPP, constant 2017)	11	17	19	25	33	35	36	36	38
Nominal, billion USD (current)	3	4	5	14	22	21	23	24	25
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	1 597	1 884	1 888	2 235	2 679	2 770	2 812	2 749	2 854
GDP, PPP (constant 2017 USD)	2 435	2 871	2 877	3 407	4 084	4 223	4 286	4 190	4 350
Nominal (current USD)	698	602	749	1 949	2 679	2 510	2 695	2 801	2 829
Nominal GDP & its components (billions of current PGK) <sup>11</sup>									
Gross domestic product	3	10	15	39	60	65	73	79	84
Households and NPISHs final consumption expenditure	2	4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
General government final consumption expenditure	1	2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Gross fixed capital formation	1	2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Stock change			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of goods and services	1	6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Imports of goods and services	2	5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Real GDP & its components (billions of 2013 PGK) <sup>11</sup>									
Gross Domestic Product	20	29	33	43	58	61	63	63	67
Households and NPISHs final consumption expenditure	3	3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
General government final consumption expenditure	1	1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Gross fixed capital formation	1	2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Stock change			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of goods and services	3	5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Imports of goods and services	3	4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	10.3	10.4	N.A.	18.9	16.0	15.6	15.4	16.2	N.A.
Industry	6.0	8.3	N.A.	31.9	38.6	41.0	41.4	38.4	N.A.
Services, etc.	N.A.	N.A.	N.A.	51.5	39.5	37.4	34.0	32.6	N.A.
Industrial production index (2010=100) <sup>12</sup>	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	1.2	2.1	3.3	5.7	8.5	8.2	10.0	10.5	11.4
Imports, c.i.f.	1.2	1.2	1.7	3.5	2.6	2.1	3.1	3.5	3.9
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	0.1	1.1	1.8	2.2	N.A.	N.A.	N.A.	N.A.	N.A.
Current account	-0.1	0.3	0.3	-1.1	N.A.	N.A.	N.A.	N.A.	N.A.
Overall balance	0.1	0.1	-0.3	0.0	N.A.	N.A.	N.A.	N.A.	N.A.
Foreign exchange rate (PGK/USD) <sup>11</sup>	0.96	2.78	3.10	2.72	2.77	3.13	3.19	3.29	3.39
PPP conversion factor, GDP (PGK/USD) <sup>11</sup>	0.75	1.41	1.82	2.11	2.48	2.62	2.70	2.76	2.81
Price Indices									
GDP Deflator (2013=100) <sup>13</sup>	15.7	33.2	46.3	89.2	104.1	106.8	115.0	126.2	126.3
Wholesale Price Index	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Consumer Price Index (2010=100) <sup>12</sup>	21.4	52.9	77.1	100.0	127.8	136.3	143.7	150.0	155.9
Growth rate (%) <sup>13</sup>									
Real GDP	-3.0	-2.5	6.3	10.1	6.6	5.5	3.5	-0.3	5.9
Population	2.4	2.3	2.2	2.3	2.0	2.0	2.0	2.0	2.0
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wholesale prices	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Consumer prices	7.0	15.6	1.8	6.0	6.0	6.7	5.4	4.4	3.9

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note : N.A. means "not available"

: PGK means Kina, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)





**Peru**



## Energy balance table of Peru

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	5		263						
Import	11	3	222	210	34	4	17		137
Export	- 18		- 12	- 156	- 80	- 1			- 11
International marine bunkers				- 49				- 31	- 1
International aviation bunkers									
Stock changes	30	- 1	- 5	25	2	- 2			8
<b>Total primary energy supply</b>	<b>28</b>	<b>2</b>	<b>468</b>	<b>29</b>	<b>- 44</b>	<b>1</b>	<b>- 14</b>		<b>134</b>
Transfers			- 151	89	57				- 8
Total transformation sector	- 6		- 317	337	88	10	30		98
Main activity producers				- 5					- 1
Autoproducers	- 5			- 8					- 5
Gas processing									
Petroleum refineries			- 317	349	88	10	30		105
Coal transformation									
Other transformation									
Losses & own use				- 8					
Discrepancy				- 16	- 8	- 12			3
<b>Total final consumption</b>	<b>22</b>	<b>2</b>		<b>431</b>	<b>93</b>		<b>16</b>		<b>227</b>
<b>Total final energy consumption</b>	<b>22</b>	<b>2</b>		<b>431</b>	<b>93</b>		<b>16</b>		<b>227</b>
Industry sector	22	2		45	4				22
Iron and steel									
Chemical & petrochemical									
Non-metallic minerals									
Other industries	22	2		45	4				22
Transport sector				333	88		16		195
Domestic air transport				16			16		
Road				316	88				195
Rail									
Inland waterways									
Other transport									
Other sector				53	1				10
Residential				38					
Commerce and public services				11					7
Agriculture				2					2
Non-specified others				2					2
<b>Non-energy</b>									
<b>2018</b>									
Production	6		252						
Import	10	2	238	224	43	7	18		138
Export	- 19		- 14	- 198	- 91	- 1			- 18
International marine bunkers				- 50				- 30	
International aviation bunkers									
Stock changes	29		10	16	3	- 6			1
<b>Total primary energy supply</b>	<b>26</b>	<b>2</b>	<b>486</b>	<b>- 9</b>	<b>- 45</b>		<b>- 11</b>		<b>121</b>
Transfers			- 149	97	56	1	- 1	1	- 3
Total transformation sector	- 5		- 338	357	85	11	28		104
Main activity producers				- 5					- 2
Autoproducers	- 5			- 9					- 6
Gas processing									
Petroleum refineries			- 338	371	85	11	28		111
Coal transformation									
Other transformation									
Losses & own use				- 7					
Discrepancy				- 24	- 9	- 12			- 3
<b>Total final consumption</b>	<b>21</b>	<b>2</b>		<b>413</b>	<b>87</b>		<b>15</b>	<b>1</b>	<b>219</b>
<b>Total final energy consumption</b>	<b>21</b>	<b>2</b>		<b>413</b>	<b>87</b>		<b>15</b>	<b>1</b>	<b>219</b>
Industry sector	21	2		44	1				21
Iron and steel									
Chemical & petrochemical									
Non-metallic minerals									
Other industries	21	2		44	1				21
Transport sector				316	86		15		188
Domestic air transport				15			15		
Road				300	86				188
Rail									
Inland waterways									
Other transport									
Other sector				54				1	10
Residential				40					
Commerce and public services				11				1	7
Agriculture				2					2
Non-specified others				2					1
<b>Non-energy</b>									

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				543	113		86	147			1 157	346
1	16							18			463	18
- 65				- 224				- 1			- 412	- 1
- 17											- 49	
8	9							3			52	3
- 73	25			319	113		86	166			1 211	366
- 17	57										- 62	
93	10	7		- 178	- 113		- 24	- 42	206		- 136	- 179
- 4				- 167	- 111		- 24	- 28	196		- 139	- 162
- 2				- 11	- 2			- 6	11		- 23	- 9
100	10	7									32	
								- 8			- 8	- 8
		- 7		- 38					- 26		- 72	
				- 1					- 1		- 18	
3	92			102			62	125	179		923	187
3	92			102			62	125	179		923	187
2	18			56				23	103		251	23
2	18			56				23	103		251	23
1	32			31				18			381	18
											16	
1	32			31				18			365	18
	42			15			62	85	76		291	146
	38			9			38	79	37		200	116
	4			7			24	6	33		80	30
									5		7	1
									1		3	
				514	111		82	145			1 110	338
	17							19			492	19
- 89				- 210				- 1			- 442	- 1
- 20											- 50	
12	7							1			56	1
- 97	23			304	111		82	164			1 166	357
- 13	56										- 52	
113	10	7		- 168	- 111		- 22	- 37	198		- 126	- 170
- 3				- 158	- 108		- 22	- 22	189		- 127	- 152
- 3				- 10	- 3			- 7	9		- 24	- 10
120	10	7									33	
								- 8			- 8	- 8
		- 7		- 37					- 24		- 68	
				- 2							- 26	
3	89			96			60	127	174		894	187
3	89			96			60	127	174		894	187
2	20			52				21	100		240	21
2	20			52				21	100		240	21
1	25			30				17			363	17
											15	
1	25			30				17			347	17
	43			14			60	90	73		291	150
	40			9			36	84	36		204	120
	4			5			23	5	32		77	29
									4		7	
									1		3	

## Major energy indicators of Peru

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	418	477	610	675	762	1 117	1 142	1 160	1 166	1 211
Production	446	421	476	549	829	1 088	1 142	1 097	1 110	1 157
Import	70	182	226	284	309	333	448	519	492	463
Export	-95	-107	-88	-159	-305	-350	-464	-502	-442	-412
Final energy consumption	363	404	542	559	646	819	865	893	894	923
Industry	76	86	122	141	169	212	209	231	240	251
Transport	105	128	142	146	248	335	373	383	363	381
Residential	151	142	240	232	170	185	189	189	204	200
Commerce & public services	14	12	11	19	41	69	77	80	77	80
Others	19	36	27	21	17	19	17	10	10	11
<b>Coal</b>										
Primary energy supply	4	11	21	31	32	33	34	29	26	28
Production	3	2		1	3	7	7	8	6	5
Import	1	7	19	28	28	12	18	14	10	11
Export					-3	-7	-5	-10	-19	-18
Transformation sector	-1	-2	-5	-10	-12	-7	-13	-9	-5	-6
Power generation			-4	-10	-12	-7	-13	-9	-5	-6
Final energy consumption	3	10	16	22	26	29	23	20	21	22
Industry	2	9	16	22	25	29	23	20	21	22
Transport										
Residential										
Commerce & public services										
Others				1						
<b>Coal products</b>										
Primary energy supply	2	4	6	7	2	1	2	2	2	2
Production										
Import	2	7	6	6	2	1	3	2	2	3
Export										
Transformation sector		-2	-5	-6						
Power generation										
Final energy consumption	1	1	1	1	2	1	2	2	2	2
Industry	1	1	1	1	2	1	2	2	2	2
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	302	293	312	401	463	445	451	509	486	468
Production	274	258	210	222	298	268	232	250	252	263
Import	37	101	129	203	201	181	223	265	238	222
Export	-6	-59	-29	-27	-40	-17	-5	-3	-14	-12
Transformation sector	-311	-312	-324	-345	-432	-301	-304	-356	-338	-317
Petroleum refineries	-311	-312	-324	-345	-432	-301	-304	-356	-338	-317
<b>Petroleum products</b>										
Primary energy supply	-58	7	7	-90	-178	16	-25	-17	-9	29
Import	30	67	72	48	75	126	182	217	224	210
Export	-88	-48	-59	-132	-172	-125	-212	-258	-198	-156
Transformation sector	277	269	288	313	391	327	335	362	357	337
Power generation	-32	-39	-29	-25	-22	-12	-17	-21	-14	-13
Petroleum refineries	309	308	317	338	412	339	352	383	371	349
Final energy consumption	207	254	282	264	330	409	429	433	413	431
Industry	42	48	70	67	52	50	40	39	44	45
Transport	105	128	142	146	230	299	329	336	316	333
Residential	36	37	43	25	27	35	36	37	40	38
Commerce & public services	12	12	10	11	13	19	19	17	11	11
Others	12	29	17	14	7	7	5	4	3	4
<b>Gas</b>										
Primary energy supply	19	18	21	68	230	330	347	301	304	319
Production	19	18	21	68	319	531	588	523	514	543
Import										
Export					-89	-201	-241	-229	-210	-224
Transformation sector	-3	-2	-9	-45	-131	-182	-200	-166	-168	-178
Power generation	-3	-2	-9	-45	-131	-182	-200	-166	-168	-178
Final energy consumption	3			6	48	81	80	90	96	102
Industry	1			6	29	45	48	56	52	56
Transport					15	27	27	29	30	31
Residential					2	5	1	1	9	9
Commerce & public services	2					2	3	4	5	7
Others						2				
<b>Electricity</b>										
Power generation	50	58	72	92	129	174	186	190	198	206
Thermal	12	11	13	25	55	82	92	79	78	82
Hydro	38	46	58	65	72	85	87	105	111	113
Nuclear										
Others	0	1	1	1	2	7	7	7	10	11
Final energy consumption	42	46	62	82	114	152	163	167	174	179
Industry	26	27	35	45	60	84	94	96	100	103
Transport										
Residential	15	18	23	25	27	33	34	34	36	37
Commerce & public services			1	7	23	30	31	32	32	33
Others	1	2	3	4	3	4	5	5	6	6

## Major economic indicators of Peru

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	22.07	26.46	27.87	29.03	30.47	30.93	31.44	31.99	32.51
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	60	87	108	150	190	197	202	210	215
GDP, billion USD (PPP, constant 2017)	116	170	210	292	369	384	393	409	418
Nominal, billion USD (current)	26	52	76	148	190	192	211	223	228
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	2 700	3 304	3 868	5 178	6 229	6 380	6 433	6 574	6 611
GDP, PPP (constant 2017 USD)	5 249	6 422	7 519	10 066	12 110	12 404	12 507	12 781	12 854
Nominal (current USD)	1 197	1 956	2 729	5 082	6 229	6 205	6 711	6 958	7 028
Nominal GDP & its components (billions of current PEN) <sup>11</sup>									
Gross domestic product	5	181	251	417	604	648	688	732	762
Households and NPISHs final consumption expenditure	4	128	163	257	395	421	441	467	493
General government final consumption expenditure		21	29	44	78	85	91	96	101
Gross fixed capital formation	1	36	43	98	140	139	142	153	160
Stock change			1	1	7	4	1	3	1
Exports of goods and services	1	30	67	116	129	146	170	184	182
Imports of goods and services	1	34	51	99	144	148	157	171	175
Real GDP & its components (billions of 2007 PEN) <sup>11</sup>									
Gross Domestic Product	151	222	274	382	483	502	514	535	546
Households and NPISHs final consumption expenditure	106	143	167	236	311	323	331	344	355
General government final consumption expenditure	16	25	30	41	59	62	64	65	68
Gross fixed capital formation	21	38	44	96	116	111	113	118	121
Stock change	1		-3	4	11	9	7	8	7
Exports of goods and services	27	58	93	108	118	131	143	148	147
Imports of goods and services	20	42	57	103	132	134	144	149	151
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	6.9	7.7	6.9	6.1	5.6	5.5	5.5	5.8	5.7
Industry	34.6	35.2	38.2	36.6	33.9	34.0	33.8	33.5	32.7
Services, etc.	N.A.	48.7	46.5	48.2	51.3	51.4	51.6	51.7	52.5
Manufacturing Production Index (2010=100) <sup>12</sup>	41.2	61.6	75.1	100.0	109.8	108.3	108.0	N.A.	N.A.
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	3.3	7.0	17.4	35.8	34.4	37.1	45.4	49.1	47.7
Imports, c.i.f.	2.6	7.4	12.5	30.0	37.9	36.3	39.9	43.3	42.3
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	0.4	-0.1	5.6	7.4	-2.5	2.2	7.1	7.2	7.1
Current account	-1.4	-1.5	1.1	-3.6	-9.5	-5.1	-2.7	-3.9	-2.2
Overall balance	-2.0	-0.5	1.2	9.3	0.0	0.5	0.7	-1.9	6.7
Foreign exchange rate (PEN/USD) <sup>11</sup>	0.19	3.49	3.30	2.83	3.18	3.38	3.26	3.29	3.34
PPP conversion factor, GDP (PEN/USD) <sup>11</sup>	0.08	1.58	1.53	1.58	1.77	1.83	1.89	1.87	1.88
Price Indices									
GDP Deflator (2007=100) <sup>13</sup>	3.6	81.3	91.5	109.1	125.3	129.1	133.8	136.8	139.5
Wholesale Price Index (2010=100) <sup>12</sup>	4.7	79.0	86.8	100.0	112.6	114.5	115.7	117.6	N.A.
Consumer Price Index (2010=100) <sup>12</sup>	3.1	79.2	87.1	100.0	117.8	122.0	125.4	127.1	129.8
Growth rate (%) <sup>13</sup>									
Real GDP	-5.0	2.7	6.3	8.3	3.3	4.0	2.5	4.0	2.2
Population	2.1	1.5	0.9	0.8	1.3	1.5	1.7	1.7	1.6
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	6 737.4	4.3	2.3	1.8	1.8	1.7	1.0	1.7	N.A.
Consumer prices	7 481.7	3.8	1.6	1.5	3.5	3.6	2.8	1.3	2.1

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note

: N.A. means "not available"

: PEN means Nuevo Sol, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Peru

### IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	PEN										
Exchange Rate	/ US Dollar							3.38			
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil	USD/BBL							42			
Natural Gas Liquids											
Ethane											
LPG	USD/BBL							38			
Naphtha											
Motor Gasoline											
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil	USD/BBL							59			
Fuel Oil											
White Spirit SBP											
Lubricants	USD/BBL							210			
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity											

## Energy prices in Peru

## WHOLESALE PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	PEN										
Exchange Rate	/ US Dollar							3.38			
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	PEN/L							1.36			
Naphtha											
Motor Gasoline	PEN/Gallon							12.01			
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil	PEN/Gallon							8.78			
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	PEN/m <sup>3</sup>							1.50			
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity	US cent/kWh							6.55			

## Energy prices in Peru

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	PEN										
Exchange Rate	/ US Dollar							3.38			
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	PEN/L							1.37			
Naphtha											
Motor Gasoline (regular)	PEN/Gallon							11.63			
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil	PEN/Gallon							9.11			
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	PEN/m <sup>3</sup>							1.52			
Liquefied Natural Gas (export)											
Compressed Natural Gas											
<b>Electricity</b>											
Industrial (monthly consumption of 50 000 kWh)	US cent/kWh							8.32			
Commercial (monthly consumption of 50 000 kWh)	US cent/kWh							11.11			
Residential (monthly consumption of 125 kWh)	US cent/kWh							15.21			



# **The Philippines**



## Energy balance table of the Philippines

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	304		22						
Import	612		352	573	98	31	62	1	279
Export	- 221		- 23	- 41	- 2	- 5			- 3
International marine bunkers				- 2					- 1
International aviation bunkers				- 68			- 68		
Stock changes	37		- 3	- 2	2	- 2	1		- 6
<b>Total primary energy supply</b>	<b>732</b>		<b>347</b>	<b>461</b>	<b>99</b>	<b>24</b>	<b>- 5</b>	<b>1</b>	<b>270</b>
<b>Transfers</b>									
Total transformation sector	- 633		- 335	289	76	7	33	1	115
Main activity producers	- 633			- 31					- 17
Autoproducers									
Gas processing									
Petroleum refineries			- 335	320	76	7	33	1	132
Coal transformation									
Other transformation									
Losses & own use			- 9						
Discrepancy	- 6		- 3	- 15	32	- 31	- 2	1	- 1
<b>Total final consumption</b>	<b>93</b>			<b>735</b>	<b>207</b>		<b>26</b>	<b>3</b>	<b>383</b>
<b>Total final energy consumption</b>	<b>93</b>			<b>735</b>	<b>207</b>		<b>26</b>	<b>3</b>	<b>383</b>
Industry sector	93			61					32
Iron and steel	5			5					1
Chemical & petrochemical	1			6					2
Non-metallic minerals	61			9					2
Other industries	26			41					27
Transport sector				512	206		26		271
Domestic air transport				26			26		
Road				448	199				249
Rail									
Inland waterways				37	7				22
Other transport									
Other sector				162				3	81
Residential				55				3	
Commerce and public services				98					71
Agriculture				2					2
Non-specified others				8					7
<b>Non-energy</b>									
<b>2018</b>									
Production	260		25						
Import	581		482	511	99	43	49	1	219
Export	- 112		- 24	- 69	- 10	- 9			- 5
International marine bunkers				- 3					- 1
International aviation bunkers				- 68			- 68		
Stock changes	- 45			- 17	- 8		- 2		- 7
<b>Total primary energy supply</b>	<b>685</b>		<b>483</b>	<b>354</b>	<b>81</b>	<b>34</b>	<b>- 20</b>	<b>1</b>	<b>205</b>
<b>Transfers</b>									
Total transformation sector	- 577		- 484	428	109	11	43	2	172
Main activity producers	- 577			- 30					- 16
Autoproducers									
Gas processing									
Petroleum refineries			- 484	459	109	11	43	2	187
Coal transformation									
Other transformation									
Losses & own use			- 3						
Discrepancy	- 7		4	- 73		- 45	1		- 4
<b>Total final consumption</b>	<b>101</b>			<b>710</b>	<b>191</b>		<b>24</b>	<b>3</b>	<b>373</b>
<b>Total final energy consumption</b>	<b>101</b>			<b>710</b>	<b>191</b>		<b>24</b>	<b>3</b>	<b>373</b>
Industry sector	101			61					29
Iron and steel	9			5					1
Chemical & petrochemical	1			6					2
Non-metallic minerals	63			9					2
Other industries	28			41					25
Transport sector				494	191		24		270
Domestic air transport				24			24		
Road				432	183				249
Rail									
Inland waterways				37	7				21
Other transport									
Other sector				154				3	74
Residential				53				3	
Commerce and public services				93					66
Agriculture				2					2
Non-specified others				7					7
<b>Non-energy</b>									

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				152	29		393	474			1 373	895
31	62		11					5			1 542	5
- 11			- 19								- 285	
- 2											- 2	
											- 68	
1			1					3			35	3
18	62		- 6	152	29		393	482			2 595	903
14	13		30	- 143	- 29		- 393	- 131	382		- 993	- 553
- 14				- 143	- 29		- 393	- 34	382		- 881	- 456
28	13		30								- 15	
								- 97			- 97	- 97
				- 7					- 68		- 84	
3	6		- 23								- 24	
36	80			3				351	314		1 495	351
36	80			3				351	314		1 495	351
22	7			3				71	101		330	71
3	1								21		30	
4									6		13	
6	1								8		78	
9	5			3				71	67		209	71
8									21		533	21
											26	
								21			469	21
8											37	
6	73							258	212		632	258
	52							242	110		407	242
6	21							16	92		206	16
									9		11	
									1		9	
				151	34		384	451			1 304	868
32	59		9					6			1 580	6
- 10			- 34								- 204	
- 3											- 3	
											- 68	
											- 60	2
19	58		- 25	151	34		384	459			2 549	876
15	23		54	- 139	- 34		- 384	- 111	357		- 944	- 529
- 15				- 139	- 34		- 384	- 18	357		- 825	- 435
30	23		54								- 25	
								- 94			- 94	- 94
				- 9					- 62		- 74	
6	- 2		- 29						2		- 73	
39	79			2				347	297		1 458	347
39	79			2				347	297		1 458	347
24	8			2				71	99		335	71
4	1								20		34	
4									6		13	
6	1								8		80	
10	6			2				71	65		208	71
8									20		514	20
											24	
								20			452	20
8											37	
6	70							257	198		609	257
	49							241	102		395	241
6	21							16	86		195	16
									8		10	
									1		8	

## Major energy indicators of the Philippines

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	1 123	1 360	1 631	1 602	1 750	2 196	2 349	2 487	2 549	2 595
Production	699	636	801	898	1 067	1 175	1 294	1 296	1 304	1 373
Import	496	790	916	799	908	1 242	1 347	1 448	1 580	1 542
Export	-28	-41	-76	-81	-165	-154	-231	-221	-204	-285
Final energy consumption	788	917	966	956	1 059	1 269	1 370	1 439	1 458	1 495
Industry	181	218	201	221	266	302	331	352	335	330
Transport	197	301	348	345	337	443	480	497	514	533
Residential	370	350	331	296	330	366	378	385	395	407
Commerce & public services	34	44	71	78	111	141	162	184	195	206
Others	6	5	15	16	15	17	19	22	18	20
<b>Coal</b>										
Primary energy supply	53	69	194	223	294	486	548	648	685	732
Production	26	27	27	64	147	163	248	264	260	304
Import	30	38	151	147	242	382	443	492	581	612
Export					-91	-69	-151	-136	-112	-221
Transformation sector	-23	-31	-158	-173	-213	-388	-428	-515	-577	-633
Power generation	-23	-31	-158	-173	-213	-388	-428	-515	-577	-633
Final energy consumption	22	31	29	44	77	93	112	126	101	93
Industry	22	31	29	44	77	93	112	126	101	93
Transport										
Residential										
Commerce & public services										
Others										
<b>Coal products</b>										
Primary energy supply										
Production										
Import										
Export										
Transformation sector										
Power generation										
Final energy consumption										
Industry										
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	422	661	643	445	372	437	435	447	483	347
Production	10	5	2	26	38	30	29	26	25	22
Import	413	664	639	437	375	438	442	436	482	352
Export		-4		-24	-36	-30	-28	-25	-24	-23
Transformation sector	-436	-643	-626	-424	-358	-426	-440	-428	-484	-335
Petroleum refineries	-436	-643	-626	-424	-358	-426	-440	-428	-484	-335
<b>Petroleum products</b>										
Primary energy supply	-15	26	23	126	198	284	342	376	354	461
Import	53	88	126	215	288	414	456	514	511	573
Export	-28	-37	-76	-57	-38	-55	-52	-59	-69	-41
Transformation sector	326	460	532	359	285	347	366	366	428	289
Power generation	-107	-182	-88	-59	-62	-59	-52	-41	-30	-31
Petroleum refineries	433	642	620	418	347	406	417	407	459	320
Final energy consumption	330	473	527	492	475	587	647	686	710	735
Industry	94	113	83	70	59	58	61	62	61	61
Transport	196	301	348	344	329	426	461	477	494	512
Residential	33	50	60	44	39	41	47	49	53	55
Commerce & public services	5	9	24	21	39	54	68	87	93	98
Others	2	2	12	12	9	8	10	12	9	10
<b>Gas</b>										
Primary energy supply				113	127	119	137	135	151	152
Production				113	127	119	137	135	151	152
Import										
Export										
Transformation sector				-107	-121	-113	-129	-129	-139	-143
Power generation				-107	-121	-113	-129	-129	-139	-143
Final energy consumption				1	3	2	3	2	2	3
Industry				1	3	2	3	2	2	3
Transport										
Residential										
Commerce & public services										
Others										
<b>Electricity</b>										
Power generation	95	121	163	204	244	297	327	340	357	382
Thermal	52	76	93	138	180	221	248	256	275	302
Hydro	22	22	28	30	28	31	29	35	34	29
Nuclear										
Others	21	22	42	36	36	44	50	49	48	50
Final energy consumption	76	96	132	163	199	244	267	280	297	314
Industry	36	39	47	57	67	81	87	92	99	101
Transport										
Residential	20	30	46	58	68	82	92	96	102	110
Commerce & public services	17	23	34	44	59	72	78	82	86	92
Others	3	4	3	4	5	9	9	9	10	10

## Major economic indicators of the Philippines

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>1</sup>	61.90	77.99	86.33	93.97	102.11	103.66	105.17	106.65	108.12
Gross domestic product <sup>3</sup>									
Real term, billion USD (constant 2015)	108	143	179	229	306	328	351	373	396
GDP, billion USD (PPP, constant 2017)	262	347	436	556	745	799	854	908	964
Nominal, billion USD (current)	44	84	107	208	306	319	328	347	377
GDP per capita <sup>3</sup>									
Real term (constant 2015 USD)	1 740	1 831	2 078	2 433	3 001	3 168	3 338	3 501	3 665
GDP, PPP (constant 2017 USD)	4 232	4 454	5 054	5 918	7 300	7 705	8 121	8 516	8 915
Nominal (current USD)	716	1 073	1 244	2 217	3 001	3 074	3 123	3 252	3 485
Nominal GDP & its components (billions of current PHP) <sup>1</sup>									
Gross domestic product	1 077	3 698	5 917	9 399	13 944	15 132	16 557	18 265	19 518
Households and NPISHs final consumption expenditure	767	2 652	4 376	6 598	10 106	10 979	11 951	13 250	14 288
General government final consumption expenditure	109	409	525	914	1 522	1 704	1 875	2 200	2 433
Gross fixed capital formation	249	716	1 076	1 918	3 100	3 783	4 246	4 983	5 300
Stock change	11	-137	21	2	-125	-58	-15	-27	-149
Exports of goods and services	296	1 603	2 440	3 090	3 794	4 036	4 893	5 519	5 540
Imports of goods and services	359	1 546	2 522	3 123	4 453	5 312	6 394	7 662	7 897
Real GDP & its components (billions of 2018 PHP) <sup>1</sup>									
Gross Domestic Product	5 267	6 985	8 774	11 184	14 991	16 063	17 176	18 265	19 383
Households and NPISHs final consumption expenditure	3 677	5 356	6 821	8 215	11 035	11 823	12 528	13 250	14 027
General government final consumption expenditure	704	829	863	1 206	1 665	1 821	1 940	2 200	2 400
Gross fixed capital formation	983	1 278	1 435	2 222	3 301	3 991	4 412	4 983	5 176
Stock change	53	-146	34	2	24	27	43	-27	-45
Exports of goods and services	838	1 770	2 377	2 952	3 849	4 204	4 935	5 519	5 664
Imports of goods and services	1 028	2 103	2 760	3 416	4 885	5 804	6 683	7 662	7 841
Sectoral shares of Real GDP (%) <sup>1</sup>									
Agriculture, Fishery and Forestry	16.5	15.2	14.8	13.4	11.3	10.4	10.1	9.7	9.2
Industry	32.9	32.0	30.8	30.0	30.0	30.3	30.3	30.6	30.4
Services, etc.	50.6	52.8	54.4	56.6	58.8	59.3	59.6	59.8	60.4
Manufacturing Production Index (2010=100) <sup>2</sup>	N.A.	72.0	86.1	100.0	135.0	150.8	150.3	107.6	98.1
External trade (billions of current USD) <sup>1</sup>									
Exports, f.o.b.	8.1	38.1	41.3	51.5	58.8	57.4	68.7	69.3	70.9
Imports, c.i.f.	13.0	37.0	49.5	58.5	74.8	89.4	101.9	119.3	117.4
Balance of payments (billions of current USD) <sup>2</sup>									
Trade balance	-4.0	-8.2	-12.1	-16.9	-23.3	-35.5	-40.2	-51.0	-49.3
Current account	-2.7	-2.2	2.0	7.2	7.3	-1.2	-2.1	-8.9	-3.0
Overall balance	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Foreign exchange rate (PHP/USD) <sup>1</sup>	24.31	44.19	55.09	45.11	45.50	47.49	50.40	52.66	51.80
PPP conversion factor, GDP (PHP/USD) <sup>1</sup>	8.82	14.90	16.24	18.49	19.04	18.93	19.39	19.92	20.05
Price Indices									
GDP Deflator (2018=100) <sup>3</sup>	20.5	52.9	67.4	84.0	93.0	94.2	96.4	100.0	100.7
Producer Price Index (2010=100) <sup>2</sup>	N.A.	59.5	92.8	100.0	85.7	81.6	80.9	60.8	59.4
Consumer Price Index (2010=100) <sup>2</sup>	28.6	63.7	78.7	100.0	115.4	116.9	120.2	126.5	129.6
Growth rate (%) <sup>3</sup>									
Real GDP	3.0	4.4	4.9	7.3	6.3	7.1	6.9	6.3	6.1
Population	2.6	2.2	1.9	1.7	1.6	1.5	1.5	1.4	1.4
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	N.A.	12.5	9.0	-4.9	-6.7	-4.8	-0.9	-24.8	-2.3
Consumer prices	12.2	4.0	6.5	3.8	0.7	1.3	2.9	5.2	2.5

Source <sup>1</sup>: *World Development Indicators*, World Bank

<sup>2</sup>: *International Financial Statistics*, International Monetary Fund

<sup>3</sup>: Calculated from <sup>1</sup> and <sup>2</sup> by ESTO

Note : N.A. means "not available"

: PHP means Philippine Peso, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in the Philippines

## IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	PHP										
Exchange Rate	/ US Dollar			42.23							
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal	USD/tonne			102.57			87.85	87.85			
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil	USD/BBL			114.11			50.91	42.16			
Natural Gas Liquids											
Ethane											
LPG	USD/BBL			90.05			39.50	37.78			
Naphtha											
Motor Gasoline	USD/BBL			119.99			64.62	55.36			
Aviation Gasoline	USD/BBL			204.94			183.91	111.41			
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	USD/BBL			128.38			55.74	52.46			
Other Kerosene	USD/BBL			126.71			47.71	54.42			
Gas/Diesel Oil	USD/BBL			127.16			51.05	51.49			
Fuel Oil	USD/BBL			113.44			55.97	36.28			
White Spirit SBP											
Lubricants											
Bitumen	USD/BBL			111.96			26.83	38.03			
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity											

## Energy prices in the Philippines

WHOLESALE PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency Exchange Rate	PHP / US Dollar			42.23							
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal	PHP/tonne			2 175			2 990				
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	PHP/L			38.12			49.18	46.61			
Naphtha											
Motor Gasoline	PHP/L			58.77			50.13	49.49			
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	PHP/L			56.99			41.77	38.72			
Other Kerosene	PHP/L			49.18			33.58	30.51			
Gas/Diesel Oil	PHP/L			47.77			34.06	32.38			
Fuel Oil	PHP/L			40.05			31.78	32.00			
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	USD/million Btu			12.10			7.79				
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity	PHP/MWh			7 037							

