



**Asia-Pacific  
Economic Cooperation**

# **APEC**

## **ENERGY STATISTICS**

# **2016**

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**ENERGY WORKING GROUP  
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**ENERGY STATISTICS AND TRAINING OFFICE  
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## PREFACE

The APEC Energy Statistics 2016 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; 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 2016 and 2015 and Energy Prices for 2016. 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 2016. The objective is to report the most recently updated data.

APEC Energy Statistics 2016 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 share of renewable energy in total final energy consumption. It is prepared in close cooperation with member economies.

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# **1 Background information on APEC energy statistics**

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 (APERC) 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 26<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 APERC.

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### **APEC energy data and APEC energy goals**

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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.

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### **Energy data**

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APEC 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 of the APEC annual energy questionnaires, the member economies submitted the following information:

- Supply and demand information for specific types of energy products
- Power generating capacity by type of power plants
- Demand and supply information of NRE

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 bio-fuels	1000 Metric Tons
Biogas	10 <sup>10</sup> kcal (gross)
Electricity (including renewable)	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**

<b>Coal</b>	<b>Petroleum Products</b>	<b>Hydro</b>
Coking coal	Gasoline	<b>Nuclear</b>
Other bituminous coal	Motor gasoline	<b>New and renewable energy</b>
Sub-bituminous coal	Aviation gasoline	Geothermal electricity
Anthracite	Naphtha	Solar photovoltaic
Lignite	Jet fuel	Tide, wave and ocean
Peat	Gasoline type jet fuel	Wind
<b>Coal products</b>	Kerosene type jet fuel	Geothermal heat
Coke oven coke	Other kerosene	Solar heat
Coke oven gas	Gas/diesel oil	Wood straw pellets/briquettes
Blast furnace gas	Fuel oil	Fuelwood
Other recovered gases	LPG	Wood waste
Patent fuel	Refinery gas	Bagasse
Coal tar	Ethane	Rise husks
BKB/PB	White spirit SBP	Straw
Gas works gas	Lubricants	Charcoal
<b>Crude Oil &amp; NGL</b>	Bitumen	Other vegetal and agricultural wastes
Crude oil	Paraffin waxes	Other primary solid biomass
Natural gas liquids	Petroleum coke	Biogases
Refinery feedstocks	Other petroleum products	Industrial wastes
Additives / oxygenates	<b>Gas</b>	Municipal solid wastes
Other hydrocarbons	Natural gas	Black liquor
	LNG	Liquid biofuels
		<b>Electricity</b>
		<b>Heat</b>



Table 1.1b • Energy flows in the APEC energy database

<b>Indigenous production</b>	<b>Total transformation sector</b>	<b>Total final energy consumption</b>
<b>Imports</b>	<b>Main activity producer</b>	<b>Industry sector</b>
<b>Exports</b>	Electricity plants	Iron and steel
<b>International marine bunkers</b>	CHP plants	Chemical including petrochemicals
<b>International aviation bunkers</b>	Heat plants	Non-ferrous metals
<b>Stock changes</b>	District cooling plants	Non-metallic minerals
<b>Total primary energy supply</b>	<b>Autoproducer</b>	Transportation equipment
<b>Transfers</b>	Electricity plants	Machinery
Recycled products	CHP plants	Mining and quarrying
Inter-product transfers	Heat plants	Food, beverages and tobacco
Products transferred	District cooling plants	Pulp, paper and printing
Gas separation	<b>Gas Processing</b>	Wood and wood products
	Gas works	Construction
	Liquefaction	Textiles and leather
	Re-gasification	Non-specified Industry
	Natural gas blending plants	<b>Transport sector</b>
	Gas-to-liquid plants	Domestic air transport
	<b>Refineries</b>	Road
	<b>Coal transformation</b>	Rail
	Coke ovens	Inland waterways
	Blast furnaces	Pipeline transport
	Patent fuel plants	Non-specified transport
	BKB/PB plants	<b>Other sector</b>
	Liquefaction (coal to oil)	Commerce and public services
	<b>Petrochemical industry</b>	Residential
	<b>Biofuel processing</b>	Agriculture
	<b>Charcoal processing</b>	Fishing
	<b>Non-specified transformation</b>	Non-specified others
	<b>Losses and own-use</b>	<b>Non-energy use</b>
	Own-use	Transformation sector
	Transmission and distribution losses	Industry sector
		Transport sector
		Other sector

However, in 2017, ESTO decided to allow member economies to report original 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 in a uniform 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 Data Centre. 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 to end of February 2018. In principle, all 21 APEC members are expected to submit annual data by this deadline. Four economies were able to submit the five energy questionnaires on time. These are Chile; Indonesia; the Philippines 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.

All data were collected by June 2018. However, the data from Hong Kong, China and Viet Nam were still preliminary.

#### *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 carried out through email communication.

#### *Method of estimation*

For economies that lack detailed data as well as those that did not submit the questionnaires, ESTO estimated 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 such as the JODI Oil and JODI Gas data, 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. No information on NRE (except for hydro) was available for the economy. From those data and the economic indicators collected from World Bank for the year 2016, ESTO estimated the final energy consumption, 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.

As regards Singapore, although the economy submitted the questionnaires, the data lacked the level of details that the energy balance table requires. Hence, ESTO as advised by Singapore, used the energy statistics and energy balance produced by IEA as the economy agrees with IEA's methodologies and estimates.

Finally for Viet Nam, ESTO filled-out the questionnaires and produced the required energy

balance table using the energy commodity balance and energy balance table submitted by the economy.

### Standardisation

The APEC reporting format used in the collection of 2016 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 the two calorific values, namely gross and net calorific values, APEC adopted the net calorific value agreed from the third experts meeting held in Singapore 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 adjustment. Tables 2 through 5 allow comparisons among member economies.

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### Energy balance table

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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.

The APEC energy balance table consists of two tables, quoted in ktoe ( $10^{10}$  kilocalories) and in petajoules (PJ equivalent to  $10^{15}$  joules).

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### Other tables

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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 shows information that constitute the primary energy supply, namely, indigenous production, imports, exports, stock change, and international marine and aviation

bunkers in terms of calorific values (ktoe and 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.

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### Notes on member economies

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#### *General notes*

Most of the member economies' annual data are tallied by calendar year (1 January - 31 December) except for Australia; Australia's energy statistics are accounted by fiscal year (1 July - 30 June).

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*

##### • **Japan**

Energy data from 2000 are not official data prepared by the Japanese Government. ESTO used data in the

energy balance table produced by the Institute of Energy Economics, Japan to maintain consistency of data from before 2000.

• **Papua New Guinea**

ESTO estimated the energy balance tables of Papua New Guinea from 2004 to 2016. 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. There is no reliable information on biomass use especially in the household sector, so ESTO did not estimate consumption of this energy source. Despite the absence of estimates, it is believed that the consumption of this fuel is substantial in the economy considering the relatively low electrification rate and the large portion of the population living in the rural areas.

• **Singapore**

Singapore submitted aggregated data on production and consumption of petroleum products. From the 2014 data, upon the advice of the focal point in the

economy, ESTO obtained the data (with permission of IEA) from IEA's energy statistics.

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**Socio-economic data**

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The socio-economic data of each member economy shown in the APEC Energy Statistics are not reported by the member economies, but are prepared by ESTO. The data are obtained from the *World Development Indicators* of the World Bank and *The International Financial Statistics Yearbook* of the International Monetary Fund (IMF). 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.

In addition to downloading GDP in the member economies' local currency, ESTO provides GDP estimates in constant dollar values.

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**APEC energy database**

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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/>.



## **2 Overview of APEC Energy Situation**

## Background

This Overview gives a detailed look on the energy situation in APEC in 2016. The first part of the analysis provides an analysis of the total APEC as compared with the world. For a better understanding of the terms used in the Overview chapter, definitions of terms were also provided in the Appendices. Specific analyses mostly referred here were by region. In view of the big differences in the scales of China, Russia and the US with the other APEC economies, they were considered as regions in the analyses. Hence for ease of comparison with other APERC publications, this Overview followed the regional groupings of APEC Energy Demand and Supply Outlook as follows:

- 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
- United States

Also for the first time, the 2016 edition included an analysis on the APEC goals: i.e. energy intensity reduction goal and the RE doubling goal. In doing so, disaggregation by fuel and by sector will have slight differences in this edition from the previous issues of APEC Energy Statistics publication.

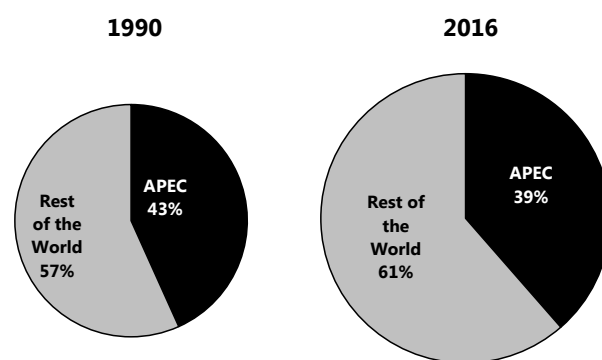
## APEC and the world

The following briefly describes APEC in terms of population, GDP and total primary energy supply (TPES) as compared with the world in 2016 and over the period 1990 to 2016.

Population growth in APEC continued its slowing pace. The 0.7% compounded annual growth rate (CAGR) over the last 10 years was maintained, to reach 2.87 billion people in 2016. Despite the population growths registered in Oceania (1.7%), other Americas (1.2%) and South-East Asia (1.1%) in 2016, these were offset by the dwindling population growth in all other regions in APEC (0.4% on average). The sluggish growth had resulted to the decline of APEC's share—from 43% in 1990 to less than 40% in 2016—in the world's population (Figure 2.1).

Similar trend was also observed in the population of the rest of the world over the last two decades—1.6% CAGR from 1990 to 2016. It grew 1.5% from 2015 to reach 4.57 billion inhabitants in 2016.

**Figure 2.1 • World population, 1990 and 2016**



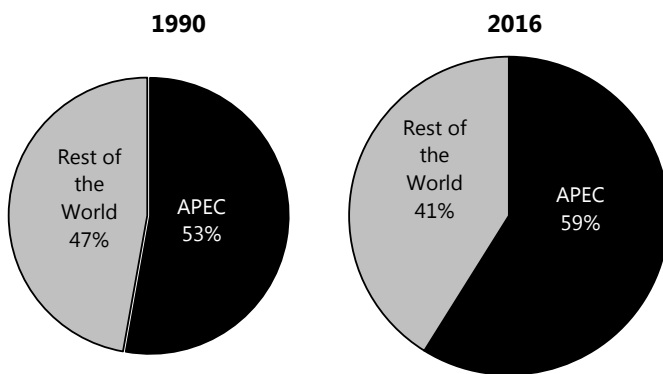
Source: World Bank data, ESTO analysis

In 2016, APEC economy continued to outperform the rest of the world with a 3.5% increase in GDP from 2015 to reach 61.2 billion USD (PPP, constant 2011 USD). The rest of the world grew by only 2.9% during the same period. Economic growths in China (6.7%), South-East Asia (4.7%) and Oceania (2.9%) continued



to contribute in APEC growth from 2015 to 2016. Most economies recorded positive growth rates in 2016 except for Brunei Darussalam (-2.5%) and Russia (-0.2%), two of APEC's significant net oil exporters, as an aftermath of oil price drop since mid-2014. Nevertheless, APEC GDP (PPP, constant 2011 USD) managed to post a six percentage point rise from the 1990 level of 53% (Figure 2.2).

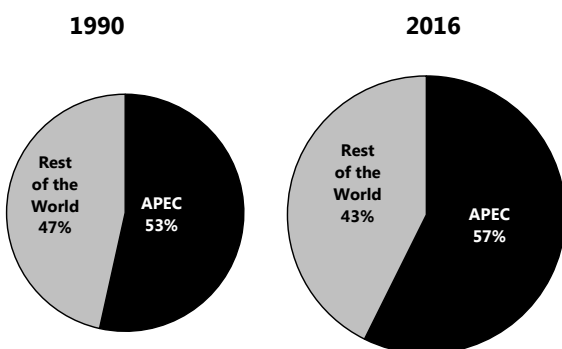
**Figure 2.2 • World GDP PPP (constant 2011 USD), 1990 and 2016**



Source: World Bank data, ESTO analysis

Similarly, in terms of primary energy supply, APEC accounted for more than 50% of the world's total primary energy supply (TPES) in 2016 (Figure 2.3). This is also equivalent to a 2.0% CAGR rise between 1990 and 2016 as compared with the rest of the world's 1.4% CAGR over the same period.

**Figure 2.3 • World total primary energy supply, 1990 and 2016**

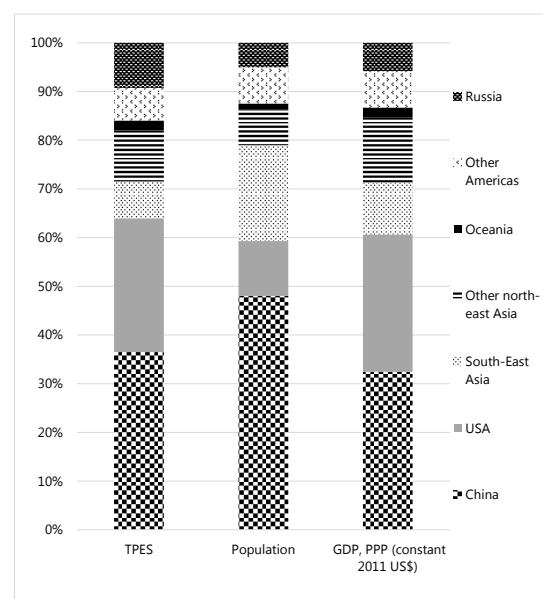


Sources: APEC and IEA data, ESTO analysis

TPES of APEC in 2016 recovered slowly at 0.3% to reach 7 892 million tonnes of oil equivalent (Mtoe). The sluggish growth can be attributed to the decline in the primary energy consumption in major economies and regions in APEC such as the United States (-1%) and China (-0.6%). The upsurges in Oceania and South-East Asia (both at 3.3%) and Russia (3.1%) somehow offset the decreases in the mentioned regions so that APEC TPES bounced back slowly in 2016.

The relative shares of GDP (PPP, constant 2011 USD), population and TPES in APEC were generally dominated by China and the US, while shares of the other economies varied from one another (Figure 2.4). Specifically, in terms of TPES, the top three regions in 2016 were China (21%), the US (16%) and other north-east Asia (6%). The combined amount of these three regions was equivalent to the TPES of the rest of the world (43%). The same regions topped APEC GDP (PPP, constant 2011 USD) with the following shares: China (18%), the US (15%) and other north-east Asia (7%), while the rest of the world's share in 2016 was 45%

**Figure 2.4 • TPES, Population and GDP in APEC, 2016 relative shares**



Sources: APEC, IEA and World Bank data, ESTO analysis

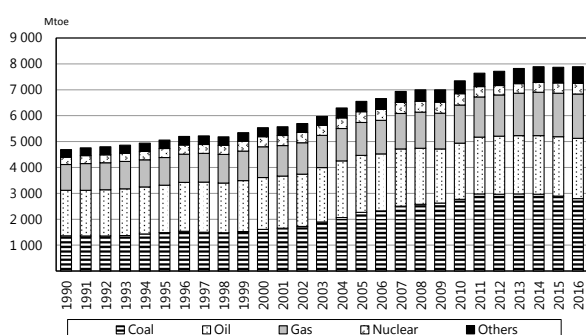
Key energy trends in APEC from 1990 to 2016 are described in the following sections.

## Energy supply trends in APEC

### Total primary energy supply

Total primary energy supply (TPES) in APEC in 2016 was 7 892 Mtoe. The slight increase from 2015 TPES levels was due in part to the significant increases in renewable energy (5.4%) and nuclear (3.6%) in 2016 (Figure 2.5). By region, Russia can also be attributed to the increase in APEC TPES, which also bounced back significantly from its contraction in the previous year with a 3.1% surge in 2016. The US and for the first time China, although minimal, recorded negative growths in 2016 at 1.0% and 0.6%, respectively.

**Figure 2.5 • Total primary energy supply, 1990-2016**



Source: APEC data, ESTO analysis

Coal (35%) remained the dominant fuel in APEC, although it has been continuously decreasing for the last three years. In 2016, it slide one percentage point further (-2.5% in 2015 to -3.4% in 2016) to 2 797 Mtoe from 2 894 Mtoe in 2015. The decline in total coal supply can be attributed to the substantial decreases in the US (-8.7%), China (-3.7) and Russia (-2.7%). Given this decrease in coal primary consumption, its compounded annual growth rate (CAGR) between 1990 and 2016 was 2.8%.

Oil was the second largest fuel in APEC in 2016 with its share of APEC TPES remained unchanged since

2011 at 29%. The growth was also maintained at 1.4% in 2016 despite dips from other Americas (-3.7%) and the US (-0.3%) from the 2015 levels. Increases in most of the regions in APEC, especially in Russia (10.5%) and South-East Asia (5.6%) offset the mentioned contractions.

In 2016, gas supply posted a 2.2% rise from the 2015 levels to reach 1 714 Mtoe. The CAGR of gas supply over the period 1990-2016 was maintained at 2.1%.

Hydro, geothermal, solar and wind energy which collectively grew by 5.4% from 2015 to 2016 contributed mainly to the slight increase in TPES. While the total share of these renewable energy sources remained modest at 8% of APEC TPES, the CAGR over the period 1990 to 2016 continued to be the highest among the fuels at 3.0%.

Nuclear, another type of fuel with a minimal share in APEC TPES (5%), can also be attributed to the TPES growth with its 3.6% upturn in 2016. This was largely due to the huge increase in China (23.6%) from 2015 to 2016 and in part by the resumption of operation of some facilities in Japan boosting nuclear supply in other north-east Asia to 2.7%. Its CAGR between 1990 and 2016 reached 1.4%.

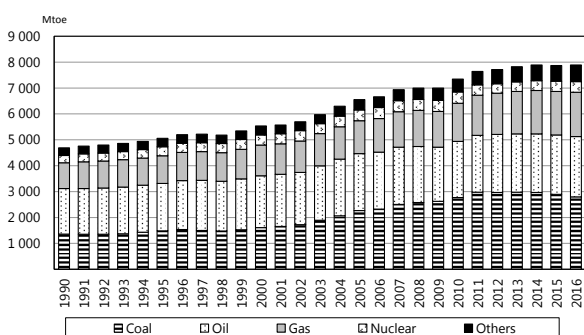
### Primary energy mix by region

Fossil fuels continued to dominate APEC primary energy mix in 2016 with 87% share of TPES (Figure 2.6). As in previous years, coal (35%) was the major fuel in APEC followed by oil (29%) and gas (22%). China had the largest share of coal supply (68%), followed by the US (12%). On the other hand, the US had the largest share of oil supply (34%), followed by China (24%) and other north-east Asia (14%). The US (38%), Russia (22%) and China (11%) had the largest share of natural gas supply. The US also had the largest share of APEC nuclear supply with 53%.

Primary energy mix per region varied significantly.

Similar pattern of energy mixes were observed in three biggest regions in APEC in 2016, although respective shares have changed as compared with 2015. Overall primary mix in China consisted of coal (66%), oil (19%) and renewables (7%). The top three fuels in the US in 2016 were oil (36%), gas (30%) and coal (16%). In Russia, gas (51%) comprised the largest of its energy mix, followed by oil (24%) then coal (15%).

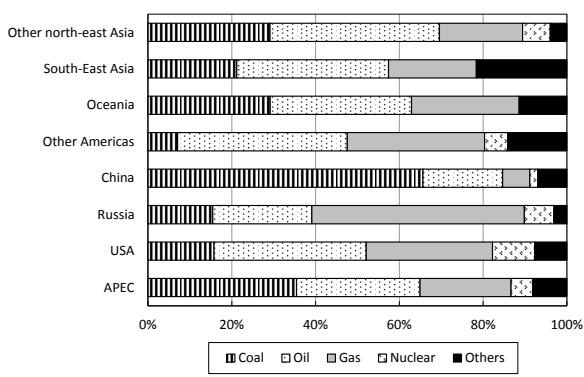
**Figure 2.6 • Primary energy mix, 1990-2016**



Source: APEC data, ESTO analysis

In the remaining regions: other Americas, other north-east Asia, South-East Asia and Oceania, oil remained the common major fuel, comprising more than one-third of their respective primary energy mixes in 2016 (Figure 2.7).

**Figure 2.7 • Primary energy mix by region, 2016**



Source: APEC data, ESTO analysis

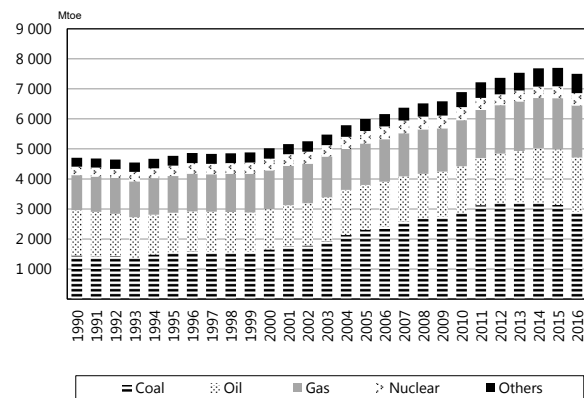
While most of these regions consisted of either coal or gas as the second or third major fuel, renewables

was the second and third largest in South-East Asia and other America's energy mixes in 2016 with 22% and 14%, respectively. Other fuels or renewables include traditional biomass which is used widely in the rural areas.

*Indigenous production*

Indigenous energy production decreased 2.5% to reach 7 502 Mtoe in 2016. This was the first time in 20 years that indigenous energy production in APEC dropped, due mainly to the decreases in indigenous coal (-7.4%) and oil (-1.8%) production. Renewables and nuclear production continued to improve significantly with 5.5% and 3.6% increases, respectively from the 2015 levels, but not enough to sustain the positive level of production in APEC. The significant contraction of indigenous production in 2016, brought the CAGR between 1990 and 2016 down to 1.9% (Figure 2.8).

**Figure 2.8 • APEC Indigenous production, 1990-2016**



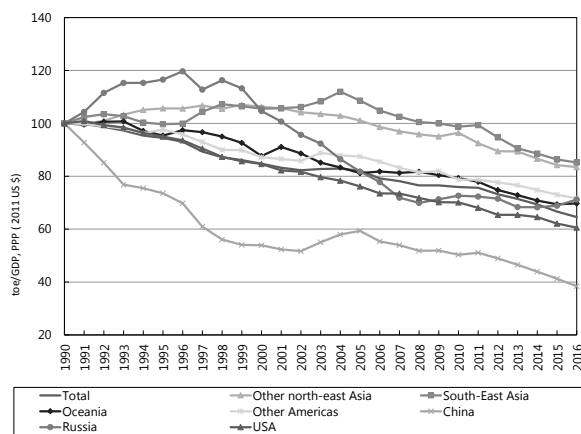
Source: APEC data, ESTO analysis

*Primary energy intensity*

Given the slowing of TPES in 2016, its primary energy intensity [Total primary energy supply/GDP (PPP, constant 2011 USD)] consequently improved. The primary energy intensity in 2016 was 129 toe/million (PPP, constant 2011 USD), a 3.2% reduction over the previous year's primary energy intensity level and

35% improvement over the 1990 level (200 toe/million (PPP constant 2011 USD). On regional level, China's primary energy intensity continued to improve significantly with 6.8% reduction from the 2015 primary intensity level, followed next by the US and South-East Asia with 2.4% and 1.3%, respectively (Figure 2.9).

**Figure 2.9 • Primary energy intensity by region, 1990-2016**



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

### Self-sufficiency

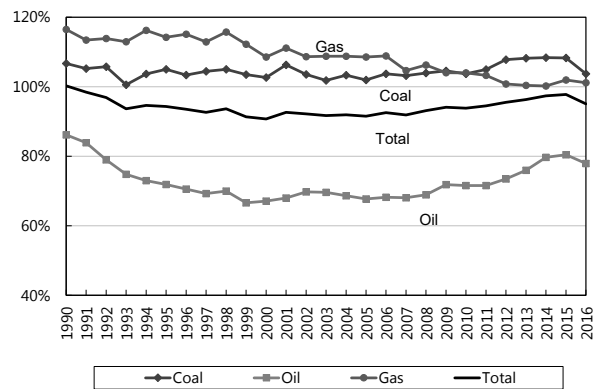
Albeit the dwindling of indigenous production in APEC, the region continued to prove self-sufficient in 2016. The overall self-sufficiency level (*Indigenous production/Total primary energy supply*) of APEC in 2016 was 95%; 2.7% lower than the 2015 level. The self-sufficiency ratio of coal and gas continued to be the highest at 104% and 101%, respectively. Oil sufficiency ratio continued to drop and the lowest (78%) among all fuels in APEC in 2016 (Figure 10).

### Net imports by region

APEC region as a whole is a net importer. Imports increased significantly by 5.9% in 2016. Its net imports (*Imports – Exports*) reached 514 Mtoe in 2016, 18.5% more than net import levels observed in 2015. As a result, the CAGR of net imports between the periods 1990 to 2016 was raised to 5.0%. On regional

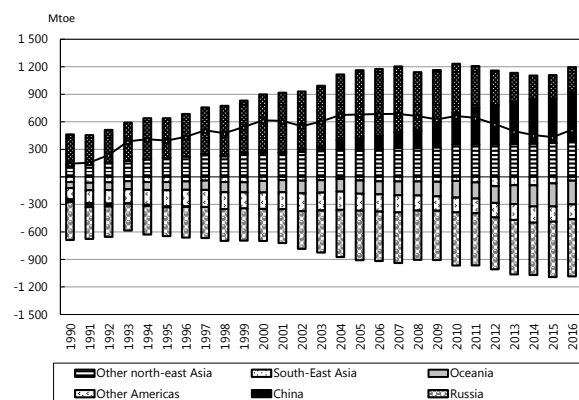
level, China, other north-east Asia, and the US remained net importers in 2016 while the other regions in APEC remained net exporters, the biggest was still Russia (Figure 2.11).

**Figure 2.10 • APEC energy self-sufficiency, 1990-2016**



Source: APEC data, ESTO analysis

**Figure 2.11 • Net imports by region, 1990-2016**



Source: APEC data, ESTO analysis

## Power generation

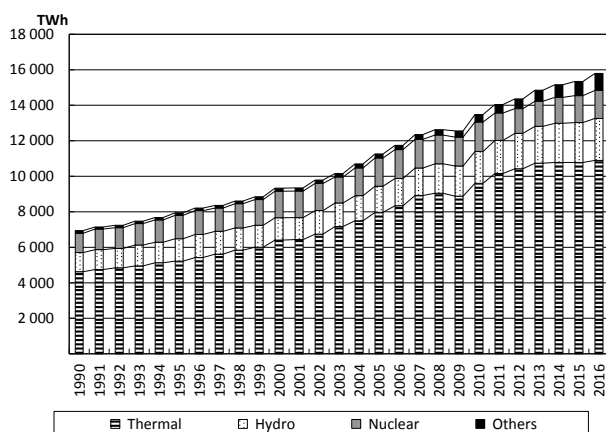
Electricity demand in APEC is continuously increasing. In 2016, power generation was almost three percentage points higher than the previous year to reach 15 791 TWh (4.0%), boosted mainly by significant increases in electricity production from South-East Asia (6.0%) and China (5.6%) CAGR of power generation between 1990 and 2016 in APEC was maintained at 3.2% (Figure 2.12).

Electricity sourced from fossil fuels continued to

dominate the total power generation in APEC, with 69% share of the total generation output in 2016. Fossil fuel mixes were comprised of coal (45%), gas (22%) and oil (2%). Its CAGR over the period 1990-2016 was still significant at 3.3%. Hydropower and nuclear remained the second and third largest sources of electricity in 2016 with 15% and 10% shares of APEC power generation, respectively.

Total power generation from renewables (biomass, solar, wind and others) — although its share was minimal — was soaring with 20.2% rise in electricity production in 2016. The almost 100% increase of power generation from biomass, wind and solar in South-East Asia and 30.3% in China from 2015 to 2016—brought in part by sharp reduction in solar photovoltaic cost—pushed-up electricity generation from renewables in APEC. Power generation from hydro and geothermal likewise showed significant increases with 8.3% and 4.4%, respectively in 2016.

**Figure 2.12 • Power generation by type, 1990-2016**



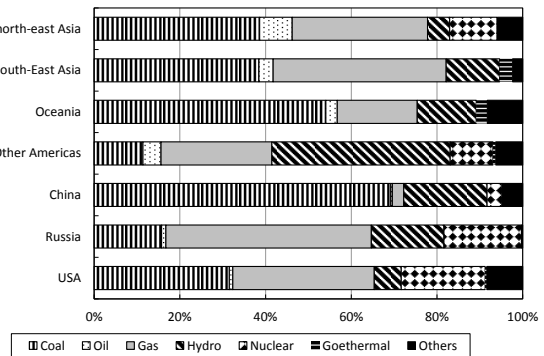
Source: APEC data, ESTO analysis

*Power generation mix by region*

Power generation mix by region varied in 2016 but fossil fuels formed the bulk of their respective power generation. Most of them had more than 50% with South-East Asia having the huge amount (82%), followed by [(north-east Asia (78%), Oceania (75%), China (72%), US and Russia both with 65%)], while

other Americas, although less than 50%, fossil fuel still dominated its own electricity generation (41%). (Figure 2.13).

**Figure 2.13 • Power generation mix by region, 2016**



Source: APEC data, ESTO analysis

In terms of growth, South-East Asia mainly drove electricity generation in APEC with a robust 6.0% yield to reach 920 GWh in 2016. Electricity generation sourced from renewables and hydro showed strong momentum in 2016 with 96.4% and 18.8%, respectively, bolstering the growth of the region’s total power generation. This can be attributed to the race for incentives and other benefits in using renewables for power generation in the region.

China likewise drove APEC power generation with a substantial 5.6% rise from 2015 to 2016. This was due in part by remarkable increases in renewables (30.3%) and nuclear (25% — the steepest among the regions in APEC) bringing the region’s total power generation to 6 142 TWh.

Power generation in Russia grew 2.2% to 1 089 TWh in 2016. This rise was due mostly to hydro power generation (9.9%) and in part by oil (8.6%). The region’s top fuels for power generation in 2016 included natural gas (48%), nuclear (18%) and hydro (17%).

Although slower, power generations in other Americas (1.5%), other north-east Asia (1.4%) and Oceania (1.3%) in 2016 were positive. Power

generation in other Americas was mostly sourced from hydro with 42%, while in both other north-east Asia (39%) and Oceania (54%), mainly from coal.

Finally, power generation in the US, while minimal, posted a slide from 4 297 TWh in 2015 to 4 294 TWh in 2016, or equivalently -0.1%. The reduction was due mainly to the decreases in oil (-10.5%) and coal (-8%)—two of the region’s top fossil fuels—and in part by geothermal (-0.8%). Renewables, accounting for 8% of the region’s power generation, had a noteworthy increase of 14.1% in 2016 but not enough to offset the declines of the mentioned fuels. Aside from fossil fuel, electricity output of the US were from nuclear with 20% of the region’s total power generation which also accounted for the lion’s share of APEC’s nuclear power generation (53%) in 2016.

### Energy demand trends in APEC

#### Total final energy consumption by sector

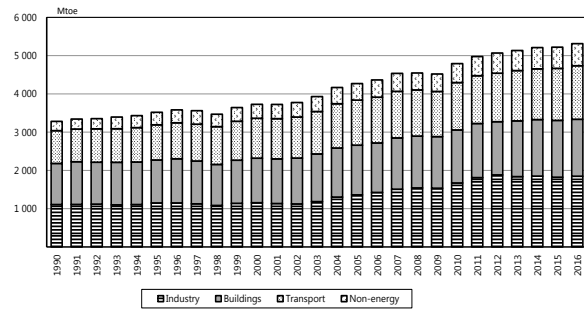
Unlike TPES, total final energy consumption (TFEC) bounced back slightly from the previous year’s sluggish growth. With some data improvements, the previously reported 0.01% increase from 2014 to 2015 rose slightly to 0.2%. And in 2016, TFEC expanded 1.3 percentage point more to reach 4 737 Mtoe (1.5%). If non-energy is to be included, total final consumption was up 1.7% to 5 313 Mtoe in 2016. CAGR of TFEC between 1990 and 2016 was maintained at 1.9%.

In 2016, in terms of total final consumption (non-energy included), industry continued to be the leading consuming sector (35%) followed by buildings sector [residential, commercial and agriculture sub-sectors combined (28%)] then transport sector (26%) and lastly, non-energy use (11%) (Figure 2.14).

Industry sector picked up in 2016 with 1.4% rise compared with 2015, reaching 1 848 Mtoe

consumption level. If non-energy is to be included, total consumption totaled 2 424 Mtoe, which was almost half of the total consumption levels in APEC in 2016.

**Figure 2.14 • Total final energy consumption in APEC by sector, 1990-2016**



Source: APEC data, ESTO analysis

Despite a few data improvements in 2016, energy consumption in the buildings sector maintained its slow pace in 2016, increasing measly by 0.4% to reach 1 490 Mtoe from the 2015 consumption levels. Slowing down of consumption in the buildings sector might be construed as an indication of energy efficiency improvement in APEC as member economies continued to implement policies and programs to improve energy consumption in the buildings sector. Over the period 1990 to 2016, its CAGR reached 1.3%.

The transport sector meanwhile continued to show quicker growth than industry and buildings sectors. Boosted by increasing purchasing power of consumers, in 2016 energy levels went up to 1 398 Mtoe as against 2015 levels of 1 359 Mtoe, or equivalently, 2.8%. This was faster than its CAGR between 1990 and 2016 at only 1.9%.

Notwithstanding the share from the total final consumption, non-energy use swelled faster than other major energy sectors in APEC. It posted an upward trend of 3.7% in 2016 compared with 2015. This was due mainly in the more than 10% surge on non-energy consumption in Oceania and in South-

East Asia with 7.9% increase. CAGR of non-energy consumption between 1990 and 2016 was also significant at 3.4%.

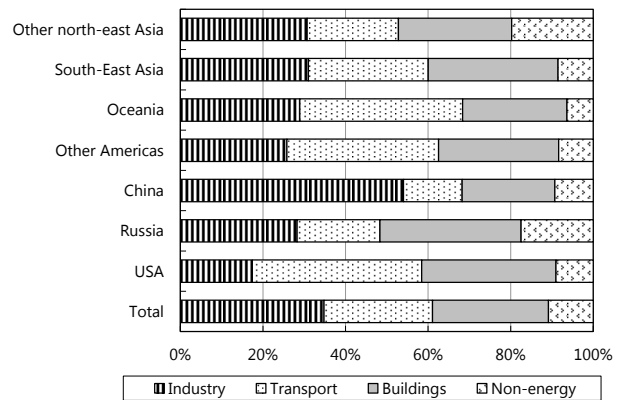
*Total final energy consumption by region*

Trends on energy consumption across APEC region in 2016 had changed from the previous year (Figure 2.15). The growth in final energy consumption in 2016 against 2015 was now driven back by major energy consuming regions such as Russia and China, up by 2.7% and 2.6%, respectively, over last year's total final consumption. While China accounted for more than 50% of APEC's consumption in the industry sector, Russia bolstered APEC's industry consumption with 7.2% rise from 2015 to 2016. In terms of volume, China, the US and other north-east Asia formed the chunk of energy consumption in APEC in 2016. The US and China's combined energy consumption alone comprised more than 50% of APEC's total final energy consumption in 2016.

Energy consumption trends of the top three major users in APEC varied. While China's energy consumption was dominated by industry sector (60%), consumption in the transport sector had grown remarkably at 7.6%. And as an aftermath of the government's policy to move towards service oriented economy, energy consumption in the buildings sector outstripped industry—2.2% as against 1.6%, respectively. In the US, energy consumption in the transport sector (45%) in 2016 formed the bulk of its total energy consumption but the increase was boosted mainly by the industry sector at 1.7%. In other north-east Asia, while majority was from the industry sector, energy consumption was almost distributed in the three energy sectors—industry (38%), buildings (34%) and transport (28%)—growth of its total consumption in 2016 was primarily driven by buildings with 1.8% increase from 2015.

Russia and South-East Asia both accounted for 8% of the APEC TFEC. While Russia's own final energy consumption was dominated by buildings sector, South-East Asia's energy consumption was spread quite evenly—one-thirds—among the three sectors, the buildings sector driven the region's energy consumption with 7.4% growth in 2016. Finally, other America's energy consumption in 2016 was influenced mainly by the bulk and growth of the transport sector in the region with 40% and 2.6%, respectively.

**Figure 2.15 • Total final energy consumption in APEC by region by sector, 2016**



Source: APEC data, ESTO analysis

*Final energy consumption by energy source*

While shares of fuel type from the APEC TFEC remain unchanged in 2016, the trend of each type of fuel, except for coal, had a different story compared with last year (Figure 2.16).

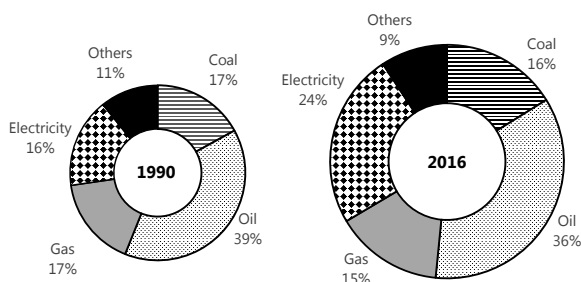
Previous year saw contraction from two other major fuel sources such as gas (-3%) and all other fuel [renewables, heat and others (-1.7%)]. In 2016, other fuel rebounded with 2.5% growth and gas with 1.8%. This can be attributed to the significant increasing demand for heat in the industry sector and gas for buildings sector.

Oil posted slightly slower increase than previous year at 1.1% or equivalently 1 678 Mtoe in 2016. Electricity

continued to register positive surges and in 2016 boosted TFEC in APEC significantly with a 3.3% increase bringing the electricity consumption level to 1 150 Mtoe.

Coal consumption continued sliding since 2013 (-7.2%) and posted a 1.1% drop in 2016. Although it had the lion's share of APEC TFEC, the decline was offset by the increases in all other fuels as mentioned earlier.

**Figure 2.16 • Total final energy consumption by energy source, 1990 and 2016**



Source: APEC data, ESTO analysis

### Final energy consumption per capita

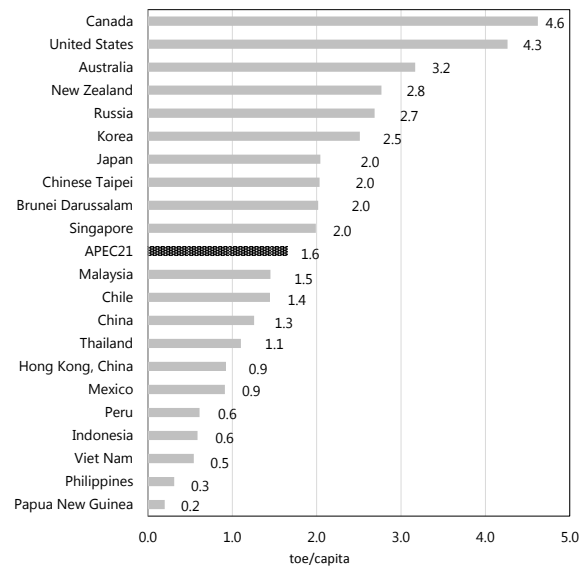
The region's diverse grouping includes small economies (in terms of population) but with large energy requirements (Brunei Darussalam and Singapore), some of the world's most energy-intensive (Canada and the United States) and also the least energy-intensive (Papua New Guinea; Peru and the Philippines) economies.

The order of final energy per capita in APEC in 2016 from among the top energy users was almost unchanged, but there were movements for some economies following APEC average per capita of 1.6 tonnes of oil equivalent (toe). (Figure 2.17).

The top three economies, although slightly diminished, were still comprised of Canada (4.6 toe), the US (4.3 toe) and Australia (3.2 toe). Meanwhile, China and South-East Asia's significant attribution in the APEC TFEC did not give much bearing in the two

regions' final energy per capita which remained well below the APEC average—1.3 toe and 1.1 toe, respectively. Seven economies have final energy per capita below one toe in 2016 which ranged from 0.2 toe to 0.9 toe.

**Figure 2.17 • Energy consumption per capita, 2016**



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

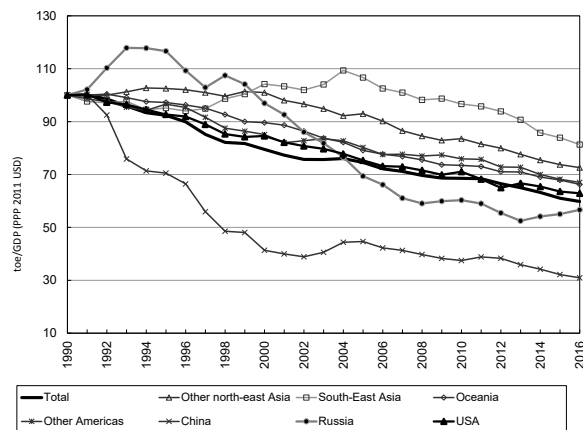
### Final energy intensity

Final energy intensity [ $Total\ final\ energy\ consumption / GDP$  (PPP, constant 2011 USD)] in APEC continued to show improvement for the last two decades. Between the periods 1990 and 2016, energy intensity was estimated to reduce by 40.2% or 2.0% CAGR. Final energy intensity in 2016, reached 77.4 toe/million USD (PPP, constant 2011 USD) representing a 2.0% improvement from the 2015 final energy intensity level of 79 toe/million USD (PPP, constant 2011 USD) (Figure 2.18). The top three regions with significant final intensity reduction over the previous year were China (-3.8%), South-East Asia (-3.1%) and Russia (3.0%).

Note that a separate discussion on APEC energy intensity reduction goal was also prepared, which compared energy intensity reduction with 2005 level.



**Figure 2.18 • Final energy intensity by region, 1990-2016**

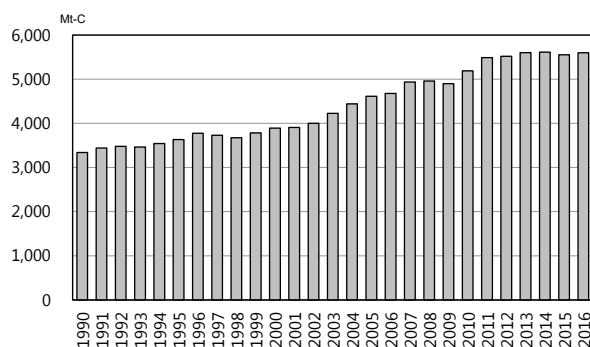


Sources: APEC data (TFEC) and World Bank (GDP), ESTO analysis)

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

In 2016, CO<sub>2</sub> emissions were calculated using the submissions from eight member economies, namely: Canada; Chile; Hong Kong, China; Japan; Peru; Chinese Taipei; Thailand and the US. For other economies, CO<sub>2</sub> were estimated using the 2016 energy balance tables. From these, CO<sub>2</sub> emissions from fuel combustion in APEC was estimated to reach 5 596 Mt-C in 2016. This represented a slight increase of 0.8% from 5 551 Mt-C in 2015. The CAGR over the period 1990 to 2016 was 1.8%.

**Figure 2.19 • CO<sub>2</sub> Emission in the APEC region, 1990-2016**



Source: APEC data, ESTO analysis

## APEC goals

### Energy intensity goal

In 2011, APEC Leaders set an aspirational goal to reduce energy intensity by 45% by 2035, against the 2005 level. After reporting three different energy intensity measures using IEA data, agreement was reached at EWG53 in March 2017 to analyse final energy (excluding non-energy) intensity, using APEC data. GDP was taken from World Bank Indicators using PPP, constant 2011 USD.

In 2016, final energy intensity (excluding) non-energy has shown remarkable improvement—from the 2005 final intensity level of 97 toe/million USD (PPP, constant 2011 USD), intensity was reduced to 77 toe/million USD (PPP, constant 2011 USD) or equivalent to 19.8% reduction from the 2005 level. Assuming this trends on final energy consumption and GDP continue, APEC goal of 45% energy intensity reduction will be achieved by 2035.

### RE doubling goal

On 2 September 2014 at a forum in Beijing, China, Energy Ministers representing Asia-Pacific Economic Cooperation (APEC) made a joint statement in which they agreed to “aspire to the goal of ‘doubling the share of renewables’ in the APEC energy mix, including in power generation, from 2010 levels by 2030”. To attain this target, member economies will need to enhance cooperation and promote innovation in renewable energy (RE) technologies.

APERC in collaboration with EGNRET was also instructed to keep track of RE doubling goal. Hence in 2017, at EWG54, the EGEDA Chair first presented the estimation of renewables shares.

In APEC Overview 2017, traditional and modern biomass were defined as follows.

Traditional biomass includes biomass used for

residential, commercial and agriculture sectors. Much of the biomass used in these sectors are heating (residential), cooking (residential and commercial) and crop drying (agriculture). This definition is applied to all APEC member economies, both OECD and non-OECD. Although, some argument can be made for counting most biomass as modern in some economies, it seems unlikely that any economy would try to increase the biomass share in the residential sector, because of the human health effects of burning biomass.

All other renewables (hydro, geothermal, etc) including biogas and wood pellets are considered modern renewables, although most likely data on wood pellets are not available.

Half of the municipal solid waste being used in power plants is assumed to be renewables.

With this definition, it was estimated that RE share expanded from 6.2% in 2010 to 7.8% in 2016. Assuming this increasing trend continues, RE share in 2030 falls short of the target share and will reach only 11.5%.

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### Energy balance table

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This section presents the 2016 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 2016 APEC EBT featured the category "Other" (column 9) from the fuel types and "Other sector" (row 20) in the flow.

The category "Other" consisted mainly of waste and commercial renewable energy, such resources being used to generate electricity and directly consumed in the industrial sector and the residential/commercial sector. While "Other sector" is the aggregated term used for residential and commercial, agriculture and all other sectors. In the analysis on energy demand trends, this was referred to as "buildings sector". Total final energy consumption consisted mainly of industry, transport and other sector, while total final consumption included non-energy. Non-energy comprised 11% of the total final consumption.

Oil and petroleum products accounted for 35% of final energy consumption, followed by electricity (24%), coal (16%), gas (15%), others (5%) and heat (4%) (*total may not add up to details due to rounding-off*).

In both power generation and TPES, coal was the major fuel, 60% and 35%, respectively.

**Table 2.1 • APEC Energy balance table (Mtoe), 2016**

	1 Coal	2 Coal products	3 Crude Oil, NGL and condensate	4 Petroleum products	5 Gas	6 Hydro	7 Nuclear	8 Geothermal, solar, etc	9 Others	10 Electricity	11 Heat	12 Total
1 Indigenous production	2 901		1 814		1 734	200	410	104	340			7 502
2 Import	443	11	1 406	540	391				5	11		2 805
3 Export	- 618	- 10	- 612	- 612	- 423				- 5	- 11		- 2 292
4 International marine bunkers				- 112								- 112
5 International aviation bunkers				- 86								- 86
6 Stock change	63	8	- 9		13							74
7 Total primary energy supply	2 789	8	2 598	- 271	1 714	200	410	104	340			7 892
8 Main activity producer	-1 455	- 9	- 3	- 42	- 623	- 197	- 410	- 93	- 65	1 239	132	-1 527
9 Autoproducer	- 207	- 43	- 1	- 28	- 114	- 3		- 6	- 29	120	118	- 194
10 Gas processing	- 8			1	7							
11 Petroleum refineries			-2 547	2 509								- 38
12 Coal transformation	- 516	219		- 1								- 298
13 Other transformation			18	- 12	- 11				- 21			- 25
14 Losses & own-use	- 34	- 17	- 11	- 135	- 176				- 1	- 205	- 42	- 620
15 Discrepancy	68	42	- 1	20	- 20				2	- 4		107
16 Total final consumption	636	200	14	2 097	778			4	226	1 150	208	5 313
17 Total final energy consumption	591	173	3	1 675	707			4	226	1 150	208	4 737
18 Industry sector	482	168	3	189	297				73	524	112	1 848
19 Transport sector	2			1 252	77				44	23		1 398
20 Other sector	107	5		234	332			4	109	603	96	1 490
20.1 Residential & commercial	72	5		138	324			4	102	527	89	1 260
20.2 Agriculture	14			52	4				5	19	3	97
20.3 Other	14			56	4				5	19	3	102
21 Non-energy	45	27	10	422	71							576

Source: APEC data, ESTO analysis



### **3 Energy balance and other tables by member economy**



**Australia**

## Energy balance table of Australia

	Coal	Coal products	Crude oil & NGL	Petroleum products				
				Total	Gasoline	Naphtha	Jet fuel	Kerosene
<b>2016</b>								
Indigenous production	292 031		17 567					
Import	19	143	16 193	27 387	5 169		4 698	15 151
Export	-251 555	-459	-11 664	-1 786	-61		-1	-45
International marine bunkers				-636				-69
International aviation bunkers				-4 094			-4 094	
Stock changes	3 584	-9	165	-61	16	-5	-2	-59
<b>Total primary energy supply</b>	<b>44 079</b>	<b>-325</b>	<b>22 261</b>	<b>20 810</b>	<b>5 124</b>	<b>-5</b>	<b>601</b>	<b>14 978</b>
<b>Transfers</b>			-658	4 178				
<b>Total transformation sector</b>	<b>-42 314</b>	<b>1 606</b>	<b>-22 220</b>	<b>21 154</b>	<b>9 187</b>	<b>6</b>	<b>2 885</b>	<b>9</b>
Main activity producers	-39 849	-11		-276				-207
Autoproducers				-946				-896
Gas processing								
Petroleum refineries			-22 352	22 376	9 187	6	2 885	9
Coal transformation	-2 465	1 617						7 657
Other transformation			132					
Losses & own use		-843	-59	-3 919				-19
Discrepancy	263	2	691	585	62	2	-402	26
<b>Total final consumption</b>	<b>2 028</b>	<b>440</b>	<b>15</b>	<b>42 808</b>	<b>14 373</b>	<b>3</b>	<b>3 084</b>	<b>16</b>
<b>Total final energy consumption</b>	<b>2 028</b>	<b>440</b>	<b>15</b>	<b>38 990</b>	<b>14 373</b>		<b>3 084</b>	<b>12</b>
<b>Industry sector</b>	<b>2 022</b>	<b>439</b>	<b>15</b>	<b>3 611</b>	<b>6</b>			<b>3</b>
Iron and steel	24	282		17				10
Chemical & petrochemical	134	14		97				93
Non-metallic minerals	370	3		203				25
Other industries	1 494	140	15	3 294	6			2
<b>Transport sector</b>				<b>31 935</b>	<b>14 201</b>		<b>3 084</b>	<b>13 538</b>
Domestic air transport				3 135	51		3 084	
Road				26 929	13 857			12 044
Rail				1 084				1 083
Inland waterways				580	288			233
Other transport				207	5			178
<b>Other sector</b>	<b>6</b>	<b>1</b>		<b>3 444</b>	<b>166</b>		<b>9</b>	<b>2 750</b>
Residential		1		342				
Commerce and public services	6			800				8
Agriculture				2 302	166			1
Non-specified others								2 086
<b>Non-energy</b>				<b>3 818</b>		<b>3</b>		<b>4</b>
<b>2015</b>								
Indigenous production	298 581		18 090					
Import	83	84	19 845	23 177	4 310		3 619	12 742
Export	-253 391	-609	-12 725	-1 880	-100		-16	-46
International marine bunkers				-757				-80
International aviation bunkers				-3 890			-3 890	
Stock changes	-1 827		263	-235	-127	19	-77	1
<b>Total primary energy supply</b>	<b>43 446</b>	<b>-525</b>	<b>25 473</b>	<b>16 415</b>	<b>4 083</b>	<b>19</b>	<b>-364</b>	<b>1</b>
<b>Transfers</b>			430	4 066				
<b>Total transformation sector</b>	<b>-41 483</b>	<b>1 807</b>	<b>-25 430</b>	<b>24 195</b>	<b>10 080</b>	<b>27</b>	<b>3 598</b>	<b>7</b>
Main activity producers	-38 742	-16		-308				-224
Autoproducers				-1 056				-878
Gas processing								
Petroleum refineries			-25 511	25 559	10 080	27	3 598	7
Coal transformation	-2 741	1 823						9 680
Other transformation			81					
Losses & own use		-850	-55	-3 337				-12
Discrepancy	-53	1	-403	675	242	8	-260	34
<b>Total final consumption</b>	<b>1 910</b>	<b>433</b>	<b>15</b>	<b>42 014</b>	<b>14 405</b>	<b>54</b>	<b>2 974</b>	<b>30</b>
<b>Total final energy consumption</b>	<b>1 910</b>	<b>433</b>	<b>15</b>	<b>38 753</b>	<b>14 405</b>		<b>2 974</b>	<b>25</b>
<b>Industry sector</b>	<b>1 904</b>	<b>432</b>	<b>15</b>	<b>3 933</b>	<b>8</b>			<b>8</b>
Iron and steel	32	281		20				11
Chemical & petrochemical	152	14		149				132
Non-metallic minerals	397	3		199				21
Other industries	1 323	134	15	3 565	8			7
<b>Transport sector</b>	<b>1</b>			<b>31 531</b>	<b>14 247</b>		<b>2 974</b>	<b>8</b>
Domestic air transport				3 025	51		2 974	
Road				26 690	13 909			11 603
Rail	1			1 051				1 050
Inland waterways				563	281			230
Other transport				202	6			156
<b>Other sector</b>	<b>5</b>	<b>1</b>		<b>3 289</b>	<b>150</b>		<b>9</b>	<b>2 607</b>
Residential		1		369				26
Commerce and public services	5			790				8
Agriculture				2 130	150			1
Non-specified others								648
<b>Non-energy</b>				<b>3 261</b>		<b>54</b>		<b>5</b>



unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				72 514	1 296		1 939	5 146			390 493	8 287
317	535		1 517	5 126							48 868	
-174	-1 232		-273	-43 094							-308 558	
-567											-636	
											-4 094	
-1	-67		57								3 679	
-425	-764		1 301	34 546	1 296		1 939	5 146			129 752	8 287
	1 873		2 305								3 520	
480	439	875	719	-12 138	-1 296		-1 583	-901	22 039		-35 653	-3 780
-18			-51	-9 247	-1 296		-1 089	-326	19 968		-32 126	-2 711
-27			-23	-2 772			-494	-575	2 071		-2 716	-1 069
											24	
											-848	
											13	
-49	-12	-875	-546	-10 186					-3 825		-18 832	
223	458		190	928							2 469	
229	1 994		3 969	13 150			356	4 245	18 214		81 256	4 506
229	1 740		412	12 399			356	4 245	18 214		76 687	4 506
162	233		355	7 240				2 850	6 645		22 822	2 757
3	1		3	304					277		904	
3				1 502				101	347		2 195	12
7	134		37	1 180				59	388		2 203	59
149	98		315	4 254				2 690	5 633		17 520	2 686
60	1 034		18	285				161	540		32 921	161
											3 135	
	1 028			93				161			27 183	161
	1								296		1 380	
59											580	
1	5		18	192					244		643	
7	473		39	4 874			356	1 234	11 029		20 944	1 588
	342			3 564			346	1 176	5 089		10 518	1 521
7	82		39	1 256			10	58	5 789		7 919	67
	49			54					151		2 507	
	254		3 557	751							4 569	
				56 379	1 149		1 774	5 176			381 149	8 006
249	559		1 698	5 137							48 326	
-104	-1 311		-303	-29 290							-297 895	
-677											-757	
											-3 890	
30	56		91								-1 799	
-502	-696		1 486	32 226	1 149		1 774	5 176			125 134	8 006
	2 027		2 039								4 496	
430	580	283	612	-11 961	-1 149		-1 419	-838	21 610		-34 668	-3 406
-26			-58	-9 146	-1 149		-997	-318	19 502		-31 174	-2 464
-152			-26	-2 742			-422	-520	2 108		-2 632	-942
											48	
											-918	
											8	
-50	-9	-283	-639	-7 199					-3 427		-14 868	
426	204		1	453				8	2		683	
304	2 106		3 499	13 519			355	4 346	18 185		80 777	4 605
304	1 893		510	12 710			355	4 346	18 185		76 707	4 605
245	238		438	7 711				2 862	6 588		23 445	2 768
5	1		3	301					292		926	
16				1 617				101	365		2 398	12
7	137		34	1 170				47	389		2 205	46
217	100		401	4 623				2 714	5 542		17 916	2 710
52	1 182		29	268				246	508		32 554	246
											3 025	
	1 178			87				246			27 023	246
	1								274		1 326	
52											563	
	3		29	181					234		617	
7	473		43	4 731			355	1 238	11 089		20 708	1 591
	343			3 488			345	1 191	5 097		10 491	1 535
7	84		43	1 214			10	47	5 772		7 838	56
	46			29					220		2 379	
	213		2 989	809							4 070	

## Major energy indicators of Australia

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	86 373	127 302	128 220	126 633	126 311	124 954	125 134	129 752
Indigenous production	157 522	323 357	312 712	320 859	344 392	365 466	381 149	390 493
Import	14 397	42 932	46 644	47 434	49 904	49 496	48 326	48 868
Export	-78 917	-228 871	-226 395	-234 175	-260 379	-284 546	-297 895	-308 558
Final energy consumption	52 698	72 136	73 794	74 418	76 287	75 924	76 707	76 687
Industry	19 315	22 718	23 135	23 501	24 662	24 209	23 445	22 822
Transport	21 112	29 990	30 932	31 153	31 714	31 754	32 554	32 921
Residential	7 490	10 253	10 477	10 454	10 485	10 329	10 491	10 518
Commerce & public services	3 480	6 972	7 000	6 980	7 164	7 360	7 838	7 919
Others	1 301	2 203	2 250	2 330	2 262	2 272	2 379	2 507
<b>Coal &amp; coal products</b>								
Primary energy supply	35 128	50 470	48 098	47 026	43 737	41 478	42 921	43 754
Indigenous production	106 102	246 564	233 640	245 352	264 516	285 440	298 581	292 031
Import		42	162	87	61	126	167	162
Export	-67 267	-190 390	-184 399	-195 162	-217 374	-242 832	-254 000	-252 014
Transformation sector	-30 334	-46 880	-44 673	-43 662	-40 576	-38 291	-39 676	-40 708
Power generation	-28 924	-44 832	-42 734	-42 275	-39 420	-37 286	-38 758	-39 860
Final energy consumption	4 381	2 530	2 483	2 420	2 351	2 443	2 343	2 468
Industry	4 170	2 423	2 406	2 357	2 349	2 438	2 336	2 461
Transport	73	94	67	57			1	
Residential	12						1	1
Commerce & public services	126	13	10	6	2	5	5	6
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	33 074	31 910	34 305	32 603	31 009	29 324	25 473	22 261
Indigenous production	29 026	25 537	24 403	22 869	19 958	19 081	18 090	17 567
Import	10 210	22 095	25 962	24 093	24 109	22 611	19 845	16 193
Export	-5 855	-15 150	-16 468	-14 621	-13 230	-12 448	-12 725	-11 664
Transformation sector	-30 676	-32 017	-33 744	-32 880	-31 325	-29 425	-25 430	-22 220
Petroleum refineries	-30 676	-32 017	-33 748	-32 895	-31 418	-29 519	-25 511	-22 352
<b>Petroleum products</b>								
Primary energy supply	-1 874	9 706	8 874	11 431	13 528	14 425	16 415	20 810
Import	4 187	15 943	14 909	18 257	20 131	20 793	23 177	27 387
Export	-3 446	-2 439	-2 191	-2 330	-2 291	-2 082	-1 880	-1 786
Transformation sector	31 064	30 770	32 055	30 840	29 862	27 526	24 195	21 154
Power generation	-946	-1 393	-1 331	-854	-1 494	-1 105	-1 364	-1 222
Petroleum refineries	32 061	32 172	33 393	31 700	31 356	28 631	25 559	22 376
Final energy consumption	25 488	35 255	36 748	37 534	38 722	38 400	38 753	38 990
Industry	2 884	3 155	3 701	4 239	4 869	4 464	3 933	3 611
Transport	20 874	29 123	30 040	30 253	30 774	30 805	31 531	31 935
Residential	378	366	385	377	385	379	369	342
Commerce & public services	256	624	625	639	642	722	790	800
Others	1 096	1 987	1 997	2 026	2 052	2 030	2 130	2 302
<b>Gas</b>								
Primary energy supply	14 786	28 440	29 919	28 568	30 264	31 702	32 226	34 546
Indigenous production	17 135	44 480	47 645	45 633	52 145	52 920	56 379	72 514
Import		4 852	5 611	4 997	5 603	5 966	5 137	5 126
Export	-2 349	-20 892	-23 337	-22 062	-27 484	-27 184	-29 290	-43 094
Transformation sector	-3 886	-9 763	-10 086	-11 076	-11 209	-11 496	-11 961	-12 138
Power generation	-3 470	-9 763	-10 081	-11 062	-11 124	-11 411	-11 888	-12 019
Final energy consumption	8 379	11 864	11 959	12 019	12 456	12 694	12 710	12 399
Industry	5 684	7 421	7 443	7 447	7 773	7 831	7 711	7 240
Transport	10	289	270	263	287	287	268	285
Residential	1 934	3 102	3 185	3 244	3 329	3 416	3 488	3 564
Commerce & public services	750	1 049	1 058	1 053	1 048	1 130	1 214	1 256
Others	1	3	3	12	19	30	29	54
<b>Electricity</b>								
Power generation	13 270	21 722	21 821	21 572	21 434	21 274	21 610	22 039
Thermal	11 989	19 854	19 556	19 305	18 618	18 165	18 733	18 840
Hydro	1 217	1 161	1 441	1 206	1 562	1 581	1 149	1 296
Nuclear								
Others	65	707	824	1 061	1 254	1 528	1 728	1 903
Final energy consumption	11 112	18 058	18 248	18 052	18 071	17 889	18 185	18 214
Industry	5 090	7 060	7 007	6 881	6 848	6 833	6 588	6 645
Transport	155	316	330	350	410	410	508	540
Residential	3 315	5 215	5 377	5 286	5 205	4 990	5 097	5 089
Commerce & public services	2 348	5 254	5 284	5 243	5 417	5 444	5 772	5 789
Others	204	213	250	292	191	212	220	151