## Energy prices in the Philippines

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	PHP										
Exchange Rate	/ US Dollar			42.23							
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal	PHP/tonne						3 900				
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	PHP/L		41.02				30.40	28.96			
LPG (transport)	PHP/L						30.00	28.64			
Naphtha											
Motor Gasoline (regular)	PHP/L		59.23				50.05	39.80			
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	PHP/L		56.96				41.77	38.72			
Other Kerosene	PHP/L		50.42				34.84	31.78			
Gas/Diesel Oil	PHP/L		49.19				33.32	25.36			
Fuel Oil	PHP/L		40.05				31.78	32.00			
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	USD/GJ							6.06			
Liquefied Natural Gas (export)											
Compressed Natural Gas	PHP/dL		14.52								
<b>Electricity</b>											
Industrial	PHP/kWh		7.84								
Commercial	PHP/kWh		9.86								
Residential	PHP/kWh		11.14								
Others	PHP/kWh		10.74								



**RUSSIA**



## Energy balance table of Russia

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	10 565		23 600						
Import	599	2		52		1	1		3
Export	-5 673	- 81	-11 326	-5 430	- 228	- 768	- 103		-1 725
International marine bunkers				- 452					- 364
International aviation bunkers				- 245			- 245		
Stock changes	- 200		66	- 8	- 5	- 4			- 17
<b>Total primary energy supply</b>	<b>5 292</b>	<b>- 80</b>	<b>12 340</b>	<b>-6 084</b>	<b>- 233</b>	<b>- 772</b>	<b>- 347</b>		<b>-2 104</b>
<b>Transfers</b>							- 14		<b>14</b>
Total transformation sector	-4 764	1 167	-12 090	11 628	1 738	1 134	566		3 414
Main activity producers	-1 971			- 31					
Autoproducers	- 647	- 138	- 23	- 218					- 60
Gas processing									
Petroleum refineries			-12 067	11 876	1 738	1 134	566		3 474
Coal transformation	-2 147	1 305							
Other transformation									
Losses & own use	- 25	- 42	- 249	- 171					- 151
Discrepancy	- 251			87		25	40		235
<b>Total final consumption</b>	<b>251</b>	<b>1 046</b>	<b>1</b>	<b>5 460</b>	<b>1 505</b>	<b>388</b>	<b>245</b>		<b>1 408</b>
<b>Total final energy consumption</b>	<b>244</b>	<b>1 046</b>	<b>1</b>	<b>3 912</b>	<b>1 505</b>		<b>245</b>		<b>1 408</b>
Industry sector	140	1 046	1	426					276
Iron and steel	99	1 040		13					
Chemical & petrochemical	7	1		17					7
Non-metallic minerals	28	3		23					19
Other industries	6	2		372					250
Transport sector				2 675	1 505		245		856
Domestic air transport				245			245		
Road				2 165	1 493				616
Rail				166	1				165
Inland waterways				26	1				17
Other transport				73	10				58
Other sector	104		1	811					275
Residential	71			608					101
Commerce and public services	31			62					55
Agriculture	2			113					110
Non-specified others				29					10
<b>Non-energy</b>	<b>8</b>			<b>1 548</b>		<b>388</b>			
<b>2018</b>									
Production	10 052		23 369						
Import	624	3	21	46	1	1	1		2
Export	-5 507	- 79	-10 963	-5 440	- 185	- 809	- 115		-1 792
International marine bunkers				- 492					- 411
International aviation bunkers				- 239			- 239		
Stock changes	- 189		- 98	4	- 1	9			- 9
<b>Total primary energy supply</b>	<b>4 980</b>	<b>- 76</b>	<b>12 329</b>	<b>-6 120</b>	<b>- 185</b>	<b>- 798</b>	<b>- 353</b>		<b>-2 209</b>
<b>Transfers</b>							- 19		<b>19</b>
Total transformation sector	-4 675	1 039	-12 055	11 458	1 718	1 198	557		3 429
Main activity producers	-2 083			- 31					
Autoproducers	- 642	- 134	- 20	- 272					- 64
Gas processing									
Petroleum refineries			-12 034	11 761	1 718	1 198	557		3 492
Coal transformation	-1 950	1 173							
Other transformation									
Losses & own use	- 27	- 57	- 273	- 174					- 154
Discrepancy	- 36			50			54		155
<b>Total final consumption</b>	<b>242</b>	<b>906</b>	<b>1</b>	<b>5 214</b>	<b>1 533</b>	<b>400</b>	<b>239</b>		<b>1 239</b>
<b>Total final energy consumption</b>	<b>235</b>	<b>906</b>	<b>1</b>	<b>3 719</b>	<b>1 533</b>		<b>239</b>		<b>1 239</b>
Industry sector	139	906	1	332					192
Iron and steel	93	899		14					
Chemical & petrochemical	8	1		18					5
Non-metallic minerals	31	4		14					12
Other industries	7	3		286					174
Transport sector				2 583	1 533		239		761
Domestic air transport				239			239		
Road				2 183	1 520				627
Rail				110	1				109
Inland waterways				17					10
Other transport				34	12				16
Other sector	96			804					286
Residential	71			560					70
Commerce and public services	23			93					87
Agriculture	2			120					117
Non-specified others				31					12
<b>Non-energy</b>	<b>7</b>			<b>1 495</b>		<b>400</b>			

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				26 439	701	2 294	10	446			64 056	838
4	6		37	314				1	6		973	
-2 004	-204		-396	-8 941				-4	-72		-31 526	-2
-88											-452	
											-245	
9	9		1	-310				-4			-456	-2
-2 079	-190		-359	17 502	701	2 294	10	439	-66		32 349	835
2 185	1 337		1 253	-9 085	-701	-2 294	-10	-211	4 019	5 322	-7 020	-738
-31				-5 801	-697	-2 294	-10	-7	3 755	2 418	-4 637	-707
-121	-1		-35	-2 808	-4			-202	275	2 892	-872	-28
2 337	1 338		1 289								-191	
											-842	
				-477				-3	-12	13	-478	-3
-18	-2			-1 046				-6	-1 233	-916	-3 688	
-22	-191			353							190	
66	953		895	7 725				222	2 720	4 406	21 832	97
66	580		108	5 822				222	2 720	4 406	18 373	97
28	14		108	1 630				126	1 226	1 512	6 108	9
13	1			489				54	223	254	2 172	
2	9			352				7	172	519	1 075	1
4	1			340				3	61	89	546	
10	4		108	450				62	770	651	2 315	8
13	56			1 182					294		4 151	
											245	
	56			9							2 174	
									190		356	
8											26	
5				1 174					103		1 350	
26	510			3 009				95	1 200	2 894	8 114	88
1	506			2 721				44	579	1 996	6 020	44
6	1			236				48	550	791	1 718	43
	2			52				3	70	106	346	1
19									1	1	31	
	373		786	1 903							3 458	
				25 398	688	2 246	8	377			62 138	815
	5		36	323				1	19		1 037	
-2 006	-227		-306	-8 434				-3	-64		-30 490	-2
-81											-492	
											-239	
7			-3	636				-4			349	-2
-2 080	-223		-273	17 923	688	2 246	8	370	-45		32 302	812
2 124	1 320		1 113	-8 524	-688	-2 246	-8	-196	3 993	5 482	-6 419	-720
-31				-5 638	-684	-2 246	-8	-6	3 736	2 507	-4 452	-692
-163	-2		-44	-2 757	-4			-187	272	2 960	-785	-25
2 318	1 322		1 156								-273	
											-777	
				-128				-4	-14	15	-131	-4
-20	-1			-845				-7	-1 214	-992	-3 590	
42	-199			-769							-755	
66	897		840	7 785				167	2 734	4 490	21 539	91
66	547		96	5 954				167	2 734	4 490	18 206	91
28	16		96	1 603				71	1 225	1 542	5 818	3
14				508				35	226	266	2 041	
2	11			295				4	170	527	1 025	1
1	1			356				1	60	88	554	
12	4		96	443				30	769	661	2 199	3
13	37			1 351					295		4 229	
											239	
	36			10							2 193	
									190		300	
7											17	
6				1 341					105		1 480	
24	495			3 000				96	1 214	2 948	8 159	88
	490			2 843				42	599	2 092	6 207	42
5	2			100				49	548	737	1 550	43
	2			57				5	67	119	369	2
19									1	1	32	
	350		744	1 830							3 332	

## Major energy indicators of Russia

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	36 816	26 660	25 932	27 287	29 027	28 978	29 857	30 410	32 302	32 349
Production	54 145	40 515	40 952	50 383	53 571	55 870	57 513	59 840	62 138	64 056
Import	5 043	1 259	1 377	971	706	1 156	939	1 031	1 037	973
Export	-22 318	-14 446	-16 013	-23 551	-24 773	-27 196	-27 894	-28 938	-30 490	-31 526
Final energy consumption	24 487	17 740	15 976	15 395	15 922	16 467	16 912	17 525	18 206	18 373
Industry	8 737	6 141	5 352	5 151	5 289	5 833	6 244	6 261	5 818	6 108
Transport	4 852	3 188	3 118	3 708	4 040	3 930	3 948	4 013	4 229	4 151
Residential	3 496	6 151	5 873	4 629	4 667	4 803	4 793	5 216	6 207	6 020
Commerce & public services	1 519	1 068	948	1 454	1 550	1 524	1 559	1 646	1 550	1 718
Others	5 883	1 191	684	453	375	376	369	389	402	376
<b>Coal</b>										
Primary energy supply	7 955	5 419	5 065	4 794	4 488	4 921	4 755	4 733	4 992	5 304
Production	8 055	5 471	5 382	6 591	6 965	8 385	8 757	9 304	10 065	10 579
Import	1 330	576	639	567	383	596	538	625	624	600
Export	-1 596	-749	-1 021	-2 251	-3 099	-4 126	-4 507	-4 975	-5 508	-5 675
Transformation sector	-5 857	-4 521	-4 383	-4 369	-4 257	-4 490	-4 271	-4 272	-4 686	-4 776
Power generation	-4 235	-3 291	-3 174	-3 021	-2 748	-2 575	-2 418	-2 366	-2 735	-2 628
Final energy consumption	1 730	562	481	282	212	265	264	235	235	244
Industry	78	73	65	45	42	116	132	128	139	140
Transport										
Residential	470	328	374	118	65	87	78	64	71	71
Commerce & public services	862	36	16	112	103	58	52	40	23	31
Others	320	125	27	7	3	4	3	2	2	2
<b>Coal products</b>										
Primary energy supply	47	-10	-41	-80	-61	-65	-65	-80	-76	-80
Production										
Import	139	11	5	4	6	3	2	3	3	2
Export	-96	-37	-46	-84	-67	-71	-66	-85	-79	-81
Transformation sector	530	259	302	345	497	983	1 002	1 005	1 039	1 168
Power generation	-158	-97	-171	-197	-218	-131	-130	-138	-135	-138
Final energy consumption	561	454	241	244	373	873	897	885	907	1 047
Industry	532	439	240	243	372	873	896	884	906	1 046
Transport										
Residential	27	14	1			1	1			
Commerce & public services										
Others	2	1								
<b>Crude oil &amp; NGL</b>										
Primary energy supply	13 479	7 925	7 696	9 079	10 757	12 142	12 334	12 443	12 329	12 340
Production	22 033	12 837	13 534	19 624	21 208	22 453	23 043	22 985	23 369	23 600
Import	778	358	248	102	46	148	32	26	21	
Export	-9 333	-5 148	-6 077	-10 628	-10 394	-10 364	-10 724	-10 637	-10 963	-11 326
Transformation sector	-12 934	-7 756	-7 610	-8 955	-10 549	-11 893	-12 034	-12 182	-12 055	-12 090
Petroleum refineries	-12 871	-7 740	-7 566	-8 923	-10 516	-11 868	-11 999	-12 161	-12 034	-12 067
<b>Petroleum products</b>										
Primary energy supply	-2 435	-1 950	-2 416	-3 669	-4 934	-6 307	-5 831	-5 997	-6 120	-6 084
Import	307	126	13	1	119	82	49	51	46	52
Export	-2 691	-1 927	-2 232	-3 498	-4 689	-5 661	-5 200	-5 326	-5 440	-5 430
Transformation sector	8 756	5 918	6 604	8 044	10 036	11 506	11 281	11 742	11 458	11 628
Power generation	-2 536	-1 573	-928	-670	-432	-369	-274	-274	-303	-249
Petroleum refineries	11 293	7 492	7 532	8 744	10 469	11 875	11 555	12 016	11 761	11 876
Final energy consumption	5 263	2 773	2 975	2 917	3 244	3 701	3 633	3 819	3 719	3 912
Industry	1 024	355	710	430	462	605	670	664	332	426
Transport	3 051	1 723	1 771	1 991	2 357	2 495	2 413	2 467	2 583	2 675
Residential	367	219	182	265	198	342	321	437	560	608
Commerce & public services	18	15	41	35	70	100	89	104	93	62
Others	803	461	271	195	158	159	140	147	150	141
<b>Gas</b>										
Primary energy supply	15 382	13 257	13 356	14 640	16 058	15 251	15 546	16 117	17 923	17 502
Production	21 638	20 120	19 709	21 597	22 615	21 953	22 542	24 323	25 398	26 439
Import	2 363	122	441	260	146	303	307	302	323	314
Export	-8 446	-6 448	-6 556	-7 010	-6 455	-6 907	-7 332	-7 853	-8 434	-8 941
Transformation sector	-9 535	-7 957	-7 931	-8 618	-9 336	-8 685	-8 441	-8 459	-8 524	-9 085
Power generation	-9 535	-7 957	-7 805	-8 532	-9 266	-8 602	-8 348	-8 341	-8 396	-8 609
Final energy consumption	5 108	4 333	4 197	4 464	4 574	4 535	4 883	5 260	5 954	5 822
Industry	1 277	1 050	1 082	1 261	1 355	1 486	1 525	1 591	1 603	1 630
Transport	1 426	1 230	1 128	1 417	1 376	1 140	1 238	1 267	1 351	1 182
Residential	1 973	1 811	1 805	1 597	1 693	1 773	1 969	2 243	2 843	2 721
Commerce & public services	368	182	103	149	127	90	96	104	100	236
Others	64	60	79	40	23	46	54	56	57	52
<b>Electricity</b>										
Power generation	3 896	3 092	3 155	3 424	3 730	3 836	3 920	3 932	4 008	4 031
Thermal	2 872	2 097	2 085	2 254	2 505	2 514	2 535	2 521	2 569	2 560
Hydro	597	631	591	622	599	605	665	666	688	701
Nuclear	426	358	471	538	613	704	708	731	736	752
Others	0	6	9	11	12	14	13	14	14	18
Final energy consumption	2 976	2 226	2 191	2 340	2 616	2 636	2 678	2 739	2 734	2 720
Industry	1 734	1 130	1 125	1 188	1 177	1 184	1 175	1 220	1 225	1 226
Transport	374	235	219	299	307	296	297	279	295	294
Residential	385	454	507	392	467	538	578	599	599	579
Commerce & public services	241	216	231	399	608	559	566	576	548	550
Others	242	191	109	61	57	59	63	65	68	71

## Major economic indicators of Russia

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	147.97	146.60	143.52	142.85	144.10	144.34	144.50	144.48	144.41
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	1 161	780	1 051	1 251	1 363	1 366	1 391	1 430	1 459
GDP, billion USD (PPP, constant 2017)	3 179	2 136	2 877	3 423	3 732	3 739	3 807	3 914	3 994
Nominal, billion USD (current)	517	260	764	1 525	1 363	1 277	1 574	1 657	1 687
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	7 849	5 324	7 323	8 755	9 462	9 464	9 627	9 899	10 105
GDP, PPP (constant 2017 USD)	21 483	14 570	20 043	23 961	25 897	25 903	26 347	27 090	27 655
Nominal (current USD)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Nominal GDP & its components (billions of current RUR) <sup>11</sup>									
Gross domestic product	1	7 306	21 610	46 309	83 087	85 616	91 843	103 862	109 242
Households and NPISHs final consumption expenditure		3 374	10 792	23 843	43 770	45 589	48 559	52 311	55 895
General government final consumption expenditure		1 103	3 646	8 671	14 761	15 810	16 731	18 394	20 067
Gross fixed capital formation		1 232	3 837	10 014	17 126	18 734	20 189	21 452	23 087
Stock change		134	502	458	1 277	1 040	1 492	1 312	1 775
Exports of goods and services		3 219	7 607	13 529	23 849	22 136	23 963	31 982	31 174
Imports of goods and services		1 756	4 648	9 790	17 163	17 691	19 090	21 590	22 840
Real GDP & its components (billions of 2016 RUR) <sup>11</sup>									
Gross Domestic Product	72 791	48 910	65 870	78 380	85 451	85 616	87 179	89 627	91 449
Households and NPISHs final consumption expenditure	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
General government final consumption expenditure	19 404	13 926	15 026	15 982	15 584	15 810	16 210	16 417	16 806
Gross fixed capital formation	36 355	7 787	12 514	17 914	18 501	18 734	19 606	19 727	20 029
Stock change	12 068	2 569	4 017	1 972	1 400	1 040	1 435	979	1 351
Exports of goods and services	13 116	10 743	16 554	19 370	21 456	22 136	23 245	24 537	24 712
Imports of goods and services	14 755	5 479	12 568	19 338	18 366	17 691	20 755	21 306	22 033
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	4.6	4.8	4.0	3.3	3.8	3.8	3.8	3.8	3.8
Industry	39.4	31.4	31.9	28.5	28.7	29.2	29.2	29.2	29.0
Services, etc.	51.3	51.2	50.8	56.6	57.4	57.0	57.0	57.0	57.1
Industrial production index (2010=100) <sup>12</sup>	N.A.	69.2	91.4	100.0	119.1	121.2	125.7	130.1	134.5
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Imports, c.i.f.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	N.A.	57.1	116.2	147.0	148.4	90.2	114.6	195.1	165.8
Current account	N.A.	45.4	84.4	67.5	67.8	24.5	32.2	115.7	65.4
Overall balance	N.A.	27.0	70.0	45.9	-1.2	13.6	20.0	36.1	67.7
Foreign exchange rate (RUR/USD) <sup>11</sup>	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
PPP conversion factor, GDP (RUR/USD) <sup>11</sup>	0.00	7.55	13.39	16.71	25.25	25.75	25.85	25.76	26.52
Price Indices									
GDP Deflator (2016=100) <sup>13</sup>	0.0	14.9	32.8	59.1	97.2	100.0	105.3	115.9	119.5
Producer Price Index (2010=100) <sup>12</sup>	N.A.	27.1	61.7	100.0	156.6	163.4	175.8	197.5	201.4
Consumer Price Index (2010=100) <sup>12</sup>	N.A.	30.8	61.4	100.0	151.5	162.2	168.2	173.0	180.8
Growth rate (%) <sup>13</sup>									
Real GDP <sup>13</sup>	-3.0	10.0	6.4	4.5	-2.0	0.2	1.8	2.8	2.0
Population <sup>13</sup>	0.2	-0.4	-0.4	0.0	0.2	0.2	0.1	0.0	0.0
Price <sup>12</sup>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	N.A.	46.5	20.6	12.2	13.8	4.3	7.6	12.3	2.0
Consumer prices	N.A.	20.8	12.7	6.8	15.5	7.0	3.7	2.9	4.5

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note : N.A. means "not available"

: - means "very small number"

: RUR means Russian Ruble, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Russia

## IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	RUB										
Exchange Rate	/ US Dollar				31.82	37.97			58.33	62.67	
<b>Coal and Coal Products</b>											
Coking Coal	USD/tonne	199.01	217.13	186.65	146.13	109.24	93.78	82.53	159.75	102.70	96.59
Anthracite	USD/tonne	134.25	61.12	88.76	64.81	57.50	43.28	36.39	37.56	36.62	41.78
Other bituminous coal	USD/tonne	21.51	37.91	22.32	20.99	19.95	14.72	9.25	11.27	9.84	9.30
<b>Sub-bituminous Coal</b>											
Lignite	USD/tonne	19.71	21.04	24.16	17.15	21.13	14.94	11.0	12.39	14.57	17.07
Peat	USD/tonne	137.87	108.27	295.95	302.21	248.39	146.98	133.77	103.14	123.81	129.37
Patent Fuel	USD/tonne	228.78	260.0	588.58						145.60	212.50
Coke	USD/tonne	385.38	541.35	320.71	437.95	405.16	330.39	335.89	404.12	404.55	404.25
Coal Tar	USD/tonne	171.40	189.62	247.27	223.61	240.34	157.70	84.15	140.13	148.10	169.38
BKB/PB	USD/tonne	4 139.53	5 423.47	5 174.71	5 161.40	5 091.95	4 046.94	4 761.95	4 696.76	5 539.72	2 648.87
<b>Oil and Oil Products</b>											
Crude Oil	USD/tonne	267.58	248.09	206.42	180.61	208.29	226.36				
Natural Gas Liquids	USD/tonne	267.58	248.09	206.42	180.61	173.01	80.76	57.00	111.09	128.81	320.19
Ethane	USD/tonne	2 369.90	443.42	1 334.55	1 874.90	1 842.40	1 431.85	3 446.50	3 539.12	2 774.35	3 512.94
LPG	USD/tonne	378.30	581.63	950.71	714.38	701.90	374.25	401.45	591.36	555.07	493.59
Naphtha				1 721.90	1 747.79	1 299.47	1 051.18	1 060.74	928.22	1 178.34	1 139.13
Motor Gasoline	USD/tonne	733.49	1 019.30	903.93	708.80	606.25	416.50	350.90	444.19	491.87	397.60
Aviation Gasoline	USD/tonne			2 224.61	2 049.88	1 826.20	1 156.01	911.27	1 014.73	1 249.92	1 131.11
Gasoline Type Jet Fuel					784.30	696.84			559.99		
Kerosene Type Jet Fuel	USD/tonne	636.05	824.30	771.03	809.73	745.34	456.67	332.30	468.21	622.88	619.0
Other Kerosene	USD/tonne	2 655.96	1 445.59	1 956.29	1 024.46	3 338.46	1 515.37	3 307.46	2 831.37	3 116.10	1 823.02
Gas/Diesel Oil	USD/tonne		1 474.81	1 021.04	694.68	660.69	351.20	299.52	480.18	646.03	614.08
Fuel Oil	USD/tonne		661.26	693.90	278.88	884.93	574.60	345.18	210.24	537.23	364.73
White Spirit SBP	USD/tonne			1 665.26	1 711.63	1 622.36	1 116.94	990.26	1 168.44	1 398.06	1 309.19
Lubricants	USD/tonne	2 370.05	2 603.50	2 635.03	2 548.98	2 296.27	1 924.64	1 790.04	1 866.17	1 976.63	1 934.65
Bitumen	USD/tonne	600.27	448.05	251.36	422.88	276.92	171.44	194.17	255.87	645.14	318.64
Paraffin Waxes	USD/tonne	2 192.59	2 238.12	2 480.62	2 937.21	3 117.54	2 646.59	2 762.28	2 743.56	2 738.24	2 192.40
Petroleum Coke	USD/tonne	292.37	353.54	359.94	266.51	227.77	228.59	219.92	263.99	567.50	804.53
<b>Natural Gas</b>											
Natural Gas	m <sup>3</sup>		11 508	27 940	27 047	26 065	19 631	13 699	15 646	18 145	19654.93
Liquefied Natural Gas	USD/1000 m <sup>3</sup>									293.99	410.50
<b>Compressed Natural Gas</b>											
Electricity	USD/kWh	25.78	36.07	29.23	28.53	49.10	45.75	16.70	16.89	16.42	21.64
<b>Other energy</b>											
Charcoal	USD/tonne	1062.14	818.28	1170.55	964.82	946.24	808.89	735.94	707.20	747.29	663.52
Wood pellets	USD/tonne	-	-	1093.42	1012.36	1093.07	702.70	627.92	538.41	876.39	889.31

## Energy prices in Russia

## WHOLESALE PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	RUB										
Exchange Rate	/ US Dollar				31.82	37.97			58.33	62.67	
<b>Coal and Coal Products</b>											
Coking Coal	RUB/tonne	5,920.00	6 505	4 523	4 045	4 225	5 524.0	8 524.0	9 552	11 029	7,716
Anthracite	RUB/tonne					7 165	7 262	9 375	11 019	11 849	14,389
Other bituminous coal											
Sub-bituminous Coal											
Lignite	RUB/tonne	895.00	907	915	1 015	1 019	1 114.0	1 181.0	1 227	1 301	1,462
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil	RUB/tonne	11,045	12,417	12,797	14,414	9,832	12,325	18,180	22,697	19,869	25,402
Natural Gas Liquids											
Ethane											
LPG	RUB/tonne			29,752	20,731	24,285	16,666	17,409	19,589	22,476	25,962
Naphtha											
Motor Gasoline	RUB/tonne	24,814	28,775	34,523	35,539	38,496	40,470	43,170	46,131	49,428	54,999
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	RUB/tonne	21,378	31,587	30,517	31,509	32,031	35,097	35,428	42,054	49,310	50,640
Other Kerosene											
Gas/Diesel Oil	RUB/tonne	24,157	30,488	34,075	36,275	36,622	40,015	39,721	46,998	57,707	56,908
Fuel Oil	RUB/tonne	12,058	13,856	12,716	12,357	11,462	7,099	12,431	16,997	22,154	11,923
White Spirit SBP											
Lubricants	RUB/tonne	43,633	51,201	50,014	53,246	61,600	87,691	65,834	84,119	78,569	71,545
Bitumen	RUB/tonne	8,494	16,989	12,850	7,645	12,546	5,499	8,287	10,018	12,255	11,602
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	RUB/1000 m <sup>3</sup>	3,081	3,562	4,062	4,638	4,666	5,205	5,055	5,137	5,319	5,339
Liquefied Natural Gas											
Compressed Natural Gas											
Electricity	RUB/MWh	1,539	1,914	1,933	2,149	2,103	2,189	2,253	2,579	2,582	2,640
Other energy											
Charcoal											

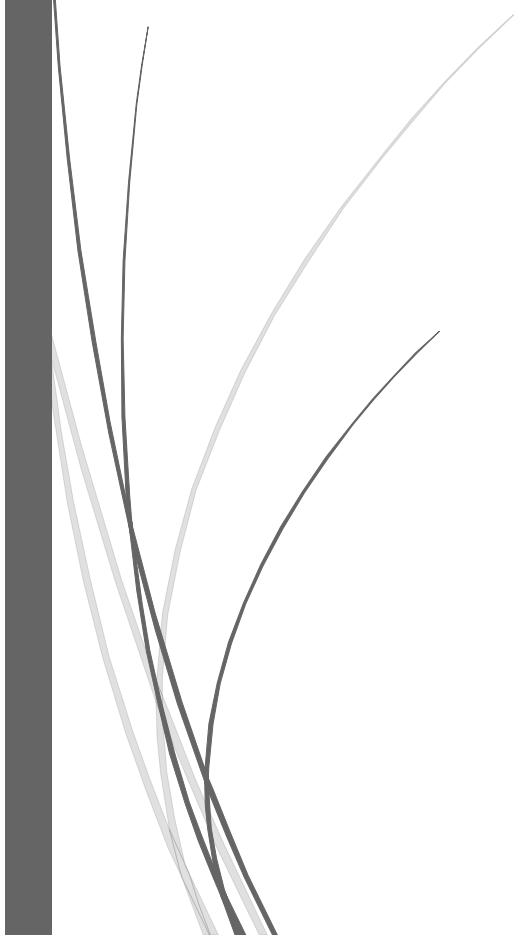
## Energy prices in Russia

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency Exchange Rate	RUB / US Dollar				31.82	37.97			58.33	62.67	
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite	RUB/tonne		1,920								
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel	RUB/tonne	3,036	1,920	2,177	2,322	2,214	2,760	3,070	3,109	2,900	2,970
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG											
LPG (transport)											
Naphtha											
Motor Gasoline (regular)	RUB/L	25.29	28.45	30.69	32.66	35.21	36.91	38.34	41.01	44.83	45.74
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil	RUB/L	23.10	27.83	30.85	33.34	34.44	35.56	33.66	40.24	46.68	47.73
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	RUB/month - person	43.81	48.32	55.36	63.63	63.89	67.56	68.24	73.04	75.59	77.94
Liquefied Natural Gas	RUB/month - person	165.79	182.05	210.85	241.51	242.74	254.52	275.23	278.02	273.55	291.32
Compressed natural gas	RUB/50 L	466.26	494.37	544.28	614.80	651.44	665.59	668.55	674.27		
<b>Electricity</b>											
Industrial											
Commercial											
Residential	RUB/100 kWh	232.03	249.69	269.02	302.64	314.95	333.42	359.02	371.44	387.16	400.64
Others	RUB/100 kWh	166.83	184.99	190.65	214.32	226.63	245.82	260.29	269.04	280.42	294.45



# **Singapore**





## Energy balance table of Singapore

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production									
Import	19		2 278	4 561	749	276	79		767
Export			- 31	-3 517	-1 096	- 37	- 209	- 12	- 910
International marine bunkers				-1 920					- 168
International aviation bunkers				- 376			- 376		
Stock changes				14	16				
<b>Total primary energy supply</b>	<b>19</b>		<b>2 247</b>	<b>-1 237</b>	<b>- 331</b>	<b>239</b>	<b>- 506</b>	<b>- 11</b>	<b>- 311</b>
Transfers			300	- 304		- 167			- 71
Total transformation sector	- 12		-2 171	2 192	364	193	506	11	465
Main activity producers	- 12								
Autoproducers				- 3					
Gas processing									
Petroleum refineries			-2 171	2 196	364	193	506	11	465
Coal transformation									
Other transformation									
Losses & own use				- 81					
Discrepancy			- 376	- 16					
<b>Total final consumption</b>	<b>8</b>			<b>554</b>	<b>33</b>	<b>266</b>			<b>82</b>
<b>Total final energy consumption</b>	<b>8</b>			<b>264</b>	<b>33</b>				<b>82</b>
Industry sector	8			166					21
Iron and steel									
Chemical & petrochemical				135					
Non-metallic minerals									
Other industries	8			32					21
Transport sector				94	33				61
Domestic air transport									
Road				91	33				58
Rail									
Inland waterways				3					3
Other transport									
Other sector				4					
Residential				1					
Commerce and public services				3					
Agriculture									
Non-specified others									
<b>Non-energy</b>				<b>290</b>		<b>266</b>			
<b>2018</b>									
Production									
Import	20		2 394	4 500	555	293	57	1	770
Export			- 32	-3 533	- 895	- 26	- 221	- 12	-1 004
International marine bunkers				-2 009					- 99
International aviation bunkers				- 365			- 365		
Stock changes			8	3	- 9				- 18
<b>Total primary energy supply</b>	<b>20</b>		<b>2 370</b>	<b>-1 404</b>	<b>- 348</b>	<b>267</b>	<b>- 529</b>	<b>- 11</b>	<b>- 351</b>
Transfers			299	- 306		- 210			- 50
Total transformation sector	- 12		-2 270	2 283	380	202	529	11	486
Main activity producers	- 12								
Autoproducers				- 5					
Gas processing									
Petroleum refineries			-2 270	2 289	380	202	529	11	486
Coal transformation									
Other transformation									
Losses & own use				- 85					
Discrepancy			- 399	60					
<b>Total final consumption</b>	<b>8</b>			<b>549</b>	<b>32</b>	<b>260</b>			<b>85</b>
<b>Total final energy consumption</b>	<b>8</b>			<b>266</b>	<b>32</b>				<b>85</b>
Industry sector	8			166					22
Iron and steel									
Chemical & petrochemical				133					
Non-metallic minerals									
Other industries	8			33					22
Transport sector				95	32				63
Domestic air transport									
Road				92	32				60
Rail									
Inland waterways				3					3
Other transport									
Other sector				4					
Residential				1					
Commerce and public services				3					
Agriculture									
Non-specified others									
<b>Non-energy</b>				<b>283</b>		<b>260</b>			

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
							1	25			27	14
2 589	27		73	382				3			7 244	3
- 931	- 9		- 312								-3 547	
-1 752											-1 920	
											- 376	
- 2											14	
- 96	18		- 239	382			1	28			1 441	17
- 66											- 4	
196	41	142	274	- 329			- 1	- 28	196		- 154	- 17
				- 286			- 1	- 28	171		- 157	- 17
- 2		- 1		- 43					25		- 21	
198	41	143	274								25	
- 20		- 61							- 10		- 91	
	- 54	41	- 4	2							- 390	
14	6	122	31	54					186		802	
14	6	122	7	54					186		512	
14	2	122	7	48					72		294	
13		122									135	
1	2		7	48					72		159	
									11		105	
											91	
									11		11	
											3	
	4			6					104		114	
	1			2					28		31	
	3			3					75		82	
									1		1	
				24							290	
							1	25			26	13
2 746	19		59	375				3			7 293	3
-1 058	- 11		- 307								-3 565	
-1 910											-2 009	
											- 365	
30				1							13	
- 191	7		- 248	377			1	28			1 392	16
- 46											- 8	
203	43	150	279	- 320			- 1	- 28	191		- 156	- 16
				- 277			- 1	- 28	166		- 153	- 16
- 3		- 2		- 43					26		- 23	
207	43	152	279								19	
- 20		- 64							- 10		- 95	
69	- 45	35		- 2							- 342	
14	6	121	31	54					182		792	
14	6	121	8	54					182		509	
14	2	121	8	48					72		293	
12		121									133	
2	2		8	48					72		160	
									11		106	
											92	
									11		11	
											3	
	4			6					99		109	
	1			2					26		29	
	3			3					72		79	
									1		1	
				23							283	