## Major economic indicators of Australia

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	17.07	22.03	22.34	22.74	23.15	23.50	23.85	24.21
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	638	1 192	1 221	1 268	1 302	1 335	1 367	1 405
GDP, Billion USD (PPP, constant 2011)	489	914	936	972	998	1 024	1 048	1 077
Nominal, Billion USD (Current)	315	1 192	1 459	1 550	1 481	1 438	1 218	1 234
GDP per Capita *3								
Real Term (constant 2010 USD)	37 383	54 087	54 649	55 771	56 245	56 805	57 295	58 039
GDP, PPP (constant 2011 USD)	28 658	41 464	41 894	42 754	43 118	43 547	43 923	44 493
Nominal (Current USD)	18 477	54 087	65 298	68 146	63 977	61 200	51 072	50 957
Nominal GDP & its Components (Billions of Current AUD) *1								
Gross Domestic Product	404	1 299	1 414	1 497	1 534	1 596	1 621	1 660
Household Final Consumption Expenditure	223	731	775	818	854	895	929	968
General Government Final Consumption Expenditure	70	234	252	269	274	282	293	309
Gross Fixed Capital Formation	112	351	367	409	426	428	423	419
Stock Change	5	- 3	6	5	1	- 2	1	1
Exports of Goods and Services	61	258	304	322	307	336	324	320
Imports of Goods and Services	69	271	290	326	327	343	349	357
Real GDP & its Components (Billions of 2013 AUD) *1								
Gross Domestic Product	753	1 407	1 442	1 498	1 538	1 577	1 614	1 660
Household Final Consumption Expenditure	413	824	857	882	898	920	942	968
General Government Final Consumption Expenditure	146	266	275	285	286	290	297	309
Gross Fixed Capital Formation	157	383	397	443	456	448	434	419
Stock Change	7	- 2	5	6		- 3	1	1
Exports of Goods and Services	82	238	240	251	264	280	299	320
Imports of Goods and Services	74	295	325	362	363	354	358	357
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	3	3	3	3	3	3	3	2
Industry	26	23	23	23	23	23	23	22
Services, etc.	63	68	68	68	68	67	68	68
Industrial Production Index (2010=100) *2	74.6	100.0	100.4	103.2	104.4	108.5	N.A.	N.A.
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	39.8	212.6	271.7	256.7	253.0	240.0	187.7	192.5
Imports, c.i.f.	42.0	201.6	243.7	260.9	242.1	236.8	208.8	196.0
Balance of Payments (Billions of Current USD) *2								
Trade Balance	0.5	11.3	22.7	-8.3	7.3	2.2	5.1	1.3
Current Account	-15.5	-44.7	-44.4	-64.5	-47.9	-42.3	-7.9	-9.1
Overall Balance	1.3	-0.5	2.3	11.0	11.8	2.3	4.4	0.6
Foreign Exchange Rate (AUD/USD) *1	1.28	1.09	0.97	0.97	1.04	1.11	1.33	1.35
PPP conversion factor, GDP (AUD/USD) *1	1.37	1.50	1.51	1.54	1.45	1.45	1.47	1.49
Price Indices								
GDP Deflator (2013=100) *3	53.6	92.3	98.1	99.9	99.8	101.2	100.5	100.0
Producer Price Index (2010=100) *2	66.4	100.0	103.4	102.9	104.0	107.2	107.5	109.8
Consumer Price Index (2010=100) *2	59.8	100.0	103.3	105.1	107.7	110.4	112.0	113.5
Growth Rate (%) *3								
Real GDP	3.6	2.1	2.5	3.9	2.6	2.6	2.4	2.8
Population	1.5	1.6	1.4	1.8	1.8	1.5	1.5	1.5
Price								
Producer Prices	6.0	1.9	3.4	-0.5	1.1	3.1	0.3	2.1
Consumer Prices	7.3	2.9	3.3	1.8	2.4	2.5	1.5	1.3

Source \*1 : World Development Indicators, World Bank

\*2 : International Financial Statistics, International Monetary Fund

\*3 : Calculated from \*1 and \*2 by ESTO

Note : N.A. means "not available"  
: AUD means Australian Dollar, USD means United States Dollar  
: PPP means Purchasing Power Parity



**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>2016</b>									
Indigenous production			6 459.2						
Import			4.9	380.8	184.7		27.0		159.4
Export			-6 125.6						
International marine bunkers									
International aviation bunkers				- 77.5			- 77.5		
Stock changes			29.1	14.	5.2		2.3		7.5
<b>Total primary energy supply</b>			<b>367.7</b>	<b>317.2</b>	<b>189.8</b>		<b>- 48.3</b>		<b>166.9</b>
<b>Transfers</b>									
Total transformation sector			- 266.0	271.2	93.9		47.0	6.1	103.6
Main activity producers				- 12.6					- 12.6
Autoproducers									
Gas processing				20.5					
Petroleum refineries			- 266.0	263.2	93.9		47.0	6.1	116.2
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy			- 101.7	- 7.5	4.6		1.3		- 13.3
<b>Total final consumption</b>				<b>580.8</b>	<b>288.3</b>			<b>6.1</b>	<b>257.2</b>
<b>Total final energy consumption</b>				<b>556.4</b>	<b>288.3</b>			<b>6.1</b>	<b>242.3</b>
Industry sector				102.2				6.1	96.0
Iron and steel									
Chemical & petrochemical									
Non-metallic minerals									
Other industries				102.2				6.1	96.0
Transport sector				434.4	288.3				146.1
Domestic air transport									
Road				434.4	288.3				146.1
Rail									
Inland waterways									
Other transport									
Other sector				19.9					0.2
Residential				19.9					0.2
Commerce and public services									
Agriculture									
Non-specified others									
Non-energy				24.4					14.9
<b>2015</b>									
Indigenous production			6 695.7						
Import			9.2	325.7	127.1		12.7		174.2
Export			-6 365.8	- 8.4			- 4.7		- 3.6
International marine bunkers									
International aviation bunkers				- 77.3			- 77.3		
Stock changes			95.2	2.6	1.7			- 0.8	0.6
<b>Total primary energy supply</b>			<b>434.2</b>	<b>242.6</b>	<b>128.8</b>		<b>- 69.3</b>	<b>- 0.8</b>	<b>171.1</b>
<b>Transfers</b>									
Total transformation sector			- 434.2	386.7	166.4		70.4		131.6
Main activity producers				- 10.9					- 10.9
Autoproducers									
Gas processing				18.2					
Petroleum refineries			- 434.2	379.4	166.4		70.4		142.5
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy				- 18.8	4.4		- 1.1	0.8	- 22.4
<b>Total final consumption</b>				<b>610.5</b>	<b>299.6</b>				<b>280.4</b>
<b>Total final energy consumption</b>				<b>597.6</b>	<b>299.6</b>				<b>280.4</b>
Industry sector				123.6					123.6
Iron and steel									
Chemical & petrochemical									
Non-metallic minerals									
Other industries				123.6					123.6
Transport sector				456.4	299.6				156.8
Domestic air transport									
Road				456.4	299.6				156.8
Rail									
Inland waterways									
Other transport									
Other sector				17.6					
Residential				17.6					
Commerce and public services									
Agriculture									
Non-specified others									
Non-energy				12.9					

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
			9.7	11 128.8			0.1				17 588.2	0.1
				-7 537.7							385.7	
											-13 663.3	
			-0.8	33.6							-77.5	
			8.9	3 624.8			0.1				76.7	
											4 309.7	0.1
	20.5			-1 704.7					408.1		-1 291.5	
				-1 170.0			-0.1		367.3		-815.4	-0.1
				-160.5					40.8		-119.7	
	20.5			-374.1							-353.6	
											-2.8	
				-1 367.1					-100.7		-1 467.8	
	-0.6	0.5		3.3					-27.0		-133.0	
	19.7	9.5		556.2					280.3		1 417.4	
	19.7			17.0					280.3		853.8	
									14.2		116.4	
									2.8		2.8	
									11.4		113.6	
											434.4	
											434.4	
	19.7			17.0					266.1		303.0	
	19.7			17.0					119.2		156.0	
									147.0		147.0	
			9.5	539.2							563.6	
				11 806.8			0.1				18 502.6	
			11.7								334.9	
				-8 199.3							-14 573.5	
											-77.3	
			1.0	-107.0							-9.3	
			12.8	3 500.5			0.1				4 177.4	
	18.2			-1 390.9					401.3		-1,037.2	
				-1 219.9			-0.1		360.9		-870.0	
				-171.0					40.4		-130.6	
	18.2										18.2	
											-54.9	
				-1 709.3					-136.2		-1 845.5	
	-0.6			63.5					26.9		71.5	
	17.6	12.9		463.8					292.0		1 366.3	
	17.6			19.8					292.0		909.5	
									16.6		140.2	
									2.1		2.1	
									14.5		138.1	
											456.4	
											456.4	
	17.6			19.8					275.4		312.8	
	17.6			19.8					117.7		155.1	
									157.7		157.7	
			12.9	443.9							456.8	

## Major energy indicators of Brunei Darussalam

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	1 273	3 310	4 427	4 323	3 456	4 037	4 177	4 310
Indigenous production	16 493	20 508	20 659	20 348	18 688	17 970	18 503	17 588
Import	11	156	276	384	309	399	335	386
Export	-15 165	-17 403	-16 331	-16 288	-15 456	-14 185	-14 574	-13 663
Final energy consumption	381	805	869	908	891	916	909	854
Industry	61	130	151	173	142	124	140	116
Transport	193	395	431	451	446	455	456	434
Residential	103	158	163	158	156	152	155	156
Commerce & public services	23	122	124	126	129	156	158	147
Others					18	28		
<b>Coal &amp; coal products</b>								
Primary energy supply								
Indigenous 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	112	636	674	512	479	382	434	368
Indigenous production	8 109	8 753	8 409	8 431	7 133	6 673	6 696	6 459
Import		14	11	8	10	7	9	5
Export	-7 971	-8 289	-7 682	-7 896	-6 707	-6 209	-6 366	-6 126
Transformation sector	-339	-601	-569	-442	-479	-382	-434	-266
Petroleum refineries	-339	-601	-569	-442	-479	-382	-434	-266
<b>Petroleum products</b>								
Primary energy supply	-32	34	128	284	193	281	243	317
Import	11	142	265	377	299	392	326	381
Export	-4		-26	-13	-9	-16	-8	
Transformation sector	304	564	510	380	435	333	387	271
Power generation	-3	-10	-10	-11	-11	-11	-11	-13
Petroleum refineries	298	557	503	374	429	327	379	263
Final energy consumption	247	519	579	619	603	607	598	556
Industry	41	109	132	152	122	107	124	102
Transport	193	395	431	451	446	455	456	434
Residential	12	16	17	17	17	17	18	20
Commerce & public services								
Others					18	28		
<b>Gas</b>								
Primary energy supply	1 193	2 641	3 625	3 526	2 783	3 374	3 501	3 625
Indigenous production	8 383	11 755	12 249	11 917	11 555	11 297	11 807	11 129
Import								
Export	-7 190	-9 114	-8 624	-8 379	-8 741	-7 961	-8 199	-7 538
Transformation sector	-532	-1 342	-1 292	-1 363	-1 301	-1 351	-1 391	-1 705
Power generation	-532	-1 342	-1 292	-1 363	-1 301	-1 351	-1 391	-1 331
Final energy consumption	33	28	28	26	24	20	20	17
Industry								
Transport								
Residential	33	28	28	26	24	20	20	17
Commerce & public services								
Others								
<b>Electricity</b>								
Power generation	112	362	356	375	379	388	401	408
Thermal	112	362	356	375	379	387	401	408
Hydro								
Nuclear								
Others	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Final energy consumption	101	257	262	262	264	289	292	280
Industry	20	21	19	21	20	17	17	14
Transport								
Residential	57	115	119	115	115	115	118	119
Commerce & public services	23	122	124	126	129	156	158	147
Others								



## Major economic indicators of Brunei Darussalam

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	0.26	0.39	0.39	0.40	0.41	0.41	0.42	0.42
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	9.59	13.71	14.22	14.35	14.05	13.72	13.64	13.30
GDP, Billion USD (PPP, constant 2011)	21.91	31.31	32.48	32.78	32.08	31.33	31.15	30.38
Nominal, Billion USD (Current)	3.52	13.71	18.53	19.05	18.09	17.10	12.93	11.40
GDP per Capita *3								
Real Term (constant 2010 USD)	37 071	35 268	36 092	35 899	34 619	33 314	32 662	31 431
GDP, PPP (constant 2011 USD)	84 672	80 553	82 435	81 994	79 070	76 089	74 600	71 789
Nominal (Current USD)	13 604	35 268	47 017	47 653	44 599	41 529	30 968	26 939
Nominal GDP & its Components (Billions of Current BND) *1								
Gross Domestic Product	6.4	18.7	23.3	23.8	22.6	21.7	17.8	15.7
Household Final Consumption Expenditure	1.7	2.8	3.0	3.3	3.5	3.4	3.5	3.3
General Government Final Consumption Expenditure	1.4	4.1	4.4	4.4	4.6	4.6	4.5	4.1
Gross Fixed Capital Formation	1.2	4.4	6.0	7.8	8.9	5.9	6.2	5.4
Stock Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exports of Goods and Services	3.9	12.6	16.2	16.7	15.4	14.9	9.3	7.8
Imports of Goods and Services	2.4	5.2	7.0	8.4	9.7	6.6	5.8	5.9
Real GDP & its Components (Billions of 2000 BND) *1								
Gross Domestic Product	13.1	18.7	19.4	19.6	19.2	18.7	18.6	18.1
Household Final Consumption Expenditure	1.4	2.8	2.9	3.2	3.3	3.2	3.4	3.3
General Government Final Consumption Expenditure	2.2	4.1	4.4	4.4	4.5	4.6	4.5	4.2
Gross Fixed Capital Formation	2.8	4.4	6.0	7.8	8.7	6.0	6.4	5.7
Stock Change	0.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.0
Exports of Goods and Services	10.8	12.6	12.2	12.4	11.7	11.8	10.5	10.3
Imports of Goods and Services	2.8	5.2	7.0	8.4	9.7	6.7	5.9	6.0
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	0.6	0.7	0.7	0.7	0.7	0.8	0.9	0.8
Industry	82.7	68.7	68.3	66.8	64.4	63.0	63.4	63.1
Services, etc.	25.2	30.6	31.0	32.5	34.9	36.2	35.8	38.0
Industrial Production Index (2000=100)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	2.2	8.9	12.5	13.0	11.4	10.5	6.4	5.2
Imports, c.i.f.	1.0	2.5	3.6	3.6	3.6	3.6	3.2	2.7
Balance of Payments (Billions of Current USD) *2								
Trade Balance	N.A.	6.2	8.6	8.8	6.9	7.4	2.9	2.2
Current Account	N.A.	5.0	6.4	5.7	3.8	5.3	2.2	1.5
Overall Balance	N.A.	0.2	2.6	2.9	1.1	1.2	-2.4	-4.9
Foreign Exchange Rate (BND/USD) *1	1.81	1.36	1.26	1.25	1.25	1.27	1.37	1.38
PPP conversion factor, GDP (BND/USD) *1	0.45	0.61	0.72	0.71	0.68	0.66	0.54	0.48
Price Indices								
GDP Deflator (2000=100) *3	48.8	100.0	120.2	121.6	118.2	115.8	95.6	86.8
Producer Price Index	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Consumer Price Index (2010=100) *2	78.0	100.0	100.1	100.2	100.6	100.4	100.0	99.3
Growth Rate (%) *3								
Real GDP	1.09	2.60	3.75	0.91	-2.13	-2.35	-0.57	-2.47
Population	2.89	1.27	1.38	1.46	1.49	1.48	1.42	1.35
Price								
Producer Prices	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Consumer Prices	2.14	0.36	0.14	0.11	0.39	-0.21	-0.42	-0.74

Source \*1 : *World Development Indicators*, World Bank  
\*2 : *International Financial Statistics*, International Monetary Fund  
\*3 : Estimation from \*1, and \*2 by ESTO  
Note : N.A. means "not available"  
: BND means Brunei Dollar, USD means United States Dollar  
: PPP means Purchasing Power Parity

## Energy prices in Brunei Darussalam in 2016

## Currency Exchange Rate

Currency Exchange Rate	Local currency / US Dollar	1.40
Local Currency Unit		BND

## IMPORT PRICES

## WHOLESALE PRICES

## CONSUMER PRICES

	Unit	Amount		Unit	Amount		Unit	Amount
Coal and Coal Products			Coal and Coal Products			Coal and Coal Products		
Coking Coal			Coking Coal			Coking Coal		
Anthracite			Anthracite			Anthracite		
Other bituminous coal			Other bituminous coal			Other bituminous coal		
Sub-bituminous Coal			Sub-bituminous Coal			Sub-bituminous Coal		
Lignite			Lignite			Lignite		
Peat			Peat			Peat		
Patent Fuel			Patent Fuel			Patent Fuel		
Coke			Coke			Coke		
Coal Tar			Coal Tar			Coal Tar		
BKB/PB			BKB/PB			BKB/PB		
			Gas Works Gas			Gas Works Gas		
Oil and Oil Products			Oil and Oil Products			Oil and Oil Products		
Crude Oil			Crude Oil			Crude Oil	USD/barrel	44.63
Natural Gas Liquids			Natural Gas Liquids			Natural Gas Liquids		
Ethane			Ethane			Ethane		
LPG			LPG			LPG Cylinder 12 kg	BND/cylinder	
Naphtha			Naphtha			Cylinder 44 kg	BND/cylinder	10.00
Motor Gasoline			Motor Gasoline			Naphtha		34.56
Aviation Gasoline			Aviation Gasoline			Motor Gasoline RON97	BND/L	
Gasoline Type Jet Fuel			Gasoline Type Jet Fuel			RON92	BND/L	
Kerosene Type Jet Fuel			Kerosene Type Jet Fuel			RON85	BND/L	0.53
Other Kerosene			Other Kerosene			Aviation Gasoline		0.52
Gas/Diesel Oil			Gas/Diesel Oil			Gasoline Type Jet Fuel		0.36
Fuel Oil			Fuel Oil			Kerosene Type Jet Fuel		
White Spirit SBP			White Spirit SBP			Other Kerosene		
Lubricants			Lubricants			Gas/Diesel Oil	BND/L	0.31
Bitumen			Bitumen			Fuel Oil		
Paraffin Waxes			Paraffin Waxes			White Spirit SBP		
Petroleum Coke			Petroleum Coke			Lubricants		
						Bitumen		
						Paraffin Waxes		
						Petroleum Coke		
Natural Gas			Natural Gas			Natural Gas		
Natural Gas			Natural Gas			Natural Gas		
Liquefied Natural Gas			Liquefied Natural Gas			Liquefied Natural Gas (export)	USD/MMBtu	7.27
Compressed Natural Gas			Compressed Natural Gas			Compressed Natural Gas		
Electricity			Electricity			Electricity		
Electricity			Electricity			Industrial		
						Commercial - The first 10 units	BND/kVA	0.20
						Next 100 units	BND/kVA	0.07
						Next 100 units	BND/kVA	0.06
						Remaining units	BND/kVA	0.05
						Minimum charge	BND	2.00
						Residential - 1-600 kWh	BND/kWh	0.01
						601-2000 kWh	BND/kWh	0.08
						2001-4000 kWh	BND/kWh	0.10
						4001 kWh above	BND/kWh	0.12
						Others (Government)	BND/kWh	0.10
Other Energy Products			Other Energy Products			Other Energy Products		

**Canada**

## Energy balance table of Canada

	Coal	Coal products	Crude oil & NGL	Petroleum products					
				Total	Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2016</b>									
Indigenous production	30 025		224 019						
Import	3 919	642	52 041	12 720	4 050	1	2 849	123	1 481
Export	-18 060	-29	-168 564	-21 329	-7 827	-490	-490		-6 720
International marine bunkers				-418					-183
International aviation bunkers				-636			-636		
Stock changes	573	-113	-125	836	92	35	4	18	306
<b>Total primary energy supply</b>	<b>16 457</b>	<b>500</b>	<b>107 371</b>	<b>-8 827</b>	<b>-3 685</b>	<b>-454</b>	<b>1 727</b>	<b>141</b>	<b>-5 116</b>
<b>Transfers</b>			<b>-9 263</b>	<b>13 074</b>	<b>3 920</b>	<b>-183</b>			<b>787</b>
<b>Total transformation sector</b>	<b>-16 392</b>	<b>1 096</b>	<b>-92 024</b>	<b>89 660</b>	<b>34 038</b>	<b>4 183</b>	<b>4 810</b>	<b>851</b>	<b>29 710</b>
Main activity producers	-14 472			-1 637	-28				-196
Autoproducers		-7		-540					-99
Gas processing									
Petroleum refineries			-94 385	91 837	34 066	4 183	4 810	851	30 005
Coal transformation	-1 920	1 103							
Other transformation			2 361						
Losses & own use				-15 940		-23		-22	-3 047
Discrepancy	881	-68	-6 084	14 197	1 822	1 204	-769	-593	3 065
<b>Total final consumption</b>	<b>946</b>	<b>1 528</b>	<b>92 164</b>	<b>92 164</b>	<b>36 095</b>	<b>4 727</b>	<b>5 768</b>	<b>377</b>	<b>25 399</b>
<b>Total final energy consumption</b>	<b>920</b>	<b>1 506</b>	<b>71 561</b>	<b>36 095</b>			<b>5 768</b>	<b>377</b>	<b>25 399</b>
Industry sector	914	1 506		5 715	795		20	28	3 710
Iron and steel	178	1 434							
Chemical & petrochemical									
Non-metallic minerals	312	46		411					
Other industries	424	26		5 304	795		20	28	3 710
Transport sector				55 178	33 535		5 246		15 442
Domestic air transport				5 236	40		5 196		
Road				46 534	33 467				12 796
Rail				1 907					1 907
Inland waterways				1 356					672
Other transport				145	28		50		67
Other sector	6			10 668	1 765		502	349	6 247
Residential	6			1 822				65	1 365
Commerce and public services				3 707	431		502	281	1 559
Agriculture				5 139	1 334			3	3 323
Non-specified others									
<b>Non-energy</b>	<b>26</b>	<b>22</b>		<b>20 603</b>		<b>4 727</b>			
<b>2015</b>									
Indigenous production	30 770		226 266						
Import	4 688	606	51 490	11 958	3 089	9	3 031	187	1 938
Export	-18 156	-50	-161 959	-22 686	-7 666	-657	-452		-6 843
International marine bunkers				-216					-80
International aviation bunkers				-864			-864		
Stock changes	369	-159	-252	810	284	-29	-12	-15	330
<b>Total primary energy supply</b>	<b>17 671</b>	<b>397</b>	<b>115 545</b>	<b>-10 998</b>	<b>-4 293</b>	<b>-677</b>	<b>1 703</b>	<b>172</b>	<b>-4 655</b>
<b>Transfers</b>			<b>-10 892</b>	<b>15 438</b>	<b>6 017</b>	<b>-197</b>	<b>-92</b>	<b>-124</b>	<b>2 278</b>
<b>Total transformation sector</b>	<b>-17 118</b>	<b>1 211</b>	<b>-90 978</b>	<b>88 488</b>	<b>32 307</b>	<b>3 828</b>	<b>4 518</b>	<b>870</b>	<b>30 367</b>
Main activity producers	-15 124			-1 614	-30				-185
Autoproducers		-7		-539					-110
Gas processing									
Petroleum refineries			-93 410	90 641	32 337	3 828	4 518	870	30 662
Coal transformation	-1 994	1 218							
Other transformation			2 432						
Losses & own use				-15 326	-5	-21		-6	-2 273
Discrepancy	616	-198	-13 675	13 111	962	1 329	-754	-544	967
<b>Total final consumption</b>	<b>1 169</b>	<b>1 410</b>	<b>90 713</b>	<b>34 988</b>	<b>4 262</b>	<b>5 375</b>	<b>368</b>	<b>26 684</b>	
<b>Total final energy consumption</b>	<b>1 140</b>	<b>1 386</b>	<b>71 155</b>	<b>34 988</b>			<b>5 375</b>	<b>368</b>	<b>26 684</b>
Industry sector	1 134	1 386		5 132	762		19	25	3 119
Iron and steel	178	1 332							
Chemical & petrochemical									
Non-metallic minerals	364	24		410					
Other industries	592	30		4 722	762		19	25	3 119
Transport sector				55 270	32 573		4 900		16 948
Domestic air transport				4 887	39		4 848		
Road				46 891	32 500				14 150
Rail				2 076					2 076
Inland waterways				1 271					663
Other transport				145	34		52		59
Other sector	6			10 753	1 653		456	343	6 617
Residential	6			1 894				50	1 509
Commerce and public services				3 743	388		456	281	1 751
Agriculture				5 116	1 265			12	3 357
Non-specified others									
<b>Non-energy</b>	<b>29</b>	<b>24</b>		<b>19 558</b>		<b>4 262</b>			

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				146 033	33 284	26 354	2 950	13 048			475 713	49 076
756	276		3 184	16 994				958	800		88 074	958
-2 903	-171		-2 728	-68 767				-1 241	-6 316		-284 306	-1 241
-235											-418	
											-636	
152	59		170	499							1 670	
-2 230	164		626	94 759	33 284	26 354	2 950	12 765	-5 516		280 097	48 793
-151	2 470	6 153	78								3 811	
3 230	1 462	3 165	8 211	-17 819	-33 284	-26 354	-2 908	-3 160	57 380	611	-43 194	-39 288
-670			-743	-8 368	-30 625	-26 354	-2 811	-427	51 632	589	-32 473	-33 799
-51		-340	-50	-6 458	-2 659		-97	-2 733	5 748	22	-6 724	-5 489
3 951	1 462	3 505	9 004								-2 548	
											-817	
				-2 993							-632	
-22	-356	-9 319	-3 151	-28 717				-2	-9 880		-54 539	-2
708	-933	1	9 692	-2 530					-1 170		5 226	
1 535	2 807		15 456	45 693			42	9 603	40 814	611	191 401	9 503
1 535	1 924		463	42 567			42	9 603	40 814	611	167 624	9 503
519	180		463	13 875				4 874	14 510	544	41 938	4 732
				1 490				1	758	1	3 862	1
				4 042					1 840	262	6 144	
17			394	769				142	631		2 311	
502	180		69	7 574				4 731	11 281	281	29 621	4 731
684	271			3 627				1 712	594		61 111	1 712
											5 236	
	271			39				1 712	72		48 357	1 712
											1 907	
684											1 356	
				3 588					522		4 255	
332	1 473			25 065			42	3 017	25 710	67	64 575	3 059
9	383			13 197				3 002	14 116		32 143	3 002
74	860			11 047				15	9 947	47	24 763	15
249	230			821					862		6 822	
							42		785	20	847	42
	883		14 993	3 126							23 777	
				139 152	32 862	26 527	2 566	13 885			472 028	49 111
621	139		2 944	16 551				984	750		87 027	984
-3 036	-402		-3 630	-66 007				-815	-5 885		-275 558	-815
-136											-216	
											-864	
-13	137		128	-2 396							-1 628	
-2 564	-126		-558	87 300	32 862	26 527	2 566	14 054	-5 135		280 789	49 280
-101	2 897	5 876	-1 116								4 546	
3 771	1 451	3 500	7 876	-18 383	-32 862	-26 527	-2 524	-3 160	57 440	676	-43 737	-38 482
-737			-662	-8 798	-29 967	-26 527	-2 491	-427	51 197	654	-33 097	-32 821
-41		-327	-61	-6 404	-2 895		-33	-2 733	6 243	22	-6 346	-5 661
4 549	1 451	3 827	8 599								-2 769	
											-776	
											-749	
-73	-357	-9 494	-3 097	-27 134				-2	-9 820		-52 282	-2
479	-1 203	118	11 757	5 760				-247	-1 918		3 449	
1 512	2 662		14 862	47 543			42	10 645	40 567	676	192 765	10 549
1 512	1 760		468	44 301			42	10 645	40 567	676	169 912	10 549
551	188		468	14 061				5 852	14 645	602	42 812	5 714
				1 500				1	772	1	3 784	1
				4 413					1 746	279	6 438	
16			394	760				138	592		2 288	
535	188		74	7 388				5 713	11 535	322	30 302	5 713
608	241			3 547				1 776	527		61 120	1 776
											4 887	
	241			38				1 776	72		48 777	1 776
											2 076	
608											1 271	
				3 509					455		4 109	
353	1 331			26 693			42	3 017	25 395	74	65 980	3 059
10	325			14 827				3 002	14 456		34 185	3 002
64	803			11 025				15	10 104	54	24 941	15
279	203			841					835		6 792	
							42			20	62	42
	902		14 394	3 242							22 853	

## Major energy indicators of Canada

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	211 286	263 062	266 803	268 008	271 688	279 635	280 789	280 097
Indigenous production	276 437	401 395	414 670	426 276	445 809	469 231	472 028	475 713
Import	46 402	84 098	89 507	92 456	86 321	81 865	87 027	88 074
Export	-105 717	-228 033	-239 110	-251 298	-262 935	-265 932	-275 558	-284 306
Final energy consumption	146 767	167 826	173 896	170 987	175 074	174 537	169 912	167 624
Industry	47 236	42 379	43 915	43 629	44 178	42 985	42 812	41 938
Transport	43 120	58 551	58 890	59 741	61 570	61 622	61 120	61 111
Residential	31 439	33 061	34 972	33 526	34 876	35 561	34 185	32 143
Commerce & public services	21 725	23 229	24 471	23 574	24 120	24 905	24 941	24 763
Others	3 247	10 606	11 648	10 517	10 330	9 464	6 854	7 669
<b>Coal &amp; coal products</b>								
Primary energy supply	24 277	22 481	20 091	19 454	17 969	19 270	18 068	16 957
Indigenous production	37 928	33 945	33 757	33 610	35 172	34 725	30 770	30 025
Import	9 547	7 945	6 190	6 504	5 362	5 392	5 294	4 561
Export	-21 443	-20 156	-20 480	-21 068	-23 371	-20 501	-18 206	-18 089
Transformation sector	-21 234	-20 300	-18 574	-16 998	-16 532	-16 265	-15 907	-15 296
Power generation	-19 973	-19 099	-17 649	-15 862	-15 626	-15 320	-15 131	-14 479
Final energy consumption	2 887	3 022	3 235	3 119	2 590	2 562	2 526	2 426
Industry	2 835	2 991	3 217	3 104	2 576	2 550	2 520	2 420
Transport								
Residential	47	31	18	15	14	12	6	6
Commerce & public services	5							
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	82 797	104 076	100 826	109 651	108 532	111 989	115 545	107 371
Indigenous production	94 146	167 161	177 686	191 259	204 038	219 948	226 266	224 019
Import	27 134	42 349	39 948	45 858	44 488	44 994	51 490	52 041
Export	-37 811	-103 906	-117 726	-128 106	-139 704	-151 545	-161 959	-168 564
Transformation sector	-85 549	-96 145	-91 351	-92 726	-90 580	-91 046	-90 978	-92 024
Petroleum refineries	-85 890	-98 129	-93 340	-95 085	-92 817	-93 342	-93 410	-94 385
<b>Petroleum products</b>								
Primary energy supply	-6 282	-7 793	-5 430	-12 265	-13 620	-13 311	-10 998	-8 827
Import	7 671	12 942	15 390	12 153	11 974	11 283	11 958	12 720
Export	-11 855	-20 463	-19 064	-23 027	-24 878	-22 625	-22 686	-21 329
Transformation sector	82 856	97 146	92 375	93 772	91 867	86 673	88 488	89 660
Power generation	-3 795	-2 085	-1 762	-1 742	-1 940	-1 997	-2 153	-2 177
Petroleum refineries	86 651	99 231	94 137	95 514	93 807	88 670	90 641	91 837
Final energy consumption	57 471	70 132	71 055	71 330	72 077	71 031	71 155	71 561
Industry	6 787	5 095	5 319	5 433	5 158	4 762	5 132	5 715
Transport	39 943	54 569	54 486	55 162	56 368	55 853	55 270	55 178
Residential	4 659	2 723	2 681	2 386	2 065	1 960	1 894	1 822
Commerce & public services	4 076	3 540	3 965	3 909	3 825	3 517	3 743	3 707
Others	2 006	4 205	4 604	4 440	4 661	4 939	5 116	5 139
<b>Gas</b>								
Primary energy supply	54 728	78 700	83 459	83 158	86 700	88 410	87 300	94 759
Indigenous production	88 554	132 426	132 393	129 689	130 347	137 576	139 152	146 033
Import	520	18 770	25 969	26 077	22 516	18 007	16 551	16 994
Export	-33 035	-79 151	-76 853	-73 525	-68 856	-65 367	-66 007	-68 767
Transformation sector	-2 448	-14 399	-15 841	-17 288	-16 736	-17 433	-18 383	-17 819
Power generation	-1 869	-11 666	-13 051	-14 070	-13 670	-14 396	-15 202	-14 826
Final energy consumption	39 922	39 195	42 479	40 540	43 572	45 602	44 301	42 567
Industry	16 852	12 654	13 827	13 684	14 434	14 108	14 061	13 875
Transport	2 896	2 464	2 437	2 478	2 895	3 420	3 547	3 627
Residential	11 356	13 224	14 665	13 589	14 738	15 741	14 827	13 197
Commerce & public services	8 320	10 285	10 826	9 982	10 677	11 499	11 025	11 047
Others	498	568	724	807	828	834	841	821
<b>Electricity</b>								
Power generation	41 456	51 957	54 491	54 506	56 692	56 883	57 440	57 380
Thermal	9 318	12 276	12 328	11 728	11 581	11 564	12 199	11 391
Hydro	25 519	30 210	32 303	32 693	33 685	32 885	32 862	33 284
Nuclear	6 275	7 797	8 049	8 158	8 896	9 226	8 756	8 698
Others	344	1 675	1 811	1 927	2 530	3 208	3 623	4 007
Final energy consumption	35 952	44 440	45 626	44 225	44 427	43 493	40 567	40 814
Industry	14 444	15 089	15 044	14 795	14 840	14 678	14 645	14 510
Transport	281	351	359	367	475	478	527	594
Residential	11 165	13 814	14 299	14 185	14 734	14 846	14 456	14 116
Commerce & public services	9 319	9 394	9 670	9 668	9 596	9 861	10 104	9 947
Others	743	5 792	6 254	5 210	4 782	3 630	835	1 647

## Major economic indicators of Canada

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	27.79	34.01	34.34	34.75	35.15	35.54	35.83	36.26
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	1 014	1 613	1 664	1 693	1 735	1 785	1 803	1 828
GDP, Billion USD (PPP, constant 2011)	870	1 384	1 427	1 452	1 488	1 531	1 546	1 568
Nominal, Billion USD (Current)	594	1 613	1 789	1 824	1 843	1 799	1 560	1 536
GDP per Capita *3								
Real Term (constant 2010 USD)	36 489	47 447	48 457	48 724	49 359	50 222	50 304	50 407
GDP, PPP (constant 2011 USD)	31 300	40 699	41 565	41 795	42 339	43 079	43 149	43 238
Nominal (Current USD)	21 372	47 447	52 082	52 497	52 418	50 633	43 525	42 349
Nominal GDP & its Components (Billions of Current CAD) *1								
Gross Domestic Product	693	1 662	1 770	1 823	1 898	1 990	1 995	2 036
Household Final Consumption Expenditure	386	946	989	1 021	1 061	1 110	1 146	1 184
General Government Final Consumption Expenditure	157	358	375	385	394	404	417	430
Gross Fixed Capital Formation	151	391	417	448	460	487	476	472
Stock Change	- 3		11	7	14	10	4	
Exports of Goods and Services	174	483	541	551	572	628	629	630
Imports of Goods and Services	173	515	562	587	604	647	678	680
Real GDP & its Components (Billions of 2005 CAD) *1								
Gross Domestic Product	1 045	1 662	1 714	1 744	1 787	1 838	1 857	1 883
Household Final Consumption Expenditure	539	946	968	987	1 012	1 039	1 061	1 085
General Government Final Consumption Expenditure	263	358	362	365	362	364	370	378
Gross Fixed Capital Formation	207	391	409	429	435	445	422	409
Stock Change	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of Goods and Services	228	483	506	520	534	565	585	591
Imports of Goods and Services	198	515	544	563	573	586	590	584
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	N.A.	1	1	1	2	1	1	1
Industry	N.A.	27	27	27	27	28	27	26
Services, etc.	N.A.	66	65	65	65	65	66	66
Industrial Production Index (2010=100) *2	81.0	100.0	104.9	104.9	106.4	111.7	111.1	111.6
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	127.6	387.5	451.3	455.6	458.3	476.3	410.0	390.3
Imports, c.i.f.	123.2	402.7	463.6	476.3	475.8	474.3	429.0	413.0
Balance of Payments (Billions of Current USD) *2								
Trade Balance	9.4	-9.4	0.4	-13.3	-7.9	4.3	-18.6	-19.8
Current Account	-20.3	-58.2	-49.7	-65.7	-59.4	-43.2	-56.2	-49.4
Overall Balance	2.5	3.8	12.3	-1.5	2.1	4.7	10.5	7.6
Foreign Exchange Rate (CAD/USD) *1	1.17	1.03	0.99	1.00	1.03	1.11	1.28	1.33
PPP conversion factor, GDP (CAD/USD) *1	1.24	1.22	1.24	1.24	1.22	1.23	1.25	1.25
Price Indices								
GDP Deflator (2005=100) *3	66.3	100.0	103.2	104.5	106.2	108.3	107.4	108.1
Producer Price Index (2010=100) *2	71.2	100.0	106.9	108.1	108.6	111.3	110.3	110.1
Consumer Price Index (2010=100) *2	67.3	100.0	102.9	104.5	105.5	107.5	108.7	110.2
Growth Rate (%) *3								
Real GDP	0.2	3.1	3.1	1.7	2.5	2.9	1.0	1.4
Population	1.5	1.1	1.0	1.2	1.2	1.1	0.8	1.2
Price								
Producer Prices	0.3	1.5	6.9	1.1	0.4	2.5	-0.8	-0.2
Consumer Prices	4.8	1.8	2.9	1.5	0.9	1.9	1.1	1.4

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

Note : N.A. means "not available"  
: CAD means Canadian Dollar, USD means United States Dollar  
: PPP means Purchasing Power Parity





**Chile**

## Energy balance table of Chile

	Coal	Coal products	Crude oil & NGL	Petroleum products				
				Total	Gasoline	Naphtha	Jet fuel	Kerosene
<b>2016</b>								
Indigenous production	1 014		256					
Import	6 624		8 607	8 456	490	145	641	5 764
Export	- 349	- 105		- 445	- 24			- 59
International marine bunkers				- 130				
International aviation bunkers				- 584			- 584	
Stock changes	- 148	52	46	- 91	1	- 15	- 39	- 69
<b>Total primary energy supply</b>	<b>7 141</b>	<b>- 53</b>	<b>8 909</b>	<b>7 206</b>	<b>467</b>	<b>130</b>	<b>18</b>	<b>5 636</b>
<b>Transfers</b>			<b>919</b>	<b>- 872</b>	<b>- 67</b>	<b>- 182</b>	<b>- 60</b>	<b>- 116</b>
<b>Total transformation sector</b>	<b>- 7 321</b>	<b>281</b>	<b>- 10 124</b>	<b>8 914</b>	<b>3 186</b>	<b>52</b>	<b>588</b>	<b>168</b>
Main activity producers	- 6 955			- 641				- 443
Autoproducers				- 121				- 68
Gas processing				- 2				
Petroleum refineries			- 10 124	9 678	3 186	52	588	168
Coal transformation	- 366	281						3 006
Other transformation								
Losses & own use		- 152		- 326				- 1
Discrepancy	316	6	296	- 128	- 61		- 91	14
<b>Total final consumption</b>	<b>136</b>	<b>82</b>	<b>14 794</b>	<b>3 525</b>			<b>515</b>	<b>106</b>
<b>Total final energy consumption</b>	<b>136</b>	<b>82</b>	<b>14 490</b>	<b>3 525</b>			<b>515</b>	<b>106</b>
<b>Industry sector</b>	<b>135</b>	<b>82</b>	<b>3 884</b>	<b>1</b>		<b>43</b>	<b>11</b>	<b>2 925</b>
Iron and steel		74	8					7
Chemical & petrochemical								
Non-metallic minerals	4		239					8
Other industries	131	8	3 637	1		43	11	2 910
<b>Transport sector</b>			<b>8 726</b>	<b>3 524</b>		<b>469</b>	<b>5</b>	<b>4 489</b>
Domestic air transport			477	5		469		3
Road			7 877	3 518			5	4 316
Rail			44					44
Inland waterways			328	1				126
Other transport								
<b>Other sector</b>	<b>1</b>		<b>1 880</b>			<b>3</b>	<b>90</b>	<b>614</b>
Residential			1 000				86	1
Commerce and public services			620			3	4	421
Agriculture								
Non-specified others	1		260					192
<b>Non-energy</b>			<b>304</b>					
<b>2015</b>								
Indigenous production	1 262		296					
Import	5 674	2	8 699	7 559	525	146	533	5 408
Export	- 339	- 28		- 489	- 75			- 82
International marine bunkers				- 128				
International aviation bunkers				- 567			- 567	
Stock changes		- 12	- 37	- 39	- 34	- 8	- 1	114
<b>Total primary energy supply</b>	<b>6 597</b>	<b>- 38</b>	<b>8 958</b>	<b>6 336</b>	<b>416</b>	<b>138</b>	<b>- 34</b>	<b>5 440</b>
<b>Transfers</b>			<b>1 065</b>	<b>- 1 003</b>		<b>- 229</b>	<b>- 5</b>	<b>- 115</b>
<b>Total transformation sector</b>	<b>- 6 921</b>	<b>252</b>	<b>- 10 322</b>	<b>9 148</b>	<b>3 027</b>	<b>130</b>	<b>609</b>	<b>155</b>
Main activity producers	- 6 556			- 640				- 474
Autoproducers				- 121				- 46
Gas processing								
Petroleum refineries			- 10 322	9 909	3 027	130	609	155
Coal transformation	- 365	252						3 135
Other transformation								
Losses & own use	- 2	- 156		- 340		- 40		
Discrepancy	487	7	299	- 316	- 95	1	- 14	- 382
<b>Total final consumption</b>	<b>161</b>	<b>65</b>	<b>13 825</b>	<b>3 348</b>			<b>561</b>	<b>150</b>
<b>Total final energy consumption</b>	<b>161</b>	<b>65</b>	<b>13 729</b>	<b>3 348</b>			<b>561</b>	<b>150</b>
<b>Industry sector</b>	<b>158</b>	<b>65</b>	<b>3 933</b>	<b>1</b>		<b>68</b>	<b>15</b>	<b>2 867</b>
Iron and steel		56	2					
Chemical & petrochemical								
Non-metallic minerals			227					6
Other industries	158	9	3 704	1		68	15	2 861
<b>Transport sector</b>			<b>8 340</b>	<b>3 347</b>		<b>455</b>	<b>7</b>	<b>4 294</b>
Domestic air transport			526	7		455		64
Road			7 488	3 340			7	4 103
Rail			32					32
Inland waterways			294					95
Other transport								
<b>Other sector</b>	<b>3</b>		<b>1 456</b>			<b>38</b>	<b>128</b>	<b>397</b>
Residential			823				126	
Commerce and public services	3		423			38	2	249
Agriculture								
Non-specified others			210					148
<b>Non-energy</b>			<b>96</b>					

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				1 013	2 001		471	7 782			12 537	10 254
40	1 209		167	3 656				1			27 344	1
- 313	- 14		- 35	- 303							- 1 202	
- 130											- 130	
											- 584	
14	35		- 18	- 18				- 11			- 170	- 11
- 389	1 230		114	4 348	2 001		471	7 772			37 795	10 244
	- 41		- 406								47	
1 103	282	233	807	- 2 131	- 2 001		- 438	- 4 258	6 819		- 10 259	- 6 697
- 15			- 183	- 2 071	- 1 987		- 438	- 1 060	6 219		- 6 933	- 3 485
- 53				- 64	- 14			- 3 132	600		- 2 731	- 3 146
	- 2			4							2	
1 171	284	233	990								- 446	
											- 85	
								- 66			- 66	- 66
- 77	- 15	- 233		- 201				- 26	- 548		- 1 253	- 26
27	- 47		32	- 321				227	- 238		158	
664	1 409		547	1 695			33	3 715	6 033		26 488	3 746
664	1 409		243	1 436			33	3 715	6 033		25 925	3 746
380	281		243	819				1 942	3 750		10 612	1 940
	1			5					51		138	
				124					4		128	
	2		229	10				11	27		291	10
380	278		14	680				1 931	3 668		10 055	1 930
207	32			24					85		8 835	
											477	
6	32			24					40		7 941	
									41		85	
201									4		328	
											4	
77	1 096			593			33	1 773	2 198		6 478	1 806
	913			464				1 748	1 169		4 381	1 748
14	178			129				25	1 022		1 796	25
63	5						33		7		301	33
			304	259							563	
				846	2 053		321	7 302			12 080	9 676
31	878		38	3 133							25 067	
- 290	- 42										- 856	
- 128											- 128	
											- 567	
- 12	- 37		- 61	2							- 86	
- 399	799		- 23	3 981	2 053		321	7 302			35 510	9 676
	- 93		- 561								62	
1 116	344	231	921	- 1 938	- 2 054		- 290	- 3 710	6 481		- 9 354	- 6 054
- 12			- 154	- 1 901	- 2 050		- 290	- 928	5 947		- 6 418	- 3 268
- 74	- 1			- 39	- 4			- 2 709	534		- 2 339	- 2 713
				2				- 1			1	- 1
1 202	345	231	1 075								- 413	
											- 113	
								- 72			- 72	- 72
- 62	- 7	- 231		- 237					- 663		- 1 398	
77	108		- 12	- 292	1			73	- 58		201	
732	1 151		325	1 514			31	3 665	5 760		25 021	3 696
732	1 148		232	1 384			31	3 665	5 760		24 795	3 696
467	283		232	771				1 943	3 633		10 503	1 943
	2			31					65		154	
				62					4		66	
	1		220	9				14	40		290	14
467	280		12	669				1 929	3 524		9 993	1 929
202	35			27					93		8 460	
											526	
3	35			27					53		7 568	
									40		72	
199											294	
63	830			586			31	1 722	2 034		5 832	1 753
	697			442				1 696	1 011		3 972	1 696
10	124			140				26	1 014		1 606	26
53	9			4			31		9		254	31
	3		93	130							226	

## Major energy indicators of Chile

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	14 009	30 854	33 616	37 203	38 487	34 723	35 510	37 795
Indigenous production	7 928	9 214	9 881	13 020	14 579	12 334	12 080	12 537
Import	7 238	22 924	25 452	25 851	26 817	24 941	25 067	27 344
Export	- 212	- 626	- 631	- 874	- 1 447	- 1 559	- 856	- 1 202
Final energy consumption	10 175	22 836	24 358	24 225	25 968	24 227	24 795	25 925
Industry	3 407	8 710	9 534	9 064	9 929	10 465	10 503	10 612
Transport	3 045	7 142	7 273	7 464	8 150	7 897	8 460	8 835
Residential	3 120	5 325	5 587	5 965	6 114	4 070	3 972	4 381
Commerce & public services	478	1 367	1 585	1 431	1 531	1 563	1 606	1 796
Others	125	292	379	301	244	232	254	301
<b>Coal &amp; coal products</b>								
Primary energy supply	2 496	4 465	5 418	6 167	6 477	6 136	6 559	7 088
Indigenous production	1 451	254	245	295	1 216	1 672	1 262	1 014
Import	1 132	3 809	5 455	5 950	6 179	5 644	5 676	6 624
Export					- 505	- 994	- 367	- 454
Transformation sector	-1 850	-3 981	-4 987	-5 940	-6 766	-5 818	-6 669	-7 040
Power generation	-1 678	-3 856	-4 786	-5 671	-6 635	-5 647	-6 556	-6 955
Final energy consumption	581	406	340	192	168	142	226	218
Industry	524	401	337	190	166	140	223	217
Transport								
Residential	15							
Commerce & public services	3					2	3	
Others	39	5	3	2	2			1
<b>Crude oil &amp; NGL</b>								
Primary energy supply	6 572	9 266	9 973	9 507	9 979	9 555	8 958	8 909
Indigenous production	1 166	611	641	532	539	435	296	256
Import	5 561	8 658	9 269	8 850	9 647	9 088	8 699	8 607
Export								
Transformation sector	-6 279	-9 895	-10 917	-10 666	-10 592	-10 631	-10 322	-10 124
Petroleum refineries	-6 279	-9 895	-10 950	-10 677	-10 632	-10 631	-10 322	-10 124
<b>Petroleum products</b>								
Primary energy supply	- 102	5 743	5 817	6 102	5 865	5 844	6 336	7 206
Import	545	7 341	7 310	7 729	7 694	7 294	7 559	8 456
Export	- 212	- 626	- 631	- 874	- 942	- 565	- 489	- 445
Transformation sector	5 757	7 115	7 563	7 414	8 372	8 920	9 148	8 914
Power generation	- 476	-1 754	-1 439	-1 819	-1 204	- 969	- 761	- 762
Petroleum refineries	6 277	8 874	9 126	9 259	9 621	9 895	9 909	9 678
Final energy consumption	5 310	11 791	12 465	12 103	13 097	13 074	13 729	14 490
Industry	1 338	3 034	3 234	2 943	3 321	3 827	3 933	3 884
Transport	3 021	7 087	7 215	7 392	8 076	7 782	8 340	8 726
Residential	753	932	1 000	991	1 028	905	823	1 000
Commerce & public services	123	463	654	499	461	368	423	620
Others	75	275	362	278	211	192	210	260
<b>Gas</b>								
Primary energy supply	1 142	4 469	4 566	4 287	4 061	3 625	3 981	4 348
Indigenous production	1 410	1 547	1 244	1 030	812	664	846	1 013
Import		3 007	3 327	3 293	3 268	2 915	3 133	3 656
Export								- 303
Transformation sector	- 13	-1 740	-2 310	-2 384	-2 067	-1 692	-1 938	-2 131
Power generation	- 62	-1 752	-2 408	-2 410	-2 078	-1 704	-1 940	-2 135
Final energy consumption	207	1 648	1 532	1 188	1 246	1 184	1 384	1 436
Industry	2	1 101	992	626	671	586	771	819
Transport	6	18	17	29	28	34	27	24
Residential	171	398	397	401	417	429	442	464
Commerce & public services	28	129	126	132	130	135	140	129
Others		2					4	
<b>Electricity</b>								
Power generation	1 580	5 195	5 649	5 997	6 268	6 059	6 481	6 819
Thermal	729	3 106	3 411	3 811	4 027	3 450	3 654	3 868
Hydro	768	1 867	1 807	1 733	1 697	1 986	2 054	2 001
Nuclear								
Others	83	222	431	453	544	624	773	950
Final energy consumption	1 330	4 707	4 980	5 350	5 606	5 773	5 760	6 033
Industry	872	3 083	3 304	3 623	3 675	3 725	3 633	3 750
Transport	18	37	41	43	46	81	93	85
Residential	372	805	821	873	934	978	1 011	1 169
Commerce & public services	60	775	804	800	938	980	1 014	1 022
Others	8	7	10	11	13	9	9	7

## Major economic indicators of Chile

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	13.24	16.99	17.15	17.31	17.46	17.61	17.76	17.91
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	79	219	232	244	254	259	265	268
GDP, Billion USD (PPP, constant 2011)	119	330	351	369	384	391	400	405
Nominal, Billion USD (Current)	33	219	252	267	278	261	244	250
GDP per Capita *3								
Real Term (constant 2010 USD)	5 948	12 860	13 519	14 109	14 551	14 681	14 894	14 959
GDP, PPP (constant 2011 USD)	8 992	19 442	20 438	21 330	21 998	22 195	22 517	22 614
Nominal (Current USD)	2 501	12 860	14 706	15 432	15 941	14 794	13 737	13 961
Nominal GDP & its Components (Billions of Current CLP) *1								
Gross Domestic Product	10 096	111 509	122 006	129 947	137 876	148 624	159 606	169 264
Household Final Consumption Expenditure	5 720	65 037	73 357	80 118	86 377	93 804	101 269	106 942
General Government Final Consumption Expenditure	902	13 502	14 535	15 496	16 960	18 874	20 732	23 222
Gross Fixed Capital Formation	2 421	24 035	28 207	32 325	34 199	35 445	37 934	38 813
Stock Change	182	1 768	1 858	2 045	1 132	- 909	21	-1 159
Exports of Goods and Services	3 281	42 089	46 072	44 340	44 395	49 202	46 871	47 705
Imports of Goods and Services	2 953	34 923	42 023	44 377	45 188	47 792	47 221	46 258
Real GDP & its Components (Billions of 2008 CLP) *1								
Gross Domestic Product	42 735	118 578	125 824	132 516	137 876	140 312	143 547	145 364
Household Final Consumption Expenditure	21 402	71 982	77 885	82 597	86 377	88 684	90 565	92 587
General Government Final Consumption Expenditure	7 227	15 520	15 900	16 490	16 960	17 603	18 453	19 610
Gross Fixed Capital Formation	5 119	25 610	29 746	33 103	34 199	32 546	32 452	32 216
Stock Change	N.A.	1 589	2 171	2 270	1 132	- 818	33	- 998
Exports of Goods and Services	11 180	40 623	42 839	42 991	44 395	44 539	43 778	43 729
Imports of Goods and Services	5 568	36 576	42 129	44 312	45 188	42 242	41 778	41 850
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	4	4	4	4	3	3	3	3
Industry	43	32	31	31	31	31	30	30
Services, etc.	46	56	57	57	57	57	58	58
Industrial Production Index (2010=100) *2	N.A.	100.0	103.7	107.1	110.8	111.1	111.7	109.7
External Trade (Billions of Current USD) *1								
Exports, f.o.b	8.4	71.1	81.4	77.8	76.8	75.1	62.2	60.6
Imports, c.i.f.	7.7	59.2	74.7	80.1	79.4	72.9	62.5	58.8
Balance of Payments (Billions of Current USD) *2								
Trade Balance	1.3	15.9	10.8	2.6	2.0	6.5	3.4	5.4
Current Account	-0.5	3.1	-4.1	-10.5	-11.2	-4.3	-5.5	-3.5
Overall Balance	2.4	3.9	14.7	0.9	1.7	2.4	0.5	0.9
Foreign Exchange Rate (CLP/USD) *1	304.90	510.25	483.67	486.47	495.27	570.35	654.12	676.96
PPP conversion factor, GDP (CLP/USD) *1	N.A.	359.25	348.02	347.23	349.68	367.21	394.34	402.57
Price Indices								
GDP Deflator (2008=100) *3	23.6	94.0	97.0	98.1	100.0	105.9	111.2	116.4
Producer Price Index (2010=100) *2	N.A.	100.0	112.2	104.8	100.7	100.8	93.9	90.5
Consumer Price Index (2010=100) *2	30.0	100.0	103.3	106.4	108.5	113.3	118.2	122.7
Growth Rate (%) *3								
Real GDP	3.3	5.8	6.1	5.3	4.0	1.8	2.3	1.3
Population	1.7	1.0	0.9	0.9	0.9	0.9	0.8	0.8
Price								
Producer Prices	N.A.	23.0	12.2	-6.6	-3.9	0.1	-6.8	-3.7
Consumer Prices	26.0	1.4	3.3	3.0	1.9	4.4	4.3	3.8

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

Note : N.A. means "not available"  
: CLP means Chilean Peso, USD means United States Dollar  
: PPP means Purchasing Power Parity



**China**

## Energy balance table of China

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2016</b>									
Indigenous production	1708 384		203 663						
Import	122 330	24	381 007	54 896	209	6 147	3 604	28	934
Export	-4 953	-6 940	-2 941	-53 526	-9 734	-68	-13 742		-15 711
International marine bunkers				-9 671					-420
International aviation bunkers				-8 614			-8 614		
Stock changes	61 021	10 381	-17 428	570	-1 572	-284	-176	-27	2 941
<b>Total primary energy supply</b>	<b>1886 782</b>	<b>3 466</b>	<b>564 301</b>	<b>-16 345</b>	<b>-11 097</b>	<b>5 794</b>	<b>-18 928</b>	<b>1</b>	<b>-12 256</b>
<b>Transfers</b>			59 600	-59 600		-7 056			
<b>Total transformation sector</b>	-1365 466	116 581	-617 132	627 030	132 058	46 177	40 514	1 661	182 401
Main activity producers	-795 013	-1 358	-131	-3 351					-298
Autoproducers	-178 189	-33 855		-3 875	-1				-62
Gas processing	-5 878	-13							
Petroleum refineries			-617 001	634 256	132 059	46 177	40 514	1 661	182 760
Coal transformation	-386 386	151 807							
Other transformation									
Losses & own use	-31 999	-6 361	-3 608	-38 459	-481			-17	-3 109
Discrepancy	70 837	45 389	203	219	378	-98	-458	-57	753
<b>Total final consumption</b>	<b>560 154</b>	<b>159 075</b>	<b>3 365</b>	<b>512 844</b>	<b>120 857</b>	<b>44 817</b>	<b>21 128</b>	<b>1 588</b>	<b>167 789</b>
<b>Total final energy consumption</b>	<b>515 654</b>	<b>132 941</b>	<b>3 097</b>	<b>410 598</b>	<b>120 709</b>	<b>1 722</b>	<b>21 128</b>	<b>1 564</b>	<b>167 439</b>
<b>Industry sector</b>	413 204	128 911	3 097	81 862	8 368	1 722		267	16 318
Iron and steel	54 826	73 721		1 302	86			2	611
Chemical & petrochemical	79 904	32 074	3 078	46 652	266	1 722		27	670
Non-metallic minerals	138 518	8 043	2	8 838	279			16	2 933
Other industries	139 956	15 073	17	25 070	7 738	1		222	12 103
<b>Transport sector</b>	2 000	22		237 584	88 952		21 128		122 529
Domestic air transport				22 204			21 128		371
Road				176 870	81 384				94 243
Rail	1 912	22		3 264	73				3 160
Inland waterways	88			21 183	1 713				16 576
Other transport				14 063	5 782				8 179
<b>Other sector</b>	100 451	4 008		91 152	23 389			1 296	28 592
Residential	45 527	3 097		35 737				272	
Commerce and public services	19 898	442		1 291				115	
Agriculture	14 175	361		17 684	2 311			23	15 258
Non-specified others	20 850	108		36 440	21 078			885	13 334
<b>Non-energy</b>	44 499	26 134	267	102 247	148	43 095		24	350
<b>2015</b>									
Indigenous production	1858 627		217 050						
Import	100 467	25	335 483	52 617	171	6 099	3 569	24	437
Export	-3 170	-6 620	-2 866	-41 120	-5 918		-12 880	-16	-7 306
International marine bunkers				-9 227					-445
International aviation bunkers				-7 799			-7 799		
Stock changes	12 740	1 080	-6 238	-2 707	-1 491	-294	-154	-24	56
<b>Total primary energy supply</b>	<b>1968 665</b>	<b>-5 515</b>	<b>543 429</b>	<b>-8 237</b>	<b>-7 238</b>	<b>5 806</b>	<b>-17 264</b>	<b>-16</b>	<b>-7 258</b>
<b>Transfers</b>									
<b>Total transformation sector</b>	-1341 441	141 933	-534 678	509 053	123 690	36 104	36 669	1 986	182 866
Main activity producers	-778 958	-1 268	-125	-3 207					-228
Autoproducers	-165 031	-32 243	-67	-3 594	-2				-63
Gas processing	-6 480	-13							
Petroleum refineries			-545 202	515 855	123 693	36 104	36 669	1 986	183 157
Coal transformation	-390 971	175 456							
Other transformation			10 715						
Losses & own use	-43 886	-6 554	-5 278	-4 004	-526			-19	-2 577
Discrepancy	-162	6 389	-52	-329	-171	58	-376	-333	68
<b>Total final consumption</b>	<b>583 177</b>	<b>136 252</b>	<b>3 421</b>	<b>496 484</b>	<b>115 755</b>	<b>41 968</b>	<b>19 029</b>	<b>1 618</b>	<b>173 099</b>
<b>Total final energy consumption</b>	<b>536 287</b>	<b>115 943</b>	<b>2 078</b>	<b>401 604</b>	<b>115 659</b>	<b>2 975</b>	<b>19 029</b>	<b>1 598</b>	<b>172 818</b>
<b>Industry sector</b>	432 136	111 751	2 078	80 583	8 495	2 975		308	17 463
Iron and steel	71 510	72 120		1 446	117			2	690
Chemical & petrochemical	47 790	15 911	2 067	43 785	315	2 973		31	697
Non-metallic minerals	147 133	8 340	2	8 815	295			11	2 793
Other industries	165 703	15 380	9	26 537	7 768	2		263	13 283
<b>Transport sector</b>	2 395	21		220 410	83 065		19 029		113 276
Domestic air transport				20 060			19 029		361
Road				163 073	76 112				85 756
Rail	2 306	21		3 332	77				3 225
Inland waterways	89			20 602	1 572				15 995
Other transport				13 343	5 305				7 940
<b>Other sector</b>	101 756	4 171		100 611	24 100			1 289	42 079
Residential	46 387	3 247		40 997				300	10 105
Commerce and public services	20 250	453		3 947				120	2 629
Agriculture	13 473	337		17 717	2 383			11	15 227
Non-specified others	21 646	134		37 950	21 717			858	14 118
<b>Non-energy</b>	46 890	20 309	1 343	94 880	96	38 993		20	281



unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				123 461	99 999	55 028	25 685	75 533			2291 753	175 744
11 744	20 142		12 089	66 408					532		625 196	
-9 856	-1 588		-2 827	-3 007					-1 626		-72 992	
-9 251											-9 671	
	64	-192	-183								-8 614	
											54 545	
-7 299	18 362		9 079	186 862	99 999	55 028	25 685	75 533	-1 094		2880 216	175 744
			-52 544									
40 473	42 003	18 507	123 237	-38 739	-99 999	-55 028	-25 685	-47 343	528 254	103 085	-874 441	-147 612
-945		-621	-1 487	-30 802	-99 999	-55 028	-25 685	-35 853	466 186	58 133	-522 898	-136 122
-951	-44	-1 687	-1 131	-8 551					62 068	44 952	-117 451	
				614							-5 277	
42 369	42 046	20 815	125 855								17 254	
											-234 579	
											-11 490	-11 490
-24 163	-7 985	-1 474	-1 231	-18 762					-191	-88 412	-12 967	-200 759
-135	-285	-26	146	-6 781					-504	-5	-38	109 320
8 876	52 095	17 007	78 687	122 579					27 496	438 743	90 080	1914 336
8 233	48 685	16 766	24 352	117 849					27 496	438 743	90 080	1736 459
4 171	9 897	16 766	24 352	52 778					6 001	288 393	60 518	1034 764
29	218	5	352	4 718					623	45 422	4 853	185 467
972	8 060	16 753	18 183	17 065					668	41 922	26 756	248 117
1 812	899	2	2 897	7 512					304	27 417	311	190 945
1 359	720	7	2 920	23 484					4 406	173 632	28 598	410 236
3 738	1 236			21 463						10 763		271 831
703	1											22 204
40	1 202			19 411						2 477		198 758
19	12									5 987		11 185
2 889	6											21 271
87	15			2 052						2 299		18 414
323	37 552			43 608					21 494	139 587	29 563	429 864
	35 465			34 369					15 735	72 417	23 571	230 452
172	1 003			4 856					725	19 985	1 680	48 878
10	82			97					3 656	9 390	31	45 395
141	1 002			4 287					1 378	37 795	4 281	105 139
643	3 410	241	54 335	4 730								177 877
				119 795	95 844	44 508	16 309	72 448			2424 581	160 637
15 404	14 927		11 985	54 283					534		543 408	
-10 517	-1 730		-2 754	-2 888					-1 604		-58 268	
-8 782											-9 227	
	37	-312	-526								-7 799	
											4 876	
-3 857	12 886		8 705	171 190	95 844	44 508	16 309	72 448	-1 070		2897 571	160 637
14 247	30 625	17 278	65 588	-32 306	-95 844	-44 508	-16 309	-44 348	500 053	95 983	-862 411	-132 457
-976		-555	-1 449	-26 564	-95 844	-44 508	-16 309	-33 632	442 340	52 452	-505 623	-121 741
-991	-39	-1 449	-1 049	-7 040					57 714	43 531	-106 730	
				1 298							-5 195	
16 214	30 665	19 281	68 087								-29 347	
											-215 515	
											-10 715	-10 715
-239	-14	-279	-350	-25 355					-249	-83 471	-12 647	-181 443
292	-564	59	639	597					-198	-11	12	6 246
10 443	42 933	17 057	74 583	114 126					27 653	415 501	83 348	1859 963
9 126	40 125	16 794	23 480	109 575					27 653	415 501	83 348	1691 989
4 927	6 142	16 794	23 480	47 953					8 621	279 867	55 801	1018 791
38	210	18	371	3 907					651	45 860	5 663	201 158
1 437	4 262	16 772	17 299	18 209					881	40 885	23 086	192 614
1 916	882	4	2 914	7 438					367	26 707	255	199 057
1 536	787	1	2 896	18 399					6 722	166 416	26 797	425 962
3 840	1 200			20 120						9 680		252 625
670	1											20 060
38	1 167			18 237						3 237		184 547
19	12									4 351		10 010
3 030	6											20 691
83	14			1 882						2 092		17 317
360	32 783			41 502					19 032	125 953	27 548	420 573
	30 592			32 737					13 682	65 061	22 428	224 539
190	1 008			4 637					648	18 250	1 461	49 645
9	86			84					3 449	8 943	26	44 027
161	1 096			4 044					1 253	33 700	3 633	102 362
1 317	2 808	263	51 102	4 551								167 974