## Major energy indicators of Singapore

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	483	789	782	880	984	1 328	1 360	1 500	1 392	1 441
Production	3	8	8	17	25	26	28	27	26	27
Import	2 571	3 387	3 455	4 739	6 493	7 302	7 705	8 152	7 293	7 244
Export	-1 544	-2 030	-1 746	-2 660	-3 668	-3 819	-4 116	-4 255	-3 565	-3 547
Final energy consumption	130	160	234	299	410	484	491	522	509	512
Industry	25	31	91	135	214	271	275	308	293	294
Transport	57	79	73	82	102	109	109	108	106	105
Residential	12	15	26	25	27	29	31	30	29	31
Commerce & public services	34	33	40	51	66	74	76	76	79	82
Others	1	2	3	5	1	1	1	1	1	1
<b>Coal</b>										
Primary energy supply						17	18	38	20	19
Production										
Import						17	18	38	20	19
Export										
Transformation sector						-10	-11	-12	-12	-12
Power generation						-10	-11	-12	-12	-12
Final energy consumption						7	7	25	8	8
Industry						7	7	25	8	8
Transport										
Residential										
Commerce & public services										
Others										
<b>Coal products</b>										
Primary energy supply	1									
Production										
Import	1	1								
Export	-1	-1								
Transformation sector										
Power generation										
Final energy consumption	1									
Industry	1									
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	1 745	2 199	1 786	2 496	1 878	2 038	2 184	2 400	2 370	2 247
Production										
Import	1 823	2 199	1 786	2 503	1 901	2 070	2 210	2 452	2 394	2 278
Export	-1			-7	-20	-32	-31	-33	-32	-31
Transformation sector	-1 745	-2 199	-1 786	-2 496	-2 231	-2 078	-2 137	-2 294	-2 270	-2 171
Petroleum refineries	-1 745	-2 199	-1 786	-2 496	-2 231	-2 078	-2 137	-2 294	-2 270	-2 171
<b>Petroleum products</b>										
Primary energy supply	-1 266	-1 472	-1 060	-1 843	-1 191	-1 113	-1 240	-1 337	-1 404	-1 237
Import	747	1 133	1 622	2 026	4 320	4 857	5 110	5 288	4 500	4 561
Export	-1 543	-2 030	-1 746	-2 653	-3 648	-3 788	-4 085	-4 222	-3 533	-3 517
Transformation sector	1 545	1 790	1 466	2 383	2 027	2 018	2 101	2 208	2 283	2 192
Power generation	-185	-228	-276	-93	-92	-8	-5	-7	-6	-4
Petroleum refineries	1 733	2 021	1 747	2 481	2 120	2 026	2 106	2 215	2 289	2 196
Final energy consumption	79	90	131	150	215	256	258	264	266	264
Industry	5	6	53	68	117	152	155	163	166	166
Transport	56	78	72	78	93	99	99	98	95	94
Residential	2		4	2	1	1	1	1	1	1
Commerce & public services	17	7	2	3	4	3	3	3	3	3
Others										
<b>Gas</b>										
Primary energy supply		53	47	210	272	358	367	369	377	382
Production										
Import		53	47	210	272	356	365	372	375	382
Export										
Transformation sector	3	-49	-42	-189	-225	-307	-315	-317	-320	-329
Power generation		-53	-47	-193	-225	-307	-315	-317	-320	-329
Final energy consumption	3	3	4	21	43	51	51	54	54	54
Industry				17	36	44	45	48	48	48
Transport					1	1				
Residential	1	2	2	2	2	2	2	2	2	2
Commerce & public services					3	3	4	3	3	3
Others	1	2	3	3						
<b>Electricity</b>										
Power generation	57	80	114	138	167	182	186	189	191	196
Thermal	56	78	112	134	163	176	180	183	185	189
Hydro										
Nuclear										
Others	1	2	2	3	4	6	6	6	6	7
Final energy consumption	47	66	98	128	152	171	175	179	182	186
Industry	20	25	38	51	61	68	68	72	72	72
Transport	1	1	1	4	8	9	10	10	11	11
Residential	9	14	21	22	24	26	27	26	26	28
Commerce & public services	18	26	38	49	59	67	69	69	72	75
Others				2	1	1	1	1	1	1

## Major economic indicators of Singapore

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	3.05	4.03	4.27	5.08	5.54	5.61	5.61	5.64	5.70
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	71	140	178	247	308	318	333	344	349
GDP, billion USD (PPP, constant 2017)	114	225	285	396	493	510	533	551	559
Nominal, billion USD (current)	36	96	128	240	308	319	343	376	374
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	23 256	34 877	41 726	48 669	55 647	56 758	59 271	61 057	61 174
GDP, PPP (constant 2017 USD)	37 252	55 866	66 837	77 958	89 135	90 915	94 941	97 801	97 989
Nominal (current USD)	11 862	23 852	29 961	47 237	55 647	56 848	61 176	66 679	65 641
Nominal GDP & its components (billions of current SGD) <sup>11</sup>									
Gross domestic product	70	166	213	327	423	440	474	507	511
Households and NPISHs final consumption expenditure	31	69	85	119	157	161	167	175	182
General government final consumption expenditure	7	17	21	32	43	45	48	51	53
Gross fixed capital formation	22	54	49	84	115	115	120	115	117
Stock change	3	5	-4	7	-8	2	10	12	8
Exports of goods and services	125	312	479	647	755	725	811	898	898
Imports of goods and services	118	292	415	561	640	610	686	752	754
Real GDP & its components (billions of 2015 SGD) <sup>11</sup>									
Gross Domestic Product	97	193	245	340	423	438	457	473	480
Households and NPISHs final consumption expenditure	45	87	107	130	157	162	168	174	180
General government final consumption expenditure	9	22	26	35	43	45	46	48	49
Gross fixed capital formation	25	60	56	88	115	116	122	117	118
Stock change	3	3	-3	6	-8	2	9	10	7
Exports of goods and services	98	273	432	599	755	755	808	870	872
Imports of goods and services	89	256	379	521	640	640	690	741	743
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industry	30.9	32.5	31.4	26.6	24.3	23.3	23.5	25.5	24.2
Services, etc.	66.8	65.4	68.2	66.8	70.0	69.5	68.9	68.7	69.3
Industrial production index (2010=100) <sup>12</sup>	27.4	57.6	70.8	100.0	107.1	111.1	122.6	131.3	129.4
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	52.7	137.8	229.6	351.9	351.6	330.5	373.4	413.0	390.8
Imports, c.i.f.	60.9	134.5	200.0	310.8	297.1	283.3	327.9	370.9	359.3
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	-1.6	15.8	47.6	63.2	92.6	90.0	101.0	101.6	96.8
Current account	3.1	10.6	29.7	55.0	57.6	56.0	59.3	57.9	53.4
Overall balance	7.0	4.8	14.1	37.7	5.2	-0.9	25.0	12.5	-8.4
Foreign exchange rate (SGD/USD) <sup>11</sup>	1.81	1.72	1.66	1.36	1.37	1.38	1.38	1.35	1.36
PPP conversion factor, GDP (SGD/USD) <sup>11</sup>	1.28	1.16	1.05	1.07	1.10	1.09	1.08	1.06	1.05
Price Indices									
GDP Deflator (2015=100) <sup>13</sup>	72.4	85.8	86.9	96.3	100.0	100.6	103.7	107.1	106.5
Wholesale Price Index (2010=100) <sup>12</sup>	92.9	87.5	97.9	100.0	86.8	80.7	86.4	92.0	N.A.
Consumer Price Index (2010=100) <sup>12</sup>	71.8	85.2	88.0	100.0	113.2	112.6	113.3	113.8	114.4
Growth rate (%) <sup>13</sup>									
Real GDP	9.8	9.0	7.4	14.5	3.0	3.3	4.5	3.5	1.3
Population	4.0	1.7	2.4	1.8	1.2	1.3	0.1	0.5	1.2
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wholesale prices	1.7	10.1	9.6	4.7	-15.3	-7.0	7.1	6.4	N.A.
Consumer prices	3.5	1.4	0.4	2.8	-0.5	-0.5	0.6	0.4	0.6

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note : N.A. means "not available"

: SGD means Singapore Dollar, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

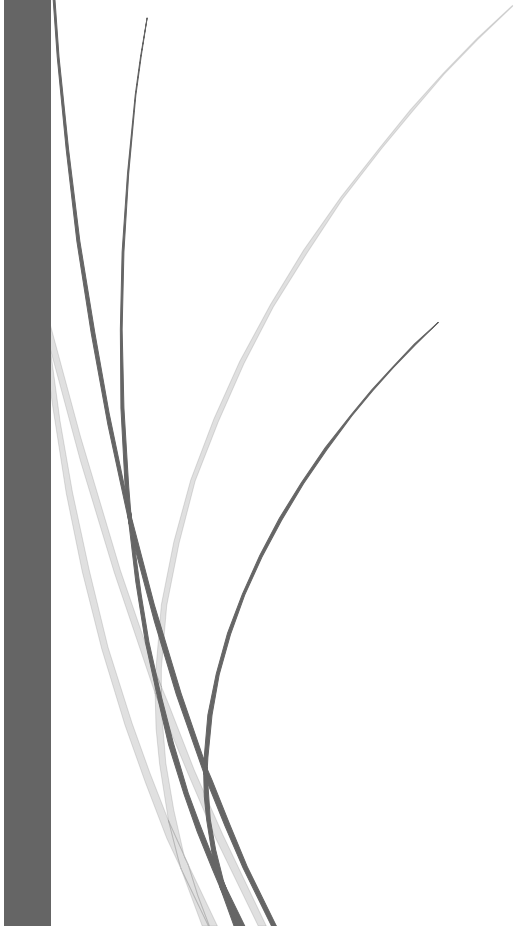
## Energy prices in Singapore

### CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency Exchange Rate	SGD / US Dollar									1.35	1.35
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG											
LPG (transport)											
Naphtha											
Motor Gasoline (regular)											
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil											
Fuel Oil											
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas	SGD/kWh								17.68	18.80	18.85
Compressed natural gas											
<b>Electricity</b>											
Industrial											
Commercial											
Residential	cents/kWh							18.90	20.65	22.87	23.56
Others											



# **Chinese Taipei**



Energy balance table of Chinese Taipei

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production									
Import	1 662	8	1 943	670	8	430	2		
Export		- 1		- 800	- 154	- 30	- 39		- 418
International marine bunkers				- 54					- 9
International aviation bunkers				- 126			- 126		
Stock changes	- 32	- 1	4	14	1	2	4		5
<b>Total primary energy supply</b>	<b>1 630</b>	<b>6</b>	<b>1 947</b>	<b>- 296</b>	<b>- 145</b>	<b>401</b>	<b>- 160</b>		<b>- 421</b>
Transfers				- 9	114	- 110			
Total transformation sector	- 1 436	121	- 1 947	1 965	356	396	172		621
Main activity producers	- 817			- 47					- 3
Autoproducers	- 326	- 44		- 15					
Gas processing									
Petroleum refineries			- 1 947	2 027	356	396	172		624
Coal transformation	- 292	165							
Other transformation									
Losses & own use		- 52		- 107					
Discrepancy	- 43	- 2		- 2	2	- 2	- 1		2
<b>Total final consumption</b>	<b>150</b>	<b>73</b>		<b>1 551</b>	<b>327</b>	<b>685</b>	<b>11</b>		<b>203</b>
<b>Total final energy consumption</b>	<b>148</b>	<b>62</b>		<b>658</b>	<b>327</b>		<b>11</b>		<b>203</b>
Industry sector	148	62		61					4
Iron and steel	5	62		4					
Chemical & petrochemical	68			28					2
Non-metallic minerals	40			9					1
Other industries	34			18					1
Transport sector				500	326		4		168
Domestic air transport				4			4		
Road				493	326				167
Rail									
Inland waterways				2					1
Other transport									
Other sector				98	2		7		31
Residential				45					
Commerce and public services				33	1		7		12
Agriculture				3					2
Non-specified others				17					16
<b>Non-energy</b>	<b>3</b>	<b>11</b>		<b>893</b>		<b>685</b>			
<b>2018</b>									
Production									
Import	1 640	9	1 925	757	4	485	6		
Export		- 1		- 755	- 173		- 40		- 395
International marine bunkers				- 49					- 5
International aviation bunkers				- 122			- 122		
Stock changes	21		20	- 11	- 3	- 5			- 5
<b>Total primary energy supply</b>	<b>1 661</b>	<b>8</b>	<b>1 945</b>	<b>- 180</b>	<b>- 172</b>	<b>480</b>	<b>- 156</b>		<b>- 405</b>
Transfers				- 12	121	- 115	- 2		
Total transformation sector	- 1 504	119	- 1 945	1 959	374	401	171		601
Main activity producers	- 857			- 68					- 3
Autoproducers	- 338	- 45		- 19					
Gas processing									
Petroleum refineries			- 1 945	2 046	374	401	171		605
Coal transformation	- 309	164							
Other transformation									
Losses & own use		- 52		- 104					
Discrepancy	- 10	3		- 17	4	- 3	- 3		3
<b>Total final consumption</b>	<b>147</b>	<b>78</b>		<b>1 646</b>	<b>327</b>	<b>764</b>	<b>10</b>		<b>199</b>
<b>Total final energy consumption</b>	<b>145</b>	<b>64</b>		<b>670</b>	<b>327</b>		<b>10</b>		<b>199</b>
Industry sector	145	64		76					4
Iron and steel	7	64		6					
Chemical & petrochemical	64			35					2
Non-metallic minerals	38			10					1
Other industries	36			25					1
Transport sector				496	325		4		165
Domestic air transport				4			4		
Road				489	325				163
Rail				1					1
Inland waterways				2					1
Other transport									
Other sector				97	2		6		30
Residential				45					
Commerce and public services				32	1		6		11
Agriculture				3					2
Non-specified others				17					16
<b>Non-energy</b>	<b>2</b>	<b>14</b>		<b>976</b>		<b>764</b>			

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				6	20	353	25	63			466	74
52	88		91	832							5 114	
-74	-2		-84								-800	
-46											-54	
											-126	
10	2		-9	-13							-29	
-58	88		-2	824	20	353	25	63			4 571	74
-11	-2		1								-9	
108	53	101	157	-588	-20	-353	-21	-47	987	93	-1 247	-62
-45				-643	-20	-353	-8	-1	836	4	-1 050	-28
-4		-11		-3			-14	-46	152	89	-208	-34
				63							63	
156	53	112	157								80	
											-128	
				-4							-4	
	-7	-95	-5	-15					-101	-18	-293	
11			-14	-55						-3	-104	
50	132	6	137	167			4	16	886	72	2 919	12
50	60	6		167			4	16	886	72	2 012	12
40	10	6		120				16	524	72	1 001	9
3				17					58		147	
14	6	6		46					141	67	351	
9				9					21		80	
14	3			47				16	303	5	424	9
2	1								5		505	
											4	
	1										493	
									5		5	
2											2	
8	49			47			4		357		506	4
	45			29			4		170		248	4
7	4			18					176		227	
									7		10	
1									4		21	
	71		136								906	
				7	16	302	20	62			407	64
90	88		84	845							5 176	
-79	-4		-63								-755	
-44											-49	
											-122	
8	-3		-4	-18							12	
-25	81		17	834	16	302	20	63			4 669	64
-15	-4		2								-12	
107	57	100	147	-613	-16	-302	-16	-47	992	101	-1 272	-52
-65				-665	-16	-302	-6	-1	842	5	-1 070	-23
-4		-10	-4	-4			-9	-45	150	96	-213	-29
				59							59	
176	57	110	151								101	
											-145	
				-3							-3	
	-5	-93	-5	-14					-101	-19	-291	
-3			-15	-44						-3	-72	
65	129	7	146	163			4	16	891	78	3 022	13
65	62	7		163			4	16	891	78	2 030	13
53	12	7		116				16	529	78	1 023	9
5				18					61		156	
19	7	7		45					144	73	361	
9				10					21		79	
20	4			43				16	303	5	427	9
2	1								5		502	
											4	
	1										489	
									5		6	
2											2	
10	49			47			4		357		505	4
	45			29			4		169		247	4
9	4			18					177		228	
									7		10	
1									4		21	
	67		145								992	



## Major energy indicators of Chinese Taipei

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	1 940	2 577	3 393	4 082	4 175	4 441	4 462	4 423	4 465	4 370
Production	447	451	502	533	551	504	456	350	407	466
Import	1 710	2 466	3 281	4 423	4 458	4 814	4 872	4 958	4 970	4 910
Export	- 22	- 72	- 99	- 648	- 681	- 711	- 727	- 708	- 755	- 799
Final energy consumption	1 063	1 390	1 733	1 969	1 981	1 990	2 024	2 021	2 048	2 031
Industry	511	641	830	933	985	980	989	991	1 041	1 020
Transport	277	407	470	522	496	507	521	516	502	505
Residential	125	169	215	242	241	240	249	248	247	248
Commerce & public services	104	128	179	227	235	236	236	239	228	227
Others	45	45	40	44	25	28	28	27	31	31
<b>Coal</b>										
Primary energy supply	439	669	1 144	1 478	1 596	1 609	1 629	1 653	1 661	1 630
Production	12	6	2							
Import	471	728	1 129	1 492	1 586	1 629	1 616	1 659	1 640	1 662
Export										
Transformation sector	- 331	- 527	- 948	- 1 290	- 1 378	- 1 386	- 1 418	- 1 464	- 1 504	- 1 436
Power generation	- 208	- 391	- 755	- 1 088	- 1 138	- 1 080	- 1 101	- 1 157	- 1 195	- 1 144
Final energy consumption	107	126	158	181	182	203	207	192	145	148
Industry	107	126	158	181	182	203	207	192	145	148
Transport										
Residential										
Commerce & public services										
Others										
<b>Coal products</b>										
Primary energy supply	3	7	10	2		7	6	7	8	6
Production										
Import	5	8	9	6	6	5	6	8	9	8
Export	- 1			- 1	- 3			- 1	- 1	- 1
Transformation sector	53	58	78	82	113	114	119	111	115	117
Power generation	- 17	- 16	- 21	- 23	- 21	- 41	- 41	- 41	- 43	- 43
Final energy consumption	30	30	48	47	64	58	60	57	61	59
Industry	30	30	48	47	64	58	60	57	61	59
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	904	1 273	1 595	2 270	1 910	1 831	1 884	1 854	1 945	1 947
Production	7	2	1	1	1					
Import	930	1 264	1 625	2 285	1 916	1 840	1 878	1 864	1 925	1 943
Export										
Transformation sector	- 904	- 1 273	- 1 595	- 2 279	- 1 916	- 1 832	- 1 887	- 1 855	- 1 945	- 1 947
Petroleum refineries	- 904	- 1 273	- 1 595	- 2 279	- 1 916	- 1 832	- 1 887	- 1 855	- 1 945	- 1 947
<b>Petroleum products</b>										
Primary energy supply	166	104	- 4	- 471	- 294	- 48	- 79	- 63	- 180	- 296
Import	280	372	353	372	535	799	809	799	756	667
Export	- 21	- 72	- 99	- 647	- 677	- 711	- 727	- 706	- 754	- 798
Transformation sector	769	1 046	1 366	2 129	1 918	1 843	1 858	1 816	1 957	1 961
Power generation	- 207	- 289	- 280	- 162	- 112	- 117	- 117	- 123	- 85	- 61
Petroleum refineries	977	1 336	1 645	2 291	2 030	1 960	1 975	1 939	2 042	2 022
Final energy consumption	619	775	874	891	775	692	695	684	691	680
Industry	210	251	275	234	177	86	77	74	97	83
Transport	276	406	468	520	490	502	516	511	496	500
Residential	47	52	61	55	50	47	48	46	45	45
Commerce & public services	46	29	38	48	43	40	37	38	32	33
Others	39	37	32	35	15	17	17	16	20	20
<b>Gas</b>										
Primary energy supply	44	113	174	289	422	551	577	632	630	623
Production	44	32	25	18	10	13	11	9	7	6
Import	24	95	166	268	415	541	564	627	640	630
Export										
Transformation sector	- 2		- 66	- 166	- 269	- 355	- 377	- 416	- 408	- 385
Power generation	- 11	- 52	- 142	- 284	- 439	- 580	- 611	- 671	- 668	- 647
Final energy consumption	31	50	65	79	92	132	140	150	163	167
Industry	8	21	31	34	43	88	94	105	116	120
Transport										
Residential	19	23	26	32	31	27	27	27	29	29
Commerce & public services	4	6	8	13	18	17	18	18	18	18
Others										
<b>Electricity</b>										
Power generation	325	479	665	819	889	929	950	972	991	987
Thermal	176	318	488	634	697	749	779	836	835	804
Hydro	29	32	32	28	26	27	35	32	28	32
Nuclear	118	127	139	144	150	131	114	81	100	116
Others	1	2	6	12	16	21	22	24	29	34
Final energy consumption	276	406	576	716	786	832	851	870	891	886
Industry	156	213	309	386	442	476	484	499	529	524
Transport	1	1	2	2	4	5	5	5	5	5
Residential	59	91	124	152	156	162	170	171	169	170
Commerce & public services	54	94	133	167	174	178	181	183	177	176
Others	6	7	8	9	9	11	11	11	11	11

## Major economic indicators of Chinese Taipei

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	20.28	22.18	22.73	23.14	23.46	23.52	23.56	23.58	23.60
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	169	322	394	487	562	574	593	609	626
GDP, billion USD (PPP, constant 2017)	235	456	651	935	1 123	1 149	1 224	1 300	1 353
Nominal, billion USD (current)	169	320	360	425	562	550	556	603	611
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	8 318	14 531	17 327	21 030	23 936	24 399	25 165	25 829	26 511
GDP, PPP (constant 2017 USD)	11 593	20 566	28 642	40 385	47 874	48 868	51 948	55 138	57 328
Nominal (current USD)	8 357	14 429	15 845	18 385	23 936	23 404	23 623	25 556	25 879
Nominal GDP & its components (billions of current TWD) <sup>12</sup>									
Gross domestic product	4 474	10 329	12 037	14 060	17 055	17 555	17 983	18 343	18 933
Private Final Consumption	2 341	5 706	6 780	7 481	8 788	9 082	9 326	9 609	9 885
Government Final Consumption	806	1 625	1 857	2 122	2 364	2 482	2 487	2 623	2 656
Gross Fixed Capital Formation	1 109	2 719	2 923	3 330	3 664	3 808	3 796	3 991	4 490
Changes in Inventories	31	93	34	197	42	- 10	- 25	85	- 26
Exports	2 021	5 444	7 841	11 198	12 157	11 808	12 096	12 219	12 022
Imports	1 834	5 258	7 399	10 268	9 959	9 615	9 696	10 184	10 095
Real GDP & its components (billions of 2016 TWD) <sup>12</sup>									
Gross Domestic Product	5 161	9 863	12 050	14 890	17 183	17 555	18 137	18 642	19 195
Private Final Consumption	3 156	6 179	7 255	7 703	8 849	9 082	9 327	9 519	9 734
Government Final Consumption	1 290	1 958	2 073	2 238	2 394	2 482	2 472	2 571	2 589
Gross Fixed Capital Formation	1 532	3 355	3 352	3 325	3 681	3 808	3 798	3 919	4 318
Changes in Inventories	- 23	64	35	214	52	- 10	- 29	112	- 35
Exports	1 925	4 676	6 836	10 255	11 919	11 808	12 340	12 364	12 525
Imports	2 370	5 703	7 066	8 767	9 711	9 615	9 771	9 847	9 954
Sectoral shares of Real GDP (%) <sup>12</sup>									
Agriculture	7.3	3.7	2.8	2.5	2.1	1.9	2.0	2.0	1.9
Industry	28.8	26.0	28.7	33.3	36.3	36.9	37.4	37.5	36.8
Services	65.1	71.4	68.4	63.9	61.8	61.3	61.0	61.1	61.2
Industrial production index (2011=100) <sup>11</sup>	N.A.	N.A.	N.A.	87.7	98.1	100.0	105.0	108.8	108.5
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	67.4	151.9	199.8	277.4	284.4	279.2	315.5	334.0	329.2
Imports, c.i.f.	54.8	140.7	185.4	255.7	236.4	229.2	257.2	284.8	285.7
Balance of payments (billions of current USD) <sup>13</sup>									
Balance on Goods and Services	7.1	6.4	10.2	25.8	62.4	62.4	60.5	72.5	60.4
Current account	10.9	8.2	14.9	36.7	72.8	72.8	71.3	83.1	70.8
Overall balance	-3.9	2.5	20.1	40.2	15.0	15.0	10.7	12.5	12.5
Foreign exchange rate (TWD/USD) <sup>11</sup>	26.40	32.27	33.42	33.05	30.37	31.90	32.32	30.44	30.93
PPP conversion factor, GDP (TWD/USD) <sup>14</sup>	18.94	22.80	20.22	17.21	15.18	15.93	15.66	14.26	14.30
Price Indices									
GDP Deflator (2016=100) <sup>12</sup>	86.7	104.7	99.9	94.4	99.3	100.0	99.2	98.4	98.7
Wholesale Price Index (2016=100) <sup>12</sup>	87.2	91.2	99.3	113.0	103.1	100.0	100.9	104.6	102.2
Consumer Price Index (2011=100) <sup>12</sup>	66.3	85.5	88.4	93.8	98.6	100.0	100.6	102.0	102.6
Growth rate (%) <sup>12</sup>									
Real GDP	5.5	6.3	5.4	10.2	1.5	3.7	5.5	6.2	5.8
Population	1.1	0.8	0.4	0.3	0.3	0.5	0.4	0.3	0.2
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wholesale prices	-0.6	1.8	0.6	5.5	-8.9	-11.6	-2.1	4.6	1.3
Consumer prices	4.1	1.3	2.3	1.0	-0.3	1.1	2.0	2.0	1.9

Source <sup>11</sup> : "Taiwan Statistical Data Book", National Development Council (Chinese Taipei)

<sup>12</sup> : National Statistics of the Directorate-General of Budget, Accounting and Statistics (DGBAS)

<sup>13</sup> : "Financial Statistics Monthly" Central Bank, Chinese Taipei

<sup>14</sup> : Estimation by ESTO (1980-1989 GDP PPP estimated by ESTO)

<sup>15</sup> : PPP in 2017 APERC estimation

Note

: #N/A shows N.A. (not available)

: TWD shows New Taiwan Dollar, USD shows United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Chinese Taipei

## IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	TWD										
Exchange Rate	/ US Dollar		29.36	29.68	29.63	30.18	31.56	32.32	30.63	30.63	30.95
<b>Coal and Coal Products</b>											
Coking Coal	USD/tonne	197.40	292.19	218.96	167.07	133.32	108.32	131.80	219.87	217.02	196.06
Anthracite	USD/tonne	183.07	219.37	179.08	154.70	151.37	98.95	101.72	151.30	175.89	176.85
Other bituminous coal	USD/tonne	103.79	128.03	119.15	102.24	91.72	74.57	67.47	94.88	111.68	97.97
Sub-bituminous Coal	USD/tonne	80.98	92.54	90.59	75.34	69.10	56.14	46.94	69.65	77.77	71.99
Lignite											
Peat											
Patent Fuel											
Coke	USD/tonne	346.76	494.12	332.05	289.19	249.45	206.30	217.01	280.70	346.58	287.67
Coal Tar											
BKB/PB											
<b>Oil and Oil Products</b>											
Crude Oil	USD/BBL	76.63	106.92	111.12	106.83	101.57	51.72	39.53	52.02		63.85
<b>Natural Gas Liquids</b>											
Ethane											
LPG	USD/tonne	16.45	997.88	890.82	875.83	853.57	464.66	351.10	443.74	550.87	455.14
Naphtha	USD/tonne	726.94	946.29	981.26	931.97	906.0	507.0	394.97	494.13	640.68	533.79
Motor Gasoline											
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene											
Gas/Diesel Oil											
Fuel Oil	USD/kL	508.64	741.40	780.78	702.19	671.24	382.49	305.60	371.59	527.09	496.82
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas	USD/tonne		683.46	778.14	761.02	730.91	443.59	326.01	387.66	387.66	452.61
Compressed Natural Gas											

## Energy prices in Chinese Taipei

## WHOLESALE PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	TWD										
Exchange Rate	/ US Dollar		29.36	29.68	29.63	30.18	31.56	32.32	30.63	30.63	30.95
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	TWD/kg	28.46	27.86	30.06	34.91	28.46	24.86	18.76	26.96	22.36	20.46
LPG (transport)											
Naphtha											
Motor Gasoline (regular)	TWD/L	29.12	28.92	32.32	33.32	24.02	18.92	23.45	24.95	22.93	26.13
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene	TWD/L	39.00	41.50	41.50	41.80	29.50	22.60	35.30	38.30	35.30	37.60
Gas/Diesel Oil	TWD/L	27.22	27.42	30.72	31.82	21.62	16.02	20.97	22.57	20.51	24.01
Fuel Oil	TWD/L	17.78	20.65	20.87	20.85	20.01	13.83	12.15	12.81	17.37	16.03
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	TWD/m <sup>3</sup>	14.64	17.25	20.35	19.15	17.38	11.01	9.70	11.66	12.68	10.96
Liquefied Natural Gas (export)	TWD/m <sup>3</sup>	16.29	19.00	22.17	20.87	18.94	12.00	10.57	12.71	13.82	11.95
Compressed natural gas											
Electricity	TWD/kWh	2.61	2.60	2.72	2.89	3.07	2.93	2.62	2.55	2.60	2.62
Industrial											
Commercial											
Residential											
Others											

## Energy prices in Chinese Taipei

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency Exchange Rate	TWD / US Dollar		29.36	29.68	29.63	30.18	31.56	32.32	30.63	30.63	30.95
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	TWD/kg	28.46	27.86	30.06	34.91	28.46	24.86	18.76	26.96	22.36	20.46
Naphtha											
Motor Gasoline	TWD/L	31.77	31.57	34.97	35.97	26.67	21.57	26.57	28.07	26.17	29.37
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene	TWD/L	39.0	41.50	41.50	41.80	29.50	22.60	35.30	38.30	35.30	37.60
Gas/Diesel Oil	TWD/L	28.60	28.80	32.10	33.20	23.0	17.40	22.60	24.20	22.20	25.70
Fuel Oil	TWD/L	17.75	20.65	20.87	20852.0	20.01	13.83	12.15	12.81	17.37	16.03
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	TWD/m <sup>3</sup>	15.83	18.44	20.45	20.34	18.56	12.19	10.89	12.85	13.86	12.14
Liquefied Natural Gas											
Compressed Natural Gas											
<b>Electricity</b>											
Industrial	TWD/kWh	2.46	2.45	2.62	2.80	3.03	2.86	2.54	2.48	2.54	2.56
Commercial	TWD/kWh	3.10	3.10	3.10	3.10	4.27	3.69	3.57	3.45	3.46	3.46
Residential	TWD/kWh	2.10	2.10	2.10	2.10	2.99	2.50	2.53	2.42	2.47	2.48
Others											



**Thailand**

Energy balance table of Thailand

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	147		804						
Import	223	343	1 842	201	71		13		86
Export	- 1	- 1	- 57	- 361	- 39		- 29		- 138
International marine bunkers									
International aviation bunkers				- 217			- 217		
Stock changes	- 50	- 57	143	- 128	- 74			- 70	9
<b>Total primary energy supply</b>	<b>320</b>	<b>286</b>	<b>2 732</b>	<b>- 506</b>	<b>- 42</b>		<b>- 233</b>	<b>- 70</b>	<b>- 42</b>
Transfers			- 291	280					
Total transformation sector	- 279	- 27	- 2 160	1 935	362		263	71	872
Main activity producers	- 279	- 27		- 2					- 1
Autoproducers									
Gas processing									
Petroleum refineries			- 2 160	1 917	362		263	71	873
Coal transformation									
Other transformation				20					
Losses & own use				- 82					
Discrepancy		- 4	- 1	- 188					- 5
<b>Total final consumption</b>	<b>41</b>	<b>255</b>	<b>281</b>	<b>1 439</b>	<b>321</b>		<b>30</b>		<b>825</b>
<b>Total final energy consumption</b>	<b>41</b>	<b>255</b>		<b>1 439</b>	<b>321</b>		<b>30</b>		<b>825</b>
Industry sector	41	255		196	1				137
Iron and steel	4			13					7
Chemical & petrochemical	2	6		25					12
Non-metallic minerals	18	190		10					7
Other industries	18	59		148	1				111
Transport sector				1 016	320		30		566
Domestic air transport				30			30		
Road				925	320				554
Rail				3					3
Inland waterways				58					8
Other transport									
Other sector				227					123
Residential				80					
Commerce and public services				24					
Agriculture				123					123
Non-specified others									
Non-energy			281						
<b>2018</b>									
Production	178		943						
Import	215	441	2 066	109	49		2		21
Export	- 2		- 66	- 461	- 54		- 35		- 202
International marine bunkers									
International aviation bunkers				- 245			- 245		
Stock changes	- 60		172	- 129	- 52		31	- 74	- 23
<b>Total primary energy supply</b>	<b>330</b>	<b>441</b>	<b>3 116</b>	<b>- 727</b>	<b>- 56</b>		<b>- 247</b>	<b>- 74</b>	<b>- 204</b>
Transfers			- 278	278					
Total transformation sector	- 289	- 27	- 2 557	2 141	369		281	74	1 012
Main activity producers	- 289	- 27		- 2					- 1
Autoproducers									
Gas processing									
Petroleum refineries			- 2 557	2 122	369		281	74	1 013
Coal transformation									
Other transformation				21					
Losses & own use				- 96					
Discrepancy		- 168		- 175	2				- 19
<b>Total final consumption</b>	<b>41</b>	<b>246</b>	<b>281</b>	<b>1 422</b>	<b>315</b>		<b>34</b>		<b>789</b>
<b>Total final energy consumption</b>	<b>41</b>	<b>246</b>		<b>1 422</b>	<b>315</b>		<b>34</b>		<b>789</b>
Industry sector	41	246		200	1				137
Iron and steel	3			14					7
Chemical & petrochemical	2	6		25					12
Non-metallic minerals	19	183		11					7
Other industries	18	57		150	1				111
Transport sector				995	313		34		531
Domestic air transport				34			34		
Road				891	313				520
Rail				3					3
Inland waterways				67					8
Other transport									
Other sector				227					120
Residential				81					
Commerce and public services				25					
Agriculture				120					120
Non-specified others									
Non-energy			281						

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				1 096	23		32	1 124			3 227	1 171
1	27		2	562				3	92		3 266	3
- 128	- 15		- 14						- 10		- 430	
											- 217	
- 12	16		3	8				3			- 81	3
- 139	29		- 8	1 666	23		32	1 129	82		5 764	1 175
	193		87								- 11	
217	102		48	- 1 116	- 23		- 32	- 455	710		- 1 446	- 505
- 1				- 1 116	- 23		- 32	- 377	710		- 1 146	- 427
			48								- 242	
	20							- 78			- 58	- 78
	- 82			- 110					- 63		- 255	
- 3	- 54		- 127	- 113				- 5			- 311	- 5
75	188			326				669	729		3 740	665
75	188			235				669	729		3 729	665
25	33			163				357	284		1 296	352
1	5			16					26		59	
2	11			67				12	44		157	12
1	2			36				15	23		293	11
22	14			44				329	191		787	329
50	50			72				99	1		1 187	99
											30	
	50			72				99			1 096	99
50									1		4	
											58	
	105							214	444		886	214
	80							214	178		472	214
	24								264		289	
									2		124	
				91							372	
				1 082	28		23	1 060			3 314	1 102
	34		2	804				4	96		3 735	4
- 137	- 19		- 15					- 1	- 4		- 534	- 1
											- 245	
- 11	4		- 4	2				1			- 13	1
- 148	18		- 17	1 888	28		23	1 064	92		6 255	1 107
	192		87									
235	117		53	- 1 083	- 28		- 22	- 423	675		- 1 613	- 470
- 1				- 1 083	- 28		- 22	- 344	675		- 1 120	- 391
			53								- 435	
	21							- 79			- 58	- 79
	- 96			- 318					- 61		- 475	
- 2	- 33		- 123	- 150				- 9			- 502	- 9
86	198			337				632	705		3 665	627
86	198			244				632	705		3 291	627
27	34			162				331	289		1 270	326
1	5			17					28		62	
1	11			59				11	44		147	11
2	2			36				12	23		284	7
22	15			50				308	194		777	308
59	58			82				81	1		1 158	81
											34	
	58			82				81			1 053	81
59									1		4	
											67	
	107							220	415		863	221
	81							220	163		465	220
	25								251		277	
									1		122	
				93							374	



## Major energy indicators of Thailand

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	1 826	2 949	3 044	4 221	5 010	5 846	6 122	6 047	6 255	5 764
Production	1 110	1 670	1 727	2 351	3 008	3 540	3 693	3 344	3 314	3 227
Import	826	1 407	1 671	2 435	2 751	3 171	3 150	3 519	3 735	3 266
Export	- 37	- 53	- 243	- 394	- 565	- 506	- 461	- 512	- 534	- 430
Final energy consumption	1 261	1 942	2 007	2 671	2 991	3 131	3 164	3 181	3 291	3 369
Industry	382	627	719	1 026	1 165	1 175	1 233	1 186	1 270	1 296
Transport	443	757	738	949	957	1 048	1 074	1 151	1 158	1 187
Residential	301	408	354	377	463	490	468	459	465	472
Commerce & public services	49	74	93	160	235	252	263	273	277	289
Others	86	75	104	159	172	167	127	112	122	124
<b>Coal</b>										
Primary energy supply	156	233	326	398	360	288	389	336	330	320
Production	151	233	218	219	210	162	178	178	178	147
Import	5		109	179	187	291	275	266	215	223
Export						- 1	- 1	- 1	- 2	- 1
Transformation sector	- 103	- 144	- 176	- 198	- 286	- 265	- 317	- 297	- 289	- 279
Power generation	- 103	- 144	- 176	- 198	- 286	- 265	- 317	- 297	- 289	- 279
Final energy consumption	53	91	151	237	70	28	74	31	41	41
Industry	53	91	151	237	70	28	74	31	41	41
Transport										
Residential										
Commerce & public services										
Others										
<b>Coal products</b>										
Primary energy supply	3	3	2	49	278	205	170	215	441	286
Production										
Import	3	3	2	49	263	292	299	322	441	343
Export					- 1					- 1
Transformation sector						- 48	- 24	- 25	- 27	- 27
Power generation						- 48	- 24	- 25	- 27	- 27
Final energy consumption	3	3	2	49	278	157	146	191	246	255
Industry	3	3	2	49	278	157	146	191	246	255
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	536	1 105	1 614	2 198	2 528	2 950	2 983	3 103	3 116	2 732
Production	118	170	193	538	805	872	935	961	943	804
Import	456	959	1 417	1 746	1 790	1 880	1 853	1 955	2 066	1 842
Export	- 35	- 33	- 23	- 146	- 67	- 6	- 69	- 73	- 66	- 57
Transformation sector	- 492	- 1 047	- 1 590	- 1 947	- 2 067	- 2 474	- 2 419	- 2 466	- 2 557	- 2 160
Petroleum refineries	- 492	- 1 047	- 1 590	- 1 947	- 2 067	- 2 474	- 2 419	- 2 466	- 2 557	- 2 160
<b>Petroleum products</b>										
Primary energy supply	289	339	- 301	- 379	- 645	- 703	- 609	- 663	- 727	- 506
Import	359	441	55	97	8	100	112	124	109	201
Export	- 1	- 20	- 220	- 246	- 492	- 490	- 385	- 433	- 461	- 361
Transformation sector	395	750	1 350	1 552	1 776	2 027	1 971	2 050	2 141	1 935
Power generation	- 119	- 265	- 109	- 97	- 13	- 8	- 5	- 3	- 2	- 2
Petroleum refineries	514	1 015	1 460	1 669	1 789	2 035	1 955	2 034	2 122	1 917
Final energy consumption	681	1 063	1 111	1 403	1 344	1 380	1 404	1 410	1 422	1 439
Industry	132	210	200	222	197	249	276	214	200	196
Transport	443	757	738	946	859	863	897	979	995	1 016
Residential			43	55	70	77	79	74	81	80
Commerce & public services	20	21	27	24	50	26	25	32	25	24
Others	86	75	103	156	168	165	126	111	120	123
<b>Gas</b>										
Primary energy supply	201	390	771	1 210	1 520	1 992	1 951	1 866	1 888	1 666
Production	201	390	695	864	1 047	1 440	1 412	1 105	1 082	1 096
Import			76	346	473	552	537	762	804	562
Export										
Transformation sector	- 179	- 299	- 561	- 888	- 1 046	- 1 069	- 1 133	- 1 098	- 1 083	- 1 116
Power generation	- 179	- 299	- 561	- 888	- 1 046	- 1 070	- 1 133	- 1 098	- 1 083	- 1 116
Final energy consumption	11	32	45	87	159	254	255	244	244	235
Industry	11	32	45	85	92	141	152	153	162	163
Transport				2	67	113	103	90	82	72
Residential										
Commerce & public services										
Others										
<b>Electricity</b>										
Power generation	159	288	346	476	574	661	673	665	672	707
Thermal	141	264	324	406	500	612	584	563	549	572
Hydro	18	24	22	21	20	14	13	17	28	23
Nuclear										
Others	0			49	55	35	76	84	95	112
Final energy consumption	138	256	317	435	536	653	681	693	705	729
Industry	65	118	145	203	228	277	284	291	289	284
Transport								1	1	1
Residential	44	85	106	92	120	149	159	161	163	178
Commerce & public services	29	53	65	136	184	225	237	240	251	264
Others			1	3	4	1	1	1	1	2

## Major economic indicators of Thailand

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	56.56	62.95	65.42	67.20	68.71	68.97	69.21	69.43	69.63
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	144	221	289	347	401	415	432	451	461
GDP, billion USD (PPP, constant 2017)	402	617	805	967	1 119	1 157	1 206	1 256	1 285
Nominal, billion USD (current)	85	126	189	341	401	413	456	507	544
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	2 547	3 518	4 412	5 164	5 840	6 018	6 248	6 489	6 618
GDP, PPP (constant 2017 USD)	7 101	9 808	12 303	14 397	16 283	16 780	17 421	18 093	18 451
Nominal (current USD)	1 509	2 008	2 894	5 076	5 840	5 993	6 594	7 297	7 817
Nominal GDP & its components (billions of current THB) <sup>11</sup>									
Gross domestic product	2 184	5 070	7 614	10 808	13 743	14 590	15 489	16 369	16 898
Households and NPISHs final consumption expenditure	1 235	2 744	4 252	5 639	7 057	7 297	7 579	8 005	8 406
General government final consumption expenditure	205	688	1 040	1 708	2 353	2 461	2 524	2 647	2 734
Gross fixed capital formation	882	1 094	2 110	2 593	3 371	3 460	3 579	3 725	3 805
Stock change	21	36	206	147	- 299	- 381	- 27	395	205
Exports of goods and services	745	3 287	5 208	7 186	9 296	9 786	10 327	10 616	10 052
Imports of goods and services	909	2 862	5 288	6 567	7 862	7 806	8 398	9 170	8 473
Real GDP & its components (billions of 2002 THB) <sup>11</sup>									
Gross Domestic Product	3 418	5 254	6 849	8 232	9 521	9 849	10 260	10 690	10 932
Households and NPISHs final consumption expenditure	1 899	2 855	3 859	4 314	4 910	5 051	5 207	5 446	5 661
General government final consumption expenditure	414	716	896	1 256	1 494	1 526	1 528	1 571	1 597
Gross fixed capital formation	1 547	1 169	1 885	2 004	2 351	2 419	2 463	2 556	2 607
Stock change	39	37	188	107	- 112	- 341	- 69	259	111
Exports of goods and services	1 178	3 305	4 717	6 068	7 175	7 368	7 750	8 010	7 773
Imports of goods and services	1 449	2 908	4 867	5 666	6 478	6 414	6 813	7 377	6 995
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	16.7	9.2	8.1	7.3	6.5	6.2	6.2	6.3	6.1
Industry	0.0	36.7	38.5	39.9	36.2	35.6	35.0	34.8	33.6
Services, etc.	N.A.	54.8	52.3	49.6	54.9	55.9	56.6	57.1	58.3
Industrial Production Index	N.A.	N.A.	N.A.	100.0	105.4	106.8	108.7	112.7	N.A.
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	23.1	69.0	110.9	193.3	214.3	215.4	236.6	253.0	246.3
Imports, c.i.f.	33.0	61.9	118.2	182.9	202.7	194.2	221.5	248.2	236.3
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	-6.8	11.7	3.4	26.7	26.1	35.8	32.6	22.4	26.7
Current account	-7.3	9.3	-7.6	11.5	27.8	43.4	44.0	28.4	38.0
Overall balance	1.8	-1.1	0.2	35.3	11.0	23.3	33.3	14.6	22.3
Foreign exchange rate (THB/USD) <sup>11</sup>	25.59	40.11	40.22	31.69	34.25	35.30	33.94	32.31	31.05
PPP conversion factor, GDP (THB/USD) <sup>11</sup>	10.53	12.42	12.26	12.68	12.98	13.07	13.29	13.11	12.97
Price Indices									
GDP Deflator (2002=100) <sup>13</sup>	63.9	96.5	111.2	131.3	144.3	148.1	151.0	153.1	154.6
Producer Price Index (2010=100) <sup>12</sup>	42.5	60.6	76.5	100.0	102.6	101.4	102.1	102.5	101.5
Consumer Price Index (2010=100) <sup>12</sup>	49.8	77.4	86.6	100.0	110.3	110.6	111.3	112.5	113.3
Growth rate (%) <sup>13</sup>									
Real GDP	11.2	4.5	4.2	7.5	3.1	3.4	4.2	4.2	2.3
Population	1.4	1.0	0.6	0.5	0.4	0.4	0.3	0.3	0.3
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	3.5	3.9	9.1	9.4	-4.1	-1.2	0.7	0.4	-1.0
Consumer prices	5.9	1.6	4.5	3.2	-0.9	0.2	0.7	1.1	0.7

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note : N.A. means "not available"

: THB means Baht, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)

## Energy prices in Thailand

### IMPORT PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	THB										
Exchange Rate	/ US Dollar	31.87								32.48	
<b>Coal and Coal Products</b>											
<b>Coking Coal</b>											
Anthracite	THB/tonne	4 112		5 853	5 853	4 526	4 279	4 279		4 506	
Other bituminous coal	THB/tonne	2 349								2 685	
Sub-bituminous Coal	THB/tonne				2 645	2 645	2 267	2 267		2 685	
Lignite	THB/tonne						1 329	1 329		907	
Peat											
Patent Fuel											
Coke	THB/tonne	13 999		17 980	12 902	12 902	11 252	11 252		17 183	
Coal Tar											
BKB/PB	THB/tonne	1 978		19 163	1 759	1 759	1 572	1 572		1 707	
<b>Oil and Oil Products</b>											
Crude Oil	USD/BBL	79.38		113.94	109.68	102.25					
<b>Natural Gas Liquids</b>											
Ethane											
LPG	USD/BBL				107.53	75.39					
<b>Naphtha</b>											
Motor Gasoline	USD/BBL				120.68	119.96					
Aviation Gasoline	USD/BBL				127.19	196.82					
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	THB/L	37.91									
Other Kerosene											
Gas/Diesel Oil	USD/BBL*	21.66			114.0	121.18					
Fuel Oil	USD/BBL*	15.66			109.48	121.42					
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas	THB/scf	7.16			11.17			5.72			
Liquefied Natural Gas	THB/tonne									416.01	
Compressed natural gas											
Electricity	THB/kWh	1.0			1.28	1.51					

\*THB/L in 2010

## Energy prices in Thailand

## CONSUMER PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	THB										
Exchange Rate	/ US Dollar	31.87								32.48	30.95
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite											
Other bituminous coal											
Sub-bituminous Coal											
Lignite											
Peat											
Patent Fuel											
Coke											
Coal Tar											
BKB/PB											
Gas Works Gas											
<b>Oil and Oil Products</b>											
Crude Oil											
Natural Gas Liquids											
Ethane											
LPG	THB/kg	13.69	17.77		13.69	13.69	18.14	16.99		17.77	
Naphtha											
Motor Gasoline	THB/L	31.24	26.89				31.50	28.75		26.89	
Unleaded Premium 95	THB/L				44.52	44.28					
Unleaded premium 91	THB/L				37.07						
Gasohol 95 (E10)	THB/L				37.40	35.95					
Gasohol 95 (E20)	THB/L				31.72	37.29					
Gasohol 91 (E10)	THB/L				35.65	32.41					
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel											
Other Kerosene	THB/L	23.03	22.65		29.23	28.39	18.74	16.68		22.65	
Gas/Diesel Oil	THB/L	26.77	26.47		27.90	27.34	22.0	21.38		26.47	
Low sulphur diesel	THB/L				30.22						
Fuel Oil	THB/L	16.80	15.32		21.39	20.59	11.65	9.84		15.32	
White Spirit SBP											
Lubricants											
Bitumen											
Paraffin Waxes											
Petroleum Coke											
<b>Natural Gas</b>											
Natural Gas											
Liquefied Natural Gas (export)											
Compressed natural gas											
Electricity											

## Energy prices in Thailand

## WHOLESALE PRICES

	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Currency	THB										
Exchange Rate	/ US Dollar	31.87								32.48	
<b>Coal and Coal Products</b>											
Coking Coal											
Anthracite	THB/tonne				4 886						
Other bituminous coal											
Sub-bituminous Coal	THB/tonne				2 533						
Lignite	THB/tonne	523			1 328						
Peat											
Patent Fuel											
Coke	THB/tonne				13 608						
Coal Tar											
BKB/PB	THB/tonne				1 980						
<b>Oil and Oil Products</b>											
LPG	THB/kg	9.79		18.13	11.55	22.35	23.39	20.47		11.49	
Motor Gasoline	THB/L	31.62		35.94		46.73	27.60	31.80		28.96	
Unleaded premium 95	THB/L				46.74						
Unleaded premium 91	THB/L				45.60						
Gasohol 95 (E10)	THB/L				38.96	38.85					
Gasohol 95 (E20)	THB/L				33.90	34.35					
Gasohol 91 (E10)	THB/L				36.51	36.55					
Gasohol 95 (E85)	THB/L				22.83	24.11					
Aviation Gasoline											
Gasoline Type Jet Fuel											
Kerosene Type Jet Fuel	THB/L	27.50									
Other Kerosene	THB/L	37.51			35.46	35.26	29.36	22.93			
Gas/Diesel Oil	THB/L	28.69		30.42	29.97	29.69	24.54	23.26		28.35	
Low sulphur diesel					27.04						
Fuel Oil	THB/L	22.04		29.41	27.28	27.61	20.91	19.38		26.15	
Lubricants											
<b>Natural Gas</b>											
Natural Gas	THB/million Btu	321.00			394.00						
Liquefied Natural Gas											
Compressed Natural Gas	THB/kg	8.50		10.50							
<b>Electricity</b>											
Industrial	THB/kWh	2.72									
Commercial	THB/kWh	3.65									
Residential	THB/kWh	3.34									
Others	THB/kWh	4.32			3.79	3.93					
<b>Other energy products</b>											
Fuel Wood	THB/kg	4.00									
Charcoal	THB/kg	7.00									
Paddy Husk	THB/kg	2.00									
Bagasse	THB/kg	0.40									
Agricultural waste	THB/kg	1.00									



# **United States**

Energy balance table of the United States

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	14 482		31 940						
Import	142	3	16 073	3 414	1 610	27	353	4	466
Export	-2 309	-25	-7 085	-9 186	-1 737		-467	-10	-2 744
International marine bunkers				-950					-427
International aviation bunkers				-1 072			-1 072		
Stock changes	-779	-2	170	-108	-46	1	2	-1	13
<b>Total primary energy supply</b>	<b>11 535</b>	<b>-25</b>	<b>41 098</b>	<b>-7 902</b>	<b>-173</b>	<b>28</b>	<b>-1 184</b>	<b>-7</b>	<b>-2 691</b>
Transfers			-4 941	5 227	186				1
Total transformation sector	-10 954	240	-36 530	35 514	15 989	371	3 688	19	10 261
Main activity producers	-10 282	-10		-259			-1	-1	-75
Autoproducers	-44	-14		-65					-2
Gas processing	-72								
Petroleum refineries			-36 733	35 838	15 989	371	3 688	21	10 338
Coal transformation	-555	264							
Other transformation			203						
Losses & own use		-47		-1 311	-67		-2		-135
Discrepancy	-103		730	94					156
<b>Total final consumption</b>	<b>477</b>	<b>168</b>	<b>356</b>	<b>31 623</b>	<b>15 935</b>	<b>399</b>	<b>2 502</b>	<b>12</b>	<b>7 592</b>
<b>Total final energy consumption</b>	<b>477</b>	<b>168</b>		<b>26 362</b>	<b>15 935</b>		<b>2 502</b>	<b>12</b>	<b>7 426</b>
Industry sector	461	168		706	7				545
Iron and steel	9	141		4					2
Chemical & petrochemical	67			68					41
Non-metallic minerals	193			49					14
Other industries	193	27		585	7				488
Transport sector				24 078	15 711		2 502		5 848
Domestic air transport				2 524	22		2 502		
Road				20 632	15 491				5 138
Rail				563					563
Inland waterways				359	198				147
Other transport									
Other sector	16			1 578	217			12	1 033
Residential				622				12	414
Commerce and public services	16			460	83			1	293
Agriculture				496	134				326
Non-specified others									
Non-energy			356	5 261		399			166
<b>2018</b>									
Production	15 449		28 687						
Import	128	3	18 083	3 194	1 399	34	279	3	424
Export	-2 841	-30	-5 242	-9 263	-1 819		-466	-9	-2 689
International marine bunkers				-843					-297
International aviation bunkers				-1 054			-1 054		
Stock changes	713	5	-43	47	-35	-3	-4	-3	29
<b>Total primary energy supply</b>	<b>13 448</b>	<b>-21</b>	<b>41 485</b>	<b>-7 919</b>	<b>-455</b>	<b>31</b>	<b>-1 245</b>	<b>-8</b>	<b>-2 533</b>
Transfers			-4 246	4 532	144		2		63
Total transformation sector	-12 899	260	-37 426	36 408	16 363	418	3 706	16	10 337
Main activity producers	-12 198	-9		-324			-1	-3	-99
Autoproducers	-52	-14		-74					-2
Gas processing	-82								
Petroleum refineries			-37 637	36 806	16 363	418	3 707	19	10 439
Coal transformation	-566	284							
Other transformation			212						
Losses & own use	-1	-49		-1 341	-49		-2		-143
Discrepancy	-35		426	60					43
<b>Total final consumption</b>	<b>512</b>	<b>189</b>	<b>238</b>	<b>31 739</b>	<b>16 003</b>	<b>449</b>	<b>2 461</b>	<b>8</b>	<b>7 767</b>
<b>Total final energy consumption</b>	<b>512</b>	<b>189</b>		<b>26 735</b>	<b>16 003</b>		<b>2 461</b>	<b>8</b>	<b>7 583</b>
Industry sector	494	189		826	13				547
Iron and steel	10	161		6					2
Chemical & petrochemical	74			76					41
Non-metallic minerals	202			60					17
Other industries	208	28		683	13				486
Transport sector				24 206	15 736		2 461		5 973
Domestic air transport				2 481	21		2 461		
Road				20 791	15 537				5 250
Rail				577					577
Inland waterways				357	177				146
Other transport									
Other sector	18			1 704	255			8	1 063
Residential				637				7	425
Commerce and public services	18			465	77			1	301
Agriculture				601	178				336
Non-specified others									
Non-energy			238	5 004		449			184

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				33 492	1 043	9 200	1 935	4 615			96 706	7 397
392	275		287	2 655				79	213		22 578	79
- 518	-1 967		-1 744	-4 590				- 156	- 72		-23 423	- 156
- 523								- 9			- 959	- 9
											-1 072	
- 12	- 73		7	- 478				10			-1 187	- 10
- 661	-1 765		-1 449	31 079	1 043	9 200	1 935	4 540	141		92 644	7 322
7	2 911		2 122								285	
696	458	657	3 376	-11 961	-1 043	-9 200	-1 808	- 833	15 736	462	-20 377	-3 513
- 96			- 86	-11 130	-1 039	-9 200	-1 707	- 598	15 017	462	-18 743	-3 204
- 1		- 56	- 7	- 683	- 4		- 101	- 235	718		- 429	- 309
				47							- 25	
793	458	713	3 468								- 895	
											- 292	
				- 196							7	
- 3	- 9	- 623	- 472	-2 757				- 5	-2 088	- 210	-6 419	- 5
			- 62	- 341				- 6			373	- 6
39	1 595	34	3 515	16 019			127	3 697	13 788	253	66 506	3 799
39	347		100	15 021			127	3 697	13 788	253	59 892	3 799
11	43		100	5 572				1 419	2 696	200	11 221	1 400
1				393					204	7	758	
1	5		21	2 286				12	448	122	3 003	4
1	1		33	399				21	119		781	21
7	37		46	2 494				1 385	1 924	70	6 678	1 375
14	3			981				1 573	50		26 682	1 573
											2 524	
	3			50				1 551	23		22 257	1 551
								17	26		606	17
14								5			364	5
				931							931	
14	301			8 468			127	705	11 042	53	21 989	825
	196			4 944				51	546		11 334	597
14	69			3 462				76	91	53	9 068	160
	36			62				69	271		897	69
									689		689	
	1 247	34	3 415	998							6 614	
				29 490	1 064	9 178	1 842	4 637			90 346	7 356
527	255		273	2 795				53	210		24 465	53
- 805	-1 656		-1 819	-3 549				- 177	- 50		-21 152	- 177
- 546								- 6			- 848	- 6
											-1 054	
86	- 1		- 22	319				- 9			1 032	- 9
- 738	-1 402		-1 567	29 055	1 064	9 178	1 842	4 498	160		92 789	7 217
- 14	2 485		1 851								285	
838	471	685	3 573	-11 187	-1 064	-9 178	-1 694	- 875	15 962	477	-21 215	-3 473
- 111			- 110	-10 424	-1 059	-9 178	-1 617	- 632	15 266	477	-19 697	-3 176
- 1		- 64	- 7	- 626	- 5		- 77	- 243	696		- 396	- 297
				55							- 28	
949	471	750	3 690								- 831	
											- 282	
				- 192							20	
- 7	- 9	- 635	- 496	-2 562				- 5	-2 079	- 217	-6 254	- 5
			17	629				- 2			1 076	- 2
78	1 544	50	3 378	15 935			148	3 616	14 043	260	66 681	3 737
78	487		116	14 921			148	3 616	14 043	260	60 425	3 737
24	127		116	5 587				1 434	2 782	206	11 518	1 416
2	2			395					208	8	788	
3	8		25	2 339				13	438	126	3 066	5
3	2		39	365				18	119		764	18
16	116		52	2 488				1 403	2 017	72	6 899	1 394
34	3			898				1 567	44		26 716	1 567
											2 481	
	3			50				1 542	19		22 401	1 542
								20	25		623	20
34								5			362	5
				849							849	
21	357			8 436			148	614	11 217	55	22 191	754
	205			4 915				73	455		11 344	529
21	65			3 458				75	99	55	9 110	165
	86			63				60	162		886	60
									852		852	
	1 058	50	3 262	1 014							6 256	



## Major energy indicators of the United States

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	80 155	86 522	95 160	97 044	92 770	91 543	90 563	90 235	92 789	92 644
Production	69 169	69 442	69 771	68 248	72 153	84 639	80 163	83 425	90 346	96 706
Import	18 946	22 448	29 394	35 252	30 372	23 482	24 959	25 064	24 465	22 578
Export	-4 631	-4 303	-4 006	-4 432	-8 026	-12 748	-13 836	-17 776	-21 152	-23 423
Final energy consumption	49 173	51 790	58 332	58 890	57 678	57 620	57 797	57 639	60 425	59 892
Industry	11 880	11 422	13 912	11 572	11 322	11 027	11 147	10 945	11 518	11 221
Transport	20 414	22 088	24 629	26 079	24 943	25 698	25 993	26 183	26 716	26 682
Residential	8 788	10 371	11 056	11 374	11 309	10 714	10 352	10 254	11 344	11 334
Commerce & public services	6 668	7 256	8 083	8 390	8 681	8 713	8 750	8 685	9 110	9 068
Others	1 424	654	654	1 474	1 423	1 468	1 555	1 571	1 737	1 587
<b>Coal</b>										
Primary energy supply	19 236	19 793	22 253	23 293	21 001	15 695	14 299	13 877	13 448	11 535
Production	22 683	22 151	22 438	23 623	22 220	18 057	14 589	15 624	15 449	14 482
Import	69	179	320	728	447	250	212	169	128	142
Export	-2 831	-2 368	-1 574	-1 187	-1 981	-1 818	-1 490	-2 378	-2 841	-2 309
Transformation sector	-17 728	-19 605	-21 838	-21 786	-20 019	-14 914	-13 800	-13 523	-12 899	-10 954
Power generation	-16 580	-18 562	-20 909	-17 818	-19 331	-14 233	-13 204	-12 894	-12 251	-10 326
Final energy consumption	1 795	955	1 074	1 047	904	671	562	537	512	477
Industry	1 392	838	981	941	841	643	540	517	494	461
Transport										
Residential	62	71	56							
Commerce & public services	101	46	37	88	63	28	23	20	18	16
Others	240			18						
<b>Coal products</b>										
Primary energy supply	5	18	64	40	-5	-35	2	-30	-21	-25
Production										
Import	20	48	99	92	32	4	6	2	3	3
Export	-15	-20	-30	-46	-38	-22	-26	-32	-30	-25
Transformation sector	578	324	283	487	282	235	215	251	260	240
Power generation		-99	-91	-3 244	-44	-35	-25	-22	-24	-24
Final energy consumption	534	316	289	265	220	146	171	175	189	168
Industry	534	316	289	265	220	146	171	175	189	168
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply	32 805	34 318	37 139	38 167	36 696	39 085	39 447	40 577	41 485	41 098
Production	18 110	16 657	15 307	13 504	14 553	24 384	23 452	24 738	28 687	31 940
Import	14 697	17 546	21 950	25 100	22 599	17 097	18 304	18 544	18 083	16 073
Export	-88	-95	-258	-206	-389	-1 896	-2 128	-3 302	-5 242	-7 085
Transformation sector	-31 622	-32 535	-35 029	-35 689	-34 315	-35 612	-36 032	-36 756	-37 426	-36 530
Petroleum refineries	-31 622	-32 535	-35 029	-35 689	-34 315	-35 814	-36 240	-36 968	-37 637	-36 733
<b>Petroleum products</b>										
Primary energy supply	-1 118	-1 428	-666	735	-2 929	-6 029	-6 609	-7 490	-7 919	-7 902
Import	2 606	1 751	3 175	4 937	3 490	3 129	3 129	3 076	3 194	3 414
Export	-1 540	-1 639	-1 858	-2 224	-4 422	-7 184	-7 843	-8 769	-9 263	-9 186
Transformation sector	30 405	31 976	32 913	34 669	34 746	34 773	35 227	35 720	36 408	35 514
Power generation	-1 141	-634	-2 416	-1 396	-454	-372	-316	-294	-398	-324
Petroleum refineries	31 561	32 610	35 329	36 065	35 200	35 145	35 542	36 013	36 806	35 838
Final energy consumption	24 205	24 930	27 542	29 179	26 694	26 080	26 236	26 224	26 735	26 362
Industry	1 853	1 121	1 074	1 472	1 265	811	846	769	826	706
Transport	19 753	21 277	23 844	25 126	23 258	23 505	23 648	23 793	24 206	24 078
Residential	1 104	1 214	1 336	1 205	878	655	592	602	637	622
Commerce & public services	892	682	697	699	640	488	557	474	465	460
Others	603	637	590	677	654	621	592	585	601	496
<b>Gas</b>										
Primary energy supply	18 353	21 246	22 933	21 236	23 282	27 068	27 335	26 960	29 055	31 079
Production	17 510	18 195	18 713	17 650	20 716	26 656	26 264	26 866	29 490	33 492
Import	1 472	2 754	3 675	4 223	3 639	2 633	2 912	2 948	2 795	2 655
Export	-83	-148	-233	-699	-1 095	-1 704	-2 205	-3 116	-3 549	-4 590
Transformation sector	-3 711	-5 334	-5 687	-6 428	-7 699	-10 257	-10 508	-9 830	-11 187	-11 961
Power generation	-3 758	-5 385	-5 732	-6 475	-7 749	-10 124	-10 372	-9 694	-11 049	-11 812
Final energy consumption	12 108	13 075	14 342	12 480	12 972	13 469	13 385	13 493	14 921	15 021
Industry	4 602	4 695	5 774	4 210	4 601	5 097	5 258	5 219	5 587	5 572
Transport	645	686	636	593	683	695	728	758	898	981
Residential	4 295	4 735	4 868	4 716	4 646	4 539	4 279	4 341	4 915	4 944
Commerce & public services	2 565	2 959	3 065	2 884	2 981	3 078	3 058	3 113	3 458	3 462
Others				77	62	61	62	63	63	62
<b>Electricity</b>										
Power generation	11 530	12 810	14 493	15 368	15 676	15 469	15 479	15 349	15 962	15 736
Thermal	7 963	8 815	10 376	11 081	11 017	10 377	10 105	9 690	10 203	9 883
Hydro	983	1 131	912	981	944	904	971	1 089	1 064	1 043
Nuclear	2 202	2 570	2 872	2 919	3 020	2 989	3 024	3 020	3 029	3 036
Others	382	295	334	388	695	1 200	1 379	1 551	1 666	1 774
Final energy consumption	9 481	10 951	12 598	13 434	13 638	13 611	13 730	13 522	14 043	13 788
Industry	3 120	3 749	4 112	3 233	2 975	2 902	2 869	2 802	2 782	2 696
Transport	15	14	16	22	23	32	38	40	44	50
Residential	3 326	3 753	4 293	4 893	5 205	5 046	5 075	4 945	5 262	5 172
Commerce & public services	3 020	3 435	4 177	4 590	4 789	4 894	4 897	4 862	4 941	4 910
Others			1	694	646	737	851	872	1 014	960