## Major energy indicators of China

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	654 004	2419 681	2690 859	2780 035	2847 971	2886 526	2897 571	2880 216
Indigenous production	705 811	2118 274	2348 832	2396 588	2450 282	2448 934	2424 581	2291 753
Import	8 436	396 278	450 190	471 781	504 744	532 231	543 408	625 196
Export	-38 922	-51 504	-48 285	-40 982	-45 879	-47 903	-58 268	-72 992
Final energy consumption	489 928	1350 918	1532 430	1630 962	1646 877	1683 868	1691 989	1736 459
Industry	329 825	864 642	1001 899	1063 550	1037 945	1048 861	1018 791	1034 764
Transport	28 776	172 131	190 197	210 196	226 822	239 555	252 625	271 831
Residential		170 925	182 587	189 963	202 885	212 404	224 539	230 452
Commerce & public services		35 058	40 035	42 716	45 592	47 266	49 645	48 878
Others	131 327	108 162	117 712	124 537	133 633	135 782	146 389	150 534
<b>Coal &amp; coal products</b>								
Primary energy supply	512 155	1753 092	1973 503	2009 895	2018 271	2001 129	1963 150	1890 248
Indigenous production	539 952	1686 511	1897 524	1916 113	1938 443	1905 066	1858 627	1708 384
Import	877	94 723	113 713	111 674	123 863	124 791	100 492	122 354
Export	-7 785	-12 623	-10 798	-6 141	-7 434	-9 114	-9 790	-11 893
Transformation sector		-1008 609	-1119 409	-1141 109	-1215 938	-1214 883	-1199 508	-1248 885
Power generation	-119 784	-810 038	-915 698	-922 201	-992 986	-987 522	-977 500	-1008 414
Final energy consumption	338 239	591 987	696 811	747 196	693 088	685 727	652 230	648 596
Industry	224 832	491 042	590 928	642 874	586 867	578 710	543 887	542 115
Transport	11 089	3 098	3 235	2 931	2 941	2 694	2 416	2 021
Residential		51 675	52 080	49 988	49 153	49 492	49 634	48 624
Commerce & public services		16 665	18 909	19 293	20 372	20 202	20 703	20 340
Others	102 319	29 507	31 659	32 109	33 755	34 629	35 590	35 495
<b>Crude oil &amp; NGL</b>								
Primary energy supply	117 828	429 522	441 339	468 935	489 544	517 983	543 429	564 301
Indigenous production	138 448	203 770	204 604	209 566	212 754	213 965	217 050	203 663
Import	2 926	237 682	253 779	271 027	281 742	308 374	335 483	381 007
Export	-24 014	-3 030	-2 514	-2 432	-1 617	-600	-2 866	-2 941
Transformation sector		-419 520	-434 390	-461 545	-480 940	-508 369	-534 678	-617 132
Petroleum refineries	-109 722	-426 153	-441 728	-469 963	-490 458	-518 282	-545 202	-617 001
<b>Petroleum products</b>								
Primary energy supply	-3 389	-1 146	4 714	-3 287	-1 981	-11 713	-8 237	-16 345
Import	4 634	48 262	53 470	51 407	52 039	45 957	52 617	54 896
Export	-7 123	-30 461	-30 343	-28 319	-32 780	-34 305	-41 120	-53 526
Transformation sector		392 747	409 849	434 962	456 769	482 524	509 053	627 030
Power generation	-11 140	-9 291	-7 784	-7 209	-6 570	-7 112	-6 802	-7 226
Petroleum refineries	107 409	402 038	417 632	442 171	463 339	489 636	515 855	634 256
Final energy consumption	80 728	311 010	330 917	344 480	365 450	377 866	401 604	410 598
Industry	47 912	86 854	86 489	77 129	77 354	77 948	80 583	81 862
Transport	16 676	153 676	167 758	186 718	200 620	209 802	220 410	237 584
Residential		26 517	28 654	29 722	32 456	36 416	40 997	35 737
Commerce & public services		3 323	3 419	3 630	3 653	3 677	3 947	1 291
Others	16 140	40 639	44 599	47 281	51 367	50 024	55 667	54 124
<b>Gas</b>								
Primary energy supply	14 242	100 564	123 765	132 944	151 570	166 039	171 190	186 862
Indigenous production	14 242	89 181	98 069	98 434	107 553	115 832	119 795	123 461
Import		15 134	28 664	37 081	46 460	52 529	54 283	66 408
Export		-3 752	-2 968	-2 572	-2 443	-2 322	-2 888	-3 007
Transformation sector		-18 338	-22 099	-22 483	-24 858	-26 421	-32 306	-38 739
Power generation	-680	-19 932	-23 671	-23 443	-25 356	-27 194	-33 604	-39 353
Final energy consumption	13 205	64 013	80 556	85 514	97 877	109 031	109 575	117 849
Industry	11 084	27 504	36 953	39 469	46 765	51 891	47 953	52 778
Transport	47	9 040	11 908	12 675	14 654	17 950	20 120	21 463
Residential		22 466	25 888	26 851	29 635	31 205	32 737	34 369
Commerce & public services		2 536	3 228	3 535	3 592	4 239	4 637	4 856
Others	2 074	2 467	2 579	2 983	3 231	3 747	4 128	4 384
<b>Electricity</b>								
Power generation	53 440	361 816	405 320	428 930	467 121	485 864	500 053	528 254
Thermal	42 540	286 546	329 698	335 583	366 044	368 238	369 799	384 219
Hydro	10 900	62 107	60 109	74 200	78 344	90 399	95 844	99 999
Nuclear		6 354	7 426	8 376	9 599	11 398	14 688	18 343
Others		6 809	8 086	10 770	13 134	15 829	19 722	25 693
Final energy consumption	52 150	296 693	331 944	354 460	385 633	403 028	415 501	438 743
Industry	40 392	205 710	231 001	243 330	262 726	275 238	279 867	288 393
Transport	964	6 317	7 296	7 872	8 608	9 109	9 680	10 763
Residential		44 072	48 333	53 483	60 107	61 714	65 061	72 417
Commerce & public services		11 111	12 926	14 547	16 141	17 162	18 250	19 985
Others	10 794	29 484	32 387	35 227	38 051	39 804	42 643	47 186

## Major economic indicators of China

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	1 135.19	1 337.71	1 344.13	1 350.70	1 357.38	1 364.27	1 371.22	1 378.67
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	830	6 101	6 682	7 207	7 767	8 333	8 908	9 505
GDP, Billion USD (PPP, constant 2011)	1 733	12 743	13 958	15 055	16 222	17 406	18 607	19 854
Nominal, Billion USD (Current)	395	6 101	7 573	8 561	9 607	10 482	11 065	11 191
GDP per Capita *3								
Real Term (constant 2010 USD)	731	4 561	4 972	5 336	5 722	6 108	6 497	6 894
GDP, PPP (constant 2011 USD)	1 526	9 526	10 384	11 146	11 951	12 759	13 570	14 401
Nominal (Current USD)	348	4 561	5 634	6 338	7 078	7 683	8 069	8 117
Nominal GDP & its Components (Billions of Current CNY) *1								
Gross Domestic Product	1 887	41 303	48 930	54 037	59 524	64 397	68 905	74 359
Household Final Consumption Expenditure	944	14 606	17 653	19 854	21 976	24 254	26 598	29 344
General Government Final Consumption Expenditure	257	5 294	6 449	7 258	8 058	8 577	9 629	10 647
Gross Fixed Capital Formation	464	18 583	21 967	24 460	27 092	29 005	30 150	31 808
Stock Change	192	1 083	1 366	1 064	1 115	1 266	1 133	1 105
Exports of Goods and Services	257	10 849	12 964	13 730	14 586	15 130	14 710	14 618
Imports of Goods and Services	201	9 344	11 795	12 266	13 131	13 769	12 475	12 920
Real GDP & its Components (Billions of 2000 CNY) *1								
Gross Domestic Product	6 417	47 188	51 688	55 749	60 074	64 458	68 905	73 522
Household Final Consumption Expenditure	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
General Government Final Consumption Expenditure								
Gross Fixed Capital Formation								
Stock Change								
Exports of Goods and Services	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.
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	36	11	10	10	9	9	9	9
Industry	28	40	41	41	41	41	41	41
Services, etc.	47	49	49	49	49	50	50	51
Industrial Production Index (2010=100) *4	9.3	100.0	110.9	120.0	106.4	116.1	124.0	132.1
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	62.1	1577.8	1898.4	2048.7	2209.0	2342.3	2273.5	2097.6
Imports, c.i.f.	53.3	1396.2	1743.5	1818.4	1950.0	1959.2	1679.6	1587.9
Balance of Payments (Billions of Current USD) *2								
Trade Balance	N.A.	245.5	236.1	297.7	351.8	N.A.	N.A.	N.A.
Current Account	N.A.	237.8	136.1	215.4	148.2	236.0	304.2	196.4
Overall Balance	N.A.	524.7	401.6	183.6	494.3	184.7	-130.0	-221.0
Foreign Exchange Rate (CNY/USD) *1	4.78	6.77	6.46	6.31	6.20	6.14	6.23	6.64
PPP conversion factor, GDP CNY/USD) *1	1.69	3.31	3.51	3.52	3.55	3.51	3.48	3.47
Price Indices								
GDP Deflator (2000=100) *4	29.4	87.5	94.7	96.9	99.1	99.9	100.0	101.1
Producer Price Index (2000=100) *3	101.3	102.6	103.1	95.6	95.4	N.A.	N.A.	N.A.
Consumer Price Index (2010=100)*2	40.4	100.0	105.6	108.3	111.2	113.3	114.9	117.2
Growth Rate (%)								
Real GDP *4	3.9	10.6	9.5	7.9	7.8	7.3	6.9	6.7
Population *4	1.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Price *4								
Producer Prices *3	-12.2	11.5	0.5	-7.3	-0.2	N.A.	N.A.	N.A.
Consumer Prices	3.1	3.2	5.6	2.6	2.6	N.A.	N.A.	N.A.

Source \*1 : *World Development Indicators*, World Bank

\*2 : *International Financial Statistics*, International Monetary Fund

\*3 : *China Statistics Yearbook*, China Statistical Publishing House

\*4 : Calculated from \*1, \*2 and \*3 by ESTO

Note : N.A. means "not available"

: CNY means Yuan Renminbi, USD means United States Dollar

: PPP means Purchasing Power Parity



**Hong Kong, China**

## Energy balance table of Hong Kong, China

	Coal	Coal products	Crude oil & NGL	Petroleum products					
				Total	Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2016</b>									
Indigenous production									
Import	7 030			20 414	531	257	6 417	5	5 623
Export				- 368	- 9				- 97
International marine bunkers				-9 104					-2 632
International aviation bunkers				-6 303			-6 303		
Stock changes	- 334			- 927	- 32	71	- 108		- 417
<b>Total primary energy supply</b>	<b>6 695</b>			<b>3 712</b>	<b>490</b>	<b>329</b>	<b>5</b>	<b>5</b>	<b>2 477</b>
<b>Transfers</b>									
Total transformation sector	-6 695			- 420		- 329			- 91
Main activity producers	-6 695			- 91					- 91
Autoproducers									
Gas processing				- 329		- 329			
Petroleum refineries									
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy				- 949	100				-1 049
<b>Total final consumption</b>				<b>2 343</b>	<b>590</b>		<b>5</b>	<b>5</b>	<b>1 337</b>
<b>Total final energy consumption</b>				<b>2 343</b>	<b>590</b>		<b>5</b>	<b>5</b>	<b>1 337</b>
Industry sector				98				1	97
Iron and steel									
Chemical & petrochemical									
Non-metallic minerals									
Other industries				98				1	97
Transport sector				2 038	590		3		1 125
Domestic air transport				3			3		
Road				1 856	552				985
Rail									
Inland waterways				179	38				140
Other transport									
Other sector				207			2	4	115
Residential				62					
Commerce and public services				145			2	4	115
Agriculture									
Non-specified others									
<b>Non-energy</b>									
<b>2015</b>									
Indigenous production									
Import	7 044			20 122	538	266	6 010	6	5 183
Export				- 701	- 6				- 298
International marine bunkers				-8 741					-2 030
International aviation bunkers				-6 181			-6 181		
Stock changes	- 350			-1 066	- 55		176		- 584
<b>Total primary energy supply</b>	<b>6 694</b>			<b>3 433</b>	<b>477</b>	<b>266</b>	<b>5</b>	<b>6</b>	<b>2 272</b>
<b>Transfers</b>									
Total transformation sector	-6 694			- 328		- 266			- 62
Main activity producers	-6 694			- 62					- 62
Autoproducers									
Gas processing				- 266		- 266			
Petroleum refineries									
Coal transformation									
Other transformation									
Losses & own use									
Discrepancy				- 771	86				- 857
<b>Total final consumption</b>				<b>2 334</b>	<b>563</b>		<b>4</b>	<b>6</b>	<b>1 353</b>
<b>Total final energy consumption</b>				<b>2 334</b>	<b>563</b>		<b>4</b>	<b>6</b>	<b>1 353</b>
Industry sector				104				1	102
Iron and steel									
Chemical & petrochemical									
Non-metallic minerals									
Other industries				104				1	102
Transport sector				2 024	563		3		1 137
Domestic air transport				3			3		
Road				1 835	525				988
Rail									
Inland waterways				186	37				149
Other transport									
Other sector				207			2	5	114
Residential				62					
Commerce and public services				145			2	4	114
Agriculture									
Non-specified others									
<b>Non-energy</b>									

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
							1	64			66	65
7 187	394			3 028				3	999		31 474	6
- 262									- 104		- 471	
-6 472											-9 104	
											-6 303	
- 454	12										-1 262	
	406			3 028			1	67	896		14 400	71
				-2 419			- 1	- 23	3 285		-6 272	- 27
				-2 419					3 281		-5 923	
							- 1	- 11	4		- 8	- 14
											- 329	
								- 12			- 12	- 13
									- 391		- 391	
											- 950	
	406			610				44	3 790		6 787	44
	406			610				44	3 790		6 787	44
				25					208		331	
				25					208		331	
	320							4	71		2 112	5
											3	
	320							4			1 860	5
									71		71	
											179	
	86			585				40	3 511		4 344	38
	61			327					1 030		1 418	
	24			259				40	2 481		2 925	38
							1	64			65	65
7 707	411			2 953				6	1 010		31 135	6
- 397									- 102		- 803	
-6 711											-8 741	
											-6 181	
- 599	- 3										-1 416	
	408			2 953			1	70	908		14 059	71
				-2 352			- 1	- 26	3 266		-6 135	- 27
				-2 352					3 261		-5 847	
							- 1	- 13	4		- 9	- 14
											- 266	
								- 13			- 13	- 13
									- 393		- 393	
											- 772	
	408			601				44	3 781		6 760	44
	408			601				44	3 781		6 760	44
				27					221		351	
				27					221		351	
	322							5	71		2 100	5
											3	
	322							5			1 840	5
									71		71	
											186	
	86			574				38	3 489		4 309	38
	62			316					1 012		1 390	
	24			258				38	2 477		2 918	38

## Major energy indicators of Hong Kong, China

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	8 904	13 359	13 889	13 823	14 118	14 379	14 059	14 400
Indigenous production		56	53	67	64	68	65	66
Import	12 918	32 137	30 577	29 027	29 410	28 340	31 135	31 474
Export	-2 123	- 726	- 904	- 971	- 770	- 607	- 803	- 471
Final energy consumption	4 950	6 693	6 732	6 837	6 746	6 867	6 760	6 787
Industry	1 516	383	352	352	348	352	351	331
Transport	1 397	2 147	2 159	2 175	2 121	2 114	2 100	2 112
Residential		1 385	1 412	1 445	1 411	1 495	1 390	1 418
Commerce & public services		2 777	2 809	2 866	2 865	2 902	2 918	2 925
Others	2 037	1		- 1	1	4		
<b>Coal &amp; coal products</b>								
Primary energy supply	6 008	6 225	7 403	7 288	7 769	8 140	6 694	6 695
Indigenous production								
Import	5 362	6 503	7 891	7 779	8 171	8 685	7 044	7 030
Export	- 1				- 1			
Transformation sector	-5 996	-6 224	-7 403	-7 288	-7 769	-8 140	-6 694	-6 695
Power generation	-5 996	-6 224	-7 403	-7 288	-7 769	-8 140	-6 694	-6 695
Final energy consumption	12							
Industry	1							
Transport								
Residential								
Commerce & public services								
Others	11							
<b>Crude oil &amp; NGL</b>								
Primary energy supply								
Indigenous production								
Import								
Export								
Transformation sector		0	0	0	0			
Petroleum refineries		- 6	- 26	- 5	- 5			
<b>Petroleum products</b>								
Primary energy supply	3 051	3 202	3 137	3 234	3 189	3 130	3 433	3 712
Import	7 556	21 530	19 113	17 851	17 995	16 506	20 122	20 414
Export	-1 967	- 498	- 628	- 810	- 621	- 501	- 701	- 368
Transformation sector	- 489	- 348	- 325	- 518	- 389	- 324	- 328	- 420
Power generation	- 126	- 37	- 37	- 190	- 44	- 50	- 62	- 91
Petroleum refineries		6	26	5	6			
Final energy consumption	2 565	2 397	2 408	2 418	2 366	2 354	2 334	2 343
Industry	908	97	102	102	101	102	104	98
Transport	1 397	2 086	2 097	2 110	2 055	2 045	2 024	2 038
Residential		81	89	91	92	90	62	62
Commerce & public services		134	120	114	118	118	145	145
Others	260	- 1		1		- 1		
<b>Gas</b>								
Primary energy supply		3 145	2 547	2 374	2 307	2 258	2 953	3 028
Indigenous production								
Import		3 145	2 547	2 374	2 307	2 258	2 953	3 028
Export								
Transformation sector	324	-2 169	-1 572	-1 364	-1 625	-1 984	-2 352	-2 419
Power generation		-2 486	-1 886	-1 697	-1 625	-2 258	-2 352	-2 419
Final energy consumption	324	659	672	677	682	689	601	610
Industry	13	22	22	26	29	29	27	25
Transport								
Residential		365	370	370	365	368	316	327
Commerce & public services		272	280	282	289	292	258	259
Others	311			- 1	- 1			
<b>Electricity</b>								
Power generation	2 488	3 297	3 360	3 337	3 371	3 427	3 266	3 285
Thermal	2 488	3 293	3 356	3 333	3 360	3 415	3 261	3 281
Hydro								
Nuclear								
Others		4	4	4	11	12	4	4
Final energy consumption	2 049	3 604	3 621	3 704	3 663	3 778	3 781	3 790
Industry	596	265	228	224	218	220	221	208
Transport		61	62	65	67	69	71	71
Residential		940	952	984	954	1 037	1 012	1 030
Commerce & public services		2 338	2 379	2 432	2 424	2 451	2 477	2 481
Others	1 453			- 1		1		



## Major economic indicators of Hong Kong, China

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	5.70	7.02	7.07	7.15	7.18	7.23	7.29	7.34
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	104	229	240	244	251	258	264	270
GDP, Billion USD (PPP, constant 2011)	154	338	354	360	371	382	391	399
Nominal, Billion USD (Current)	77	229	249	263	276	291	309	321
GDP per Capita *3								
Real Term (constant 2010 USD)	18 251	32 550	33 889	34 086	35 003	35 718	36 261	36 816
GDP, PPP (constant 2011 USD)	26 974	48 108	50 086	50 378	51 732	52 789	53 592	54 413
Nominal (Current USD)	13 486	32 550	35 142	36 731	38 404	40 315	42 432	43 737
Nominal GDP & its Components (Billions of Current HKD) *1								
Gross Domestic Product	599	1 776	1 934	2 037	2 138	2 260	2 398	2 491
Household Final Consumption Expenditure	344	1 090	1 224	1 315	1 413	1 503	1 593	1 650
General Government Final Consumption Expenditure	41	157	169	185	199	214	231	248
Gross Fixed Capital Formation	157	387	455	517	516	531	537	536
Stock Change	6	38	12	- 4	- 2	7	- 21	
Exports of Goods and Services	703	3 647	4 117	4 397	4 739	4 816	4 698	4 658
Imports of Goods and Services	652	3 543	4 043	4 374	4 726	4 811	4 641	4 601
Real GDP & its Components (Billions of 2013 HKD) *1								
Gross Domestic Product	960	2 108	2 210	2 247	2 317	2 381	2 438	2 491
Household Final Consumption Expenditure	611	1 266	1 372	1 428	1 494	1 544	1 618	1 650
General Government Final Consumption Expenditure	107	206	211	219	225	232	240	248
Gross Fixed Capital Formation	230	459	506	541	555	554	536	536
Stock Change	10	51	15	- 4	- 1	8	- 21	
Exports of Goods and Services	830	3 983	4 174	4 308	4 645	4 690	4 626	4 658
Imports of Goods and Services	793	3 851	4 070	4 243	4 596	4 644	4 561	4 601
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	N.A.	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Industry	N.A.	7	7	7	7	7	7	7
Services, etc.	N.A.	90	91	91	90	90	89	90
Manufacturing Production (2010=100) *2	126.1	100.0	100.7	99.9	100.0	99.6	0.0	0.0
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	82.4	400.7	455.6	492.9	535.5	524.1	510.6	516.7
Imports, c.i.f.	84.7	441.4	510.9	553.5	622.3	600.8	559.4	547.3
Balance of Payments (Billions of Current USD) *2								
Trade Balance	N.A.	3.3	-7.5	-18.9	-27.9	-32.4	-22.9	-16.7
Current Account	N.A.	16.0	13.8	4.1	4.2	4.1	10.3	12.7
Overall Balance	N.A.	12.2	10.4	19.8	0.5	12.5	30.0	0.8
Foreign Exchange Rate (HKD/USD) *1	7.79	7.77	7.78	7.76	7.76	7.75	7.75	7.76
PPP conversion factor, GDP (HKD/USD) *1	6.03	5.37	5.46	5.55	5.56	5.62	5.76	5.79
Price Indices								
GDP Deflator (2013=100) *3	62.4	84.3	87.5	90.6	92.3	94.9	98.4	100.0
Producer Price Index (2010=100) *2	N.A.	100.0	108.3	108.4	105.0	103.3	100.4	101.8
Consumer Prices Index (2010=100) *2	57.0	100.0	105.3	109.6	114.3	119.4	122.9	125.9
Growth Rate (%) *3								
Real GDP	3.8	6.8	4.8	1.7	3.1	2.8	2.4	2.2
Population	0.3	0.7	0.7	1.1	0.4	0.7	0.9	0.6
Price								
Producer Prices	N.A.	6.0	8.3	0.1	-3.1	-1.7	-2.7	1.3
Consumer Prices	10.4	2.3	5.3	4.1	4.3	4.4	3.0	2.4

Source \*1: *World Development Indicators*, World Bank\*2: *International Financial Statistics*, International Monetary Fund

\*3: Calculated from \*1 and \*2 by ESTO

Note : N.A. means "not available"

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

: PPP means Purchasing Power Parity

## Energy prices in Hong Kong, China in 2016

## Currency Exchange Rate

Currency Exchange Rate	Local currency / US Dollar	
Local Currency Unit		HKD

## IMPORT PRICES

## WHOLESALE PRICES

## CONSUMER PRICES

	Unit	Amount		Unit	Amount		Unit	Amount
<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>		
Coking Coal			Coking Coal			Coking Coal		
Anthracite			Anthracite			Anthracite		
Other bituminous coal	HKD/tonne	396.81	Other bituminous coal			Other bituminous coal		
Sub-bituminous Coal			Sub-bituminous Coal			Sub-bituminous Coal		
Lignite			Lignite			Lignite		
Peat			Peat			Peat		
Patent Fuel			Patent Fuel			Patent Fuel		
Coke			Coke			Coke		
Coal Tar			Coal Tar			Coal Tar		
BKB/PB			BKB/PB			BKB/PB		
			Gas Works Gas			Gas Works Gas		
<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>		
Crude Oil			Crude Oil			Crude Oil		
Natural Gas Liquids			Natural Gas Liquids			Natural Gas Liquids		
Ethane			Ethane			Ethane		
LPG	HKD/kg	3.64	LPG			LPG	HKD/kg	24.07
Naphtha			Naphtha			Naphtha		
Motor Gasoline	HKD/L	3.16	Motor Gasoline			Motor Gasoline (regular)	HKD/L	13.19
Aviation Gasoline			Aviation Gasoline			Aviation Gasoline		
Gasoline Type Jet Fuel			Gasoline Type Jet Fuel			Gasoline Type Jet Fuel		
Kerosene Type Jet Fuel	HKD/L	2.56	Kerosene Type Jet Fuel			Kerosene Type Jet Fuel		
Other Kerosene			Other Kerosene			Other Kerosene		
Gas/Diesel Oil			Gas/Diesel Oil			Gas/Diesel Oil		
Fuel Oil	HKD/L	1.71	Fuel Oil			Fuel Oil		
White Spirit SBP			White Spirit SBP			White Spirit SBP		
Lubricants			Lubricants			Lubricants		
Bitumen			Bitumen			Bitumen		
Paraffin Waxes			Paraffin Waxes			Paraffin Waxes		
Petroleum Coke			Petroleum Coke			Petroleum Coke		
<b>Natural Gas</b>			<b>Natural Gas</b>			<b>Natural Gas</b>		
Natural Gas	HKD/kg	3.47	Natural Gas			Natural Gas		
Liquefied Natural Gas			Liquefied Natural Gas			Liquefied Natural Gas		
Compressed Natural Gas			Compressed Natural Gas			Compressed Natural Gas		
<b>Electricity</b>			<b>Electricity</b>			<b>Electricity</b>		
Electricity			Electricity			Industrial		
						Commercial		
						Residential		
						Others		
<b>Other Energy Products</b>			<b>Other Energy Products</b>			<b>Other Energy Products</b>		
Gas oil, diesel oil and naphtha	HKD/L	2.60				Environmental diesel oil (road)	HKD/L	10.67

**Indonesia**

## Energy balance table of Indonesia

	Coal	Coal products	Crude oil & NGL	Petroleum products				
				Total	Gasoline	Naphtha	Jet fuel	Kerosene
<b>2016</b>								
Indigenous production	268 244		43 978					
Import	2 293		21 979	23 772	12 861		829	4 445
Export	-194 704		-18 595	-4 365	- 1		- 2	
International marine bunkers								
International aviation bunkers								
Stock changes	-22 590		5 728	2 974	1 748		42	- 360
<b>Total primary energy supply</b>	<b>53 243</b>		<b>53 091</b>	<b>22 381</b>	<b>14 608</b>		<b>869</b>	<b>- 360</b>
Transfers			3 028	1 683				
<b>Total transformation sector</b>	<b>-44 353</b>	<b>14</b>	<b>-55 664</b>	<b>41 522</b>	<b>12 198</b>		<b>3 024</b>	<b>849</b>
Main activity producers	-44 335			-5 023				-4 119
Autoproducers								
Gas processing								
Petroleum refineries			-55 664	48 522	12 198	1 977	3 024	849
Coal transformation	- 18	14						
Other transformation				-1 977		-1 977		
Losses & own use				- 96	- 54			- 1
Discrepancy			- 455	- 879				- 39
<b>Total final consumption</b>	<b>8 891</b>	<b>14</b>		<b>64 611</b>	<b>26 753</b>		<b>3 893</b>	<b>488</b>
<b>Total final energy consumption</b>	<b>8 891</b>	<b>14</b>		<b>60 437</b>	<b>26 753</b>		<b>3 893</b>	<b>488</b>
Industry sector	8 891			4 527				28
Iron and steel	229							
Chemical & petrochemical								
Non-metallic minerals	6 198							
Other industries	2 464			4 527				28
Transport sector				44 751	26 222		3 893	
Domestic air transport					3 895	2	3 893	
Road				40 836	26 219			
Rail								
Inland waterways				19				
Other transport								
Other sector		14		11 159	531			460
Residential		14		8 020				418
Commerce and public services				718				23
Agriculture								
Non-specified others				2 421	531			19
Non-energy								1 711
Non-energy				4 174				
<b>2015</b>								
Indigenous production	271 401		45 547					
Import	1 769		20 247	27 331	14 938		1 003	5 661
Export	-215 120		-17 039	-4 322	- 2	- 317	- 2	- 77
International marine bunkers								
International aviation bunkers								
Stock changes	-7 003		- 434	2 273	385		- 68	- 60
<b>Total primary energy supply</b>	<b>51 047</b>		<b>48 320</b>	<b>25 282</b>	<b>15 321</b>		<b>933</b>	<b>- 138</b>
Transfers			4 131	1 947				
<b>Total transformation sector</b>	<b>-41 215</b>	<b>6</b>	<b>-52 415</b>	<b>40 682</b>	<b>10 572</b>	<b>317</b>	<b>2 685</b>	<b>654</b>
Main activity producers	-41 207			-4 249				-3 386
Autoproducers								
Gas processing								
Petroleum refineries			-52 415	46 291	10 572	1 677	2 685	654
Coal transformation	- 8	6						
Other transformation				-1 360		-1 360		
Losses & own use				- 100	- 52			- 1
Discrepancy			- 37	- 98				120
<b>Total final consumption</b>	<b>9 832</b>	<b>6</b>		<b>67 713</b>	<b>25 841</b>		<b>3 619</b>	<b>636</b>
<b>Total final energy consumption</b>	<b>9 832</b>	<b>6</b>		<b>61 897</b>	<b>25 841</b>		<b>3 619</b>	<b>636</b>
Industry sector	9 832			7 660				36
Iron and steel	235							
Chemical & petrochemical								
Non-metallic minerals	4 222			7 660				
Other industries	5 375							36
Transport sector				41 229	25 155		3 619	
Domestic air transport					3 621	2	3 619	
Road				37 582	25 153			
Rail								
Inland waterways				26				
Other transport								
Other sector		6		13 009	686			599
Residential		6		7 843				545
Commerce and public services				1 117				30
Agriculture								
Non-specified others				4 049	686			25
Non-energy				5 816				3 123

Note: Others Excludes non-commercial biomass supply and consumption.