## Major economic indicators of the United States

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	249.62	282.16	295.52	309.33	320.74	323.07	325.12	326.84	328.33
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	9 805	13 738	15 602	16 320	18 238	18 550	18 983	19 552	19 975
GDP, billion USD (PPP, constant 2017)	10 082	14 126	16 043	16 781	18 753	19 074	19 519	20 104	20 539
Nominal, billion USD (current)	5 963	10 252	13 037	14 992	18 238	18 745	19 543	20 612	21 433
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	39 279	48 689	52 796	52 760	56 863	57 419	58 388	59 822	60 837
GDP, PPP (constant 2017 USD)	40 388	50 064	54 287	54 250	58 470	59 041	60 037	61 511	62 555
Nominal (current USD)	23 889	36 335	44 115	48 467	56 863	58 021	60 110	63 064	65 280
Nominal GDP & its components (billions of current USD) <sup>11</sup>									
Gross domestic product	5 963	10 252	13 037	14 992	18 238	18 745	19 543	20 612	21 433
Households and NPISHs final consumption expenditure	3 809	6 762	8 747	10 186	12 297	12 770	13 340	13 993	14 545
General government final consumption expenditure	948	1 438	1 963	2 510	2 608	2 661	2 743	2 891	2 995
Gross fixed capital formation	1 269	2 373	2 990	2 756	3 723	3 798	3 999	4 279	4 455
Stock change	15	55	58	54	137	28	16	58	49
Exports of goods and services	552	1 096	1 305	1 846	2 266	2 227	2 375	2 529	2 515
Imports of goods and services	630	1 471	2 026	2 360	2 792	2 740	2 930	3 138	3 125
Real GDP & its components (billions of 2015 USD) <sup>11</sup>									
Gross Domestic Product	9 799	13 738	15 602	16 320	18 238	18 550	18 983	19 552	19 975
Households and NPISHs final consumption expenditure	6 195	8 906	10 383	10 967	12 297	12 638	12 970	13 322	13 643
General government final consumption expenditure	2 000	2 243	2 514	2 760	2 608	2 653	2 668	2 710	2 758
Gross fixed capital formation	1 727	2 991	3 421	2 997	3 860	3 824	3 951	4 179	4 268
Stock change	21	78	63	57	137	24	16	53	48
Exports of goods and services	661	1 316	1 463	1 887	2 266	2 273	2 362	2 432	2 429
Imports of goods and services	717	1 742	2 184	2 295	2 792	2 839	2 971	3 092	3 126
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	N.A.	1.2	1.2	1.0	1.0	1.1	1.0	1.0	1.1
Industry	N.A.	21.8	20.4	18.9	18.5	18.3	18.3	18.3	18.5
Services, etc.	N.A.	75.4	76.3	77.4	76.8	77.0	77.0	77.0	76.9
Industrial production index (2010=100) <sup>12</sup>	68.2	101.2	105.8	100.0	110.6	108.4	110.9	115.3	116.2
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	393.6	781.9	901.1	1 278.5	1 502.6	1 451.0	1 546.3	1 664.0	1 643.2
Imports, c.i.f.	517.0	1 259.3	1 732.7	1 969.2	2 315.3	2 250.2	2 408.5	2 614.2	2 567.4
Balance of payments (billions of current USD) <sup>12</sup>									
Trade balance	-111.0	-446.8	-782.8	-648.7	-761.9	-749.8	-799.3	-878.7	-861.5
Current account	-79.0	-401.9	-749.2	-432.0	-408.9	-397.6	-361.7	-438.2	-472.1
Overall balance	-26.0	72.5	-48.3	9.3	-90.0	-38.5	-6.4	-89.1	6.5
Foreign exchange rate (USD/USD) <sup>11</sup>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PPP conversion factor, GDP (USD/USD) <sup>11</sup>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Price Indices									
GDP Deflator (2015=100) <sup>13</sup>	60.9	74.6	83.6	91.9	100.0	101.0	102.9	105.4	107.3
Producer Prices Index (2010=100) <sup>12</sup>	62.9	71.8	85.2	100.0	108.0	108.4	111.0	114.2	116.1
Consumer Price Index (2010=100) <sup>11</sup>	59.9	79.0	89.6	100.0	108.7	110.1	112.4	115.2	117.2
Growth rate (%) <sup>13</sup>									
Real GDP	1.9	4.1	3.5	2.6	3.1	1.7	2.3	3.0	2.2
Population	1.1	1.1	0.9	0.8	0.7	0.7	0.6	0.5	0.5
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	3.6	5.8	7.3	6.8	-0.9	0.4	2.3	2.9	1.7
Consumer prices	5.4	3.4	3.4	1.6	0.1	1.3	2.1	2.4	1.8

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note

: N.A. means "not available"

: USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)





**Viet Nam**

Energy balance table of Viet Nam

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2019</b>									
Production	1 074		477						
Import	1 027		331	485	86		88		203
Export	- 27		- 188	- 144	- 9		- 71		- 24
International marine bunkers									
International aviation bunkers									
Stock changes	- 67		- 45	- 5			- 5		
<b>Total primary energy supply</b>	<b>2 007</b>		<b>576</b>	<b>335</b>	<b>77</b>		<b>12</b>		<b>179</b>
<b>Transfers</b>									
Total transformation sector	- 1 387		- 558	537	240		24		234
Main activity producers	- 1 387			- 18					- 7
Autoproducers									
Gas processing									
Petroleum refineries			- 558	555	240		24		241
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy				- 51					
<b>Total final consumption</b>	<b>620</b>			<b>839</b>	<b>318</b>		<b>36</b>		<b>414</b>
<b>Total final energy consumption</b>	<b>590</b>			<b>839</b>	<b>318</b>		<b>36</b>		<b>414</b>
<b>Industry sector</b>									
Iron and steel	42			7					4
Chemical & petrochemical	32			4					3
Non-metallic minerals	332			11					8
Other industries	164			71					64
<b>Transport sector</b>									
Domestic air transport				36	279		36		262
Road				490	279				211
Rail				2					2
Inland waterways				58					49
Other transport									
<b>Other sector</b>									
Residential	20			42	39				72
Commerce and public services	20			20					15
Agriculture				97	39				57
Non-specified others									
<b>Non-energy</b>	<b>30</b>								
<b>2018</b>									
Production	970		517						
Import	533		232	553	90		88	2	270
Export	- 56		- 166	- 130	- 9		- 64		- 24
International marine bunkers									
International aviation bunkers									
Stock changes	153		- 94	- 15	- 6		- 9		
<b>Total primary energy supply</b>	<b>1 600</b>		<b>489</b>	<b>408</b>	<b>74</b>		<b>15</b>	<b>2</b>	<b>246</b>
<b>Transfers</b>									
Total transformation sector	- 1 060		- 472	454	218		19		182
Main activity producers	- 1 060			- 6					- 1
Autoproducers									
Gas processing									
Petroleum refineries			- 472	460	218		19		183
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy									
<b>Total final consumption</b>	<b>541</b>			<b>879</b>	<b>293</b>		<b>34</b>	<b>2</b>	<b>428</b>
<b>Total final energy consumption</b>	<b>517</b>			<b>837</b>	<b>293</b>		<b>34</b>	<b>1</b>	<b>428</b>
<b>Industry sector</b>									
Iron and steel	37			7					4
Chemical & petrochemical	27			4					3
Non-metallic minerals	288			12					8
Other industries	142			69					62
<b>Transport sector</b>									
Domestic air transport				34	265		34		244
Road				460	265				196
Rail				2					2
Inland waterways				55					46
Other transport									
<b>Other sector</b>									
Residential	23			50	28			1	106
Commerce and public services	23			25				1	19
Agriculture				117	28				87
Non-specified others									
<b>Non-energy</b>	<b>24</b>			<b>42</b>					

unit: Petajoules

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				357	238		20	349			2 516	607
35	39		34						12		1 855	
- 19	- 19		- 2					- 4	- 7		- 370	- 4
											- 118	
15	19		32	357	238		20	346	4		3 884	604
	18											
- 4	23		19	- 303	- 238		- 20	- 110	853		- 1 225	- 368
- 11				- 303	- 238		- 20	- 68	853		- 1 180	- 326
7	23		19								- 3	
								- 42			- 42	- 42
									- 104		- 104	
			- 51								- 51	
11	60			55				236	753		2 503	236
11	60			27				236	753		2 445	236
1	12			23				195	409		1 289	195
	2			12					63		124	
	1			1					38		74	
	2			7				20	43		412	20
	7			3				176	265		679	176
9				5				5			596	5
											36	
				5				5			500	5
											2	
9											58	
1	48							35	344		560	35
	42							17	233		313	17
	5							4	87		112	4
1								15	24		136	15
				27							58	
				348	299		2	337			2 473	638
29	38		36						11		1 330	
- 16	- 14		- 2					- 4	- 5		- 361	- 4
											44	
13	24		35	348	299		2	334	6		3 486	634
	17											
2	25		7	- 288	- 299		- 2	- 100	782		- 985	- 401
- 5				- 288	- 299		- 2	- 60	782		- 933	- 361
7	25		7								- 11	
								- 40			- 40	- 40
									- 98		- 98	
				42							42	
15	66		42	103				233	690		2 446	233
15	66			18				233	690		2 295	233
3	11			15				186	381		1 168	186
1	2			8					63		114	
	1								35		67	
1	2			5				19	41		363	19
1	6			2				168	242		624	168
9				3				5			561	5
											34	
				3				5			469	5
											2	
9											55	
2	55							42	309		566	42
	49							24	210		308	24
	6							4	79		107	4
2								14	20		151	14
				42	85						151	

## Major energy indicators of Viet Nam

Petajoules

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
<b>Total</b>										
Primary energy supply	227	382	620	1 212	2 038	2 737	2 848	2 939	3 486	3 884
Production	243	568	1 078	2 025	2 351	2 661	2 442	2 429	2 473	2 516
Import	123	214	372	516	563	681	931	1 055	1 330	1 855
Export	- 131	- 411	- 781	- 1 259	- 892	- 489	- 403	- 458	- 361	- 370
Final energy consumption	175	321	494	1 022	1 538	2 107	1 937	2 057	2 295	2 445
Industry	72	130	195	376	658	1 063	873	956	1 168	1 289
Transport	59	106	158	289	422	493	502	539	561	596
Residential	20	45	80	265	365	416	328	337	308	313
Commerce & public services	14	26	44	70	69	88	95	98	107	112
Others	10	15	17	23	24	47	139	127	151	136
<b>Coal</b>										
Primary energy supply	93	139	183	297	617	1 070	1 147	1 162	1 600	2 007
Production	109	196	272	760	1 032	977	884	873	970	1 074
Import				2	27	162	309	344	533	1 027
Export	- 18	- 66	- 76	- 422	- 465	- 41	- 29	- 52	- 56	- 27
Transformation sector	- 37	- 30	- 48	- 89	- 203	- 530	- 799	- 791	- 1 060	- 1 387
Power generation	- 37	- 30	- 48	- 89	- 203	- 530	- 799	- 791	- 1 060	- 1 387
Final energy consumption	55	109	135	207	414	540	328	350	517	590
Industry	43	81	98	156	348	460	292	317	494	569
Transport	1									
Residential	8	20	30	36	50	61	36	33	23	20
Commerce & public services	2	4	6	14	15	18				
Others	3	3	1	1	1	1				
<b>Coal products</b>										
Primary energy supply										
Production										
Import										
Export										
Transformation sector										
Power generation										
Final energy consumption										
Industry										
Transport										
Residential										
Commerce & public services										
Others										
<b>Crude oil &amp; NGL</b>										
Primary energy supply			13		303	341	312	274	489	576
Production	115	326	707	793	670	766	662	592	517	477
Import						8	19	50	232	331
Export	- 112	- 326	- 657	- 766	- 347	- 392	- 292	- 291	- 166	- 188
Transformation sector					- 292	- 296	- 299	- 261	- 472	- 558
Petroleum refineries					- 292	- 296	- 299	- 261	- 472	- 558
<b>Petroleum products</b>										
Primary energy supply	115	197	325	497	453	404	490	538	408	335
Import	123	214	372	514	515	505	592	652	553	485
Export	- 1	- 19	- 47	- 17	- 77	- 53	- 74	- 106	- 130	- 144
Transformation sector	- 16	- 15	- 55	- 28	194	288	329	309	454	537
Power generation	- 16	- 15	- 55	- 28	- 49	- 5	- 10	- 1	- 6	- 18
Petroleum refineries					242	293	339	310	460	555
Final energy consumption	97	171	277	484	581	710	792	821	837	839
Industry	19	31	63	105	75	112	84	90	92	93
Transport	58	105	157	289	422	493	501	533	552	586
Residential	4	7	13	30	36	38	65	75	50	42
Commerce & public services	11	18	30	40	28	42	29	26	25	20
Others	6	10	14	20	20	25	112	98	117	97
<b>Gas</b>										
Primary energy supply		8	47	195	340	367	377	346	348	357
Production		8	47	248	340	367	377	346	348	357
Import										
Export				- 54						
Transformation sector		- 7	- 46	- 190	- 319	- 323	- 318	- 275	- 288	- 303
Power generation		- 7	- 46	- 190	- 319	- 323	- 318	- 275	- 288	- 303
Final energy consumption		1	1	4	21	45	21	30	18	27
Industry		1	1	4	21	44	20	28	15	23
Transport							1	3	3	5
Residential										
Commerce & public services										
Others										
<b>Electricity</b>										
Power generation	31	53	96	192	342	588	644	700	782	853
Thermal	12	15	43	129	242	381	414	390	479	594
Hydro	19	38	52	63	99	206	230	309	299	238
Nuclear										
Others	0					1		1	4	21
Final energy consumption	22	40	81	166	312	507	574	626	690	753
Industry	10	17	33	78	164	290	309	344	381	409
Transport			1							
Residential	9	18	37	70	119	181	187	195	210	233
Commerce & public services	2	4	8	16	26	27	65	71	79	87
Others	1	2	2	2	3	8	13	16	20	24

## Major economic indicators of Viet Nam

	1990	2000	2005	2010	2015	2016	2017	2018	2019
Population (millions) <sup>11</sup>	67.99	79.91	83.83	87.97	92.68	93.64	94.60	95.55	96.46
Gross domestic product <sup>13</sup>									
Real term, billion USD (constant 2015)	37	76	107	145	193	205	219	235	251
GDP, billion USD (PPP, constant 2017)	114	236	330	448	597	634	677	725	776
Nominal, billion USD (current)	6	31	58	116	193	205	224	245	262
GDP per capita <sup>13</sup>									
Real term (constant 2015 USD)	542	957	1 273	1 648	2 085	2 192	2 317	2 457	2 604
GDP, PPP (constant 2017 USD)	1 673	2 955	3 932	5 089	6 438	6 768	7 155	7 586	8 041
Nominal (current USD)	95	390	687	1 318	2 085	2 192	2 366	2 566	2 715
Nominal GDP & its components (billions of current VND) <sup>11</sup>									
Gross domestic product	41 955	441 646	914 001	2 157 828	4 192 862	4 502 733	5 005 975	5 542 332	6 037 348
Households and NPISHs final consumption expenditure	35 559	293 507	598 567	1 436 289	2 849 540	3 086 298	3 405 750	3 745 063	4 115 186
General government final consumption expenditure	5 177	28 346	49 952	129 313	265 545	293 106	325 804	358 592	390 051
Gross fixed capital formation	N.A.	122 101	285 841	704 401	1 033 780	1 066 160	1 190 474	1 321 906	1 462 994
Stock change	N.A.	8 670	22 702	65 810	126 667	130 579	140 220	148 644	157 662
Exports of goods and services	15 120	238 142	582 214	1 553 687	3 764 320	4 215 636	5 085 742	5 865 550	6 447 619
Imports of goods and services	18 996	253 927	612 521	1 730 902	3 731 151	4 100 294	4 945 460	5 679 497	6 254 976
Real GDP & its components (billions of 2010 VND) <sup>11</sup>									
Gross Domestic Product	548 308	1 138 111	1 588 646	2 157 828	2 875 856	3 054 470	3 262 548	3 493 399	3 738 546
Households and NPISHs final consumption expenditure	N.A.	732 706	1 022 157	1 436 289	1 913 547	2 053 236	2 204 149	2 364 170	2 538 173
General government final consumption expenditure	N.A.	59 998	84 251	129 313	182 270	196 013	210 410	223 624	236 594
Gross fixed capital formation	N.A.	243 269	412 327	704 401	832 235	914 777	1 008 084	1 095 283	1 186 192
Stock change	N.A.	15 311	31 434	65 810	87 574	94 346	99 933	103 812	107 752
Exports of goods and services	73 737	462 350	1 061 162	1 553 687	2 937 635	3 344 890	3 904 663	4 461 684	4 761 143
Imports of goods and services	91 438	455 760	1 049 910	1 730 902	3 073 334	3 543 103	4 163 134	4 696 315	5 088 430
Sectoral shares of Real GDP (%) <sup>11</sup>									
Agriculture, Fishery and Forestry	34.0	24.8	21.6	18.4	16.1	15.3	14.8	14.3	13.7
Industry	24.9	35.1	38.1	32.1	34.2	34.6	35.0	35.6	36.2
Services, etc.	41.7	40.1	40.3	36.9	38.3	38.6	38.8	38.8	38.9
Industrial Production Index	N.A.	N.A.	N.A.	100.0	140.1	150.6	164.8	181.6	N.A.
External trade (billions of current USD) <sup>11</sup>									
Exports, f.o.b.	2.4	14.5	32.4	72.2	162.1	176.6	215.0	243.7	264.3
Imports, c.i.f.	2.8	15.6	36.8	84.8	165.6	174.8	212.9	236.9	253.4
Balance of payments (billions of current USD) <sup>11</sup>									
Trade balance	N.A.	0.4	-2.4	-5.1	7.4	11.0	10.8	16.5	21.5
Current account	N.A.	1.1	-0.6	-4.3	-2.0	0.6	-1.6	5.9	13.1
Overall balance	N.A.	0.8	2.5	1.9	-1.1	11.4	18.4	14.4	32.5
Foreign exchange rate (VND/USD) <sup>11</sup>	6 537.6	14 167.8	15 858.9	18 612.9	21 697.6	21 935.0	22 370.1	22 602.1	23 050.2
PPP conversion factor, GDP (VND/USD) <sup>11</sup>	N.A.	3 984.8	4 375.5	6 543.8	7 789.2	7 716.4	7 807.6	7 891.2	7 967.5
Price Indices									
GDP Deflator (2010=100) <sup>13</sup>	7.7	38.8	57.5	100.0	145.8	147.4	153.4	158.7	161.5
Producer Price Index (2010=100)	N.A.	N.A.	N.A.	100.0	132.4	131.5	N.A.	N.A.	N.A.
Consumer Price Index (2010=100)	N.A.	48.1	59.9	100.0	144.6	148.4	153.6	159.1	163.5
Growth rate (%) <sup>13</sup>									
Real GDP	5.1	6.8	7.5	6.4	6.7	6.2	6.8	7.1	7.0
Population	2.2	1.1	0.9	1.0	1.1	1.0	1.0	1.0	1.0
Price	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producer prices	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Consumer prices	N.A.	-1.7	8.3	9.2	0.6	2.7	3.5	3.5	2.8

Source <sup>11</sup>: *World Development Indicators*, World Bank

<sup>12</sup>: *International Financial Statistics*, International Monetary Fund

<sup>13</sup>: Calculated from <sup>11</sup> and <sup>12</sup> by ESTO

Note : N.A. means "not available"

: VND means Dong, USD means United States Dollar

: PPP means Purchasing Power Parity

: **Total population** is based on the *de facto* definition of population, which counts all residents regardless of legal status or citizenship.

The values shown are midyear estimates. (from WB)







**APEC**

**Region**

Primary energy supply table in 2019

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Primary energy</b>									
Production	18 623	695	22 424	572	106 969	5	20 760	2 086	2 025
Import	2 216	94	3 725	1 222	34 227	1 313	2 105	16 633	13 235
Export	- 14 943	- 581	- 13 352	- 23	- 4 049	- 12	- 12 562	- 845	- 2 903
International marine bunkers	- 32		- 23	- 4	- 242	- 410		- 188	- 348
International aviation bunkers	- 211	- 5	- 36	- 32	- 240	- 280		- 261	- 236
Stock change	- 262	- 7	57	- 3	- 2 778	- 17	167	- 37	- 43
Total	5 390	195	12 795	1 732	133 886	599	10 470	17 388	11 731
<b>Coal, peat, and coal &amp; peat products</b>									
Production	12 596		1 208	24	78 453		15 169	18	21
Import	17	8	250	314	5 360	265	182	4 858	3 352
Export	- 10 629		- 866	- 2	- 337		- 11 189	- 47	
Stock change	- 240		- 13	8	- 1 956	- 6	23	1	- 22
Total	1 744	8	580	344	81 521	258	4 184	4 830	3 351
<b>Crude oil, NGL &amp; petroleum products</b>									
Production	691	268	11 405	22	7 997		1 638	18	34
Import	2 017	85	2 451	739	23 882	876	1 917	7 940	7 865
Export	- 629	- 295	- 9 505	- 22	- 3 504	- 12	- 247	- 798	- 2 903
International marine bunkers	- 32		- 23	- 4	- 242	- 410		- 188	- 348
International aviation bunkers	- 211	- 5	- 36	- 32	- 240	- 280		- 261	- 236
Stock change	- 22	- 7	17	- 11	- 822	- 11	170	- 39	- 40
Total	1 813	47	4 309	692	27 071	163	3 478	6 671	4 372
<b>Gas</b>									
Production	4 938	427	6 627	54	6 805		2 420	88	9
Import	182		920	169	4 967	128		3 767	2 018
Export	- 3 685	- 286	- 2 705		- 131		- 1 076		
Stock change			52	- 2				1	19
Total	1 435	140	4 894	220	11 642	128	1 343	3 855	2 046
<b>Nuclear power</b>									
Production			1 104		3 800			696	1 592
<b>Hydro power</b>									
Production	56		1 367	81	4 696		70	287	10
<b>Geothermal, solar, etc</b>									
Production	342		714	392	5 217	5	1 464	980	360

Primary energy supply table in 2018

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Primary energy</b>									
Production	17 266	692	22 514	571	102 038	5	19 519	2 080	1 894
Import	2 229	16	3 543	1 151	31 839	1 365	2 392	17 155	13 542
Export	- 13 929	- 505	- 13 038	- 45	- 3 761	- 11	- 10 743	- 784	- 2 970
International marine bunkers	- 24		- 19	- 5	- 233	- 464		- 187	- 400
International aviation bunkers	- 200	- 4	- 37	- 28	- 241	- 288		- 304	- 222
Stock change	46	- 8	- 119	- 8	- 1 431	- 6	- 1 333	- 7	- 35
Total	5 389	192	12 844	1 636	128 211	600	9 835	17 952	11 809
<b>Coal &amp; coal products</b>									
Production	12 035		1 220	38	75 305		13 731	22	22
Import	13		230	274	5 033	287	135	4 925	3 341
Export	- 10 333		- 802	- 8	- 402		- 8 774	- 43	
Stock change	84		- 50	- 6	- 747	- 17	- 1 504	- 2	9
Total	1 798		598	298	79 190	270	3 588	4 903	3 372
<b>Crude oil, NGL &amp; petroleum products</b>									
Production	612	246	11 188	17	7 927		1 696	17	34
Import	2 049	16	2 392	733	22 137	909	2 252	8 206	8 122
Export	- 554	- 224	- 9 141	- 31	- 3 159	- 9	- 522	- 741	- 2 970
International marine bunkers	- 24		- 19	- 5	- 233	- 464		- 187	- 400
International aviation bunkers	- 200	- 4	- 37	- 28	- 241	- 288		- 304	- 222
Stock change	- 38	- 7	- 45		- 684	11	195	- 21	56
Total	1 846	28	4 338	685	25 747	159	3 621	6 968	4 620
<b>Gas</b>									
Production	4 237	446	6 910	44	6 132		2 615	94	11
Import	168		818	145	4 648	123		3 966	2 078
Export	- 3 042	- 281	- 2 816	- 6	- 125		- 1 379		
Stock change		- 2	- 24					16	- 100
Total	1 363	163	4 889	183	10 655	123	1 236	4 077	1 990
<b>Nuclear power</b>									
Production			1 099		3 211			708	1 456
<b>Hydro power</b>									
Production	57		1 389	84	4 434		73	291	12
<b>Geothermal, solar, etc</b>									
Production	326	0.0	708	387	5 028	5	1 404	947	358

Note: Gas = Natural gas/ LNG &amp; town gas

Primary energy supply table in 2019 (Continued)

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
4 171	6 250	644	580	1 157	1 373	64 056	27	466	3 227	96 706	2 516	355 331
2 301	4 316	366	114	463	1 542	973	7 244	5 114	3 266	22 578	1 855	124 900
- 2 284	- 2 843	- 95	- 494	- 412	- 285	- 31 526	- 3 547	- 800	- 430	- 23 423	- 370	- 115 780
- 17	- 33	- 14		- 49	- 2	- 452	- 1 920	- 54		- 959		- 4 748
	- 174	- 54			- 68	- 245	- 376	- 126	- 217	- 1 072		- 3 633
- 38	177	10	1	52	35	- 456	14	- 29	- 81	- 1 187	- 118	- 4 544
4 133	7 692	858	201	1 211	2 595	32 349	1 441	4 571	5 764	92 644	3 884	351 527
91	207	76		5	304	10 579			147	14 482	1 074	134 455
822	271	26		14	612	601	19	1 669	567	145	1 027	20 378
		- 42		- 18	- 221	- 5 756		- 1	- 2	- 2 335	- 27	- 31 470
- 28	16	3		29	37	- 200		- 33	- 106	- 781	- 67	- 3 337
885	494	63		29	732	5 224	19	1 635	606	11 510	2 007	120 026
1 339	4 109	56	28	263	22	23 600			804	31 940	477	84 711
1 174	2 313	337	114	431	925	52	6 839	2 613	2 043	19 487	816	84 917
- 1 016	- 2 832	- 53	- 49	- 168	- 64	- 16 756	- 3 547	- 800	- 418	- 16 271	- 332	- 60 219
- 17	- 33	- 14		- 49	- 2	- 452	- 1 920	- 54		- 950		- 4 740
	- 174	- 54			- 68	- 245	- 376	- 126	- 217	- 1 072		- 3 633
- 8	152	7	1	20	- 5	58	14	18	15	62	- 50	- 481
1 473	3 536	279	94	497	808	6 257	1 010	1 651	2 226	33 196	911	100 554
2 573	1 148	167	463	543	152	26 439		6	1 096	33 492	357	87 802
305	1 717					314	382	832	562	2 655		18 916
- 1 235			- 445	- 224		- 8 941				- 4 590		- 23 317
	9	1				- 310		- 13	8	- 478		- 713
1 642	2 874	168	18	319	152	17 502	382	824	1 666	31 079	357	82 688
	122					2 294		353		9 200		19 160
94	85	92	3	113	29	701		20	23	1 043	238	9 009
74	578	253	85	233	867	443	27	88	1 156	6 550	369	20 194

Primary energy supply table in 2018 (Continued)

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
4 113	6 655	631	531	1 110	1 304	62 138	26	407	3 314	90 346	2 473	339 625
2 376	4 475	362	110	492	1 580	1 037	7 293	5 176	3 735	24 465	1 330	125 663
- 2 466	- 3 081	- 92	- 443	- 442	- 204	- 30 490	- 3 565	- 755	- 534	- 21 152	- 361	- 109 373
- 18	- 34	- 13		- 50	- 3	- 492	- 2 009	- 49		- 848		- 4 849
	- 175	- 54			- 68	- 239	- 365	- 122	- 245	- 1 054		- 3 647
15	- 67	- 8	- 2	56	- 60	349	13	12	- 13	1 032	44	- 1 529
4 020	7 773	826	195	1 166	2 549	32 302	1 392	4 669	6 255	92 789	3 486	345 890
70	252	78		6	260	10 065			178	15 449	970	129 702
868	260	14		12	581	628	20	1 649	656	131	533	19 590
	- 1	- 37		- 19	- 112	- 5 588		- 1	- 3	- 2 871	- 56	- 29 048
8	3	- 3		29	- 45	- 189		21	- 60	718	153	- 1 598
947	514	52		28	685	4 916	20	1 669	771	13 426	1 600	118 645
1 424	4 425	55	41	252	25	23 369			943	28 687	517	81 475
1 216	2 352	346	110	462	993	67	6 894	2 682	2 175	21 277	785	86 175
- 1 300	- 3 070	- 56	- 57	- 212	- 92	- 16 403	- 3 565	- 755	- 527	- 14 505	- 296	- 58 189
- 18	- 34	- 13		- 50	- 3	- 492	- 2 009	- 49		- 843		- 4 843
	- 175	- 54			- 68	- 239	- 365	- 122	- 245	- 1 054		- 3 647
1	- 82	- 11	- 2	26	- 17	- 94	11	9	43	5	- 108	- 753
1 324	3 416	267	92	477	837	6 208	967	1 765	2 389	33 566	897	100 218
2 477	1 174	155	402	514	151	25 398		7	1 082	29 490	348	81 687
291	1 849					323	375	845	804	2 795		19 229
- 1 144			- 386	- 210		- 8 434				- 3 549		- 21 372
	12	6				636	1	- 18	2	319		849
1 624	3 035	161	16	304	151	17 923	377	834	1 888	29 055	348	80 392
	149					2 246		302		9 178		18 350
95	117	95	3	111	34	688		16	28	1 064	299	8 890
47	537	248	85	227	835	372	26	82	1 082	6 479	339	19 522

Final energy consumption table in 2019

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Total</b>	<b>3 226</b>	<b>40</b>	<b>7 785</b>	<b>1 150</b>	<b>71 038</b>	<b>282</b>	<b>6 826</b>	<b>10 299</b>	<b>5 412</b>
Coal, peat, and coal & peat products	126		102	10	13 597		1 758	836	310
Crude oil, NGL & petroleum products	1 668	25	3 195	640	20 191	92	3 163	4 630	1 899
Gas	481	1	2 097	67	8 225	25	538	1 199	912
Electricity	772	14	1 907	267	22 675	162	943	3 340	1 886
Others	179		485	166	6 349	3	424	294	405
<b>Industry</b>	<b>927</b>	<b>8</b>	<b>1 969</b>	<b>442</b>	<b>35 706</b>	<b>12</b>	<b>3 065</b>	<b>3 408</b>	<b>1 976</b>
Coal, peat, and coal & peat products	126		102	10	10 781		1 758	832	297
Crude oil, NGL & petroleum products	165	6	263	150	2 989	3	150	731	153
Gas	254		671	39	4 517	1	528	463	311
Electricity	274	3	681	160	14 091	7	339	1 233	981
Others	108		252	84	3 329		289	149	234
<b>Transport</b>	<b>1 417</b>	<b>19</b>	<b>2 847</b>	<b>403</b>	<b>15 506</b>	<b>87</b>	<b>2 217</b>	<b>2 903</b>	<b>1 535</b>
Coal, peat, and coal & peat products					64				
Crude oil, NGL & petroleum products	1 370	19	2 575	398	13 026	84	2 215	2 821	1 447
Gas	19		152	1	1 246		1	1	50
Electricity	23		28	5	631	3	1	63	11
Others	5		92		539			17	27
<b>Agriculture</b>	<b>97</b>		<b>292</b>	<b>18</b>	<b>2 075</b>			<b>107</b>	<b>67</b>
Coal, peat, and coal & peat products					513				
Crude oil, NGL & petroleum products	88		215	9	878			98	15
Gas	1		39	1	5				
Electricity	8		38	8	481			9	51
Others					199				2
<b>Residential &amp; commercial</b>	<b>784</b>	<b>13</b>	<b>2 675</b>	<b>273</b>	<b>12 762</b>	<b>182</b>	<b>1 484</b>	<b>3 809</b>	<b>1 737</b>
Coal, peat, and coal & peat products					1 652			5	12
Crude oil, NGL & petroleum products	45	1	142	73	1 558	5	738	931	199
Gas	206	1	1 234	27	2 244	24	8	735	552
Electricity	468	12	1 160	93	5 217	151	603	2 033	832
Others	66		138	79	2 091	2	135	105	143