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				63 372	1 606		9 166	52 321			438 688	63 094
269	5 342		26						60		48 104	
- 329	- 1		-4 032	-30 878				- 355			-248 896	- 355
269	- 88		22								-13 888	
209	5 253		-3 984	32 494	1 606		9 166	51 966	60		224 008	62 739
	1 683										4 711	
967	992		9 037	-8 847	-1 606		-9 166	- 216	21 321		-56 995	-10 989
-904				-10 937	-1 606		-9 166	- 216	21 321		-49 963	-10 989
				2 090							2 090	
1 871	992		9 037								-7 141	
											- 3	
											-1 977	
- 2				-7 406					-2 742		-10 244	
			- 879	-2 494				- 53	- 63		-3 944	
1 174	7 928		4 174	13 747				51 697	18 576		157 536	51 697
1 174	7 928			13 747				51 697	18 576		153 361	51 697
994	115			13 367				6 836	5 860		39 481	6 836
				632							862	
				7 114							7 114	
				1 016							7 214	
994	115			4 603				6 836	5 860		24 291	6 836
19								2 240	19		47 010	2 240
											3 895	
								2 240			43 076	2 240
									19		19	
19											19	
160	7 813			380				42 621	12 697		66 871	42 621
	7 602			209				42 405	8 053		58 701	42 405
	211			171				216	4 644		5 749	216
160											2 421	
			4 174								4 174	
				64 265	1 182		8 642	51 255			442 292	61 079
141	4 804		783						1		49 347	
-209			-3 714	-30 076				- 245			-266 802	- 245
689	91		-1 500								-5 164	
621	4 895		-4 430	34 189	1 182		8 642	51 010	1		219 673	60 834
	1 947										6 079	
955	769		10 465	-9 538	-1 182		-8 642	- 171	20 097		-52 378	-9 994
-863				-10 096	-1 182		-8 642	- 171	20 097		-45 449	-9 994
				558							558	
1 818	769		10 465								-6 124	
											- 2	
											-1 360	
- 3				-6 299					-2 642		-9 040	
			- 219	-1 586				- 305	- 12		-2 037	
1 573	7 611		5 816	16 766				50 535	17 445		162 297	50 535
1 573	7 611			16 766				50 535	17 445		156 481	50 535
1 332	110			16 361				7 222	5 511		46 585	7 222
				722							956	
				7 397							7 397	
				1 050							5 272	
1 332	110			7 192				7 222	5 511		32 960	7 222
26								681	18		41 928	681
											3 621	
								681			38 263	681
									18		18	
26											26	
214	7 500			405				42 631	11 916		67 968	42 631
	7 298			213				42 415	7 627		58 103	42 415
	202			192				217	4 290		5 816	217
214											4 049	
			5 816								5 816	

## Major energy indicators of Indonesia

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	94 339	197 027	215 590	214 887	214 990	217 676	219 673	224 008
Indigenous production	169 528	346 406	387 418	454 174	453 274	442 676	442 292	438 688
Import	10 295	37 801	41 788	43 327	48 059	50 519	49 347	48 104
Export	-81 059	-183 767	-216 332	-260 320	-261 382	-273 652	-266 802	-248 896
Final energy consumption	65 853	142 411	153 814	162 295	153 728	157 045	156 481	153 361
Industry	19 366	52 403	55 667	54 672	42 646	43 858	46 585	39 481
Transport	7 876	30 966	37 008	43 826	45 704	46 519	41 928	47 010
Residential	35 854	51 945	53 033	54 533	56 116	57 566	58 103	58 701
Commerce & public services	1 017	4 276	4 696	5 077	5 408	5 536	5 816	5 749
Others	1 740	2 821	3 411	4 187	3 856	3 566	4 049	2 421
<b>Coal &amp; coal products</b>								
Primary energy supply	4 042	39 502	46 780	42 377	42 377	44 794	51 047	53 243
Indigenous production	6 342	161 797	207 723	278 930	278 930	269 361	271 401	268 244
Import	365	32	25	359	359	1 436	1 769	2 293
Export	-2 529	-122 398	-160 331	-209 538	-209 538	-224 600	-215 120	-194 704
Transformation sector	-2 602	-20 237	-26 534	-31 060	-36 378	-37 078	-41 209	-44 339
Power generation	-2 600	-20 233	-26 530	-31 056	-36 374	-37 076	-41 207	-44 335
Final energy consumption	1 440	19 265	20 246	17 240	5 999	7 716	9 838	8 905
Industry	1 431	19 248	20 230	17 223	5 982	7 709	9 832	8 891
Transport								
Residential	9	16	16	17	17	7	6	14
Commerce & public services								
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	43 208	48 821	51 270	48 006	47 990	49 931	48 320	53 091
Indigenous production	80 874	54 074	51 543	49 725	47 204	45 823	45 547	43 978
Import	6 848	14 977	14 350	14 217	17 531	18 073	20 247	21 979
Export	-42 713	-19 922	-16 793	-15 775	-15 524	-13 790	-17 039	-18 595
Transformation sector	-46 591	-50 719	-54 511	-51 856	-52 467	-55 010	-52 415	-55 664
Petroleum refineries	-46 591	-50 719	-54 511	-51 856	-52 467	-55 010	-52 415	-55 664
<b>Petroleum products</b>								
Primary energy supply	-9 591	15 002	24 692	30 439	30 324	26 561	25 282	22 381
Import	3 082	22 792	27 413	28 751	30 169	31 010	27 331	23 772
Export	-10 185	-4 615	-3 905	-3 554	-3 479	-4 159	-4 322	-4 365
Transformation sector	36 634	35 196	35 258	40 133	37 900	42 127	40 682	41 522
Power generation	-3 722	-7 653	-9 323	-6 642	-5 996	-5 943	-4 249	-5 023
Petroleum refineries	40 767	45 130	47 972	49 669	46 716	50 139	46 291	48 522
Final energy consumption	21 996	47 116	55 012	64 189	64 491	64 074	61 897	60 437
Industry	5 994	6 498	7 651	8 884	7 383	6 758	7 660	4 527
Transport	7 876	30 792	36 733	43 319	44 912	45 132	41 229	44 751
Residential	5 831	6 268	6 351	6 736	7 310	7 661	7 843	8 020
Commerce & public services	555	736	866	1 063	1 031	957	1 117	718
Others	1 740	2 821	3 411	4 187	3 856	3 566	4 049	2 421
<b>Gas</b>								
Primary energy supply	17 925	36 384	35 242	35 837	34 602	34 692	34 189	32 494
Indigenous production	43 557	73 202	69 464	66 134	66 134	64 582	64 265	63 372
Import								
Export	-25 633	-36 818	-34 222	-30 297	-31 532	-29 890	-30 076	-30 878
Transformation sector	- 741	-15 494	-14 310	-12 491	-11 256	-12 687	-9 538	-8 847
Power generation	- 741	-9 904	-9 331	-9 624	-9 624	-10 765	-10 096	-10 937
Final energy consumption	2 736	15 569	16 398	16 962	17 018	16 854	16 766	13 747
Industry	2 736	15 293	16 035	16 506	16 591	16 444	16 361	13 367
Transport								
Residential		147	190	238	209	216	213	209
Commerce & public services		129	173	218	218	194	192	171
Others								
<b>Electricity</b>								
Power generation	2 777	14 505	15 766	17 227	18 592	19 656	20 097	21 321
Thermal	2 192	12 190	13 873	15 293	16 311	17 467	18 009	18 745
Hydro	488	1 501	1 068	1 101	1 455	1 304	1 182	1 606
Nuclear								
Others	97	813	825	834	826	885	906	969
Final energy consumption	2 383	12 726	13 749	14 963	16 128	17 080	17 445	18 576
Industry	1 218	4 385	4 706	5 175	5 537	5 668	5 511	5 860
Transport		8	8	9	11	13	18	19
Residential	774	5 145	5 600	6 203	6 640	7 231	7 627	8 053
Commerce & public services	391	3 188	3 435	3 575	3 941	4 167	4 290	4 644
Others								

## Major economic indicators of Indonesia

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	181.44	242.52	245.71	248.88	252.03	255.13	258.16	261.12
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	310	755	802	850	897	942	988	1 038
GDP, Billion USD (PPP, constant 2011)	839	2 045	2 172	2 302	2 430	2 552	2 677	2 811
Nominal, Billion USD (Current)	106	755	893	918	913	891	861	932
GDP per Capita *3								
Real Term (constant 2010 USD)	1 708	3 113	3 263	3 415	3 560	3 693	3 828	3 975
GDP, PPP (constant 2011 USD)	4 625	8 433	8 838	9 251	9 643	10 003	10 368	10 766
Nominal (Current USD)	585	3 113	3 634	3 688	3 621	3 492	3 335	3 570
Nominal GDP & its Components (Billions of Current IDR) *1								
Gross Domestic Product	195 597	6864 133	7831 726	8615 705	9546 134	10569 705	11526 333	12406 774
Household Final Consumption Expenditure	124 184	3858 822	4340 605	4858 331	5425 017	6039 436	6621 880	7169 496
General Government Final Consumption Expenditure	18 649	618 178	709 451	796 848	908 574	996 197	1123 750	1183 640
Gross Fixed Capital Formation	59 758	2127 841	2451 914	2819 026	3051 496	3436 924	3782 012	4040 205
Stock Change	4 217	129 095	131 329	202 638	178 091	220 231	144 179	158 867
Exports of Goods and Services	53 409	1667 918	2061 886	2118 979	2283 777	2501 425	2438 993	2372 293
Imports of Goods and Services	50 046	1537 720	1868 075	2152 937	2359 212	2580 508	2394 879	2272 666
Real GDP & its Components (Billions of 2010 IDR) *1								
Gross Domestic Product	2816 408	6864 133	7287 635	7727 083	8156 498	8564 867	8982 517	9434 632
Household Final Consumption Expenditure	1510 655	3858 822	4054 079	4277 706	4512 035	4750 438	4980 431	5231 391
General Government Final Consumption Expenditure	260 623	618 178	652 292	681 819	727 812	736 283	775 398	774 282
Gross Fixed Capital Formation	870 587	2127 841	2316 359	2527 729	2654 375	2772 471	2911 356	3041 587
Stock Change	5273 750	129 095	118 207	174 183	124 454	163 583	112 848	133 400
Exports of Goods and Services	458 032	1667 918	1914 268	1945 064	2026 114	2047 887	2004 467	1973 040
Imports of Goods and Services	477 155	1537 720	1768 822	1910 300	1945 867	1987 114	1862 939	1817 369
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	20	14	14	13	13	13	13	13
Industry	42	43	43	43	42	42	41	41
Services, etc.	N.A.	41	42	42	42	43	43	43
Manufacturing Production Index (2010=100)	43.2	100.0	104.1	108.3	N.A.	N.A.	0.0	0.0
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	25.7	157.8	203.5	190.0	182.6	176.3	150.4	144.7
Imports, c.i.f.	21.8	135.7	177.4	191.7	186.6	178.2	142.7	135.7
Balance of Payments (Billions of Current USD) *2								
Trade Balance	5.4	31.0	33.8	8.7	5.8	7.0	14.0	15.3
Current Account	-3.0	5.1	1.7	-24.4	-29.1	-27.5	-17.5	-17.0
Overall Balance	1.5	31.7	15.3	1.2	-7.1	17.4	-0.7	12.4
Foreign Exchange Rate (IDR/USD) *1	1 842.81	9 090.43	8 770.43	9 386.63	10 461.24	11 865.21	13 389.41	13 308.33
PPP conversion factor, GDP (IDR/USD) *1	360.61	3 425.30	3 606.57	3 674.27	3 795.44	3 931.47	4 044.10	4 092.20
Price Indices								
GDP Deflator (2010=100) *3	6.9	100.0	107.5	111.5	117.0	123.4	128.3	131.5
Producer Price Index (2010=100) *2	9.9	100.0	107.4	112.9	119.6	130.8	130.8	130.8
Consumer Price Index (2010=100) *2	12.7	100.0	105.4	109.9	116.9	124.4	132.3	137.0
Growth Rate (%) *3								
Real GDP	7.2	6.2	6.2	6.0	5.6	5.0	4.9	5.0
Population	1.8	1.3	1.3	1.3	1.3	1.2	1.2	1.1
Price								
Producer Prices	10.0	4.9	7.4	5.1	5.9	9.3	0.0	0.0
Consumer Prices	7.8	5.1	5.4	4.3	6.4	6.4	6.4	3.5

Source \*1 : *World Development Indicators*, World Bank  
\*2 : *International Financial Statistics*, International Monetary Fund

\*3 : Calculated from \*1 and \*2 by ESTO  
: N.A. means "not available"  
: IDR means Rupiah, USD means United States Dollar  
: PPP means Purchasing Power Parity

## Energy prices in Indonesia in 2016

## Currency Exchange Rate

Currency Exchange Rate	Local currency / US Dollar	13,436
Local Currency Unit		IDR

## IMPORT PRICES

## WHOLESALE PRICES

## CONSUMER PRICES

	Unit	Amount		Unit	Amount		Unit	Amount
<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>		
Coking Coal			Coking Coal			Coking Coal		
Anthracite			Anthracite			Anthracite		
Other bituminous coal	USD/tonne	104.13	Other bituminous coal	USD/tonne	66.30	Other bituminous coal	USD/BOE	10.64
Sub-bituminous Coal			Sub-bituminous Coal			Sub-bituminous Coal		
Lignite			Lignite			Lignite		
Peat			Peat			Peat		
Patent Fuel			Patent Fuel			Patent Fuel		
Coke			Coke			Coke		
Coal Tar			Coal Tar			Coal Tar		
BKB/PB			BKB/PB			BKB/PB		
			Gas Works Gas			Gas Works Gas		
<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>		
Crude Oil			Crude Oil	USD/bbl	40.13	Crude Oil		
Natural Gas Liquids			Natural Gas Liquids			Natural Gas Liquids		
Ethane			Ethane			Ethane		
LPG			LPG			LPG - 12kg	USD/BOE	0.10
Naphtha			Naphtha			Naphtha		
Motor Gasoline			Motor Gasoline			Motor Gasoline (regular)		
Aviation Gasoline			Aviation Gasoline			Aviation Gasoline		
Gasoline Type Jet Fuel			Gasoline Type Jet Fuel			Gasoline Type Jet Fuel		
Kerosene Type Jet Fuel			Kerosene Type Jet Fuel			Kerosene Type Jet Fuel		
Other Kerosene			Other Kerosene			Other Kerosene		
Gas/Diesel Oil			Gas/Diesel Oil			Gas/Diesel Oil		
Fuel Oil			Fuel Oil			Fuel Oil		
White Spirit SBP			White Spirit SBP			White Spirit SBP		
Lubricants			Lubricants			Lubricants		
Bitumen			Bitumen			Bitumen		
Paraffin Waxes			Paraffin Waxes			Paraffin Waxes		
Petroleum Coke			Petroleum Coke			Petroleum Coke		
Natural Gas			Natural Gas			Natural Gas		
Natural Gas			Natural Gas			Natural Gas		
Liquefied Natural Gas			Liquefied Natural Gas			Liquefied Natural Gas		
Compressed Natural Gas			Compressed Natural Gas			Compressed Natural Gas		
Electricity			Electricity			Electricity		
Electricity			Electricity			Industrial	USD/BOE	127.71
						Commercial	USD/BOE	145.84
						Residential	USD/BOE	102.44
						Others		
<b>Other Energy Products</b>			<b>Other Energy Products</b>			<b>Other Energy Products</b>		



**Japan**

## Energy balance table of Japan

	Coal	Coal products	Crude oil & NGL	Petroleum products					
				Total	Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2016</b>									
Indigenous production	788		478						
Import	115 820	1 491	166 809	40 016	652	19 256	482	740	591
Export		- 635		-18 958	-2 422	- 13	-2 821	- 382	-8 664
International marine bunkers				-4 638				- 99	- 38
International aviation bunkers				-6 564			-6 564		
Stock changes	- 413		1 428	1 221	19	150	92	393	217
<b>Total primary energy supply</b>	<b>116 195</b>	<b>856</b>	<b>168 715</b>	<b>11 077</b>	<b>-1 750</b>	<b>19 393</b>	<b>-8 810</b>	<b>651</b>	<b>-7 895</b>
<b>Transfers</b>			- 94	96		57			
<b>Total transformation sector</b>	<b>-101 294</b>	<b>22 760</b>	<b>-168 575</b>	<b>147 075</b>	<b>40 607</b>	<b>12 823</b>	<b>13 057</b>	<b>13 077</b>	<b>43 688</b>
Main activity producers	-62 761	-5 186	-3 151	-8 810				- 45	- 373
Autoproducers	-4 633	-2 039		-10 560		-2 262		- 18	-2 538
Gas processing				-1 115					
Petroleum refineries			-165 424	168 346	40 607	15 085	13 057	13 140	46 599
Coal transformation	-33 900	29 986		- 786					
Other transformation									
Losses & own use	- 547	-3 022		-10 461		- 23		- 52	- 112
Discrepancy	115	-3 009	- 47	353	832	-1 627	129	- 296	912
<b>Total final consumption</b>	<b>14 469</b>	<b>17 585</b>		<b>148 139</b>	<b>39 689</b>	<b>30 621</b>	<b>4 375</b>	<b>13 381</b>	<b>36 592</b>
<b>Total final energy consumption</b>	<b>14 469</b>	<b>17 585</b>		<b>112 404</b>	<b>39 689</b>	<b>889</b>	<b>4 375</b>	<b>13 185</b>	<b>36 554</b>
Industry sector	14 469	16 994		17 144	48	889		2 312	5 204
Iron and steel	10 186	16 224		1 288				19	262
Chemical & petrochemical	137	41		1 033		108		32	116
Non-metallic minerals	3 650	262		1 057				19	170
Other industries	496	466		13 766	48	782		2 242	4 655
Transport sector				70 352	39 640		4 375		24 547
Domestic air transport				4 375			4 375		
Road				63 708	39 640				23 301
Rail				173					173
Inland waterways				2 096					1 073
Other transport									
Other sector		591		24 908				10 873	6 803
Residential		10		13 920				9 034	
Commerce and public services		581		7 341				1 277	3 724
Agriculture				2 282				559	1 721
Non-specified others				1 365				2	1 359
<b>Non-energy</b>				<b>35 735</b>		<b>29 732</b>		<b>195</b>	<b>38</b>
<b>2015</b>									
Indigenous production	671		517						
Import	116 057	1 909	169 499	45 022	956	21 606	535	1 032	374
Export		- 439		-17 206	-2 678	- 9	-2 869	- 432	-8 219
International marine bunkers				-4 230					- 30
International aviation bunkers				-6 333			-6 333		
Stock changes	- 959		- 785	392	- 60	263	- 87	8	47
<b>Total primary energy supply</b>	<b>115 769</b>	<b>1 470</b>	<b>169 231</b>	<b>17 645</b>	<b>-1 783</b>	<b>21 860</b>	<b>-8 755</b>	<b>608</b>	<b>-7 828</b>
<b>Transfers</b>			- 239	241		200			
<b>Total transformation sector</b>	<b>-100 204</b>	<b>22 296</b>	<b>-169 063</b>	<b>144 494</b>	<b>41 163</b>	<b>11 808</b>	<b>13 151</b>	<b>12 833</b>	<b>45 409</b>
Main activity producers	-54 723	-4 417	-5 223	-9 891				- 7	- 241
Autoproducers	-12 276	-2 606		-11 720		-2 757		- 22	-2 603
Gas processing				-1 279					
Petroleum refineries			-163 840	168 447	41 163	14 566	13 151	12 863	48 253
Coal transformation	-33 205	29 319		-1 064					
Other transformation									
Losses & own use	- 548	-2 929		-10 423		- 44		- 32	- 155
Discrepancy	- 275	-3 022	71	- 383	845	-1 694	63	- 287	- 16
<b>Total final consumption</b>	<b>14 742</b>	<b>17 815</b>		<b>151 574</b>	<b>40 225</b>	<b>32 130</b>	<b>4 459</b>	<b>13 122</b>	<b>37 411</b>
<b>Total final energy consumption</b>	<b>14 742</b>	<b>17 815</b>		<b>113 969</b>	<b>40 225</b>	<b>761</b>	<b>4 459</b>	<b>12 935</b>	<b>37 321</b>
Industry sector	14 742	17 211		17 396	51	761		2 333	5 586
Iron and steel	10 474	16 415		1 515				75	253
Chemical & petrochemical	198	41		1 154		113		17	221
Non-metallic minerals	3 646	252		1 114				21	241
Other industries	424	502		13 613	51	648		2 221	4 871
Transport sector				72 010	40 174		4 459		25 169
Domestic air transport				4 459			4 459		
Road				64 936	40 174				23 943
Rail				147					147
Inland waterways				2 468					1 079
Other transport									
Other sector		605		24 563				10 602	6 566
Residential		9		13 751				8 818	
Commerce and public services		596		7 165				1 231	3 482
Agriculture				2 279				551	1 724
Non-specified others				1 368				2	1 360
<b>Non-energy</b>				<b>37 604</b>		<b>31 369</b>		<b>186</b>	<b>90</b>

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				3 747	6 878	4 687	6 562	8 713			31 853	22 153
2 384	12 049		3 863	97 847							421 983	
-3 183	- 279		-1 194								-19 593	
-4 483			- 18								-4 638	
				1 168							-6 564	
162	173		16								3 404	
-5 119	11 942		2 666	102 762	6 878	4 687	6 562	8 713			426 444	22 153
		39										2
7 688	3 206	7 484	5 445	-70 333	-6 878	-4 687	-6 129	-8 958	91 354	741	-104 925	-21 965
-7 977	- 415			-70 418	-6 544	-4 687	-2 788	-2 381	76 635	582	-89 509	-11 714
-3 715	- 97	-1 739	- 191	-3 067	- 334		-3 341	-6 577	14 719	159	-15 673	-10 252
		- 76		3 152							2 036	
19 380	4 756	9 299	6 422								2 922	
			- 786								-4 700	
- 678	- 846	-7 278	-1 471	-4 498					-4 865		-23 393	
226	535	- 245	- 112	962			1	2 366	-3 383	- 70	-2 711	
2 117	14 836		6 528	28 893			433	2 122	83 107	671	295 418	2 555
1 898	12 507		3 308	28 702			433	2 122	83 107	671	259 492	2 555
869	4 514		3 308	14 622				2 101	33 030		98 360	2 101
170	281			556	1 772				6 287		35 757	
38	284			454	2 663				5 030		8 904	
209	20			639	736				1 562		7 268	
452	3 928		1 658	9 451				2 101	20 151		46 431	2 101
1 023	767			72					2 000		72 423	
											4 375	
	767			72							63 780	
									2 000		2 172	
1 023											2 096	
6	7 226			14 009			433	21	48 077	671	88 709	454
	4 886			7 903			253	21	23 557	27	45 691	274
	2 340			6 106			112		24 241	575	38 955	112
2							68		279	69	2 698	68
4											1 365	
219	2 329		3 221	190							35 925	
				2 409	7 207	1 162	6 169	6 270			24 405	19 646
4 167	12 249		4 105	100 585							433 072	
-1 859	- 229		- 911								-17 645	
-4 183			- 17								-4 230	
											-6 333	
73	163		- 15	- 774							-2 126	
-1 802	12 183		3 162	102 220	7 207	1 162	6 169	6 270			427 143	19 646
		41										2
4 323	3 417	7 349	5 040	-68 975	-7 207	-1 162	-5 726	-9 410	90 351	761	-103 846	-22 343
-9 435	- 208			-69 322	-6 523	-1 162	-2 094	-1 538	75 881	591	-78 421	-10 155
-4 124	- 150	-1 855	- 208	-3 928	- 684		-3 632	-7 872	14 470	170	-28 078	-12 189
	-1 196	- 83		4 274							2 996	
17 883	4 970	9 287	6 312								4 607	
			-1 064								-4 950	
- 602	-1 054	-7 156	-1 380	-4 395					-7 335		-25 630	
535	497	- 234	- 92	1 239				4 856	- 963	- 75	1 447	4 856
2 453	15 043		6 730	30 089			443	1 716	82 053	686	299 116	2 159
2 370	12 533		3 364	29 908			443	1 716	82 053	686	261 332	2 159
971	4 329		3 364	15 048				1 694	32 952		99 041	1 694
182	296		709	1 921					6 293		36 617	
61	264		478	2 832					5 017		9 241	
203	25		624	775					1 569		7 356	
526	3 744		1 554	9 520				1 694	20 074		45 827	1 694
1 389	819			77					1 867		73 954	
											4 459	
	819										64 936	
									1 867		2 014	
1 389											2 468	
				77							77	
10	7 386			14 783			443	22	47 234	686	88 336	465
	4 933			8 512			253	22	23 565	27	46 139	275
	2 452			6 271			117		23 380	586	38 115	117
4							73		289	73	2 714	73
6											1 368	
83	2 510		3 366	180							37 785	

## Major energy indicators of Japan

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	432 553	484 988	454 296	440 193	456 082	433 276	427 143	426 444
Indigenous production	74 691	97 960	63 725	25 420	24 426	22 321	24 405	31 853
Import	374 356	416 121	416 557	439 572	447 833	437 469	433 072	421 983
Export	-5 030	-17 727	-16 228	-13 810	-18 800	-16 110	-17 645	-19 593
Final energy consumption	271 114	283 547	276 029	275 910	269 882	264 798	261 332	259 492
Industry	114 932	105 401	103 193	102 676	101 722	101 051	99 041	98 360
Transport	70 004	80 303	77 682	78 169	75 945	74 199	73 954	72 423
Residential	40 788	51 495	50 482	50 942	48 670	47 180	46 139	45 691
Commerce & public services	34 172	41 083	39 487	38 892	38 901	38 177	38 115	38 955
Others	11 217	5 265	5 186	5 230	4 644	4 190	4 082	4 063
<b>Coal &amp; coal products</b>								
Primary energy supply	75 664	112 507	107 191	111 867	117 673	118 188	117 238	117 050
Indigenous production	5 893	467	650	675	676	750	671	788
Import	70 045	112 726	106 767	112 743	117 766	116 977	117 965	117 311
Export	-1 039	-533	-483	-988	-893	-393	-439	-635
Transformation sector	-30 445	-70 180	-65 311	-69 023	-75 497	-76 198	-77 907	-78 533
Power generation	-24 918	-66 551	-62 604	-66 514	-72 372	-73 050	-74 021	-74 619
Final energy consumption	39 591	33 646	33 172	33 352	34 895	33 339	32 557	32 053
Industry	38 825	33 039	32 608	32 757	34 301	32 754	31 952	31 462
Transport								
Residential	83	12	11	14	13	9	9	10
Commerce & public services	683	595	552	581	580	577	596	581
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	200 318	185 437	179 766	184 275	183 735	172 505	169 231	168 715
Indigenous production	555	757	722	689	598	560	517	478
Import	200 268	185 869	178 607	183 458	181 883	172 618	169 499	166 809
Export								
Transformation sector	-195 130	-185 029	-178 574	-183 884	-182 902	-172 444	-169 063	-168 575
Petroleum refineries	-176 529	-181 505	-171 020	-171 005	-173 287	-165 217	-163 840	-165 424
<b>Petroleum products</b>								
Primary energy supply	48 733	16 359	22 003	27 762	31 205	19 881	17 645	11 077
Import	64 443	43 562	48 215	51 123	47 866	46 187	45 022	40 016
Export	-3 990	-17 194	-15 745	-12 822	-17 907	-15 717	-17 206	-18 958
Transformation sector	137 816	159 778	146 910	137 024	141 528	136 446	144 494	147 075
Power generation	-33 298	-19 439	-23 059	-32 590	-27 266	-23 625	-21 611	-19 370
Petroleum refineries	174 595	181 228	172 092	171 831	171 066	162 618	168 447	168 346
Final energy consumption	148 664	129 228	124 570	124 679	118 946	115 423	113 969	112 404
Industry	37 245	20 085	18 621	18 358	17 484	17 427	17 396	17 144
Transport	68 308	78 383	75 781	76 340	74 021	72 270	72 010	70 352
Residential	16 289	16 666	16 671	16 864	15 481	14 557	13 751	13 920
Commerce & public services	15 904	9 222	8 693	8 271	7 699	7 347	7 165	7 341
Others	10 917	4 872	4 804	4 846	4 261	3 821	3 647	3 647
<b>Gas</b>								
Primary energy supply	41 440	77 108	86 082	95 276	102 968	104 389	102 220	102 762
Indigenous production	1 847	3 159	3 100	3 045	2 651	2 699	2 409	3 747
Import	39 600	73 964	82 969	92 248	100 319	101 687	100 585	97 847
Export								
Transformation sector	-26 786	-45 608	-54 370	-62 635	-69 775	-71 056	-68 975	-70 333
Power generation	-32 537	-54 964	-64 743	-74 132	-73 689	-75 257	-73 249	-73 485
Final energy consumption	14 484	29 308	29 792	30 678	29 342	30 014	29 908	28 702
Industry	4 072	14 402	15 345	15 903	14 669	15 308	15 048	14 622
Transport		91	91	93	89	82	77	72
Residential	7 113	8 472	8 442	8 652	8 309	8 435	8 512	7 903
Commerce & public services	3 300	6 344	5 914	6 030	6 275	6 188	6 271	6 106
Others								
<b>Electricity</b>								
Power generation	72 547	99 624	95 536	95 641	94 404	92 854	90 351	91 354
Thermal	46 364	62 451	69 754	82 510	81 072	79 640	75 467	75 020
Hydro	7 827	7 827	7 365	6 865	6 627	6 800	7 207	6 878
Nuclear	16 839	25 143	14 012	1 547	1 256	0	383	1562
Others	1 392	3 994	4 202	4 512	5 250	6 217	7 094	7 699
Final energy consumption	64 052	88 170	85 529	84 702	84 196	83 083	82 053	83 107
Industry	31 971	35 878	34 781	34 246	33 820	33 664	32 952	33 030
Transport	1 696	1 829	1 810	1 737	1 835	1 847	1 867	2 000
Residential	16 074	25 886	24 936	25 025	24 516	23 832	23 565	23 557
Commerce & public services	14 041	24 261	23 697	23 385	23 719	23 447	23 380	24 241
Others	270	316	306	309	307	294	289	279

## Major economic indicators of Japan

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	123.54	128.07	127.83	127.63	127.45	127.28	127.14	126.99
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	4 704	5 700	5 694	5 779	5 894	5 916	5 996	6 053
GDP, Billion USD (PPP, constant 2011)	3 778	4 578	4 573	4 642	4 734	4 752	4 816	4 862
Nominal, Billion USD (Current)	3 133	5 700	6 157	6 203	5 156	4 850	4 395	4 949
GDP per Capita *3								
Real Term (constant 2010 USD)	38 074	44 508	44 539	45 277	46 249	46 484	47 163	47 661
GDP, PPP (constant 2011 USD)	30 582	35 750	35 775	36 368	37 149	37 337	37 883	38 283
Nominal (Current USD)	25 359	44 508	48 168	48 603	40 454	38 109	34 568	38 972
Nominal GDP & its Components (Billions of Current JPY) *1								
Gross Domestic Product	453 609	500 354	491 409	494 957	503 176	513 876	531 986	538 446
Household Final Consumption Expenditure	232 097	288 956	286 255	290 242	296 673	300 083	301 211	299 859
General Government Final Consumption Expenditure	61 445	97 527	99 205	100 241	101 469	103 562	105 297	106 474
Gross Fixed Capital Formation	154 814	106 724	107 638	110 966	117 382	123 146	126 479	126 789
Stock Change	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of Goods and Services	46 358	75 237	73 343	71 990	80 082	90 135	93 571	86 793
Imports of Goods and Services	42 834	67 929	76 011	79 645	91 740	102 803	95 797	81 561
Real GDP & its Components (Billions of 2005 JPY) *1								
Gross Domestic Product	412 882	500 354	499 776	507 248	517 395	519 334	526 364	531 303
Household Final Consumption Expenditure	227 331	288 956	287 840	293 680	300 636	298 059	297 963	298 143
General Government Final Consumption Expenditure	62 493	97 527	99 412	101 080	102 596	103 152	104 742	106 115
Gross Fixed Capital Formation	137 927	106 724	108 491	112 336	117 875	121 476	123 547	124 904
Stock Change	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of Goods and Services	30 336	75 237	75 052	74 985	75 556	82 576	85 005	86 142
Imports of Goods and Services	39 930	67 929	71 872	75 760	78 240	84 709	85 345	83 721
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	N.A.	1	1	1	1	1	1	1
Industry	N.A.	28	28	27	27	28	28	28
Services, etc.	N.A.	70	71	71	71	70	70	70
Industrial Production Index (2010=100) *2	103.9	100.0	97.2	97.4	96.8	98.6	97.3	97.5
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	287.6	769.8	823.2	798.6	715.1	690.2	624.8	644.9
Imports, c.i.f.	235.4	694.1	855.4	885.8	833.2	812.2	648.0	607.6
Balance of Payments (Billions of Current USD) *2								
Trade Balance	N.A.	108.5	-4.5	-53.5	-89.6	-99.8	-7.3	51.2
Current Account	N.A.	220.9	129.6	60.1	46.4	36.4	136.5	194.0
Overall Balance	N.A.	12.9	149.1	-32.2	81.7	-15.9	-41.6	-79.6
Foreign Exchange Rate (JPY/USD) *1	144.79	87.78	79.81	79.79	97.60	105.94	121.04	108.79
PPP conversion factor, GDP (JPY/USD) *1	188.91	111.62	107.45	104.27	101.30	103.05	102.76	100.28
Price Indices								
GDP Deflator (2005=100) *3	109.9	100.0	98.3	97.6	97.3	98.9	101.1	101.3
Producer Price Index (2010=100) *2	107.7	100.0	101.4	100.6	101.8	105.1	102.7	99.1
Consumer Price Index (2010=100) *2	94.5	100.0	99.7	99.7	100.0	102.8	103.6	103.5
Growth Rate (%) *3								
Real GDP	4.9	4.2	-0.1	1.5	2.0	0.4	1.4	0.9
Population	0.3	0.0	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1
Price								
Producer Prices	1.5	-0.1	1.4	-0.9	1.2	3.2	-2.3	-3.5
Consumer Prices	3.1	-0.7	-0.3	-0.1	0.3	2.8	0.8	-0.1

Source \*1 : World Development Indicators, World Bank  
\*2 : International Financial Statistics, International Monetary Fund

\*3 : Calculated from \*1 and \*2 by ESTO

Note : N.A. means "not available"  
: JPY means Yen, USD means United States Dollar  
: PPP means Purchasing Power Parity

## Energy prices in Japan in 2016

## Currency Exchange Rate

Currency Exchange Rate	Local currency / US Dollar	108.42
Local Currency Unit		JPY

## IMPORT PRICES

## WHOLESALE PRICES

## CONSUMER PRICES

	Unit	Amount		Unit	Amount		Unit	Amount
<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>		
Coking Coal	JPY/tonne	12 033	Coking Coal			Coking Coal		
Anthracite			Anthracite			Anthracite		
Other bituminous coal	JPY/tonne	8 785	Other bituminous coal			Other bituminous coal		
Sub-bituminous Coal			Sub-bituminous Coal			Sub-bituminous Coal		
Lignite			Lignite			Lignite		
Peat			Peat			Peat		
Patent Fuel			Patent Fuel			Patent Fuel		
Coke			Coke			Coke		
Coal Tar			Coal Tar			Coal Tar		
BKB/PB			BKB/PB			BKB/PB		
			Gas Works Gas			Gas Works Gas		
<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>		
Crude Oil	JPY/kL	32 514	Crude Oil			Crude Oil		
Natural Gas Liquids			Natural Gas Liquids			Natural Gas Liquids		
Ethane			Ethane			Ethane		
LPG	JPY/tonne	44 734	LPG	JPY/kg	114.0	LPG	JPY/m <sup>3</sup>	755.0
Naphtha	JPY/kL	33 111	Naphtha	JPY/kL	28 907	Naphtha		
Motor Gasoline	JPY/kL	37 575	Motor Gasoline	JPY/kL	109 051	Motor Gasoline (regular)	JPY/L	125
Aviation Gasoline			Aviation Gasoline			Aviation Gasoline		
Gasoline Type Jet Fuel			Gasoline Type Jet Fuel			Gasoline Type Jet Fuel		
Kerosene Type Jet Fuel			Kerosene Type Jet Fuel			Kerosene Type Jet Fuel		
Other Kerosene	JPY/kL	49 108	Other Kerosene	JPY/kL	54 513	Other Kerosene	JPY/L	76.2
Gas/Diesel Oil	JPY/kL	39 487	Gas/Diesel Oil	JPY/kL	85 902	Gas/Diesel Oil	JPY/L	105
Fuel Oil			Fuel Oil	JPY/kL	40 276	Fuel Oil		
White Spirit SBP			White Spirit SBP			White Spirit SBP		
Lubricants			Lubricants			Lubricants		
Bitumen			Bitumen			Bitumen		
Paraffin Waxes			Paraffin Waxes			Paraffin Waxes		
Petroleum Coke			Petroleum Coke			Petroleum Coke		
<b>Natural Gas</b>			<b>Natural Gas</b>			<b>Natural Gas</b>		
Natural Gas			Natural Gas			Natural Gas		
Liquefied Natural Gas	JPY/tonne	39 339	Liquefied Natural Gas			Liquefied Natural Gas		
Compressed Natural Gas			Compressed Natural Gas			Compressed Natural Gas		
<b>Electricity</b>			<b>Electricity</b>			<b>Electricity</b>		
Electricity			Electricity			Industrial		
						Commercial		
						Residential	JPY/kWh	22.00
						Others		
<b>Other Energy Products</b>			<b>Other Energy Products</b>			<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>2016</b>									
Indigenous production	768		689						
Import	81 131	235	149 275	40 536	172	24 620		3	272
Export			- 522	-63 752	-9 499	-6 041	-14 917	- 272	-23 893
International marine bunkers				-10 557					-1 225
International aviation bunkers				-4 923			-4 923		
Stock changes	- 667		- 927	- 22	- 65	- 230	- 264	10	292
<b>Total primary energy supply</b>	<b>81 232</b>	<b>235</b>	<b>148 515</b>	<b>-38 718</b>	<b>-9 392</b>	<b>18 349</b>	<b>-20 104</b>	<b>- 259</b>	<b>-24 554</b>
Transfers			-3 496	3 533	784	2 152	162	245	274
<b>Total transformation sector</b>	<b>-76 100</b>	<b>7 362</b>	<b>-145 278</b>	<b>135 789</b>	<b>18 404</b>	<b>21 958</b>	<b>21 541</b>	<b>2 676</b>	<b>46 540</b>
Main activity producers	-46 546	-1 957		-3 198				-107	- 92
Autoproducers	-5 473	-2 248		-1 591		-1 279			
Gas processing				-106					
Petroleum refineries			-155 876	150 979	18 404	32 505	21 541	2 783	46 632
Coal transformation	-24 081	11 567							
Other transformation			10 598	-10 295		-9 268			
Losses & own use		-3 083		-7 533				- 4	- 14
Discrepancy	- 100	- 116	259	1 009	64	744	94	- 113	- 105
<b>Total final consumption</b>	<b>5 032</b>	<b>4 398</b>		<b>94 080</b>	<b>9 860</b>	<b>43 203</b>	<b>1 693</b>	<b>2 545</b>	<b>22 141</b>
<b>Total final energy consumption</b>	<b>5 032</b>	<b>3 825</b>		<b>44 698</b>	<b>9 860</b>		<b>1 693</b>	<b>2 545</b>	<b>22 141</b>
Industry sector	5 032	3 267		3 578				86	1 300
Iron and steel	1 281	3 032		77					2
Chemical & petrochemical	84			521				19	40
Non-metallic minerals	2 681			558				5	132
Other industries	986	235		2 422				62	1 126
Transport sector				32 985	9 859		1 229	3	17 927
Domestic air transport				1 238	2		1 229		7
Road				31 187	9 857			3	17 520
Rail				99					99
Inland waterways				459					299
Other transport				2					2
Other sector		558		8 135	1		464	2 456	2 914
Residential		558		3 537				1 821	864
Commerce and public services				2 358			6	509	473
Agriculture				341				107	200
Non-specified others				1 899	1		458	19	1 377
Non-energy		573		49 382		43 203			
<b>2015</b>									
Indigenous production	785		658						
Import	80 860	268	142 110	37 602	48	24 045		1	280
Export			- 346	-62 430	-9 906	-5 807	-14 368	- 499	-23 494
International marine bunkers				-9 430					-1 304
International aviation bunkers				-4 407			-4 407		
Stock changes	-1 077		-1 426	347	179	170	45	295	- 684
<b>Total primary energy supply</b>	<b>80 568</b>	<b>268</b>	<b>140 996</b>	<b>-38 318</b>	<b>-9 679</b>	<b>18 408</b>	<b>-18 730</b>	<b>- 203</b>	<b>-25 202</b>
Transfers			-3 029	3 111	631	1 790	146	317	229
<b>Total transformation sector</b>	<b>-76 410</b>	<b>8 861</b>	<b>-138 155</b>	<b>130 784</b>	<b>18 890</b>	<b>19 617</b>	<b>20 334</b>	<b>2 537</b>	<b>45 790</b>
Main activity producers	-47 280	-1 977		-2 246				-117	- 96
Autoproducers	-4 811	-2 296		-1 994		-1 477			
Gas processing				- 88					- 1
Petroleum refineries			-147 910	144 507	18 890	30 339	20 334	2 654	45 887
Coal transformation	-24 319	13 134							
Other transformation			9 755	-9 395		-9 245			
Losses & own use		-3 125	- 1	-7 113				- 2	- 17
Discrepancy	643		189	1 835	- 278	1 323	- 5	- 418	888
<b>Total final consumption</b>	<b>4 801</b>	<b>6 004</b>		<b>90 299</b>	<b>9 564</b>	<b>41 138</b>	<b>1 745</b>	<b>2 231</b>	<b>21 688</b>
<b>Total final energy consumption</b>	<b>4 801</b>	<b>5 452</b>		<b>43 523</b>	<b>9 564</b>		<b>1 745</b>	<b>2 231</b>	<b>21 688</b>
Industry sector	4 801	4 797		3 420			1	92	1 286
Iron and steel	1 553	4 529		100					5
Chemical & petrochemical	111			533				18	40
Non-metallic minerals	2 739			516				5	130
Other industries	398	268		2 271			1	69	1 111
Transport sector				32 085	9 560		1 224	8	17 262
Domestic air transport				1 228			1 224		3
Road				30 522	9 560			7	16 978
Rail				113					113
Inland waterways				219					167
Other transport				3				1	1
Other sector		655		8 018	4		520	2 131	3 140
Residential		655		3 035				1 534	787
Commerce and public services				2 354	3		33	354	531
Agriculture				464				90	346
Non-specified others				2 165	1		487	153	1 476
Non-energy		552		46 776		41 138			



unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				138	245	42 209	818	6 412			51 279	4 298
7 175	8 260		34	39 608							310 785	
-1 990	-187		-6 953								-64 274	
-9 332											-10 557	
											-4 923	
358	-89		-34	1 567							-49	
-3 789	7 984		-6 953	41 313	245	42 209	818	6 412			282 261	4 298
											37	
-607	396	292	-165									
7 566	1 542	5 246	10 316	-20 548	-245	-42 209	-628	-2 174	48 038	5 245	-90 748	-2 457
-2 999				-19 312	-245	-42 209	-574	-1 166	45 039	1 597	-68 571	-1 985
			-312	-1 236			-54	-1 008	2 999	3 648	-4 963	-472
											-106	
10 565	2 557	5 246	10 746								-4 897	
											-12 514	
											303	
-1 603	-144	-5 537	-231	-86					-4 712	-152	-15 566	
350	-319	-1	295	853					1 152	-333	2 723	
1 917	9 459		3 262	21 532			190	4 237	44 478	4 760	178 707	1 840
1 917	6 504		38	21 532			190	4 237	44 478	4 760	128 752	1 840
1 339	815		38	7 509			5	2 808	22 819	2 801	47 819	609
13	62			1 487				8	4 437	5	10 327	
462				1 095				340	4 120	1 799	7 959	10
371	14		36	533				675	1 107	3	5 557	2
493	739		2	4 394			5	1 785	13 155	994	23 976	597
172	3 795			1 201				495	231		34 912	495
											1 238	
12	3 795			1 201				495			32 883	495
									231		330	
160											459	
											2	
406	1 894			12 822			185	934	21 428	1 959	46 021	736
114	738			8 856			39	140	5 914	1 694	20 738	179
243	1 127			3 963			122	731	14 138	265	21 577	469
31	3			3			24	63	1 190		1 621	88
18	26								186		2 085	
	2 955		3 224								49 955	
				169	185	42 930	663	5 853			51 243	3 999
7 206	6 004		18	38 944				10			299 794	10
-1 604	-122		-6 630								-62 776	
-8 126											-9 430	
											-4 407	
-245	338		249	234				16			-1 906	16
-2 769	6 220		-6 363	39 347	185	42 930	663	5 879			272 518	4 025
-860	751	255	-148								82	
6 547	2 405	5 169	9 495	-19 172	-185	-42 930	-500	-1 365	47 198	4 832	-87 042	-1 569
-2 033				-18 297	-185	-42 930	-457	-402	44 642	1 594	-67 538	-1 044
			-517	-875			-43	-963	2 556	3 238	-5 188	-525
											-88	
8 580	2 492	5 169	10 162								-3 403	
											-11 185	
											360	
-1 323	-149	-5 424	-198	-68					-4 675	-145	-15 127	
152	-549		722	396					67	-324	2 781	
1 747	8 678		3 508	20 503			164	4 488	42 590	4 363	173 212	2 429
1 747	6 497		51	20 503			164	4 488	42 590	4 363	125 884	2 429
1 281	709		51	7 413			5	2 512	22 560	2 570	48 078	643
19	76			1 528				7	4 669	5	12 391	
475				1 445				280	4 211	1 651	8 231	20
325	10		46	519				843	1 058	2	5 677	4
462	623		5	3 921			5	1 382	12 622	912	21 779	619
59	3 972			1 164				418	191		33 858	418
1											1 228	
7	3 970			1 164				418			32 104	418
									191		304	
50	2										219	
1											3	
407	1 816			11 926			159	1 558	19 839	1 793	43 948	1 368
53	661			8 171			35	106	5 486	1 550	19 038	140
303	1 130			3 752			102	1 386	13 094	243	20 931	1 141
26	2			3			22	66	1 001		1 556	87
25	23								258		2 423	
	2 181		3 457								47 328	

## Major energy indicators of Korea

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	92 915	249 923	260 392	263 363	263 688	268 267	272 518	282 261
Indigenous production	22 625	44 839	46 897	46 126	43 453	48 958	51 243	51 279
Import	73 942	266 854	282 262	287 436	290 991	291 882	299 794	310 785
Export	-3 794	-45 795	-54 886	-58 818	-56 866	-59 025	-62 776	-64 274
Final energy consumption	58 181	119 324	121 420	122 304	124 500	122 897	125 884	128 752
Industry	19 261	44 973	47 648	47 329	48 148	47 970	48 078	47 819
Transport	14 572	29 945	29 456	30 274	31 376	31 865	33 858	34 912
Residential	12 941	19 861	20 143	20 292	20 289	19 077	19 038	20 738
Commerce & public services	8 694	20 499	20 159	20 261	20 405	20 115	20 931	21 577
Others	2 713	4 046	4 014	4 148	4 282	3 870	3 979	3 706
<b>Coal &amp; coal products</b>								
Primary energy supply	25 383	73 454	80 265	77 079	77 881	81 699	80 836	81 467
Indigenous production	7 576	959	959	932	808	778	785	768
Import	15 725	72 948	79 484	76 078	77 379	79 523	81 128	81 366
Export								
Transformation sector	-13 183	-61 116	-66 369	-65 747	-63 670	-66 328	-67 549	-68 738
Power generation	-5 975	-52 433	-55 575	-54 601	-53 573	-54 167	-56 364	-56 224
Final energy consumption	11 719	9 139	9 737	9 133	9 444	9 045	10 253	8 857
Industry	3 054	8 284	8 899	8 317	8 591	8 320	9 598	8 299
Transport								
Residential	8 638	855	838	816	853	725	655	558
Commerce & public services								
Others	27							
<b>Crude oil &amp; NGL</b>								
Primary energy supply	43 240	120 994	128 027	130 505	126 880	128 496	140 996	148 515
Indigenous production		698	707	718	605	783	658	689
Import	42 672	121 571	127 916	131 070	125 523	128 438	142 110	149 275
Export		-481	-584	-356	-286	-143	-346	-522
Transformation sector	-42 522	-117 960	-125 340	-128 676	-123 971	-125 468	-138 155	-145 278
Petroleum refineries	-42 522	-124 969	-133 521	-136 793	-131 812	-134 466	-147 910	-155 876
<b>Petroleum products</b>								
Primary energy supply	6 496	-25 876	-34 313	-33 285	-30 317	-32 157	-38 318	-38 718
Import	12 842	33 027	32 960	37 435	40 423	39 906	37 602	40 536
Export	-3 794	-45 314	-54 302	-58 462	-56 580	-58 882	-62 430	-63 752
Transformation sector	39 028	111 104	118 468	120 812	117 431	120 579	130 784	135 789
Power generation	-4 511	-5 078	-4 435	-5 820	-5 295	-3 676	-4 240	-4 789
Petroleum refineries	43 539	123 460	131 479	135 192	130 453	133 001	144 507	150 979
Final energy consumption	36 935	43 905	42 305	41 431	41 285	40 974	43 523	44 698
Industry	10 881	5 896	5 187	4 143	3 477	3 457	3 420	3 578
Transport	14 485	28 401	27 875	28 594	29 631	30 107	32 085	32 985
Residential	1 916	2 982	3 205	2 902	2 952	2 839	3 035	3 537
Commerce & public services	7 065	3 447	2 965	2 727	2 138	1 892	2 354	2 358
Others	2 588	3 179	3 073	3 065	3 087	2 679	2 629	2 240
<b>Gas</b>								
Primary energy supply	2 724	38 636	41 588	44 979	47 616	43 137	39 347	41 313
Indigenous production		485	406	391	415	289	169	138
Import	2 680	39 290	41 902	42 853	47 666	44 015	38 944	39 608
Export								
Transformation sector	-2 037	-17 641	-19 533	-21 660	-22 776	-20 140	-19 172	-20 548
Power generation	-2 037	-18 005	-20 036	-22 219	-22 776	-20 140	-19 172	-20 548
Final energy consumption	673	20 585	21 576	22 902	24 140	22 218	20 503	21 532
Industry	73	7 092	8 276	9 291	9 803	8 827	7 413	7 509
Transport		1 023	1 074	1 149	1 204	1 212	1 164	1 201
Residential	464	8 940	8 906	9 106	8 984	8 320	8 171	8 856
Commerce & public services	136	3 526	3 316	3 351	4 146	3 856	3 752	3 963
Others		4	4	5	3	3	3	3
<b>Electricity</b>								
Power generation	9 062	42 697	44 704	45 643	46 239	46 931	47 198	48 038
Thermal	3 967	29 369	30 709	32 057	33 504	32 697	32 073	32 686
Hydro	547	317	395	341	369	237	185	245
Nuclear	4 548	12 779	13 306	12 928	11 935	13 451	14 170	13 932
Others		232	294	317	430	546	771	1 176
Final energy consumption	8 115	38 637	40 464	41 397	41 886	41 860	42 590	44 478
Industry	4 969	19 616	21 155	21 554	21 987	22 322	22 560	22 819
Transport	87	188	193	193	186	172	191	231
Residential	1 525	5 270	5 319	5 494	5 502	5 411	5 486	5 914
Commerce & public services	1 409	12 700	12 888	13 117	13 087	12 789	13 094	14 138
Others	125	863	909	1 039	1 124	1 166	1 259	1 376

## Major economic indicators of Korea

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	42.87	49.55	49.94	50.20	50.43	50.75	51.01	51.25
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	363	1 094	1 135	1 161	1 194	1 234	1 269	1 306
GDP, Billion USD (PPP, constant 2011)	499	1 504	1 559	1 595	1 641	1 696	1 744	1 795
Nominal, Billion USD (Current)	279	1 094	1 202	1 223	1 306	1 411	1 383	1 415
GDP per Capita *3								
Real Term (constant 2010 USD)	8 465	22 087	22 725	23 124	23 685	24 324	24 871	25 484
GDP, PPP (constant 2011 USD)	11 633	30 352	31 229	31 777	32 549	33 426	34 178	35 020
Nominal (Current USD)	6 516	22 087	24 080	24 359	25 890	27 811	27 105	27 608
Nominal GDP & its Components (Billions of Current KRW) *1								
Gross Domestic Product	197 712	1265 308	1332 681	1377 457	1429 445	1486 079	1564 124	1641 786
Household Final Consumption Expenditure	98 050	636 713	679 142	707 614	727 800	748 201	771 239	798 729
General Government Final Consumption Expenditure	22 252	183 109	194 381	204 324	214 467	224 724	234 766	249 167
Gross Fixed Capital Formation	74 594	385 924	403 045	407 307	418 289	433 266	458 420	487 274
Stock Change	3 732	19 264	36 191	19 722	-2 288	1 813	-6 105	-7 013
Exports of Goods and Services	50 100	625 309	742 936	776 062	770 115	747 134	709 122	694 216
Imports of Goods and Services	51 249	585 010	723 014	737 572	698 937	669 058	600 239	581 662
Real GDP & its Components (Billions of 2010 KRW) *1								
Gross Domestic Product	419 518	1265 308	1311 893	1341 967	1380 833	1426 972	1466 788	1509 755
Household Final Consumption Expenditure	253 472	636 713	655 181	667 781	680 350	692 236	707 493	725 362
General Government Final Consumption Expenditure	73 124	183 109	187 158	193 474	199 783	205 869	212 022	221 514
Gross Fixed Capital Formation	166 683	385 924	389 124	387 256	400 060	413 677	434 599	459 019
Stock Change	7 585	19 265	30 158	28 883	6 112	6 408	13 781	-8 162
Exports of Goods and Services	62 785	625 309	719 943	756 558	788 788	804 797	803 746	824 330
Imports of Goods and Services	101 122	585 010	668 932	685 009	696 725	706 938	721 740	755 861
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	5	2	2	2	2	2	2	2
Industry	31	35	35	35	35	35	35	35
Services, etc.	54	54	53	54	54	54	54	53
Industrial Production Index (2010=100) *2	22.9	100.0	106.0	107.7	108.3	109.0	108.5	109.3
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	65.0	466.4	555.2	547.9	559.6	572.7	526.8	495.4
Imports, c.i.f.	69.8	425.2	524.4	519.6	515.6	525.5	436.5	406.2
Balance of Payments (Billions of Current USD) *2								
Trade Balance	-3.3	47.9	29.1	49.4	82.8	88.9	122.3	118.9
Current Account	-2.4	28.9	18.7	50.8	81.1	84.4	105.9	99.2
Overall Balance	-0.1	32.6	8.2	12.4	17.3	12.9	11.6	4.2
Foreign Exchange Rate (KRW/USD) *1	707.76	1156.06	1108.29	1126.47	1094.85	1052.96	1131.16	1160.43
PPP conversion factor, GDP (KRW/USD) *1	557.27	840.57	854.59	854.89	869.08	871.88	870.93	874.63
Price Indices								
GDP Deflator (2010=100) *3	47.1	100.0	101.6	102.6	103.5	104.1	106.6	108.7
Producer Price Index (2010=100)*2	56.3	100.0	106.7	107.5	105.7	105.2	100.9	99.1
Consumer Price Index (2010=100) *2	44.6	100.0	104.0	106.3	107.7	109.1	109.8	110.9
Growth Rate (%) *3								
Real GDP	9.8	6.5	3.7	2.3	2.9	3.3	2.8	2.9
Population	1.0	0.5	0.8	0.5	0.5	0.6	0.5	0.5
Price								
Producer Prices	4.2	3.8	6.7	0.7	-1.6	-0.5	-4.0	-1.8
Consumer Prices	8.6	2.9	4.0	2.2	1.3	1.3	0.7	1.0

Source \*1 : *World Development Indicators*, World Bank  
\*2 : *International Financial Statistics*, International Monetary Fund

\*3 : Calculated from \*1 and \*2 by ESTO

Note : N.A. means "not available"  
: KRW means Won, USD means United States Dollar  
: PPP means Purchasing Power Parity



**Malaysia**

## Energy balance table of Malaysia

	Coal	Coal products	Crude oil & NGL	Petroleum products				
				Total	Gasoline	Naphtha	Jet fuel	Kerosene
<b>2016</b>								
Indigenous production	1 521		35 704					
Import	17 160		10 881	15 332	8 546		1 449	3 894
Export	- 15		-16 627	-12 206	- 457		-1 067	- 4 801
International marine bunkers				- 297				- 1
International aviation bunkers				-2 413			-2 413	
Stock changes	244		70	796	274		100	13
<b>Total primary energy supply</b>	<b>18 910</b>		<b>30 028</b>	<b>1 211</b>	<b>8 363</b>		<b>-1 932</b>	<b>- 63</b>
<b>Transfers</b>								
Total transformation sector	-17 090		-29 998	26 937	5 041		2 546	78
Main activity producers	-17 090			- 319				- 165
Autoproducers				- 46				- 46
Gas processing				2 632				74
Petroleum refineries			-29 998	24 670	5 041		2 546	4
Coal transformation								9 981
Other transformation								
Losses & own use				- 351				
Discrepancy	- 37		- 30	117	- 1		- 12	- 10
<b>Total final consumption</b>	<b>1 783</b>			<b>27 914</b>	<b>13 402</b>		<b>603</b>	<b>5</b>
<b>Total final energy consumption</b>	<b>1 783</b>			<b>25 270</b>	<b>13 402</b>		<b>603</b>	<b>5</b>
Industry sector	1 783			2 423	109			2
Iron and steel								
Chemical & petrochemical								
Non-metallic minerals	1 783							
Other industries				2 423	109			2
Transport sector				20 949	13 293		603	
Domestic air transport							603	
Road				20 346	13 293			
Rail								
Inland waterways								
Other transport								
Other sector				1 898				3
Residential				605				3
Commerce and public services				925				
Agriculture				97				
Non-specified others				271				
Non-energy				2 644				
<b>2015</b>								
Indigenous production	1 612		34 018					
Import	16 040		8 387	14 201	7 577	137	553	4 555
Export	- 156		-16 103	-10 315	- 401	-1 370	- 549	- 42
International marine bunkers				- 346				- 2
International aviation bunkers				-2 505			-2 505	
Stock changes	10		57	394	79	- 412	96	- 4
<b>Total primary energy supply</b>	<b>17 506</b>		<b>26 360</b>	<b>1 429</b>	<b>7 254</b>	<b>-1 644</b>	<b>-2 405</b>	<b>- 46</b>
<b>Transfers</b>								
Total transformation sector	-15 616		-24 559	24 585	5 027	2 452	2 838	51
Main activity producers	-15 616			- 380				- 279
Autoproducers				- 51				- 51
Gas processing				211				44
Petroleum refineries			-24 948	24 805	5 027	2 452	2 838	6
Coal transformation								10 566
Other transformation				389				
Losses & own use				-1 368			-1 066	
Discrepancy	- 113		- 226	257	513		193	- 44
<b>Total final consumption</b>	<b>1 777</b>			<b>26 527</b>	<b>12 795</b>		<b>626</b>	<b>4</b>
<b>Total final energy consumption</b>	<b>1 777</b>			<b>25 106</b>	<b>12 795</b>		<b>626</b>	<b>4</b>
Industry sector	1 777			2 185	181			4
Iron and steel								
Chemical & petrochemical								
Non-metallic minerals	1 777							
Other industries				2 185	181			4
Transport sector				20 628	12 545		626	
Domestic air transport							626	
Road				20 001	12 545			
Rail								
Inland waterways								
Other transport								
Other sector				2 294	69			
Residential				673				
Commerce and public services				767				
Agriculture				190				
Non-specified others				664	69			
Non-energy				1 420				

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				52 446	1 722		27	717			92 137	2 466
51	490		902	6 295					3		49 670	
- 605	- 355		-4 844	-30 739				- 82	- 60		-59 730	- 82
- 296											- 297	
											-2 413	
38	30		239					- 34			1 077	- 34
- 811	164		-3 703	28 002	1 722		27	600	- 57		80 444	2 349
1 324	3 344		4 673	-12 629	-1 722		- 27	- 223	13 473		-21 280	-1 972
- 155				-11 698	-1 722		- 27	- 76	12 938		-17 994	-1 824
				- 965				- 147	535		- 623	- 147
	2 059		337	1 019							3 651	
1 478	1 284		4 336								-5 328	
				- 985							- 985	
- 27			- 324	-4 516					- 869		-5 736	
27	- 14		3	- 1					- 162		- 112	
512	3 494		649	10 855				377	12 386		53 316	377
512	1 499			5 488				377	12 386		45 305	377
479	138			5 283					5 819		15 309	
											1 783	
479	138			5 283					5 819		13 525	
14				184				377	29		21 540	377
											603	
14				184				377			20 907	377
									29		29	
19	1 361			21					6 538		8 457	
	602								2 677		3 282	
14	759			21					3 814		4 760	
5									47		144	
											271	
	1 995		649	5 367							8 011	
				56 477	1 197		23	891			94 219	2 112
957	350		71	7 714					1		46 343	
-1 408	- 272		- 711	-31 198				- 182			-57 954	- 182
- 344											- 346	
											-2 505	
- 81	161		65					- 114			347	- 114
- 875	239		- 575	32 993	1 197		23	595	1		80 104	1 816
	1 203										50	
1 590	829	172	1 273	-19 789	-1 197		- 23	- 596	12 911		-24 286	-1 817
- 101				-12 662	-1 197		- 23	- 91	12 482		-17 489	-1 312
				-1 646				- 116	429		-1 384	- 116
	49			-5 480							-5 269	
1 691	780	172	1 273								- 143	
								- 389				- 389
- 16		- 172	- 114	-2 103					- 1 079		-4 550	
- 201	- 12			-2 046				1	- 464		-2 591	1
498	2 259		584	9 054					11 369		48 727	
498	1 423			4 823					11 369		43 076	
491	123			4 551					5 215		13 728	
											1 777	
491	123			4 551					5 215		11 951	
4				249					23		20 900	
											626	
4				249							20 251	
									23		23	
3	1 300			23					6 131		8 448	
	673			1					2 434		3 108	
	627			22					3 657		4 446	
3									40		230	
											664	
	837		584	4 231							5 652	