Final energy consumption table in 2018

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Total</b>	<b>3 250</b>	<b>39</b>	<b>7 773</b>	<b>1 146</b>	<b>72 966</b>	<b>280</b>	<b>6 474</b>	<b>10 524</b>	<b>5 503</b>
Coal, peat, and coal & peat products	129		108	10	18 125		1 344	852	374
Crude oil, NGL & petroleum products	1 687	26	3 193	639	20 007	92	3 202	4 759	1 856
Gas	480	1	2 097	65	7 022	26	543	1 208	938
Electricity	768	12	1 888	263	21 603	159	922	3 405	1 913
Others	187		488	170	6 209	2	462	300	421
<b>Industry</b>	<b>939</b>	<b>6</b>	<b>1 953</b>	<b>443</b>	<b>37 311</b>	<b>13</b>	<b>2 705</b>	<b>3 495</b>	<b>2 069</b>
Coal, peat, and coal & peat products	129		108	10	14 212		1 344	847	355
Crude oil, NGL & petroleum products	163	5	254	151	2 532	3	199	766	153
Gas	258		672	36	3 695	1	534	477	315
Electricity	273	1	662	159	13 643	8	337	1 252	1 004
Others	117		257	88	3 229		291	153	242
<b>Transport</b>	<b>1 415</b>	<b>19</b>	<b>2 855</b>	<b>397</b>	<b>15 384</b>	<b>86</b>	<b>2 200</b>	<b>2 955</b>	<b>1 472</b>
Coal, peat, and coal & peat products					72				
Crude oil, NGL & petroleum products	1 372	19	2 585	392	13 214	82	2 198	2 872	1 383
Gas	17		151	1	1 018		1	2	51
Electricity	21		29	4	579	3	1	63	11
Others	5		90		501			18	27
<b>Agriculture</b>	<b>111</b>		<b>304</b>	<b>20</b>	<b>2 059</b>			<b>107</b>	<b>67</b>
Coal, peat, and coal & peat products					561				
Crude oil, NGL & petroleum products	102		228	9	867			98	12
Gas	1		39	1	5				
Electricity	8		37	9	447			9	50
Others				1	179				4
<b>Residential &amp; commercial</b>	<b>786</b>	<b>13</b>	<b>2 659</b>	<b>273</b>	<b>13 326</b>	<b>181</b>	<b>1 489</b>	<b>3 894</b>	<b>1 797</b>
Coal, peat, and coal & peat products					2 596			5	19
Crude oil, NGL & petroleum products	51	1	125	76	1 657	6	726	974	220
Gas	204	1	1 236	26	2 089	25	8	730	572
Electricity	466	11	1 160	91	4 876	148	584	2 080	838
Others	66		138	79	2 109	2	171	106	148

Note: Gas = Natural gas/LNG &amp; town gas

Final energy consumption table in 2019 (Continued)

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
2 213	4 670	564	141	923	1 495	18 373	512	2 012	3 369	59 892	2 445	202 666
71	103	28		24	93	1 290	8	210	296	645	590	20 095
1 215	2 735	271	57	431	735	3 913	264	658	1 439	26 362	839	74 422
328	503	73		102	3	5 822	54	167	235	15 021	27	35 880
571	1 008	141	15	179	314	2 720	186	886	729	13 788	753	53 257
27	322	52	69	187	351	4 628		91	670	4 076	236	19 013
792	1 409	191	38	251	330	6 108	294	1 001	1 296	11 221	1 289	71 733
71	103	24		24	93	1 186	8	210	296	629	569	17 117
116	229	19	25	45	61	427	166	61	196	706	93	6 753
323	464	58		56	3	1 630	48	120	163	5 572	23	15 242
283	552	51	11	103	101	1 226	72	524	284	2 696	409	24 081
	61	39	3	23	71	1 639		87	357	1 618	195	8 539
1 047	2 095	226	26	381	533	4 151	105	505	1 187	26 682	596	64 468
												64
1 014	2 089	226	26	333	512	2 675	94	500	1 016	24 078	586	57 101
4	2			31		1 182			72	981	5	3 748
2	4					294	11	5	1	50		1 132
27				18	21				99	1 573	5	2 424
11	176	26	4	7	11	346		10	124	897	136	4 406
		2				2						517
9	129	13	4	2	2	113		3	123	496	97	2 294
		1				52				62		161
2	47	9		5	9	70		7	2	271	24	1 040
				1		109				69	15	394
335	921	117	72	280	612	7 738	113	475	761	20 402	424	55 971
		1				102				16	20	1 809
49	288	11	2	49	153	670	4	78	105	1 082	63	6 244
1	37	14		15		2 957	6	47		8 406		16 514
285	336	80	4	70	202	1 129	103	346	442	10 082	321	23 969
	261	12	66	146	258	2 879		4	214	816	21	7 435

Final energy consumption table in 2018 (Continued)

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
2 152	4 677	548	138	894	1 458	18 206	509	2 030	3 291	60 425	2 295	204 578
76	104	26		23	101	1 141	8	209	287	701	517	24 136
1 156	2 769	268	55	413	710	3 720	266	670	1 422	26 735	837	74 481
352	500	62		96	2	5 954	54	163	244	14 921	18	34 746
551	985	140	15	174	297	2 734	182	891	705	14 043	690	52 340
18	319	51	68	187	347	4 656		98	633	4 024	233	18 876
797	1 383	180	37	240	335	5 818	293	1 023	1 270	11 518	1 168	72 996
76	104	23		23	101	1 045	8	209	287	683	494	20 057
102	233	19	24	44	61	332	166	76	200	826	92	6 402
346	460	49		52	2	1 603	48	116	162	5 587	15	14 427
274	527	50	10	100	99	1 225	72	529	289	2 782	381	23 677
	58	40	3	21	71	1 613		94	331	1 640	186	8 433
986	2 097	224	25	363	514	4 229	106	502	1 158	26 716	561	64 264
												73
961	2 091	224	25	316	494	2 583	95	496	995	24 206	552	57 155
5	2			30		1 351			82	898	3	3 612
2	4					295	11	5	1	44		1 074
18				17	20				81	1 567	5	2 350
15	184	25	4	7	10	369		10	122	886	151	4 450
		2				2						565
13	140	13	4	2	2	120		3	120	601	117	2 451
		1				57				63		167
2	45	8		4	8	67		7	1	162	20	884
						123				60	14	382
325	935	114	72	281	590	7 757	108	474	742	20 454	415	56 687
		1				94				18	23	2 757
52	305	10	2	51	146	654	4	77	107	1 103	75	6 421
1	38	12		14		2 943	6	47		8 373		16 324
273	331	80	4	68	188	1 147	98	346	414	10 203	289	23 695
	261	11	66	149	257	2 920		4	221	757	28	7 490

**Demand & supply table of coal, peat, and coal & peat products in 2019**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Production	12 596		1 208	24	78 453		15 169	18	21
Import	17	8	250	314	5 360	265	182	4 858	3 352
Export	- 10 629		- 866	- 2	- 337		- 11 189	- 47	
Stock change	- 240		- 13	8	- 1 956	- 6	23	1	- 22
Primary energy supply	1 744	8	580	344	81 521	258	4 184	4 830	3 351
Main activity producers	- 1 532		- 424	- 315	- 47 300	- 258	- 2 426	- 2 613	- 2 142
Autoproducers		- 8	- 2					- 289	- 234
Coal transformation	- 53		- 30	- 5	- 15 296			- 772	- 499
Refining									
Gas processing					- 558				
Other transformation									
Final energy consumption	126		102	10	13 597		1 758	836	310

**Demand & supply table of crude oil, NGL and petroleum products in 2019**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Production	691	268	11 405	22	7 997		1 638	18	34
Import	2 017	85	2 451	739	23 882	876	1 917	7 940	7 865
Export	- 629	- 295	- 9 505	- 22	- 3 504	- 12	- 247	- 798	- 2 903
Stock change	- 22	- 7	17	- 11	- 822	- 11	170	- 39	- 40
Primary energy supply	1 813	47	4 309	692	27 071	163	3 478	6 671	4 372
Main activity producers	- 9	- 1	- 51	- 12	- 265	- 4	- 143	- 214	- 45
Autoproducers	- 39		- 23	- 4				- 161	- 64
Coal transformation								- 14	
Refining	- 14	- 29	- 202	- 26	- 3 614		14	74	- 146
Gas processing		4			- 2	- 12	106	- 73	- 4
Other transformation			152				- 112	- 7	44
Final energy consumption	1 668	25	3 195	640	20 191	92	3 163	4 630	1 899

**Demand & supply table of gas in 2019**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Production	4 938	427	6 627	54	6 805		2 420	88	9
Import	182		920	169	4 967	128		3 767	2 018
Export	- 3 685	- 286	- 2 705		- 131		- 1 076		
Stock change			52	- 2				1	19
Primary energy supply	1 435	140	4 894	220	11 642	128	1 343	3 855	2 046
Main activity producers	- 315	- 47	- 408	- 106	- 2 130	- 115	- 606	- 2 521	- 983
Autoproducers	- 196	- 6	- 253	- 4				- 149	- 61
Coal transformation									
Refining									
Gas processing		- 31			133		409	70	
Other transformation			- 150						
Final energy consumption	481	1	2 097	67	8 225	25	538	1 199	912

Note: Gas = Natural gas/ LNG

**Demand & supply table of coal, peat, and coal & peat products in 2019 (continued)**

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
91	207	76		5	304	10 579			147	14 482	937	134 318
822	271	26		14	612	601	19	1 586	567	145	1 027	20 294
		- 42		- 18	- 221	- 5 756		- 1	- 2	- 2 335	- 27	- 31 470
- 28	16	3		29	37	- 200		- 32	- 106	- 781	- 63	- 3 332
<b>885</b>	<b>494</b>	<b>63</b>		<b>29</b>	<b>732</b>	<b>5 224</b>	<b>19</b>	<b>1 554</b>	<b>606</b>	<b>11 510</b>	<b>1 874</b>	<b>119 811</b>
- 810	- 302	- 15			- 633	- 1 977	- 12	- 776	- 306	- 10 291	- 1 227	- 73 361
	- 2	- 8		- 5		- 789		- 353		- 59		- 1 750
	- 26	- 7				- 842		- 120		- 292		- 17 941
										- 72		- 630
<b>71</b>	<b>103</b>	<b>28</b>		<b>24</b>	<b>93</b>	<b>1 290</b>	<b>8</b>	<b>198</b>	<b>296</b>	<b>645</b>	<b>625</b>	<b>20 119</b>

**Demand & supply table of crude oil, NGL and petroleum products in 2019 (continued)**

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
1 339	4 109	56	28	263	22	23 600			804	31 940	486	84 719
1 174	2 313	337	114	431	915	52	6 839	2 479	2 043	19 487	825	84 782
- 1 016	- 2 832	- 53	- 49	- 168	- 64	- 16 756	- 3 547	- 744	- 418	- 16 271	- 303	- 60 135
- 8	152	7	1	20	- 5	58	14	18	15	62	9	- 422
<b>1 473</b>	<b>3 536</b>	<b>279</b>	<b>94</b>	<b>497</b>	<b>798</b>	<b>6 257</b>	<b>1 010</b>	<b>1 581</b>	<b>2 226</b>	<b>33 196</b>	<b>1 017</b>	<b>100 580</b>
- 22	- 342		- 6	- 5	- 33	- 31		- 45	- 2	- 259	- 18	- 1 509
- 3	- 56		- 24	- 8		- 240	- 3	- 13		- 65		- 704
												- 14
- 92	- 88	7	- 8	32	- 15	- 191	25	38	- 242	- 895	- 133	- 5 505
19	- 30		2									9
	1								20	203		301
<b>1 215</b>	<b>2 735</b>	<b>271</b>	<b>57</b>	<b>431</b>	<b>732</b>	<b>3 913</b>	<b>264</b>	<b>616</b>	<b>1 439</b>	<b>26 362</b>	<b>811</b>	<b>74 348</b>

**Demand & supply table of gas in 2019 (continued)**

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
2 573	1 148	167	463	543	152	26 439		5	1 096	33 492	375	87 819
305	1 717					314	382	749	562	2 655		18 833
- 1 235			- 445	- 224		- 8 941				- 4 590		- 23 317
	9	1				- 310		- 12	8	- 478		- 712
<b>1 642</b>	<b>2 874</b>	<b>168</b>	<b>18</b>	<b>319</b>	<b>152</b>	<b>17 502</b>	<b>382</b>	<b>742</b>	<b>1 666</b>	<b>31 079</b>	<b>375</b>	<b>82 624</b>
- 547	- 1 064	- 43	- 1	- 167	- 143	- 5 801	- 286	- 579	- 1 116	- 11 130	- 296	- 28 403
- 56	- 287	- 2	- 6	- 11		- 2 808	- 43	- 3		- 683		- 4 567
- 85	9							56		47		608
						- 477		- 4		- 196		- 827
<b>328</b>	<b>503</b>	<b>73</b>		<b>102</b>	<b>3</b>	<b>5 822</b>	<b>54</b>	<b>150</b>	<b>235</b>	<b>15 021</b>	<b>32</b>	<b>35 867</b>



**Demand & supply table of coal, peat, and coal & peat products in 2018**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Production	12 035		1 220	38	75 305		13 731	22	22
Import	13		230	274	5 033	287	135	4 925	3 341
Export	- 10 333		- 802	- 8	- 402		- 8 774	- 43	
Stock change	84		- 50	- 6	- 747	- 17	- 1 504	- 2	9
Primary energy supply	1 798		598	298	79 190	270	3 588	4 903	3 372
Main activity producers	- 1 574		- 461	- 279	- 45 942	- 270	- 2 244	- 2 644	- 2 240
Autoproducers			- 2					- 282	- 249
Coal transformation	- 55		- 32	- 3	- 14 172			- 796	- 488
Refining									
Gas processing					- 453				
Other transformation									
Final energy consumption	129		107	12	23 815		345	873	339

**Demand & supply table of crude oil, NGL and petroleum products in 2018**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Production	612	246	11 188	17	7 927		1 696	17	34
Import	2 049	16	2 392	733	22 137	909	2 252	8 206	8 122
Export	- 554	- 224	- 9 141	- 31	- 3 159	- 9	- 522	- 741	- 2 970
Stock change	- 38	- 7	- 45		- 684	11	195	- 21	56
Primary energy supply	1 846	28	4 338	685	25 747	159	3 621	6 968	4 620
Main activity producers	- 8	- 1	- 57	- 12	- 247	- 3	- 240	- 304	- 65
Autoproducers	- 40		- 23	- 4				- 165	- 75
Coal transformation								- 15	
Refining	- 75	- 2	- 191	- 21	- 3 207		12	77	- 190
Gas processing		1			- 2	- 13	106	- 73	- 9
Other transformation			145				- 116	- 8	39
Final energy consumption	1 656	26	3 108	623	17 815	95	3 124	4 855	1 898

**Demand & supply table of gas in 2018**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Production	4 237	446	6 910	44	6 132		2 615	94	11
Import	168		818	145	4 648	123		3 966	2 078
Export	- 3 042	- 281	- 2 816	- 6	- 125		- 1 379		
Stock change		- 2	- 24					16	- 100
Primary energy supply	1 363	163	4 889	183	10 655	123	1 236	4 077	1 990
Main activity producers	- 354	- 49	- 389	- 86	- 1 953	- 110	- 557	- 2 683	- 1 014
Autoproducers	- 161	- 6	- 261	- 5				- 144	- 73
Coal transformation									
Refining									
Gas processing		- 40			- 121		498	69	
Other transformation			- 144						
Final energy consumption	480	1	1 869	62	5 534	26	649	1 225	928

Note: Gas = Natural gas/ LNG

## Demand &amp; supply table of coal, peat, and coal &amp; peat products in 2018 (Continued)

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
70	252	78		6	260	10 065			178	15 449	885	129 617
868	260	14		12	581	628	20	1 566	656	131	533	19 507
	- 1	- 37		- 19	- 111	- 5 588		- 1	- 3	- 2 871	- 56	- 29 048
8	3	- 3		29	- 45	- 189		20	- 60	718	143	- 1 609
947	514	52		28	685	4 916	20	1 586	771	13 426	1 506	118 467
- 857	- 309	- 9			- 577	- 2 089	- 12	- 814	- 316	- 12 208	- 938	- 73 784
	- 3	- 7		- 5		- 781		- 364		- 66		- 1 759
	- 29	- 8				- 777		- 137		- 282		- 16 778
										- 82		- 535
75	139	24		22	126	1 120	8	252	222	712	350	28 671

## Demand &amp; supply table of crude oil, NGL and petroleum products in 2018 (Continued)

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
1 424	4 425	55	41	252	25	23 369			943	28 687	526	81 484
1 216	2 352	346	110	462	993	67	6 894	2 547	2 175	21 277	794	86 050
- 1 300	- 3 070	- 56	- 57	- 212	- 92	- 16 403	- 3 565	- 700	- 527	- 14 505	- 327	- 58 166
1	- 82	- 11	- 2	26	- 17	- 94	11	9	43	5	- 33	- 677
1 324	3 416	267	92	477	837	6 208	967	1 693	2 389	33 566	960	100 209
- 9	- 288		- 7	- 5	- 30	- 31		- 65	- 2	- 324	- 6	- 1 705
- 6	- 54		- 25	- 9		- 293	- 5	- 16		- 74		- 789
												- 15
- 39	- 65	- 5	- 2	33	- 25	- 273	19	57	- 435	- 831	- 80	- 5 242
23	- 33											1
	1								21	212		294
1 071	2 857	264	56	433	684	3 820	264	684	1 460	26 224	821	71 838

## Demand &amp; supply table of gas in 2018 (Continued)

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
2 477	1 174	155	402	514	151	25 398		6	1 082	29 490	348	81 686
291	1 849					323	375	761	804	2 795		19 145
- 1 144			- 386	- 210		- 8 434				- 3 549		- 21 372
	12	6				636	1	- 16	2	319		851
1 624	3 035	161	16	304	151	17 923	377	750	1 888	29 055	348	80 309
- 483	- 1 109	- 43	- 2	- 158	- 139	- 5 638	- 277	- 598	- 1 083	- 10 424	- 288	- 27 438
- 53	- 420	- 2	- 4	- 10		- 2 757	- 43	- 3		- 626		- 4 568
- 148	9							53		55		376
		- 4				- 128		- 3		- 192		- 470
293	617	69		90	2	5 260	54	150	244	13 493	30	31 077

Power generation table in 2019

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Total</b>	<b>263 660</b>	<b>4 935</b>	<b>645 318</b>	<b>84 558</b>	<b>7 503 428</b>	<b>36 888</b>	<b>293 766</b>	<b>1 037 318</b>	<b>578 034</b>
Thermal	212 002	4 933	116 519	45 170	5 139 691	36 775	247 394	750 830	401 468
Coal	154 304	484	42 963	28 134	4 939 049	22 655	174 493	329 220	246 071
Oil	4 923	49	5 581	1 170	10 763	167	10 582	36 120	9 302
Gas	52 775	4 400	67 975	15 865	189 879	13 953	62 319	385 489	146 095
Hydro	15 602		379 631	22 477	1 304 438	3	19 478	79 596	2 791
Nuclear			101 197		348 355			63 779	145 910
Geothermal				202			14 101	2 830	
Others	36 056	1.5	47 971	16 709	710 944	110	12 793	140 283	27 865
<b>Main activity producers</b>	<b>226 679</b>	<b>4 023</b>	<b>584 223</b>	<b>78 033</b>	<b>7 503 428</b>	<b>36 777</b>	<b>293 766</b>	<b>871 576</b>	<b>546 194</b>
Thermal	189 228	4 021	94 535	43 934	5 139 691	36 775	247 394	681 298	372 531
Coal	154 304		42 742	28 134	4 939 049	22 655	174 493	297 105	229 183
Oil	819	49	3 703	760	10 763	167	10 582	20 034	3 737
Gas	34 105	3 973	48 090	15 039	189 879	13 953	62 319	364 159	139 612
Hydro	15 602		350 755	22 447	1 304 438		19 478	76 644	2 791
Nuclear			101 197		348 355			63 779	145 910
Geothermal				202			14 101	2 218	
Others	21 849	1.5	37 736	11 450	710 944	2	12 793	47 637	24 962
<b>Autoproducers</b>	<b>36 981</b>	<b>912</b>	<b>61 095</b>	<b>6 525</b>		<b>111</b>		<b>165 742</b>	<b>31 840</b>
Thermal	22 774	912	21 984	1 236				69 531	28 937
Coal		484	221					32 115	16 888
Oil	4 104		1 878	410				16 086	5 565
Gas	18 670	428	19 885	826				21 330	6 483
Hydro			28 876	30		3		2 951	
Nuclear									
Geothermal								612	
Others	14 207		10 235	5 259		108		92 647	2 903

Power generation table in 2018

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Total</b>	<b>260 781</b>	<b>4 294</b>	<b>653 669</b>	<b>82 313</b>	<b>7 166 133</b>	<b>36 558</b>	<b>282 280</b>	<b>1 061 085</b>	<b>586 200</b>
Thermal	216 366	4 292	119 350	44 237	5 004 484	36 458	235 405	784 148	426 856
Coal	157 711		46 905	29 867	4 806 743	23 037	160 013	332 535	258 286
Oil	4 838	47	6 110	1 287	10 858	264	17 945	45 598	13 027
Gas	53 817	4 245	66 335	13 084	186 883	13 157	57 447	406 014	155 542
Hydro	15 804		385 840	23 367	1 231 787	3	20 140	80 968	3 359
Nuclear			100 731		294 359			64 929	133 505
Geothermal				214			14 019	2 524	
Others	28 611	1.5	47 748	14 494	635 503	97	12 715	128 516	22 480
<b>Main activity producers</b>	<b>228 807</b>	<b>3 853</b>	<b>591 782</b>	<b>75 338</b>	<b>7 166 133</b>	<b>36 460</b>	<b>282 280</b>	<b>899 134</b>	<b>550 475</b>
Thermal	195 495	3 852	96 554	42 901	5 004 484	36 458	235 405	714 747	393 878
Coal	157 711		46 701	29 867	4 806 743	23 037	160 013	301 584	240 131
Oil	816	47	4 164	848	10 858	264	17 945	27 987	5 848
Gas	36 968	3 805	45 689	12 187	186 883	13 157	57 447	385 175	147 900
Hydro	15 804		356 287	23 307	1 231 787		20 140	77 678	3 359
Nuclear			100 731		294 359			64 929	133 505
Geothermal				214			14 019	2 318	
Others	17 508	1.5	38 210	8 916	635 503	2	12 715	39 462	19 732
<b>Autoproducers</b>	<b>31 974</b>	<b>440</b>	<b>61 887</b>	<b>6 975</b>		<b>99</b>		<b>161 951</b>	<b>35 726</b>
Thermal	20 871	440	22 796	1 336				69 401	32 978
Coal			204					30 951	18 155
Oil	4 022		1 946	439				17 611	7 180
Gas	16 849	440	20 646	897				20 839	7 643
Hydro			29 553	60		3		3 290	
Nuclear									
Geothermal								206	
Others	11 103		9 538	5 579		95		89 053	2 748

Power generation table in 2019 (Continued)

GWh

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
178 366	344 176	44 811	4 520	57 327	106 041	1 119 699	54 470	274 191	196 373	4 370 988	236 884	17 435 752
149 701	264 503	8 150	3 167	22 695	83 997	710 651	52 626	223 407	158 934	2 745 143	164 877	11 542 633
76 411	25 976	2 266		154	57 890	187 815	650	126 412	35 875	1 069 527	120 157	7 640 507
1 010	45 349	4	2 555	696	3 752	8 558	217	5 850	1 167	35 790	2 213	185 819
72 280	193 178	5 880	612	21 844	22 354	514 278	51 760	91 145	121 891	1 639 825	42 507	3 716 307
26 167	23 716	25 575	886	31 462	8 025	194 717		8 753	6 446	289 799	66 117	2 505 679
	11 190					208 984		32 323		843 330		1 755 068
	5 351	8 041	422		10 691	433		1	1	18 364		60 436
2 498	39 416	3 046	45	3 171	3 328	4 914	1 843	9 707	30 992	474 353	5 890	1 571 936
171 546	284 294	43 254	1 434	54 406	106 041	1 043 175	47 449	232 096	196 373	4 171 491	236 884	16 733 142
143 493	220 287	7 280	752	20 908	83 997	638 162	45 606	188 790	158 934	2 610 862	164 877	11 093 355
76 411	25 770	1 566		29	57 890	172 973	650	93 533	35 875	1 058 906	120 157	7 531 425
776	39 773	4	540	310	3 752	1 840	23	4 564	1 167	28 534	2 213	134 109
66 306	154 744	5 710	212	20 569	22 354	463 349	44 933	90 692	121 891	1 523 423	42 507	3 427 820
26 167	22 927	25 571	677	30 769	8 025	193 541		8 753	6 446	288 560	66 117	2 469 708
	11 190					208 984		32 323		843 330		1 755 068
	5 248	7 982			10 691	433			1	17 845		58 720
1 886	24 642	2 422	5	2 730	3 328	1 610	1 843	2 230	30 992	410 894	5 890	1 355 846
6 820	59 882	1 557	3 086	2 921		76 525	7 021	42 095		199 497		702 609
6 208	44 216	870	2 415	1 787		72 489	7 021	34 618		134 281		449 278
	206	701		125		14 842		32 879		10 622		109 082
234	5 576		2 015	387		6 719	193	1 286		7 257		51 709
5 974	38 434	169	400	1 275		50 929	6 827	453		116 402		288 487
	789	4	209	693		1 177				1 239		35 971
	103	59	422					1		519		1 716
612	14 774	624	40	441		2 859		7 476		63 459		215 645

Power generation table in 2018 (Continued)

GWh

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
170 529	357 593	44 412	4 416	55 003	99 192	1 113 208	53 144	275 550	186 719	4 433 936	217 189	17 144 203
142 220	277 315	7 328	3 119	21 562	76 439	713 160	51 476	231 843	152 420	2 834 295	133 111	11 515 885
77 286	27 306	1 583		133	51 932	177 566	688	131 262	35 845	1 272 150	91 654	7 682 502
1 048	47 186	12	2 589	748	3 173	8 007	317	8 172	216	42 928	751	215 121
63 886	202 823	5 733	530	20 681	21 334	527 588	50 471	92 409	116 359	1 519 218	40 706	3 618 262
26 325	32 526	26 290	830	30 723	9 384	191 142		7 852	7 783	295 501	83 081	2 472 706
	13 675					204 569		27 682		841 329		1 680 780
	5 375	7 976	422		10 435	426			2	18 774		60 167
1 985	28 702	2 818	45	2 718	2 935	3 910	1 668	8 172	26 514	444 037	997	1 414 665
163 366	292 942	43 001	1 378	52 390	99 192	1 037 761	46 032	233 815	186 719	4 240 665	217 189	16 448 713
136 046	226 758	6 560	752	19 845	76 439	641 481	44 365	196 381	152 420	2 703 698	133 111	11 061 629
77 286	27 087	953		29	51 932	160 882	688	97 664	35 845	1 260 393	91 654	7 570 200
511	40 941	12	543	334	3 173	952	25	6 788	216	34 533	751	157 556
58 249	158 730	5 595	210	19 482	21 334	479 646	43 652	91 929	116 359	1 408 771	40 706	3 333 873
26 325	31 621	26 286	621	29 975	9 384	189 988		7 852	7 783	294 084	83 081	2 435 363
	13 675					204 569		27 682		841 329		1 680 780
	5 248	7 919			10 435	426			2	18 733		59 314
996	15 640	2 235	5	2 570	2 935	952	1 668	1 899	26 514	382 822	997	1 211 281
7 163	64 651	1 412	3 038	2 613		75 447	7 112	41 735		193 271		695 490
6 174	50 557	768	2 367	1 717		71 680	7 112	35 462		130 598		454 256
	219	630		104		16 684		33 598		11 757		112 302
537	6 245		2 047	414		7 054	292	1 385		8 394		57 565
5 637	44 093	138	321	1 199		47 941	6 819	480		110 447		284 389
	905	4	209	748		1 154				1 417		37 343
	127	57	422							40		853
989	13 062	582	40	148		2 613		6 272		61 216		203 038

Fuel consumption table for power generation in 2019

	Australia	Brunei Darussala m	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Main activity producers	- 1 160	- 19	- 1 247	- 281	- 27 351	- 245	- 2 908	- 3 586	- 2 744
Coal	- 1 511		- 424	- 315	- 40 988	- 258	- 2 426	- 2 476	- 2 060
Coke					- 7				
Coke oven gas								- 39	- 21
Blast furnace gas								- 92	- 55
Crude oil & NGL					- 7			- 7	
LPG						- 2		- 8	
Refinery gas					- 24			- 31	
Naphtha					- 6				
Diesel oil	- 7	- 1	- 8	- 5	- 12	- 2	- 116	- 15	- 8
Fuel oil	- 1		- 18		- 7		- 26	- 69	- 27
Natural gas	- 290	- 27	- 322	- 106	- 1 577	- 115	- 606	- 2 508	- 657
Others	648	8	- 475	144	15 278	132	267	1 661	82
Autoproducers	- 89	- 11	- 246	- 4		- 2		- 362	- 15
Coal		- 8						- 176	- 1
Coke									
Coke oven gas			- 2					- 15	
Blast furnace gas								- 93	- 4
Crude oil & NGL									
LPG								- 7	
Refinery gas			- 14					- 57	
Naphtha									- 7
Diesel oil	- 36		- 5	- 2				- 10	
Fuel oil	- 1		- 1	- 2				- 44	
Natural gas	- 100	- 6	- 253	- 4				- 149	- 3
Others	48	3	29	4		- 2		190	- 1

Fuel consumption table for power generation in 2018

	Australia	Brunei Darussala m	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Main activity producers	- 1 214	- 22	- 1 258	- 230	- 26 461	- 251	- 2 805	- 3 754	- 2 721
Coal	- 1 553		- 461	- 279	- 40 020	- 270	- 2 244	- 2 502	- 2 156
Coke					- 2			- 1	
Coke oven gas								- 38	- 21
Blast furnace gas								- 99	- 55
Crude oil & NGL					- 6			- 21	
LPG								- 9	
Refinery gas					- 28			- 56	
Naphtha					- 3				
Diesel oil	- 6	- 1	- 9	- 5	- 13	- 3	- 192	- 14	- 6
Fuel oil	- 1		- 21		- 8		- 48	- 132	- 43
Natural gas	- 326	- 29	- 298	- 86	- 1 472	- 110	- 557	- 2 670	- 683
Others	672	8	- 468	140	15 092	131	237	1 787	244
Autoproducers	- 76	- 4	- 248	- 4		- 2		- 352	- 17
Coal								- 171	- 2
Coke									
Coke oven gas			- 2					- 15	
Blast furnace gas								- 91	- 4
Crude oil & NGL									
LPG								- 7	
Refinery gas			- 13					- 59	
Naphtha									- 12
Diesel oil	- 38		- 6	- 2				- 12	
Fuel oil	- 1		- 2	- 2				- 40	
Natural gas	- 82	- 6	- 261	- 5				- 144	- 2
Others	45	2	35	5		- 2		188	2

Fuel consumption table for power generation in 2019 (Continued)

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
- 867	- 1 043	- 184	- 5	- 139	- 881	- 1 530	- 157	- 1 041	- 1 146	- 18 387	- 1 180	- 66 102
- 810	- 302	- 15			- 633		- 12	- 800	- 279	- 10 134	- 1 387	- 64 830
												- 8
											- 1	- 60
											- 1	- 147
												- 14
												- 11
												- 56
												- 6
- 22	- 30		- 1	- 1	- 17			- 3	- 1	- 74	- 7	- 329
- 1	- 312		- 5	- 4	- 14			- 44	- 1	- 85	- 11	- 625
- 547	- 1 064	- 33	- 1	- 167	- 143		- 286	- 643	- 1 116	- 10 059	- 303	- 20 570
513	666	- 136	2	34	- 74	- 1 530	141	450	252	1 966	527	20 554
- 41	- 189		- 35	- 23		- 254	- 21	- 8		- 103		- 1 402
				- 5				- 16		- 2		- 209
												- 17
	- 2											- 98
						- 2						- 2
												- 7
							- 1			- 7		- 80
												- 7
- 3	- 3		- 5	- 5		- 44				- 1		- 115
	- 2		- 19	- 2			- 2					- 74
- 56	- 183		- 6	- 11		- 280	- 43			- 72		- 1 166
18	1		- 5	2		72	25	8		- 20		372

Fuel consumption table for power generation in 2018 (Continued)

Petajoules

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
- 862	- 1 040	- 176	- 6	- 127	- 825	- 1 498	- 153	- 1 060	- 1 120	- 19 318	- 933	- 65 834
- 857	- 309	- 9			- 577		- 12	- 838	- 289	- 12 008	- 1 060	- 65 445
												- 2
												- 60
												- 155
												- 27
												- 9
												- 84
												- 3
- 8	- 36		- 1	- 2	- 16			- 3	- 1	- 96	- 1	- 415
- 1	- 253		- 5	- 3	- 15			- 64	- 1	- 99	- 5	- 699
- 483	- 1 109	- 33	- 2	- 158	- 139		- 277	- 665	- 1 083	- 9 342	- 288	- 19 811
486	666	- 134	2	36	- 79	- 1 498	137	511	254	2 230	421	20 875
- 45	- 204		- 34	- 24		- 236	- 23	- 7		- 69		- 1 346
				- 5				- 14		- 2		- 193
												- 17
	- 2											- 97
												- 7
							- 2			- 4		- 78
												- 12
- 6	- 3		- 5	- 6		- 45				- 1		- 123
	- 2		- 20	- 3			- 3					- 73
- 53	- 218		- 4	- 10		- 256	- 43			- 41		- 1 127
15	21		- 5	- 1		65	26	7		- 21		381

## Power generation capacity - total

MW

	1990	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Australia	38 451	60 068	61 939	64 246	64 026	66 557	66 353	65 559	71 656	74 291	79 312
Brunei Darussalam	307	889	895	915	917	920	923	923	993	1 007	1 261
Canada	104 141	132 375	132 959	132 598	132 598	140 340	148 150	144 023	147 629	148 682	149 514
Chile	5 099	16 231	17 549	18 153	18 515	20 513	22 431	25 798	26 310	27 534	27 644
China	137 891	962 180	1 064 550	1 144 750	1 247 280	1 370 190	1 525 270	1 650 509	1 777 085	1 816 218	2 010 050
Hong Kong, China	8 342	12 624	12 624	12 625	12 625	12 626	12 626	10 685	10 557	10 347	10 386
Indonesia	9 275	33 980	39 916	45 246	50 988	53 064	54 688	58 416	62 233	64 553	69 679
Japan	188 700	281 082	282 284	285 643	287 060	287 060	291 836	299 362	339 698	344 867	344 154
Korea	38 401	84 750	84 650	87 826	91 478	99 817	103 191	111 203	122 950	127 476	132 104
Malaysia	5 582	24 817	25 599	29 143	29 748	29 974	30 439	33 045	33 592	33 592	36 121
Mexico	27 371	62 290	61 600	62 136	63 611	66 238	67 333	72 334	74 431	89 351	92 286
New Zealand	7 176	9 457	9 765	9 615	9 622	9 704	9 455	9 288	9 311	9 358	9 391
Papua New Guinea	490	711	827	833	865	654	1 229	1 236	1 303	1 325	1 324
Peru	4 143	N.A.	N.A.	9 699	11 051	10 269	10 908	14 009	14 735	14 884	15 120
The Philippines	6 869	13 319	16 162	17 025	17 325	17 944	18 695	21 423	22 728	23 815	25 531
Russia	213 400	222 935	222 984	232 685	239 423	259 020	257 075	264 828	266 519	271 600	275 786
Singapore	3 667	10 265	10 222	10 488	11 221	12 863	13 042	13 474	13 355	13 355	12 306
Chinese Taipei	17 819	48 897	48 807	48 433	48 877	48 491	48 747	49 960	49 753	51 596	55 915
Thailand	8 725	31 486	31 772	33 178	34 973	34 973	35 808	48 276	49 048	49 728	52 299
United States	733 589	1 040 980	1 055 278	1 067 878	1 065 092	1 073 438	1 062 691	1 092 400	1 100 333	1 078 129	1 127 771
Viet Nam	2 537	21 278	23 263	26 211	32 089	35 956	40 521	43 714	45 410	49 410	55 207

## Power generation capacity - thermal power

MW

	1990	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Australia	30 130	49 028	49 626	50 459	49 509	49 977	49 710	47 786	51 218	51 700	51 540
Brunei Darussalam	307	888	894	914	915	919	922	922	992	1 006	1 260
Canada	31 201	40 424	38 939	34 660	34 660	34 174	40 946	35 076	37 429	37 322	37 322
Chile	2 421	10 050	10 871	11 125	10 838	12 324	13 616	15 736	15 600	16 877	16 544
China	101 845	706 630	768 520	819 170	862 380	894 420	970 460	1 060 944	1 104 946	1 144 080	1 189 570
Hong Kong, China	8 342	12 624	12 624	12 625	12 625	12 625	12 625	10 668	10 510	10 300	10 243
Indonesia	7 040	29 040	34 683	39 690	44 414	46 344	46 073	49 284	52 824	55 144	59 377
Japan	119 303	181 736	182 382	185 309	188 904	188 904	190 805	194 669	197 092	197 092	178 702
Korea	11 065	59 301	58 361	59 175	61 924	69 286	70 287	75 778	86 377	89 014	88 174
Malaysia	4 185	22 488	22 515	24 994	24 973	24 243	23 518	25 732	26 436	26 436	28 264
Mexico	18 155	47 736	47 070	46 707	48 047	48 797	49 421	53 047	54 388	62 010	63 521
New Zealand	2 296	2 929	3 138	2 988	2 738	2 661	2 389	2 221	3 076	3 076	3 076
Papua New Guinea	335	183	287	292	295	251	824	831	898	920	919
Peru	1 744	4 682	N.A.	5 828	7 414	6 464	6 464	8 328	9 004	9 154	9 062
The Philippines	3 661	9 041	10 772	11 504	11 784	12 047	12 365	14 465	15 649	16 588	18 132
Russia	149 700	151 114	151 114	157 845	163 926	182 465	179 148	185 913	186 581	190 215	191 948
Singapore	3 667	10 261	10 216	10 478	10 964	12 607	12 726	13 092	13 243	13 243	12 035
Chinese Taipei	10 041	37 939	37 647	37 078	37 300	36 665	36 654	37 471	36 730	38 574	41 221
Thailand	6 451	25 109	25 145	28 859	30 119	30 119	30 719	38 685	38 685	39 365	39 733
United States	536 667	793 551	798 833	793 352	787 297	789 624	773 980	769 999	764 805	767 009	758 592
Viet Nam	1 362	13 074	13 074	13 514	15 667	18 487	21 815	23 525	26 019	27 986	29 338

## Power generation capacity - hydro power

MW

	1990	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Australia	8 321	8 773	8 788	8 790	8 037	8 048	8 048	8 724	8 271	8 523	8 735
Brunei Darussalam											
Canada	59 381	75 078	75 573	75 537	75 537	78 533	79 420	80 259	80 831	81 396	81 399
Chile	2 678	5 467	5 946	5 992	6 094	6 445	6 499	6 671	6 656	6 627	6 341
China	36 046	213 400	233 390	248 900	280 020	304 860	319 540	332 071	343 587	352 590	358 040
Hong Kong, China										1	1
Indonesia	2 095	3 720	3 881	4 078	5 059	5 059	5 069	5 344	5 344	5 406	5 565
Japan	37 482	47 966	48 111	48 418	48 934	48 934	50 034	50 117	50 036	50 059	50 055
Korea	2 340	5 525	6 418	6 447	6 454	6 467	6 471	6 485	6 489	6 490	6 508
Malaysia	1 397	2 107	2 856	3 317	3 916	4 773	5 716	6 130	5 881	5 881	6 190
Mexico	7 838	11 626	11 646	11 650	11 653	12 464	12 223	12 580	12 628	12 643	13 301
New Zealand	4 619	5 254	5 254	5 254	5 263	5 263	5 340	5 340	5 381	5 381	5 389
Papua New Guinea	155	254	267	267	295	295	296	295	295	295	295
Peru	2 400	3 318	N.A.	3 484	3 556	3 527	4 166	5 189	5 246	5 363	5 397
The Philippines	2 153	2 914	3 491	3 521	3 521	3 543	3 600	3 618	3 627	3 701	3 760
Russia	43 400	47 430	47 479	49 445	50 104	50 845	50 998	51 016	51 241	51 333	51 839
Singapore											
Chinese Taipei	2 562	4 579	4 643	4 683	4 683	4 683	4 691	4 691	4 691	4 694	4 695
Thailand	2 274	3 488	3 500	3 508	3 524	3 524	3 524	3 519	3 586	3 602	4 103
United States	92 360	101 023	100 944	101 106	101 589	102 162	102 239	102 790	102 703	102 800	102 650
Viet Nam	1 176	8 180	10 165	12 643	16 331	17 378	18 571	20 075	19 288	20 170	20 632

## Power generation capacity - nuclear power

MW

	1990	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Australia											
Brunei Darussalam											
Canada	13 538	12 665	12 665	13 370	13 370	14 033	14 033	14 033	14 033	14 033	14 033
Chile											
China		10 820	12 570	12 570	14 610	20 080	27 170	33 642	35 817	44 660	48 740
Hong Kong, China											
Indonesia											
Japan	31 645	48 847	48 960	48 960	46 148	46 148	42 048	41 482	39 132	38 042	33 083
Korea	7 616	5 525	6 418	6 447	6 454	20 716	21 716	23 116	22 529	21 850	23 250
Malaysia											
Mexico	675	1 365	1 365	1 610	1 400	1 400	1 510	1 608	1 608	1 634	1 721
New Zealand											
Papua New Guinea											
Peru											
The Philippines											
Russia	20 300	24 300	24 300	25 304	25 304	25 304	26 304	27 189	27 952	29 140	30 339
Singapore											
Chinese Taipei	5 144	5 144	5 144	5 144	5 144	5 144	5 144	5 144	5 144	4 508	3 872
Thailand											
United States	99 643	101 167	101 419	101 885	99 240	98 569	98 672	99 565	99 629	99 433	98 119
Viet Nam											



## Power generation capacity - others

MW

	1990	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Australia		2 267	3 525	4 997	6 480	8 532	8 595	9 049	12 167	14 068	19 037
Brunei Darussalam		1	1	1	1	1	1	1	1	1	1
Canada	21	4 208	5 782	9 031	9 031	13 600	13 751	14 655	15 336	15 931	16 760
Chile		714	732	1 036	1 583	1 744	2 316	3 391	4 053	4 030	4 759
China		31 330	50 070	64 110	90 270	150 830	208 100	223 853	292 734	358 800	413 700
Hong Kong, China						1	1	17	47	47	142
Indonesia	140	1 220	1 352	1 478	1 515	1 661	3 546	3 789	4 065	4 405	4 737
Japan	270	2 533	2 831	2 956	3 074	3 074	8 949	13 094	53 437	59 674	82 314
Korea		1 070	1 217	1 575	2 262	4 098	4 706	6 041	7 555	10 122	14 171
Malaysia		221	228	832	859	957	1 205	1 184	1 274	1 274	1 667
Mexico	703	1 563	1 519	2 169	2 511	3 577	4 179	5 099	5 807	13 064	13 743
New Zealand	261	1 274	1 373	1 373	1 621	1 780	1 726	1 727	854	901	926
Papua New Guinea		274	274	274	276	109	109	109	110	110	110
Peru		N.A.	N.A.	387	81	278	278	492	485	657	661
The Philippines	1 055	1 364	1 900	2 001	2 021	2 354	2 730	3 340	3 452	3 525	3 639
Russia		91	91	91	89	406	625	710	746	913	1 661
Singapore		4	6	10	257	257	317	382	112	112	271
Chinese Taipei	72	1 235	1 373	1 528	1 750	1 999	2 258	2 654	3 187	4 904	6 127
Thailand		2 889	3 127	811	1 330	1 330	1 564	6 072	6 777	7 980	8 462
United States	4 919	45 239	54 082	71 535	76 966	83 083	87 800	120 046	133 196	108 887	168 410
Viet Nam		24	24	54	91	91	135	114	145	504	5 237



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# Appendices

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## A. Definition of products

### **Coal**

This section includes coal, i.e., solid fossil fuel consisting of carbonized vegetal matter, and coal products derived directly or indirectly from the various classes of coal by carbonization or pyrolysis processes, by the aggregation of finely divided coal or by chemical reactions with oxidizing agents, including water.

#### **Anthracite**

A high-rank, hard coal with a gross calorific value (moist, ash-free basis) greater than or equal to 24 MJ/kg and a Vitrinite mean random reflectance greater than or equal to 2.0 per cent.

#### **Coking coal**

A medium-rank hard coal with either a gross calorific value (moist, ash-free basis) not less than 24 MJ/kg and with a Vitrinite mean random reflectance less than 2%, or a gross calorific value (moist, ash-free basis) less than 24 MJ/kg provided that the Vitrinite mean random reflectance is equal to or greater than 0.6%.

#### **Bituminous coal**

A medium-rank hard coal with either a gross calorific value (moist, ash-free basis) not less than 24 MJ/kg and with a Vitrinite mean random reflectance less than 2%, or a gross calorific value (moist, ash-free basis) less than 24 MJ/kg provided that the Vitrinite mean random reflectance is equal to or greater than 0.6%.

#### **Lignite**

A brown coal with a gross calorific value (moist, ash-free basis) less than 20 MJ/kg.

### **Peat**

A solid formed from the partial decomposition of dead vegetation under conditions of high humidity and limited air access (initial stage of coalification). It is available in two forms for use as a fuel, sod peat and milled peat.

#### **Patent fuel**

A composition fuel made by moulding hard coal fines into briquette shapes with the addition of a binding agent.

#### **Coke**

Coke comprises coke oven coke and gas coke.

##### *Coke oven coke*

The solid product obtained from carbonisation of coking coal at high temperature. Coke oven coke is low in moisture, and volatile matter and has the mechanical strength to support a blast furnace charge. It is used mainly in the iron and steel industry acting as heat source and chemical agent.

##### *Gas coke*

A by-product from the carbonisation of bituminous coal for the manufacture of gas works gas. Gas coke is used mainly for heating purposes.

#### **Coal tar**

The liquid by-product of the carbonisation of coal in coke ovens.

**BKB<sup>1</sup>/PB<sup>2</sup>**

BKB is a composition fuel made of brown coal produced by briquetting under high pressure with or without the addition of a binding agent.

PB is a fuel comprising small blocks of dried, highly compressed peat made without a binding agent.

**Gas works gas**

This group includes gases obtained from the carbonisation or gasification of carbonaceous material of fossil or biomass origins in gas works. The gases comprise:

- Gases obtained from carbonisation or gasification of coal, cokes, biomass, or waste; and
- Substitute natural gas (a methane-rich gas) made from synthesis gas.

**Coke oven gas**

It is gas produced from coke ovens during the manufacturing of coke oven coke.

**Blast furnace gas**

The by-product gas of blast furnace operation consisting mainly of nitrogen, carbon dioxide and carbon monoxide. The gas is recovered as it leaves the furnace. Its calorific value arises mainly from the carbon monoxide produced by the partial combustion of coke and other carbon-bearing products in the blast furnace. It is used to heat blast air and is also used as a fuel in the iron and steel industry. It may also be used by other nearby industrial plants. Note that where carbonised biomass (e.g., charcoal and animal meal) is used in blast furnaces, part of the carbon supply may be considered renewable.

<sup>1</sup> BKB stands for Braunkohlenbriketts

<sup>2</sup> PB stands for Peat briquettes

**Oxygen steel furnace gas**

It is the by-product gas of the production of steel in a basic oxygen furnace. The gas is recovered as it leaves the surface.

**Oil****Crude oil**

A mineral oil of fossil origin extracted by conventional means from underground reservoirs and comprises either liquid or near-liquid hydrocarbons and associated impurities such as sulphur and metals.

It exists in the liquid phase under normal surface temperature and pressure, and usually flows to the surface under the pressure of the reservoir. This is termed conventional extraction. Crude oil includes condensate from condensate fields, and 'field' or 'lease' condensate extracted with the crude oil.

**Natural gas liquids (NGLs)**

A mixture of ethane, propane, butane (normal and iso), (iso) pentane and a few higher alkanes collectively referred to as pentanes plus.

NGLs are produced in association with oil or natural gas. They are removed in field facilities or gas separation plants before sale of the gas. All the components of NGL except ethane are either liquid at the surface or are liquefied for disposal.

**Refinery feedstocks**

Oils or gases from crude oil refining or the processing of hydrocarbons in the petrochemical industry which are destined for further processing in the refinery excluding blending. Typical feedstocks include naphtha,

middle distillates, pyrolysis gasoline and heavy oils from vacuum distillation and petrochemical plants.

### **Additives and Oxygenates**

Compounds added to or blended with oil products to modify their properties (octane, cetane, cold properties, etc.). Examples of these products include:

- Oxygenates such as alcohols (methanol, ethanol).
- Ethers such as methyl tertiary butyl ether (MTBE), ethyl tertiary butyl (ETBE), and tertiary amyl methyl ether (TAME).
- Esters such as (e.g., rapeseed or dimethyl ester, etc.)
- Chemical compounds such as tetramethyl lead (TML), tetraethyllead (TEL) and detergents.

Some additives and oxygenates may be derived from biomass while others may be of hydrocarbon origin.

### **Biofuels**

Fuels derived directly or indirectly from biomass.

#### ***Biogasoline***

Liquid fuels derived from biomass and used in spark-ignition internal combustion engines.

#### ***Biodiesel***

Liquid biofuels derived from biomass and used in diesel engines.

#### ***Bio-jet kerosene***

Liquid biofuels derived from biomass and blended with or replacing jet kerosene.

#### ***Bioethanol***

Ethanol produced from biomass and/or biodegradable fraction of waste.

#### ***Biomethanol***

Methanol produced from biomass and/or the biodegradable fraction of waste.

#### ***Bio-oil***

A pyrolysis oil fuel produced from biomass.

### **Other hydrocarbons**

These are non-conventional oil and hydrogen. Non-conventional oils refer to oils obtained through non-conventional production techniques. Oils are extracted from reservoirs containing extra heavy oils or oil sands which need heating or treatment (e.g., emulsification) in situ before they can be brought to the surface for refining/processing. They also include oils extracted from oil sands, extra heavy oils, coal, and oil shale which are at, or can be brought to the surface without treatment and require processing after mining (ex situ processing). Non-conventional oils may also be produced from natural gas. Hydrogen, although not a hydrocarbon, is included unless it is a component of another gas.

### **Refinery gas (not liquefied)**

A mixture of non-condensable gases mainly consisting of hydrogen, methane, ethane, and olefins obtained during distillation of crude oil or treatment of oil products (e.g., cracking) in refineries or from nearby petrochemical plants. It is used mainly as a fuel within the refinery.

### **Ethane**

A naturally gaseous straight-chain hydrocarbon (C<sub>2</sub>H<sub>6</sub>). Ethane is obtained at gas separation plants or from the refining of crude oil. It is a valuable feedstock for petrochemical manufacture.

### **Liquefied petroleum gases (LPG)**

Refers to liquefied propane (C<sub>3</sub>H<sub>8</sub>) and butane (C<sub>4</sub>H<sub>10</sub>) or mixtures of both. Commercial grades

are usually mixtures of the gases with small amounts of propylene, butylene, isobutene, and isobutylene stored under pressure in containers.

### **Naphtha**

Refers to light or medium oils distilling between 30°C and 210°C which do not meet the specification for motor gasoline. The main uses for naphtha are as feedstock for high octane gasolines and the manufacture of olefins in the petrochemical industry.

### **Gasolines**

Complex mixtures of volatile hydrocarbons distilling between approximately 25°C and 220°C and consisting of compounds in the C<sub>4</sub> to C<sub>12</sub> range.

#### ***Motor gasoline***

Motor gasoline is a mixture of some aromatics (for example, benzene and toluene) and aliphatic hydrocarbons in the C<sub>5</sub> to C<sub>12</sub> range. The distillations range is 25°C to 220°C. Motor gasoline may also contain biogasoline products.

#### ***Aviation gasoline***

Aviation gasoline is gasoline prepared especially for aviation piston engines with additives which assure performance under flight conditions. Aviation gasolines are predominantly alkylates (obtained by combining C<sub>4</sub> and C<sub>5</sub> isoparaffins with C<sub>3</sub>, C<sub>4</sub> and C<sub>5</sub> olefins) with the possible addition of more aromatic components including toluene. The distillation range is 25°C to 170°C.

#### ***Gasoline-type jet fuel***

This includes all light hydrocarbon oils for use in aviation turbine power units, distilling between 100°C and 250°C. They are obtained by blending kerosene and gasoline or naphtha

in such a way that the aromatic content does not exceed 25% in volume and the vapor pressure is between 13.7 kilopascal (kPa) and 20.6 kPa.

### **Kerosene**

Comprise kerosene-type jet fuel and other kerosene. This is a mixture of hydrocarbons in the range C<sub>9</sub> to C<sub>16</sub> distilling over the temperature interval 145°C to 300°C, but not usually above 250°C, and with a flash point above 38°C.

#### ***Kerosene-type jet fuel***

This is a blend of kerosene suited to flight conditions with particular specifications, such as freezing point. The specifications are set down by a small number of national standards committees, most notably, ASTM (US), MOD (UK), GOST (Russia).

#### ***Other kerosene***

Kerosene used for heating, cooking, lighting, solvents, and internal combustion engines. Other names of this product are burning oil, vaporising oil, power kerosene and illuminating oil.

### **Gas/Diesel oil (Distillate fuel oil)**

Middle distillates, predominantly of carbon number range C<sub>11</sub> to C<sub>25</sub> and with a distillation range of 160°C to 420°C. This product comprises road diesel and heating or other gas oil.

### **Fuel oil**

This comprises residual fuel oil and heavy fuel oil which is usually a blended product based on the residues from various refinery, distillation, and cracking processes. Residual fuel oils A-5 have a distillation range of 350°C to 650°C and a kinematic viscosity in the range 6 to 55 centistokes (cSt) at 100°C. Their flash point is

always above 60°C and their specific gravity is above 0.95.

### **White spirit and SBP**

White spirit and special boiling point industrial spirits (SBP) are refined distillate intermediates with a distillation in the naphtha/kerosene range. They are mainly used for non-fuel purposes.

#### *White spirit*

An industrial spirit with a flash point above 30°C and a distillation range of 135°C to 200°C.

#### *SBP*

Light oils distilling between 30°C and 200°C.

### **Lubricants**

Oils, produced from crude oil, for which the principal use is to reduce friction between sliding surfaces and during metal cutting operations.

### **Bitumen**

A solid, semi-solid or viscous hydrocarbon with a colloidal structure, being brown to black in color. It is obtained as a residue in the distillation of crude oil and by vacuum distillation of oil residues from atmospheric distillation. It should not be confused with the nonconventional primary extra heavy oils which may also be referred to as bitumen.

### **Paraffin waxes**

Residues extracted when dewaxing lubricant oils. The waxes have a crystalline structure which varies in fineness according to the grade, and are colourless, odourless and translucent, with a melting point above 45°C.

### **Petroleum coke**

A black solid obtained mainly by cracking and carbonising heavy hydrocarbon oils, tars, and pitches. It consists mainly of carbon (90 to 95 per cent) and has a low ash content. The two most important categories are 'green coke' and 'calcined coke'. Green coke (raw coke) is the primary solid carbonisation product from high boiling hydrocarbon fractions obtained at temperatures below 630°C. It contains 4-15 per cent by weight of matter that can be released as volatiles during subsequent heat treatment at temperatures up to approximately 1330°C. Calcined coke is a petroleum coke or coal-derived pitch coke obtained by heat treatment of green coke to about 1330°C. It will normally have a hydrogen content of less than 0.1 per cent by weight.

### **Other products**

Other products include products (including partly refined products) from the refining of crude oil and feedstocks which are not specified above.

## **Gas**

### **Natural gas**

A mixture of gaseous hydrocarbons, primarily methane, but generally also including ethane, propane and higher hydrocarbons in much smaller amounts and some non-combustible gases such as nitrogen and carbon dioxide.

#### *Associated gas*

Gas produced in association with crude oil.

#### *Non-associated gas*

Gas originating from fields producing hydrocarbons only in gaseous form.

#### *Colliery gas*

Gas recovered from coal mines.



**Shale gas**

Natural gas produced from hydrocarbon-rich shale formation. Shale gas is typically a dry gas primarily composed of methane (90 per cent or more), but some formations do produce wet gas.

**Coal seam gas**

Coal seam gas (also known as coal bed methane) is a form of natural gas extracted from coal seams.

**LNG**

Liquid natural gas is produced by liquefaction of natural gas, liquefied by reducing its temperature to simplify storage and transportation when production sites are remote from centres of consumption and pipeline transportation is not economically practicable.

**New and renewable energy****Fuelwood**

Fuelwood (in log, brushwood, pellet, or chip form) obtained from natural or managed forests or isolated trees. Also included are wood residues used as fuel and in which the original composition of wood is retained. Charcoal and black liquor are excluded.

**Woodwaste**

Yard trash and types of waste typically generated by sawmills, plywood mills, and woodyards associated with the lumber and paper industry, such as wood residue, cut-offs, wood chips, sawdust, wood shavings, bark, wood refuse, wood-fired boiler ash, and plywood or other bonded materials that contain only phenolic-based glues or other glues that are approved specifically by the administrative authority.

**Bagasse**

The fuel obtained from the fibre which remains after juice extraction in sugar cane processing.

**Charcoal**

The solid residue from the carbonisation of wood or other vegetal matter through slow pyrolysis.

**Other biomass**

All other solid biomass products not specifically mentioned above. This includes agricultural wastes such as straw, rice husks, nut shells, poultry litter, crushed grape dregs, palm oil bunches, etc. The quantity of fuel used should be reported on a net calorific value basis.

**Biogas**

Gases arising from the anaerobic fermentation of biomass and the gasification of solid biomass (including biomass in wastes).

**Landfill gas**

Biogas from the anaerobic fermentation of organic matter in landfills.

**Sewage sludge gas**

Biogas from the anaerobic fermentation of waste matter in sewage plants.

**Other biogas**

Other biogases from anaerobic fermentation not elsewhere specified.

**Industrial waste**

Non-renewable waste which is combusted with heat recovery in plants other than those used for the incineration of municipal waste.

**Municipal solid waste (renewables)**

Household waste and waste from companies and public services that resembles household waste, and which is collected at installations

specifically designed for the disposal of mixed wastes with recovery of combustible liquids, gases, or heat.

### **Liquid biofuels**

Liquids derived from biomass and used as fuels.

#### ***Biogasoline***

Refers to liquid fuels derived from biomass and used in spark-ignition internal combustion engines. Biogasoline may be blended with petroleum gasoline or used directly in engines. The blending may take place in refineries or at or near the point of sale.

#### ***Bioethanol***

Refers to ethanol produced from biomass.

#### ***Biodiesel***

Refers to liquid biofuels derived from biomass and used in diesel engines. Biodiesels may be blended with petroleum diesel or used directly in diesel engines.

#### ***Bio-jet kerosene***

Refers to liquid biofuels derived from biomass and blended with or replacing jet kerosene.

### **Hydro**

Electricity produced from devices that are driven by fresh, flowing or falling water.

### **Geothermal**

Electricity and heat generation produced from geothermal plants.

### **Solar**

#### ***Electricity from solar photovoltaics***

Refers to electricity produced by the direct conversion of solar radiation through photovoltaic processes in semiconductor devices (solar cells), including concentrating photovoltaic systems.

#### ***Heat from concentrating solar thermal***

Refers to high temperature heat produced from solar radiation captured by concentrating solar thermal systems. The high temperature heat can be transformed to generate electricity, drive chemical reactions, or be used directly in industrial processes.

#### ***Heat from non-concentrating solar thermal***

Refers to low temperature heat produced from solar radiation captured by non-concentrating solar thermal systems.

### **Tide/wave/ocean**

Electricity produced from tide/wave/ocean.

### **Wind**

Electricity produced from devices driven by wind.

## **Electricity and heat**

### **Electricity**

Electricity is an energy carrier with a wide range of application. It is used in almost all kinds of human activity ranging from industrial production, household use, agriculture, commerce for running machines, lighting, and heating.

### **Heat**

Heat is an energy carrier primarily used for warming spaces and industrial processes. Heat energy reported in this publication includes district cooling energy. District cooling is the production and delivery of chilled water via insulated pipelines from central water chilling plants to various customers.

## Sources of electricity and heat:

### **Thermal**

Electricity and heat generation from combustible fuels such as coal, oil, and gas.

### **Hydro**

Electricity generation from hydro plants, including pumped up (pumped storage) plants.

### **Nuclear**

Electricity and heat generation from nuclear plants.

### **Geothermal**

Electricity and heat generation from geothermal plants.

### **Renewable energy**

Electricity and heat generation from solar, biomass, and waste and electricity generation from tide, wave, ocean, and wind.

#### Solar

- Electricity: quantity of electricity generated by solar photovoltaics and from solar thermal systems.
- Heat: solar energy exploited for hot water production by flat plate collectors which are mainly of the thermosyphon type. This heat is mainly for domestic hot water or for the seasonal heating of swimming pools.

*Note: Passive solar energy for the direct heating, cooling, and lighting dwellings or other buildings is not included.*

#### Tide/wave/ocean

Electricity produced from tide/wave/ocean.

#### Wind

Electricity produced from devices driven by wind.

#### Biomass

Electricity and heat produced by fuelwood, wood waste, bagasse, other biomass, biogas, and liquid biofuels.

#### Waste

Electricity and heat produced by industrial waste and municipal solid waste.

#### Others

Electricity and heat generation from other fuel sources such as fuel cells, etc.

## B. Definition of flows

### Supply

**Domestic supply = indigenous production + from other sources + imports – exports – international marine bunkers – international aviation bunkers ± stock changes.**

### Production

**P**roduction is defined as the capture, extraction or manufacture of fuels or energy in forms which are ready for general use. In energy statistics, two types of production are distinguished, primary and secondary.

#### *Primary production*

The capture or extraction of fuels or energy from natural energy flows, the biosphere, and natural reserves of fossil fuels within the national territory in a form suitable for use. Inert matter removed from the extracted fuels and quantities reinjected, flared, or vented are not included. The resulting products are referred to as 'primary' products.

#### *Secondary production*

The manufacture of energy products through the process of transformation of primary fuels or energy. The quantities of secondary fuels reported as production include quantities lost through venting and flaring during and after production. In this manner, the mass, energy, and carbon within the primary source(s) from which the fuels are manufactured may be balanced against the secondary fuels produced. Fuels, electricity, and heat produced are usually sold but may be partly or entirely consumed by the producer.

There are a few specificities according to the fuels:

### Oil

Production includes only marketable production, and excludes volumes returned to formation. Such production should include all crude oil, NGL, condensates and oil from shale and tar sand, etc. It should also include the receipts of additives/oxygenates by refineries and blending plants from outside the refinery sector.

#### **Natural gas**

All dry marketable production is measured after purification and extraction of NGLs and sulphur. Quantities reinjected, vented, or flared, are not included. Production includes quantities used within the natural gas industry, in gas extraction, pipeline systems and processing plants.

Calculation of production of hydro, geothermal, solar, wind, etc. and nuclear follows some conventions used by selected international organisations.

With regards to the production of secondary energy in the basic energy statistics, production of secondary oil products represents the gross refinery output. Secondary coal products and gases represent the output from coke ovens, gas works, blast furnaces and other transformation processes. In the energy balances production of secondary products is zero and the gross refinery output is included in the transformation sector.

#### *Production from other sources*

Refers to both primary energy that has not been accounted for under production and secondary energy that has been accounted for

in the production of another fuel. Examples include:

- additives and other hydrocarbons produced from coal, gas, or renewables.
- oil and coal used in natural gas blending plants to adjust calorific value.
- recovered slurries, middling and other low grade coal products which cannot be classified according to the main categories of coal.

## Imports and exports

### *Imports of energy products*

Comprise all fuel and other energy products entering the national territory. Goods simply being transported through a economy (goods in transit) and goods temporarily admitted are excluded but re-imports, which are domestic goods exported but subsequently readmitted, are included. The bunkering of fuel outside the reference territory by national merchant ships and civil aircraft engaged in international travel is excluded from imports. Fuels delivered to national merchant ships and civil aircraft which are outside of the national territory and are engaged in international travel should be classified as 'international marine' or 'aviation bunkers', respectively, in the economy where such bunkering is carried out. Note that the 'economy of origin' of energy products should be recorded as a economy from which goods were imported.

### *Exports of energy products*

Comprise all fuel and other energy products leaving the national territory with the exception that exports exclude quantities of fuels delivered for use by merchant (including passenger) ships and civil aircraft, of all nationalities, during international transport of

goods and passengers. Goods simply being transported through a economy (goods in transit) and goods temporarily withdrawn are excluded but re-exports, foreign goods exported in the same state as previously imported, are included. Fuels delivered to foreign merchant ships and civil aircraft engaged in international travel are classified as 'international marine' or 'aviation bunkers', respectively. Note that 'economy of destination' of energy products (that is economy of the last known destination as it is known at the time of exportation) should be recorded as a economy to which these products are exported to.

Quantities of crude oil and products imported or exported under processing agreements (i.e., refining on account) should be included. Crude oil and NGLs should be reported as coming from the economy of ultimate origin; refinery feedstocks and finished products should be reported as coming from the economy of last consignment. Any gas liquids (e.g., LPG) extracted during the regasification of imported liquefied natural gas should be included as imports. Petroleum products imported or exported directly by the petrochemical industry should be included.

*Note(s):*

- *Imports or exports of ethanol (reported in the Additives/Oxygenate column) should relate to the quantities destined for fuel use.*
- *Re-exports of oil imported for processing within bonded areas should be included as an export of product from the processing economy to the final destination.*

### International marine bunkers

International marine bunkers are quantities of fuels delivered to merchant (including passenger) ships, of any nationality, for consumption during international voyages transporting goods or passengers. International voyages take place when the ports of departure and arrival are in different national territories. Fuels delivered for consumption by ships during domestic transportation, fishing or military uses are not included here. For the purposes of energy statistics, International marine bunkers are not included in exports. Consumption of warships should be included in final consumption under other sector, not elsewhere specified. Consumption by ships engaged in fishing and in transport in inland and coastal waters is not included.

### International aviation bunkers

International aviation bunkers are quantities of fuels delivered to civil aircraft, of any nationality, for consumption during international flights transporting goods or passengers. International flights take place when the ports of departure and arrival are in different national territories. Fuels delivered for consumption by aircraft undertaking domestic or military flights are not included here. Fuels used by airlines for their road vehicles are excluded. The domestic/international split should be determined based on departure and landing locations and not by the nationality of the airline.

### Stock changes

Stocks are quantities of energy products that can be held and used to:

- Maintain service under conditions where supply and demand are variable

in their timing or amount due to normal market fluctuations, or

- Supplement supply in the case of a supply disruption. Stocks used to manage a supply disruption may be called 'strategic' or 'emergency' stocks and are often held separately from stocks designed to meet normal market fluctuations.

Stock changes are defined as the increase (stock build) or decrease (stock draw) in the quantity of stock over the reporting period. They are calculated as a difference between the opening and closing stocks.

### Transfers

This refers to products transferred and inter-product transfers. Product transferred refers to the reclassification (renaming) of products which is necessary when finished oil products are used as feedstock in refineries. Inter-product transfers refer to the movements of fuels between product categories because of reclassification of a product which no longer meets its original specification. The transferred product is often blended with its host. For example, quantities of kerosene may be reclassified as gas oil after blending with the latter to meet its winter diesel specification.

### Statistical difference

This is the difference between calculated and observed gross inland deliveries. National Administrations sometimes obtain the data components of domestic availability from a variety of sources. Owing to differences in concepts, coverage, timing, and definitions, observed and calculated gross inland deliveries are often not identical.

## **Transformation**

Transformation is the process where the movement of part or all the energy content of a product entering a process to one or more different products leaving the process (e.g., coking coal to coke, crude oil to petroleum products, and heavy fuel oil to electricity). The transformation can take place in various plants explained below:

### **Electricity plants**

Electricity plants refer to plants producing only electricity. The electricity may be obtained directly from natural sources such as hydro, geothermal, wind, tidal, marine, solar energy or from fuel cells or from the heat obtained from the combustion of fuels or nuclear reactions.

### **Combined heat and power plants (CHP)**

Combined heat and power plants refer to plants which produce both heat and electricity from at least one generating unit in the plant. They are sometimes referred to as 'co-generation' plants. Both main activity producer (formerly known as public) and autoproducer plants are included here.

### **Heat plants**

Heat plants refer to plants (including heat pumps and electric boilers) designed to produce heat only for deliveries to third parties. Both main activity producer (formerly known as public) and autoproducer plants are included here. Deliveries of fuels for heat generated by an establishment for its own use are classified within the part of final consumption where they are consumed.

Heat plants also include district cooling plants. District cooling plants produce chilled water for

deliveries to third parties. Chilled water is used for air-conditioning.

### **Blast furnace**

Blast furnaces are furnaces which produce blast furnace gas as a by-product when making pig iron from iron ore. During the process, carbon, mainly in the form of coke, is added to the blast furnace to support and reduce the iron oxide charge and provide heat. Blast furnace gas comprises carbon monoxide and other gases formed during the heating and reduction process.

### **Gas works**

Gas works plants are to produce town gas/gas work gas by carbonisation (including gas produced by coke ovens and transferred to gas works gas), by total gasification with or without enrichment with oil products (LPG, residual fuel oil, etc.) and by reforming and simple mixing of gases and/or air.

### **Coke ovens**

Coke ovens are facilities for the carbonisation of coal, principally coking coal, at high temperature. The transformation process provides to produce coke and by-products such as coke oven gas and coal tar.

### **Patent fuel plants**

Patent fuel plants are for the manufacturing of a composition fuel made of hard coal fines and addition of a binding agent.

### **BKB plants**

BKB (brown coal briquettes) plants are for the manufacturing of a composition fuel made of lignite/brown coal (including dried lignite fines and dust) produced by briquetting under high pressure without the addition of a binding agent. This includes peat briquettes plants

which produce a similar composition fuel using peat.

### **Petroleum refineries**

Petroleum refineries are industrial plants which transform crude oil and other hydrocarbons into finished oil products. Typical finished products are liquefied petroleum gases, naphtha, motor gasoline, gas oils, aviation fuels and other kerosene, and fuel oils.

### **Petrochemical industry**

Petrochemical industries are industrial plants which convert hydrocarbon feedstock into organic chemicals, intermediate compounds, and finished products such as plastics, fibres, solvents, and surfactants. Feedstock used by the plant is usually obtained from the refinery and includes naphtha, ethane, propane, and middle distillate oils (for example, gas oil). Quantities of backflows or petroleum products returned from the petrochemical sector, whether returned to refineries for further processing/blending or used directly. Note: energy use in the petrochemical sector is reported in the Energy sector, non-energy use is shown in the chemical/petrochemical industrial sector as non-energy.

### **Liquefaction plants**

Liquefaction plants include diverse liquefaction processes, such as coal liquefaction plants and gas-to-liquid plants. Coal liquefaction plants are facilities where coal is used to produce liquid fuels suitable for transportation applications by the removal of carbon or addition of hydrogen, either directly or indirectly.

### **Natural gas blending plants**

These are plants, separate from gas works, in which substitute natural gas, petroleum gases or biogases are mixed with natural gas for

distribution in the gas mains. Where blending of substitute natural gas with natural gas takes place within gas works the blending is considered part of the gas works process.

### **Charcoal production plants**

Charcoal plants are facilities in which wood or other vegetal matter is carbonised through slow pyrolysis to produce charcoal.

### **Other transformation plants**

Other transformation plants represent other energy transformation processes not already covered by the list of definition.

### **Energy sector**

The energy sector covers ISIC Divisions 05, 06, 19 and 35. The energy sector includes the manufacture of chemical materials for atomic fission and fusion and the products of these processes. Fuels used in the manufacture of fuel briquettes and packaged fuel from coal or lignite and consumption in coke ovens and other transformation industries should also be reported here.

Fuels used by the energy industry to support the extraction (mining, oil and gas production) or transformation activity are reported in this category. For example: fuel used for heating, lighting, or operating pumps/compressors, or used as inputs fuel into furnaces or ovens. Note that quantities of fuels transformed into another energy form should be reported under the transformation sector. Consumption used in support of the operation of pipelines (oil, gas and coal slurry) should be reported in the transport sector.

### **Final energy consumption**

The term final energy consumption (equal to the sum of the consumption in the end-use sectors: industry, transport, residential,



commercial/public services, agriculture/forestry, fishing and non-specified) implies that energy used for transformation and for own use of the energy producing industries is excluded. Final consumption reflects for the most part deliveries to consumers. It does not include consumption for non-energy purposes.

### **Industry**

Industry sector covers all industrial undertakings as enumerated below. Sectors included are iron and steel; chemical including petrochemical; non-ferrous metals; non-metallic mineral products; transport equipment; machinery; mining (excluding energy producing industries) and quarrying; food processing, beverages and tobacco; pulp, paper and printing; wood and wood products (other than pulp and paper); construction; textile and leather; not elsewhere specified.

#### **Iron and steel**

Covers ISIC Group 241 and Class 2431. The consumption in coke ovens and blast furnaces are defined as part of transformation processes and energy industry own use.

#### **Chemical including petrochemical**

Refers to ISIC Division 20 and 21, excluding ISIC 2011. The consumption by plants manufacturing charcoal or enrichment/production of nuclear fuels is excluded, as these plants are considered part of the energy industries.

- Includes manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms (ISIC 201)
- Other chemical products (ISIC 202), Man-made fibers (ISIC 203)

#### **Non-ferrous metals**

Refers to ISIC Group 242 and Class 2432.

- Manufacture of precious and non-ferrous metals (ISIC 242)
- Casting of non-ferrous metals (ISIC Class 2432)

#### **Non-metallic minerals products**

Covers ISIC Division 23, i.e.: Glass, ceramic, cement and other building materials industries.

- Manufacture of glass and glass products (ISIC 231)
- Non-metallic mineral products (ISIC 239) such as ceramics, tiles, baked clay products and cement

#### **Transport equipment**

Covers ISIC Division 29 and 30, i.e.:

- Manufacture of motor vehicles (ISIC 291) bodies for motor vehicles and semi-trailers (ISIC 292)
- Manufacture of parts and accessories for motor vehicles (ISIC 293)
- Building of ships and boats (ISIC 301)
- Manufacture of railway locomotives and rolling stock (ISIC 302)
- Manufacture of air and spacecraft and related machinery (ISIC 303)
- Manufacture of transport equipment not elsewhere classified (ISIC 309)

#### **Machinery**

Refers to Fabrication of metal products, machinery and equipment other than transport equipment. ISIC Division 25, 26, 27 and 28.

Includes manufacture of:

- Structural metal products, tanks, reservoirs and steam generators (ISIC 251)
- Weapons and ammunition (ISIC 252)
- Other fabricated metal products; metalworking service activities (ISIC 259)
- Electronic components and boards

(ISIC 261)

- Computers and peripheral equipment (ISIC 262)
- Communication equipment (ISIC 263)
- Consumer electronics (ISIC 264)
- Measuring, testing, navigating and control equipment; watches and clocks (ISIC 265)
- Irradiation, electromedical and electrotherapeutic equipment (ISIC 266)
- Optical instruments and photographic equipment (ISIC 267)
- Magnetic and optical media (ISIC 268)
- Electric motors, generators and transformers and electricity distribution and control apparatus (ISIC 271)
- Batteries and accumulators (ISIC 272)
- Wiring and wiring devices (ISIC 273)
- Electric lighting equipment (ISIC 274)
- Domestic appliances (ISIC 275)
- Other electrical equipment (ISIC 279)
- General purpose machinery (ISIC 281)
- Special purpose machinery (ISIC 282)

Mining (excluding energy producing industries) and quarrying

Refers to ISIC Divisions 13 and 14, i.e.:

- Mining of iron ores (ISIC 131)
- Mining of non-ferrous metal ores (ISIC 132)
- Quarrying of stone, sand and clay (ISIC 141)
- Mining and quarrying not elsewhere classified (ISIC 142)

Food, beverages and tobacco

Refers to ISIC Division 10, 11 and 12, i.e.:

- Processing and preserving of meat, fish, crustaceans and molluscs, fruit and vegetables (ISIC 101, 102, 103)
- Manufacture of vegetable and animal oils fats, dairy products (ISIC 104, 105)

- Manufacture of grain mill products, starches and starch products (ISIC 106)
- Manufacture of other food products (ISIC 107)
- Manufacture of prepared animal feeds (ISIC 108)
- Manufacture of beverages (ISIC 110)
- Manufacture of tobacco products (ISIC 120)

Pulp, paper and printing

Refers to ISIC Division 17 and 18. Includes production of recorded media.

- Manufacture of paper and paper products (ISIC 170)
- Printing and service activities related to printing (ISIC 181)
- Reproduction of recorded media (ISIC 182)

Wood and wood products (other than pulp and paper)

Refers to ISIC Division 16, i.e.:

- Sawmill and planing of wood (ISIC 161)
- Manufacture of products of wood, cork, straw and plaiting materials (ISIC 162)

Construction

Refers to ISIC Division 41, 42 and 43, i.e.:

- Construction of buildings (ISIC 410)
- Construction of roads and railways (ISIC 421)
- Construction of utility projects (ISIC 422)
- Construction of other civil engineering projects (ISIC 429)
- Demolition and site preparation (ISIC 431)
- Electrical, plumbing and other construction installation activities (ISIC 432)
- Building completion and finishing (ISIC 433)
- Other specialised construction activities (ISIC 439)

### Textile and leather

Refers to ISIC Divisions 13, 14 and 15, i.e.:

- Spinning, weaving and finishing of textiles (ISIC 131)
- Manufacture of other textiles (ISIC 139)
- Manufacture of wearing apparel except fur apparel (ISIC 141)
- Manufacture of articles of fur (ISIC 142)
- Manufacture of knitted and crocheted fabrics and apparel (ISIC 143)
- Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur (ISIC 151)
- Manufacture of footwear (ISIC 152)

### Not elsewhere specified

If your economy's industrial classification does not correspond to the above ISIC, please estimate the breakdown by industry and include in "not elsewhere specified" only consumption in sectors which is not covered above. This covers ISIC Division 22, 31 and 32, i.e.: manufacture of

- Rubber products (ISIC 221)
- Plastic products (ISIC 222)
- Furniture (ISIC 310)
- Jewelry, bijouterie and related articles (ISIC 321)
- Musical instruments (ISIC 322)
- Sports goods (ISIC 323)
- Games and toys (ISIC 324)
- Medical and dental instruments and supplies (ISIC 325)
- Others manufacturing not elsewhere classified (ISIC 329)

### **Transport**

All transport activities irrespective of the economic sector in which the activity occurs. Refers to ISIC Divisions 49, 50 and 51.

### Domestic air transport

Refers to domestic aircraft - commercial, private, agricultural, etc. include oil used for purposes other than flying, e.g., bench-testing of engines. Military use of aviation fuels also should be excluded here.

### Road

Transport by road vehicles. It includes agricultural highway use but excludes motor gasoline used in stationary engines (included in the other sector) and diesel oil for non-highway use in tractors (included in agriculture). Lubricants for use in road vehicles should be included here. Bitumen for use in road surfacing and gas oil used in engines at construction sites should not be included here but should be included in the industry subsector 'construction' below.

### Rail

Refers to rail traffic, including industrial railways.

### Inland waterways

Refers to water vessels navigating in inland waterways and coastal shipping. For example: small craft, barges, and those coastal ships which do not travel for international transportation.

### Pipeline transport

Refers to transport of goods through pipelines.

### Not elsewhere specified

Transport activities not included elsewhere.

### **Other**

Other sector covers commercial and public services, residential, agriculture, fishing and other final consumption not elsewhere classified.

#### Commercial and public services

These refer to business and offices in the public and private sectors. ISIC Divisions 01, 02, 03, 33, 36-39, 45-99, ISIC Class 8422.

#### Residential

Refers to all households including 'households with employed persons'. ISIC Divisions 97 and 98.

#### Agriculture

Refers to agriculture, hunting and forestry by ISIC as follows: ISIC Divisions 01 and 02.

#### Fishing

Refers to aquaculture and fisheries, covering the use of fishery resources from marine, brackish or freshwater environments, with the goal of capturing or gathering fish, crustaceans, molluscs and other marine organisms and products (e.g., aquatic plants, pearls, sponges, etc.) Also included are activities that are normally integrated in the process of production for own account (e.g., seeding oysters for pearl production). ISIC Division 03.

#### Not elsewhere specified

Report activities not included elsewhere, please specify. This category includes military use.

#### Non-energy use

Refers to use of energy products as raw materials in the different sectors; that is, not consumed as a fuel or transformed into another fuel. Example: in industry, coal used to make methanol or ammonia.

Non-energy use if further classified into the following:

#### *Chemical (incl. the petrochemical sector)*

Non-energy use of coal includes uses as feedstocks to produce fertiliser and as feedstocks for other petrochemical products.

#### *Transport sector*

Non-energy use in all transport sub sectors.

#### *Other sector*

Non-energy use in commercial and public services, residential, agriculture and not elsewhere specified.

## C. Energy prices

**E**nergy prices are in either local currency units or in US dollars.

### Table 1. Import prices

These are import prices based on cost, insurance and freight (CIF). These prices are obtained by dividing the value by the volume in foreign trade. Value and volume are recorded by customs administrations for each tariff position. Values recorded at the import stage include CIF but exclude import duties.

These are import prices of coal and coal products; crude oil, NGL and petroleum products; electricity and other products including biofuels and other renewable energy products.

The average local currency exchange rate to the US dollar and local currency unit are also required in this table.

### Table 2. Wholesale prices

Table 2 contains wholesale prices. These are the prices that a buyer pays for large volume purchases whether for own consumption of retail. Examples are prices paid by electricity distribution companies to electricity generators or suppliers.

Prices are either in local currency units or in US dollars.

### Table 3. Consumer prices

These are the prices paid by end-use consumers such as motorists purchasing fuels in filling stations, households electricity bills, coal briquette prices in supermarkets, etc. The prices may also be in local currency units or in US dollars.

Electricity prices are prices charged to the industrial, commercial, residential rates and rates to other consumers. Commercial sector includes government services and streetlights

## D. Definition of columns and rows of the energy balance table

### Unit

For presenting its energy balances, APEC has adopted kcal and Joules.  $10^7$  kcal or 41.868 gigajoules (GJ) is equivalent to one ton of oil equivalent (toe). This quantity of energy is, within a few percent, equal to the net heat content of one ton of crude oil.

### Conversion (from original to TOE)

The EGEDA secretariat has adopted specific factors supplied by the member economies for each flow or use. The balances are expressed in term of 'net' heat value. The difference between the 'net' and 'gross' heat value for each fuel is the latent heat in condensation of the water vapor produced during combustion of the fuel. For coal and oil, net heat value is 5 percent less than gross, for most forms of natural and manufactured gas the difference is 9-10 percent, while for electricity there is no difference. The use of net heat value is consistent with the practice of the Statistical Offices of the European Communities and the United Nations.

### Layout

The energy balances are presented in tabular format: columns for the various sources of energy and rows for the different origins and uses.

### Columns

Across the top of the table from left to right, there are thirteen columns with the following headings:

**Column 1:** Coal and peat include all primary coal, such as anthracite, coking coal, other

bituminous coal, sub-bituminous coal, lignite and peat.

**Column 2:** Coal and peat products include all fuels derived from coal including patent fuel, coke oven coke, gas coke, briquettes, coal tar, coke oven gas, blast furnace gas, other recovered gases and peat products.

**Column 3:** Crude Oil & NGL comprise crude oil, refinery feedstocks and natural gas liquids. Natural LPG is included in LPG.

**Columns 4 to 13:** Petroleum products (column 4) comprises motor gasoline, naphtha, jet fuel, kerosene, gas/diesel oil, residual fuel oil, LPG, refinery gas and other petroleum products such as: aviation gasoline, ethane, white spirit, lubricants, bitumen, paraffin waxes and petroleum coke (columns 5 to 13). The definitions of these products are in Appendix A.

**Column 14:** Gas includes natural gas and LNG (excluding natural gas liquids).

**Column 15:** Hydro shows the energy content of the electricity produced in hydro power plants. Hydro output includes output from pumped storage plants.

**Column 16:** Nuclear shows the primary heat equivalent of the electricity produced by a nuclear power plant with an average thermal efficiency of 33 percent.

**Column 17:** Geothermal, solar, etc. shows the primary heat equivalent of the electricity produced in geothermal plants with an average thermal efficiency of 10 percent, and the energy content of electricity produced in non-thermal power plants such as photovoltaic, wind, tide wave etc.

**Column 18:** Others includes wood, wood waste, black liquor, industrial and municipal waste and biomass (power generation from other fuel sources such as defined in 'others' is included here).

**Column 19:** Electricity shows final consumption and trade in electricity (which is accounted at the same heat value as electricity in final consumption, i.e., 1 GWh = 0.0036 Petajoules (PJ)).

**Column 20:** Heat includes heat production from public combined heat and power plants (CHP), from autoproducer's heat that is sold to a third party (e.g., to a network).

**Column 21:** Total = the total of columns 1 to 11.

**Column 22:** Total renewables = the sum of hydro, geothermal, solar, wind, solid and liquid biofuels, and the renewable portions of industrial wastes and municipal solid wastes.

### **Rows**

The categories on the left-hand side of the table have the following functions.

**Row 1:** Indigenous production shows only production of primary energy, i.e., hard coal, lignite, crude oil, NGL, natural gas, hydro and nuclear, geothermal, etc. electricity and others.

**Row 2/3:** Imports and exports comprise amounts having crossed the boundaries of the economy with or without customs clearance.

**Row 4/5:** International marine and aviation bunkers cover those quantities delivered to sea-going ships and international flights of all flags. Consumption by ships and planes engaged in transport in inland and coastal waters is not included.

**Row 6:** Stock changes are treated as follows: a decrease in stocks, shown in the table as a positive number, is added to supply and an increase in stocks, shown as a negative number, is deducted from supply. Producers', importers', energy transformation industries' and large users' stocks are included.

**Row 7:** Total primary energy supply (TPES) is made up of *indigenous production (row 1) + imports (row 2) – exports (row 3) – international marine and aviation bunkers (row 4/5) and ± stock changes (row 6)*.

**Row 8:** Transfers refer to interproduct transfers, product transferred, liquid products from gas separation and recycled products as defined in Appendix B.

**Row 9:** Total transformation sector is made up of *main activity producer (row 10) + autoproducers (row 11) + gas processing (row 12) + petroleum refineries (row 13) + coal transformation (row 14) + other transformation (row 15)*.

**Row 10:** Main activity producer, column 1 to 9 show primary and secondary fuel input to public utilities' plants as negative entries. Gross electricity produced (including power stations' own consumption) appears as a positive quantity in column 11, 'electricity'. Transformation losses appear in the 'total', column 12, as a negative number.

**Row 11:** Autoproducers, columns 1 to 9 show primary and secondary fuel input to electricity generation of autoproducers as negative entries. An autoproducer is an establishment which, in addition to its main activities, generates electricity wholly or partially for its own use, such as industries, railways, refineries etc. Total gross electricity produced appears as a positive quantity in column 10, 'electricity'.

Transformation losses appear in the 'total', column 12 as a negative number.

**Row 12:** Where there is a production of gas at gas-to-liquid facilities, the treatment is similar to that for electricity generation, with the quantity produced appearing as a positive figure in column 5 'gas', input as negative entries in column 1 (coal), 2 (coal products), 4 (petroleum products) and 5 (natural gas input) and conversion losses appearing in the 'total' column.

**Row 13:** The petroleum refineries row shows the transformation of crude oil, NGL and condensate to petroleum products.

**Row 14:** Coal transformation shows the transformation of coal from primary to secondary fuels and from secondary to tertiary fuels (hard coal to coke, coke to blast furnace gas, brown coal to BKB, etc.)

**Row 15:** Other transformation: contains the energy feedstocks and outputs of petrochemical industry, biofuel processing, charcoal processing and other transformation processes that are not classified elsewhere.

**Row 16:** Loss & own use: own use contains the primary and secondary energy consumed by transformation industries for heating, traction and lighting purposes. These are shown as negative figures. Included here are, for example, the coal mines' own use of energy, energy use in refineries, electricity plants' own consumption (which includes gross electricity consumed for pumped storage), and energy used for oil and gas extraction (which also includes consumption for the pipeline system). Loss includes losses in gas distribution, electricity transmission, and coal transport.

**Row 17:** Discrepancy is a category which includes the sum of the unexplained statistical differences for individual fuels.

**Row 18:** Total final consumption (TFC) is the sum of total final energy consumption (TFEC) in row 19 and non-energy use in row 36.

**Row 19:** Total final energy consumption (TFEC) is the sum of consumption by the different end-use sectors (row 20, 25, 31).

**Row 20:** Consumption of the industry sector (energy used for transport by industry is not included here but reported under transport).

**Row 21:** Iron and steel covers ISIC Group 241 and Class 2431. Report pulverised coal injection (PCI) into blast furnaces under blast furnaces, Transformation sector. To avoid double counting, fuels used in blast furnaces should be reported in the transformation sector.

**Row 22:** Chemical & petrochemical refers to ISIC Division 20 and 21.

Includes manufacture of basic chemicals (ISIC 201)

Other chemical products (ISIC 202), Man-made fibers (ISIC 203)

**Row 23:** Non-metallic minerals covers ISIC Division 23, i.e.: Glass, ceramic, cement and other building materials industries.

Manufacture of glass and glass products (ISIC 231)

Non-metallic mineral products (ISIC 239) such as ceramics, tiles, baked clay products and cement



**Row 24:** Other industries cover consumption of all other manufacturing industries, mining, quarrying and constructions.

**Row 25:** The transport sector includes all fuels for transport, except international marine bunkers. It includes transport in the industry sector and covers road, railway, domestic air transport, inland waterways (including small craft, fishing vessels and coastal shipping not included under marine bunkers) and non-specified transport.

**Row 26:** Domestic air transport refers to domestic aircraft - commercial, private, agricultural, etc. include oil used for purposes other than flying, e.g., bench-testing of engines. Military use of aviation fuels also should be excluded here.

**Row 27:** Road covers transport by road vehicles. It includes agricultural highway use but excludes motor gasoline used in stationary engines (included in the other sector) and diesel oil for non-highway use in tractors (included in agriculture). Lubricants for use in road vehicles should be included here. Bitumen for use in road surfacing and gas oil used in engines at construction sites should not be included here but should be included in the industry subsector 'construction'.

**Row 28:** Rail refers to rail traffic, including industrial railways.

**Row 29:** Inland waterways refers to water vessels navigating in inland waterways and coastal shipping. Examples include small craft, barges, and those coastal ships which do not travel for international transportation.

**Row 30:** Non-specified transport covers pipeline transport and other transport activities not included elsewhere.

**Row 31:** Other sectors cover agriculture, residential, commercial and public services, and non-specified consumption.

**Row 32:** Refers to all households including 'households with employed persons.' ISIC Division 97 and 98.

**Row 33:** These refer to business and offices in the public and private sectors.

**Row 34:** Consumption of the agriculture sector.

**Row 35:** Other shows non-specified use which may include military use.

**Row 36:** Non-energy use covers use of coal, gas, and petroleum products such as white spirit, paraffin waxes, lubricants, bitumen, and other products. Petroleum coke is shown as non-energy use only when there is evidence of such use; otherwise, it is shown under energy use in industry or other sectors. This covers all oil including naphtha, except the other petroleum products listed above, and gas used as petrochemical feedstock. Gas, which is specifically used as raw material for chemical products such as methanol and ammonia/urea, is also included.

## E Conversion factors

### Coal

Coal has separate factors for production, imports, exports, inputs to power plants, coal used in coke ovens, and coal used in industry. Each economy's individual conversion factors are applied.

### Crude oil

The conversion factors of each economy are applied as shown in the table of conversion factors.

### Petroleum products

The conversion factors of each economy are applied.

### Gas

To convert the gross heat content of a gas to its net heat content, the following multiplying factors were used:

Natural gas	0.9
Gas works gas	0.9
Coke oven gas	0.9
Blast furnace gas	1.0

### Electricity

Figures for electricity production, trade, and final consumption are calculated using the energy content of the electricity, i.e., at a rate of 1 TWh = 3.6 PJ. Hydro-electricity production (excluding pumped storage) and electricity produced by other non-thermal means (wind, tide, photovoltaic, etc.) are accounted for similarly using 1 TWh = 3.6 PJ. However, the primary energy value ascribed to nuclear

power plants is calculated from the gross generation by assuming that only 33% of the primary energy content appears as electricity, i.e., 1 TWh = (3.6/0.33) PJ. In the case of electricity produced from geothermal heat the primary value is calculated using 1 TWh = (3.6/0.1) PJ.

### Heat

Information on heat is supplied in net kilocalories. 10<sup>10</sup> kilocalories = 1 ktoe = 0.041868 PJ

### Others

The conversion factors used for other energy, such as wood, wood waste, black liquor, etc. are those that are provided by each economy. In cases where the member economies cannot provide a conversion factor, the CA used the following net calorific values in kcal/kg.

Fuelwood and wood waste	3 702
Bagasse	1 959
Charcoal	6 898
Industrial waste	3 344
Municipal solid waste	3 344
Other biomass	2 986

**Average net calorific values of energy products for 2019**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Coal</b>									
Anthracite	26 700		26 381			29 299		27 246	20 218
Coking coal	28 500		25 007	29 724				28 076	28 010
Other bituminous coal	25 700		27 226	22 306	22 513	26 370	24 618	25 050	23 697
Sub-bituminous coal	18 478		17 897						21 353
Lignite	9 800		14 019						
Peat									
<b>Coal Products</b>									
Patent fuels									19 385
Coke oven coke	27 000		27 457	28 591	28 469			29 181	28 889
Coal tar	35 714			38 841	33 494			35 393	37 000
Coal briquettes	20 995				17 796		19 845		
<b>Crude oil and NGL</b>									
Crude oil	43 282	45 000	42 790	43 203	41 868		5 862	42 048	42 203
Natural gas liquids	45 410	45 636	45 220	48 127			5 862	45 290	
Refinery feedstocks	43 282						5 862	42 500	47 164
Additives/oxygenates			25 120	22 651			5 862		44 079
Other hydrocarbons			41 868	35 198	41 868		5 862		
<b>Petroleum products</b>									
Refinery gas	48 100	47 600	48 100	48 100	46 055			48 100	48 100
Ethane	49 400								
LPG	47 700	46 151	47 300	47 300	50 242	45 544	5 862	47 700	47 700
Motor gasoline	44 600	44 749	44 800	44 800	43 124	42 776	5 862	44 600	44 600
Aviation gasoline	44 600		44 800	44 800			5 862	44 600	44 600
Gasoline-type jet fuel									
Kerosene-type jet fuel	44 500	44 581	44 600	44 600	43 124	42 966	5 862	44 500	44 500
Other kerosene	42 900	44 581	43 800	43 800	43 124	44 053	5 862	42 900	42 900
Gas/diesel oil	42 600	43 379	42 600	43 300	42 705	42 496	5 862	42 600	42 600
Fuel oil	42 600		40 200	40 200	41 868	41 500	5 862	42 600	42 600
Naphtha	43 200		45 000	45 000	38 418	44 129	5 862	43 200	43 200
White spirit SBP					38 418				
Lubricants		41 801			38 418		5 862		
Bitumen		40 001			38 418				
Paraffin wax					38 418				
Petroleum coke	33 800		32 000	32 000	30 773			33 800	33 800
Other products	40 000	46 151	40 000	40 000	38 979		5 862	40 000	40 000
<b>Natural gas</b>									
Natural gas		37 645			37 259	38 542	36 031		
<b>New and renewables</b>									
Fuel wood and wood waste									
Bagasse									
Charcoal				28 232		29 300		29 300	
Other biomass									
Industrial waste									
Municipal solid waste									
Biogasoline	26 800		26 800					26 800	
Biodiesel	36 800		36 800			37 800	40 570	36 800	
Other liquid biofuels									

Note: The Net Calorific Values are used to convert the unit of each product to tons of oil equivalent (toe). 1 toe = 41.868 TJ

Some economies reported data in energy units (TJ, ktoe, mboe). Therefore, the calorific value were calculated.

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	The Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam
	26 607					29 000		28 240	31 401	30 464	23 446
	29 040	29 753				28 500		27 882	27 633	28 246	
	25 875	26 561			22 098	25 362	25 800	23 664	26 377	26 745	
	19 869	20 220						19 556		19 028	
	11 364	16 303				14 918			10 467	13 968	
						9 965					
	28 523	29 500				29 015		27 842		28 865	
	37 970										
	18 000								26 377		
	43 509	43 080	42 370			42 077		37 681	42 239	42 901	42 705
	41 397	45 782	42 370			41 910			49 225	46 315	45 636
	42 350	43 884								43 538	
	34 055							37 681		37 863	
	41 868								49 225	51 004	
	48 100	48 100						37 522		48 100	
									46 905	49 400	
	47 300	47 700	47 698					27 779	49 403	47 300	45 636
	44 800	44 600	44 606					32 657	42 490	44 800	43 961
	44 800	44 600								44 800	
	44 600	44 500	44 517					33 494	43 015	44 600	43 124
			42 846					35 588	42 643	43 800	43 124
	42 600	42 600	43 063					35 169	43 158	42 600	42 705
	40 200	42 600	44 047					40 193	42 134	40 200	41 449
	45 000		43 967					32 657		45 000	
								37 681			
								40 193			42 140
								41 868			41 800
								37 681			
	32 000	33 800						34 332		32 000	
	40 000	40 000	40 206					37 681	41 868	40 000	41 449
			38 365	36 389	34 436			37 688	36 098		37 681
	30 800		30 800			30 800					
		29 657						22 169	29 673	32 021	26 800
								35 169	42 424	42 179	
										21 583	

## F. Currency codes

<b>Code</b>	<b>Currency</b>	<b>Economy</b>
AUD	Australian Dollar	Australia
BND	Brunei Dollar	Brunei Darussalam
CAD	Canadian Dollar	Canada
CLP	Chilean Peso	Chile
CNY	Yuan Renminbi	China
HKD	Hong Kong Dollar	Hong Kong, China
IDR	Rupiah	Indonesia
KRW	Won	Korea
MYR	Malaysian Ringgit	Malaysia
MXN	Mexican Peso	Mexico
NZD	New Zealand Dollar	New Zealand
PGK	Kina	Papua New Guinea
PEN	Nuevo Sol	Peru
PHP	Philippine Peso	The Philippines
RUB	Russian Ruble	Russia
SGD	Singapore Dollar	Singapore
TWD	New Taiwan Dollar	Chinese Taipei
THB	Baht	Thailand
USD	US Dollar	United States
VND	Dong	Viet Nam

# APEC

## ENERGY STATISTICS

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# 2019

**ENERGY WORKING GROUP**  
**JULY 2022**

**EGEDA SECRETARIAT**  
**ENERGY STATISTICS AND TRAINING OFFICE**  
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