## Major energy indicators of Malaysia

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	20 683	70 346	77 318	77 346	77 982	78 626	80 104	80 444
Indigenous production	46 437	83 399	86 567	85 883	86 632	87 821	94 219	92 137
Import	9 700	38 519	41 172	44 775	50 761	47 483	46 343	49 670
Export	-35 279	-51 694	-48 206	-52 341	-55 179	-54 612	-57 954	-59 730
Final energy consumption	12 305	39 131	38 342	38 576	41 655	42 697	43 076	45 305
Industry	5 297	14 281	13 368	15 310	13 133	12 739	13 728	15 309
Transport	5 386	16 826	17 065	15 146	20 072	21 483	20 900	21 540
Residential	733	2 655	2 771	2 841	2 997	2 992	3 108	3 282
Commerce & public services	889	4 296	4 222	4 225	4 401	4 461	4 446	4 760
Others		1 074	916	1 053	1 052	1 023	894	415
<b>Coal &amp; coal products</b>								
Primary energy supply	1 355	14 601	14 655	15 796	15 290	15 258	17 506	18 910
Indigenous production	70	1 511	1 838	1 860	1 823	1 693	1 612	1 521
Import	1 424	13 073	13 330	14 220	13 900	13 695	16 040	17 160
Export	- 28	- 62	- 141	- 232	- 326	- 114	- 156	- 15
Transformation sector	- 813	-12 951	-13 013	-14 138	-13 519	-13 639	-15 616	-17 090
Power generation	- 813	-12 951	-13 013	-14 138	-13 519	-13 639	-15 616	-17 090
Final energy consumption	513	1 826	1 759	1 744	1 538	1 708	1 777	1 783
Industry	513	1 826	1 759	1 744	1 538	1 708	1 777	1 783
Transport								
Residential								
Commerce & public services								
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	10 024	25 173	27 068	30 204	29 154	28 649	26 360	30 028
Indigenous production	30 629	34 653	30 963	31 321	30 176	31 043	34 018	35 704
Import	2 244	8 115	9 322	10 003	9 103	9 799	8 387	10 881
Export	-22 949	-17 258	-11 524	-12 086	-10 645	-11 702	-16 103	-16 627
Transformation sector	-9 980	-22 710	-24 777	-27 650	-26 346	-26 085	-24 559	-29 998
Petroleum refineries	-9 980	-22 710	-24 798	-27 749	-26 509	-26 344	-24 948	-29 998
<b>Petroleum products</b>								
Primary energy supply	1 954	2 312	2 095	-3 034	2 834	3 882	1 429	1 211
Import	6 031	10 359	11 580	12 725	19 852	16 064	14 201	15 332
Export	-3 913	-8 429	-9 421	-13 967	-12 472	-10 816	-10 315	-12 206
Transformation sector	7 425	21 572	22 379	25 501	24 495	24 058	24 585	26 937
Power generation	-2 989	- 540	-2 084	-1 361	-1 102	- 959	- 431	- 365
Petroleum refineries	10 414	21 207	23 890	26 147	24 938	24 501	24 805	24 670
Final energy consumption	9 596	23 746	22 765	21 977	25 160	25 271	25 106	25 270
Industry	3 481	4 176	3 289	4 528	2 702	1 550	2 185	2 423
Transport	5 386	16 562	16 777	14 835	19 787	21 210	20 628	20 949
Residential	729	712	791	714	735	647	673	605
Commerce & public services		1 246	1 019	877	916	877	767	925
Others		1 050	890	1 023	1 020	987	854	368
<b>Gas</b>								
Primary energy supply	7 007	27 656	32 244	32 948	29 300	29 213	32 993	28 002
Indigenous production	15 395	46 628	52 381	51 157	52 992	53 190	56 477	52 446
Import	6 971	6 938	6 938	7 819	7 887	7 924	7 714	6 295
Export	-8 388	-25 944	-27 075	-26 029	-31 579	-31 901	-31 198	-30 739
Transformation sector	-2 420	-18 548	-22 115	-21 683	-18 736	-19 691	-19 789	-12 629
Power generation	-1 141	-13 578	-12 623	-13 188	-15 015	-16 505	-14 309	-12 663
Final energy consumption	481	4 566	4 582	4 843	4 372	4 682	4 823	5 488
Industry	473	4 285	4 274	4 530	4 087	4 411	4 551	5 283
Transport		245	270	291	264	250	249	184
Residential	4	6	6		1	1	1	
Commerce & public services	4	30	31	23	20	20	22	21
Others								
<b>Electricity</b>								
Power generation	1 979	10 292	10 928	11 554	11 896	12 682	12 911	13 473
Thermal	1 636	9 667	10 100	10 599	10 877	11 451	11 625	11 659
Hydro	343	547	693	796	910	1 151	1 197	1 722
Nuclear								
Others		78	135	160	109	79	88	92
Final energy consumption	1 715	8 993	9 236	10 011	10 585	11 036	11 369	12 386
Industry	830	3 994	4 045	4 509	4 806	5 070	5 215	5 819
Transport		18	18	21	21	22	23	29
Residential		1 937	1 974	2 126	2 261	2 345	2 434	2 677
Commerce & public services	885	3 020	3 172	3 325	3 465	3 564	3 657	3 814
Others		24	26	30	32	36	40	47



## Major economic indicators of Malaysia

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	18.04	28.11	28.64	29.17	29.71	30.23	30.72	31.19
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	82	255	269	283	297	314	330	344
GDP, Billion USD (PPP, constant 2011)	190	593	625	659	690	731	768	801
Nominal, Billion USD (Current)	44	255	298	314	323	338	296	297
GDP per Capita *3								
Real Term (constant 2010 USD)	4 535	9 071	9 377	9 709	9 981	10 398	10 745	11 032
GDP, PPP (constant 2011 USD)	10 552	21 107	21 819	22 591	23 224	24 195	25 002	25 669
Nominal (Current USD)	2 441	9 071	10 405	10 780	10 882	11 184	9 649	9 508
Nominal GDP & its Components (Billions of Current MYR) *1								
Gross Domestic Product	119	821	912	971	1 019	1 106	1 158	1 230
Household Final Consumption Expenditure	62	395	437	482	528	580	626	675
General Government Final Consumption Expenditure	16	103	121	134	140	147	152	155
Gross Fixed Capital Formation	39	184	202	246	270	287	303	317
Stock Change	- 1	8	9	4	- 6	- 11	- 12	1
Exports of Goods and Services	89	714	777	770	770	816	817	832
Imports of Goods and Services	86	583	635	666	683	714	729	750
Real GDP & its Components (Billions of 2005 MYR) *1								
Gross Domestic Product	263	821	865	912	955	1 012	1 063	1 108
Household Final Consumption Expenditure	120	395	422	458	491	525	557	590
General Government Final Consumption Expenditure	29	103	118	124	132	137	143	145
Gross Fixed Capital Formation	71	184	196	233	252	264	274	281
Stock Change	1	8	5	4	- 3	- 9	- 1	
Exports of Goods and Services	154	714	744	731	733	770	772	781
Imports of Goods and Services	126	583	620	638	649	675	681	688
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	22	10	10	10	10	9	9	8
Industry	49	40	39	39	39	39	39	39
Services, etc.	31	48	49	50	51	51	51	52
Industrial Production Index (2010=100) *2	31.6	100.0	102.4	106.7	110.4	116.0	121.5	126.3
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	29.5	198.6	228.1	227.5	228.3	233.9	199.2	189.7
Imports, c.i.f.	29.3	164.6	187.5	196.4	205.9	208.9	176.0	168.4
Balance of Payments (Billions of Current USD) *2								
Trade Balance	2.5	38.4	45.9	36.6	30.6	N.A.	27.9	24.5
Current Account	-0.9	25.6	32.5	16.3	11.2	14.8	9.1	7.1
Overall Balance	0.9	19.6	40.2	8.9	5.0	N.A.	-5.8	7.3
Foreign Exchange Rate (MYR/USD) *1	2.70	3.22	3.06	3.09	3.15	3.27	3.91	4.15
PPP conversion factor, GDP (MYR/USD) *1	0.97	1.41	1.46	1.45	1.43	1.44	1.42	1.42
Price Indices								
GDP Deflator (2005=100) *3	45.2	100.0	105.4	106.5	106.7	109.3	108.9	111.0
Producer Price Index (2010=100) *2	50.4	100.0	112.3	111.8	108.8	110.4	102.2	101.1
Consumer Price Index (2010=100) *2	56.8	100.0	103.2	104.9	107.1	110.5	112.8	115.1
Growth Rate (%) *3								
Real GDP	9.0	7.4	5.3	5.5	4.7	6.0	5.0	4.2
Population	2.9	1.8	1.9	1.9	1.8	1.8	1.6	1.5
Price								
Producer Prices	0.7	5.6	12.3	-0.5	-2.7	1.5	-7.5	-1.1
Consumer Prices	2.6	1.7	3.2	1.7	2.1	3.1	2.1	2.1

Source \*1 : World Development Indicators, World Bank

\*2 : International Financial Statistics, International Monetary Fund

\*3 : Calculated from \*1 and \*2 by ESTO

Note

: N.A. means "not available"

: MYR means Malaysian Ringgit, USD means United States Dollar

: PPP means Purchasing Power Parity

## Energy prices in Malaysia in 2016

## Currency Exchange Rate

Currency Exchange Rate	Local currency / US Dollar	4,1483
Local Currency Unit		MYR

## IMPORT PRICES

## WHOLESALE PRICES

## CONSUMER PRICES

	Unit	Amount		Unit	Amount		Unit	Amount
<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>		
Coking Coal			Coking Coal			Coking Coal		
Anthracite			Anthracite			Anthracite		
Other bituminous coal			Other bituminous coal			Other bituminous coal		
Sub-bituminous Coal	MYR/tonne	247.97	Sub-bituminous Coal			Sub-bituminous Coal		
Lignite			Lignite			Lignite		
Peat			Peat			Peat		
Patent Fuel			Patent Fuel			Patent Fuel		
Coke			Coke			Coke		
Coal Tar			Coal Tar			Coal Tar		
BKB/PB			BKB/PB			BKB/PB		
			Gas Works Gas			Gas Works Gas		
<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>		
Crude Oil	MYR/tonne	1 184.08	Crude Oil			Crude Oil		
Natural Gas Liquids			Natural Gas Liquids			Natural Gas Liquids		
Ethane			Ethane			Ethane		
LPG			LPG			LPG		
Naphtha			Naphtha			Naphtha		
Motor Gasoline			Motor Gasoline			Motor Gasoline (regular)		
Aviation Gasoline			Aviation Gasoline			Aviation Gasoline		
Gasoline Type Jet Fuel			Gasoline Type Jet Fuel			Gasoline Type Jet Fuel		
Kerosene Type Jet Fuel			Kerosene Type Jet Fuel			Kerosene Type Jet Fuel		
Other Kerosene			Other Kerosene			Other Kerosene		
Gas/Diesel Oil			Gas/Diesel Oil			Gas/Diesel Oil		
Fuel Oil			Fuel Oil			Fuel Oil		
White Spirit SBP			White Spirit SBP			White Spirit SBP		
Lubricants			Lubricants			Lubricants		
Bitumen			Bitumen			Bitumen		
Paraffin Waxes			Paraffin Waxes			Paraffin Waxes		
Petroleum Coke			Petroleum Coke			Petroleum Coke		
Natural Gas			Natural Gas			Natural Gas		
Natural Gas	MYR/tonne	1 376.94	Natural Gas			Natural Gas		
Liquefied Natural Gas	MYR/tonne	1 540.17	Liquefied Natural Gas			Liquefied Natural Gas		
Compressed Natural Gas			Compressed Natural Gas			Compressed Natural Gas		
<b>Electricity</b>			<b>Electricity</b>			<b>Electricity</b>		
Electricity			Electricity			Industrial		
						Commercial		
						Residential		
						Others		
<b>Other Energy Products</b>			<b>Other Energy Products</b>			<b>Other Energy Products</b>		

**Mexico**

## Energy balance table of Mexico

	Coal	Coal products	Crude oil & NGL	Petroleum products				
				Total	Gasoline	Naphtha	Jet fuel	Kerosene
<b>2016</b>								
Indigenous production	6 960		124 685					
Import	4 884	753	511	42 809	22 035	254	1 629	9 453
Export	- 1		-65 726	-9 334		-2 197		- 762
International marine bunkers				- 896				- 812
International aviation bunkers				-3 715	- 10		-3 705	
Stock changes	- 213		- 133	- 16	- 300		- 35	306
<b>Total primary energy supply</b>	<b>11 630</b>	<b>753</b>	<b>59 337</b>	<b>28 848</b>	<b>21 725</b>	<b>-1 943</b>	<b>-2 111</b>	<b>8 185</b>
<b>Transfers</b>			<b>-6 073</b>	<b>7 083</b>		<b>- 254</b>	<b>- 45</b>	<b>44</b>
<b>Total transformation sector</b>	<b>-10 155</b>	<b>402</b>	<b>-53 312</b>	<b>42 980</b>	<b>14 513</b>	<b>3 166</b>	<b>2 086</b>	<b>11 129</b>
Main activity producers	-8 890			-6 624				- 501
Autoproducers		- 123		-1 522				- 152
Gas processing				- 328				
Petroleum refineries			-53 412	51 521	14 513	3 233	2 086	11 782
Coal transformation	-1 265	525						
Other transformation			100	- 67		- 67		
Losses & own use		- 377		-5 502				- 718
Discrepancy	- 431	30	48	1 833	553	- 18	70	980
<b>Total final consumption</b>	<b>1 044</b>	<b>808</b>	<b>75 242</b>	<b>36 791</b>	<b>951</b>	<b>44</b>	<b>19 576</b>	
<b>Total final energy consumption</b>	<b>1 044</b>	<b>723</b>	<b>70 436</b>	<b>36 791</b>	<b>21</b>	<b>44</b>	<b>19 576</b>	
Industry sector	1 044	723	7 065		21			1 887
Iron and steel		721	109					24
Chemical & petrochemical			438		21			141
Non-metallic minerals	165		3 050					7
Other industries	879	2	3 468					1 715
Transport sector			52 822	36 791				14 594
Domestic air transport			14	14				
Road			51 260	36 777				13 069
Rail			672					672
Inland waterways			876					853
Other transport								
Other sector			10 549			44		3 095
Residential			5 814			44		
Commerce and public services			1 565					45
Agriculture			3 170					3 050
Non-specified others								
<b>Non-energy</b>		<b>85</b>	<b>4 806</b>		<b>930</b>			
<b>2015</b>								
Indigenous production	5 774		130 949					
Import	4 821	466	401	34 669	18 587	559	1 140	7 415
Export	- 2		-62 281	-9 728		-2 616		- 343
International marine bunkers				- 850				- 775
International aviation bunkers				-3 451	- 12		-3 439	
Stock changes	381		368	271	550		40	- 190
<b>Total primary energy supply</b>	<b>10 974</b>	<b>466</b>	<b>69 437</b>	<b>20 911</b>	<b>19 125</b>	<b>-2 057</b>	<b>-2 259</b>	<b>6 107</b>
<b>Transfers</b>			<b>-5 977</b>	<b>7 035</b>		<b>- 559</b>	<b>- 60</b>	<b>59</b>
<b>Total transformation sector</b>	<b>-10 488</b>	<b>797</b>	<b>-65 754</b>	<b>49 263</b>	<b>16 890</b>	<b>3 201</b>	<b>2 324</b>	<b>13 794</b>
Main activity producers	-8 728			-5 987				- 346
Autoproducers	- 13	- 142		-1 620				- 165
Gas processing				- 769				
Petroleum refineries			-65 964	57 796	16 890	3 358	2 324	14 305
Coal transformation	-1 747	939						
Other transformation			210	- 157		- 157		
Losses & own use		- 390		-5 715				- 730
Discrepancy	2 514	8	2 294	1 214	- 555	215	- 5	- 71
<b>Total final consumption</b>	<b>3 000</b>	<b>881</b>	<b>72 708</b>	<b>35 460</b>	<b>800</b>	<b>59</b>	<b>18 979</b>	
<b>Total final energy consumption</b>	<b>3 000</b>	<b>769</b>	<b>67 985</b>	<b>35 460</b>	<b>21</b>	<b>59</b>	<b>18 979</b>	
Industry sector	3 000	769	6 254		21			1 627
Iron and steel		768	103					22
Chemical & petrochemical			289		21			143
Non-metallic minerals	157		2 985					9
Other industries	2 843	1	2 877					1 453
Transport sector			50 981	35 460				14 249
Domestic air transport			15	15				
Road			49 508	35 445				12 815
Rail			672					672
Inland waterways			786					762
Other transport								
Other sector			10 750			59		3 103
Residential			6 020			59		
Commerce and public services			1 600					114
Agriculture			3 130					2 989
Non-specified others								
<b>Non-energy</b>		<b>112</b>	<b>4 723</b>		<b>779</b>			

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
1 698	5 147		2 593	30 433	2 640	2 753	4 325	8 668	192		180 464	15 620
-6 201	- 174			35 554					- 169		84 703	
- 83			- 1	- 22							-75 252	
											- 896	
- 85	- 44		142	216							-3 715	
-4 671	4 929		2 734	66 181	2 640	2 753	4 325	8 668	23		185 158	15 620
	4 723		2 615								1 010	
5 782	198	3 665	2 441	-35 978	-2 640	-2 753	-4 082	-1 745	27 545		-39 738	-8 454
-6 123				-26 805	-2 563	-2 753	-3 321		22 881		-28 075	-5 884
- 584	- 85		- 701	-9 407	- 77		- 761	-1 745	4 664		-8 971	-2 570
	- 328			234							- 94	
12 489	611	3 665	3 142								-1 891	
											- 740	
											33	
-1 068		-3 665	- 51	-12 275					-5 293		-23 447	
735	91		- 578	-3 669				- 1	971		-1 219	
778	9 941		7 161	14 259			243	6 922	23 246		121 764	7 165
778	9 900		3 326	13 760			243	6 922	23 246		116 374	7 165
755	1 076		3 326	12 753			12	914	12 548		35 059	926
41			44	3 007					462		4 299	
76	19		181	2 851					505		3 794	
68	3		2 972	1 345					1 005		5 565	
570	1 054		129	5 550			12	914	10 576		21 401	926
23	1 414			23					98		52 943	
											14	
	1 414			23							51 283	
									98		770	
23											876	
	7 410			984			231	6 008	10 600		28 372	6 239
	5 770			733			140	6 008	5 070		17 765	6 148
	1 520			251			91		2 063		3 970	91
	120								975		4 145	
									2 492		2 492	
	41		3 835	499							5 390	
				34 366	2 650	3 016	4 204	8 626			189 585	15 469
927	3 941		2 100	30 175					142		70 674	
-6 768	- 1			- 25					- 199		-72 235	
- 74			- 1								- 850	
											-3 451	
137	- 210		- 56	146							1 166	
-5 778	3 730		2 043	64 662	2 650	3 016	4 204	8 626	- 57		184 889	15 469
	5 085		2 631								1 058	
6 907	- 132	3 668	2 611	-34 107	-2 650	-3 016	-3 987	-1 699	26 716		-44 925	-8 325
-5 641				-26 533	-2 584	-3 016	-3 400		22 588		-27 660	-5 984
- 414	- 120		- 921	-8 063	- 66		- 587	-1 699	4 128		-8 062	-2 341
	- 769			489							- 280	
12 962	757	3 668	3 532								-8 168	
											- 808	
											53	
-1 216		-3 668	- 101	-13 367					-4 984		-24 456	
625	1 183		- 178	-3 251					463		3 242	
538	9 866		7 006	13 937			217	6 927	22 138		119 808	7 144
538	9 828		3 100	13 451			217	6 927	22 138		114 487	7 144
514	992		3 100	12 397			11	888	12 037		35 356	899
41			40	2 864					459		4 194	
60	19		46	2 956					510		3 755	
77	3		2 896	1 279					940		5 361	
336	970		118	5 298			11	888	10 128		22 046	899
24	1 248			17					98		51 096	
											15	
	1 248			17							49 525	
									98		770	
24											786	
	7 588			1 037			206	6 039	10 003		28 035	6 245
	5 961			776			124	6 039	4 814		17 773	6 163
	1 486			261			82		2 045		3 988	82
	141								865		3 995	
									2 279		2 279	
	38		3 906	486							5 321	

## Major energy indicators of Mexico

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	123 677	178 538	186 939	191 725	191 919	188 185	184 889	185 158
Indigenous production	195 533	222 538	223 725	218 524	216 174	208 315	189 585	180 464
Import	5 831	47 983	52 336	56 348	56 289	59 392	70 674	84 703
Export	-75 752	-88 337	-85 503	-78 951	-76 453	-74 321	-72 235	-75 252
Final energy consumption	74 219	109 911	113 469	113 788	113 902	112 379	114 487	116 374
Industry	25 750	32 768	35 485	35 123	36 062	33 806	35 356	35 059
Transport	28 306	51 086	51 429	51 694	51 125	51 287	51 096	52 943
Residential	15 749	17 802	17 937	18 023	17 544	17 741	17 773	17 765
Commerce & public services	1 482	3 546	3 616	3 701	3 903	3 904	3 988	3 970
Others	2 932	4 709	5 002	5 247	5 268	5 641	6 274	6 637
<b>Coal &amp; coal products</b>								
Primary energy supply	4 127	13 255	14 550	12 717	12 912	12 653	11 440	12 383
Indigenous production	3 742	8 005	10 370	7 944	7 677	7 752	5 774	6 960
Import	241	5 191	4 881	4 503	5 007	5 094	5 287	5 637
Export	-6	-77	-167	-151	-3	-2	-2	-1
Transformation sector	-2 608	-9 270	-9 376	-9 463	-8 916	-9 748	-9 691	-9 753
Power generation	-1 725	-8 333	-8 498	-8 611	-8 027	-8 817	-8 883	-9 013
Final energy consumption	938	3 902	4 840	2 919	3 632	2 470	3 769	1 767
Industry	938	3 902	4 840	2 919	3 632	2 470	3 769	1 767
Transport								
Residential								
Commerce & public services								
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	82 375	77 940	78 338	81 533	82 596	80 353	69 437	59 337
Indigenous production	153 283	155 255	153 673	152 754	149 894	144 821	130 949	124 685
Import	237	324	306	374	411	385	401	511
Export	-70 838	-77 691	-76 142	-71 307	-67 271	-64 097	-62 281	-65 726
Transformation sector	-74 376	-71 731	-70 821	-71 165	-74 629	-73 769	-65 754	-53 312
Petroleum refineries	-74 443	-71 851	-70 929	-71 270	-74 851	-74 083	-65 964	-53 412
<b>Petroleum products</b>								
Primary energy supply	-1 585	16 491	19 424	21 019	16 125	16 228	20 911	28 848
Import	4 934	29 792	32 584	32 388	28 777	30 102	34 669	42 809
Export	-4 741	-9 666	-9 014	-7 390	-9 042	-9 955	-9 728	-9 334
Transformation sector	53 177	53 163	50 175	50 324	53 272	53 395	49 263	42 980
Power generation	-15 118	-10 602	-11 822	-12 362	-12 074	-8 695	-7 607	-8 146
Petroleum refineries	68 366	64 663	62 821	63 553	66 199	62 949	57 796	51 521
Final energy consumption	44 459	67 738	68 168	68 648	67 392	67 511	67 985	70 436
Industry	7 445	5 888	5 951	5 919	5 773	5 751	6 254	7 065
Transport	28 237	50 975	51 324	51 579	51 010	51 173	50 981	52 822
Residential	6 573	6 585	6 515	6 589	6 076	6 094	6 020	5 814
Commerce & public services	540	1 506	1 502	1 508	1 636	1 595	1 600	1 565
Others	1 664	2 784	2 876	3 053	2 897	2 898	3 130	3 170
<b>Gas</b>								
Primary energy supply	23 120	54 238	57 116	59 310	62 171	60 523	64 662	66 181
Indigenous production	22 750	42 582	42 111	40 771	40 485	37 269	34 366	30 433
Import	369	12 642	14 514	18 896	21 990	23 628	30 175	35 554
Export		-787	-69	-7	-30	-39	-25	-22
Transformation sector	-3 431	-28 674	-30 565	-32 176	-30 024	-31 398	-34 107	-35 978
Power generation	-3 431	-29 313	-31 241	-32 751	-30 591	-31 918	-34 596	-36 212
Final energy consumption	11 635	12 515	13 063	13 654	14 361	13 550	13 451	13 760
Industry	10 825	11 521	12 125	12 677	13 353	12 438	12 397	12 753
Transport		9	9	18	18	17	17	23
Residential	810	768	729	744	768	834	776	733
Commerce & public services		217	200	215	222	261	261	251
Others								
<b>Electricity</b>								
Power generation	9 962	23 691	26 032	26 417	25 566	25 924	26 716	27 545
Thermal	7 250	19 247	21 280	21 997	21 138	20 537	21 635	22 421
Hydro	2 019	3 193	3 117	2 742	2 408	3 344	2 650	2 640
Nuclear	253	506	868	754	1 015	832	996	909
Others	44	233	264	474	535	746	945	1 099
Final energy consumption	8 617	18 546	20 104	21 302	20 763	21 686	22 138	23 246
Industry	4 591	10 552	11 568	12 620	11 814	12 237	12 037	12 548
Transport	69	102	96	97	97	97	98	98
Residential	1 754	4 187	4 452	4 474	4 503	4 636	4 814	5 070
Commerce & public services	935	1 780	1 862	1 917	1 978	1 973	2 045	2 063
Others	1 268	1 925	2 126	2 194	2 371	2 743	3 144	3 467

## Major economic indicators of Mexico

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	85.36	117.32	119.09	120.83	122.54	124.22	125.89	127.54
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	640	1 058	1 097	1 136	1 152	1 185	1 223	1 259
GDP, Billion USD (PPP, constant 2011)	1 116	1 844	1 911	1 981	2 008	2 065	2 132	2 195
Nominal, Billion USD (Current)	263	1 058	1 180	1 201	1 274	1 314	1 170	1 077
GDP per Capita *3								
Real Term (constant 2010 USD)	7 499	9 016	9 208	9 406	9 400	9 537	9 718	9 872
GDP, PPP (constant 2011 USD)	13 070	15 716	16 049	16 395	16 385	16 623	16 939	17 207
Nominal (Current USD)	3 078	9 016	9 913	9 941	10 401	10 581	9 291	8 444
Nominal GDP & its Components (Billions of Current MXN) *1								
Gross Domestic Product	739	13 366	14 666	15 818	16 277	17 471	18 537	20 100
Household Final Consumption Expenditure	514	8 735	9 504	10 238	10 819	11 510	12 150	13 164
General Government Final Consumption Expenditure	62	1 573	1 727	1 890	1 984	2 132	2 287	2 436
Gross Fixed Capital Formation	132	2 885	3 267	3 613	3 459	3 672	4 176	4 609
Stock Change	39	162	148	165	202	155	138	163
Exports of Goods and Services	137	3 970	4 552	5 104	5 096	5 573	6 412	7 461
Imports of Goods and Services	146	4 152	4 756	5 299	5 283	5 779	6 790	7 859
Real GDP & its Components (Billions of 2008 MXN) *1								
Gross Domestic Product	9 045	14 948	15 495	16 060	16 277	16 740	17 288	17 791
Household Final Consumption Expenditure	4 984	10 052	10 389	10 633	10 819	11 046	11 418	11 836
General Government Final Consumption Expenditure	1 182	1 853	1 909	1 974	1 984	2 042	2 082	2 131
Gross Fixed Capital Formation	1 953	3 163	3 411	3 579	3 459	3 565	3 743	3 784
Stock Change	78	172	140	161	202	160	141	159
Exports of Goods and Services	925	4 381	4 719	5 027	5 096	5 451	5 910	6 115
Imports of Goods and Services	1 117	4 647	4 908	5 174	5 283	5 596	5 927	6 099
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	4	3	3	3	3	3	3	3
Industry	37	33	33	32	32	32	31	30
Services, etc.	55	60	60	61	61	61	62	62
Industrial Production Index (2010=100) *2	65.7	100.0	103.5	106.3	105.9	108.7	107.5	107.2
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	40.7	298.3	349.6	370.8	380.0	396.9	380.5	373.9
Imports, c.i.f.	43.5	310.2	361.1	380.5	391.0	411.6	405.3	397.5
Balance of Payments (Billions of Current USD) *2								
Trade Balance	-4.4	-2.9	-1.2	0.3	-0.9	-2.8	-14.6	-13.1
Current Account	-7.5	-5.2	-12.5	-18.7	-31.2	-24.6	-30.3	-23.9
Overall Balance	1.0	41.8	42.0	23.3	31.4	34.8	-2.9	8.3
Foreign Exchange Rate (MXN/USD) *1	2.81	12.64	12.42	13.17	12.77	13.29	15.85	18.66
PPP conversion factor, GDP (MXN/USD) *1	1.43	7.67	7.67	7.86	7.88	8.05	8.54	8.87
Price Indices								
GDP Deflator (2008=100) *3	8.2	89.4	94.6	98.5	100.0	104.4	107.2	113.0
Producer Price Index (2010=100) *2	11.9	100.0	105.2	110.1	111.6	114.6	113.8	113.2
Consumer Price Index (2010=100) *2	11.8	100.0	103.4	107.7	111.8	116.2	115.4	115.1
Growth Rate (%)								
Real GDP *3	5.1	5.1	3.7	3.6	1.4	2.8	3.3	2.9
Population *3	2.0	1.6	1.5	1.5	1.4	1.4	1.3	1.3
Price *2								
Producer Prices	21.7	4.2	5.2	4.6	1.4	2.7	-0.7	-0.5
Consumer Prices	26.7	4.2	3.4	4.1	3.8	4.0	-0.7	-0.3

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

Note : N.A. means "not available"  
: MXN means Mexican Nuevo Peso, USD means United States Dollar  
: PPP means Purchasing Power Parity





**New Zealand**

## Energy balance table of New Zealand

	Coal	Coal products	Crude oil & NGL	Petroleum products				
				Total	Gasoline	Naphtha	Jet fuel	Kerosene
<b>2016</b>								
Indigenous production	1 631		1 834					
Import	230		5 574	2 656	1 058		215	1 051
Export	- 859		-1 574	- 192				
International marine bunkers				- 301				- 49
International aviation bunkers				- 866			- 866	
Stock changes	151		- 60	- 177	- 55		2	- 39
<b>Total primary energy supply</b>	<b>1 153</b>		<b>5 774</b>	<b>1 120</b>	<b>1 003</b>		<b>- 649</b>	<b>963</b>
<b>Transfers</b>			<b>- 189</b>	<b>197</b>			<b>- 2</b>	<b>2</b>
<b>Total transformation sector</b>	<b>- 547</b>	<b>88</b>	<b>-5 684</b>	<b>5 756</b>	<b>1 582</b>		<b>1 232</b>	<b>1 982</b>
Main activity producers	- 108			- 1				- 1
Autoproducers	- 7	- 168						
Gas processing								
Petroleum refineries			-5 684	5 757	1 582		1 232	1 983
Coal transformation	- 432	256						
Other transformation								
Losses & own use	- 58	- 50		- 334				
Discrepancy	- 35	- 1	99	- 373	- 34		- 309	3
<b>Total final consumption</b>	<b>513</b>	<b>37</b>		<b>6 366</b>	<b>2 551</b>		<b>272</b>	<b>2 940</b>
<b>Total final energy consumption</b>	<b>513</b>	<b>37</b>		<b>5 994</b>	<b>2 551</b>		<b>272</b>	<b>2 940</b>
Industry sector	453	37		452	9			367
Iron and steel		37						
Chemical & petrochemical								
Non-metallic minerals	52							
Other industries	401			452	9			367
Transport sector				4 883	2 496		272	2 070
Domestic air transport				284	10		272	2
Road				4 455	2 486			1 962
Rail				47				47
Inland waterways				97				61
Other transport								
Other sector	60			659	46			503
Residential	7			78	1			3
Commerce and public services	24			154	11			109
Agriculture	29			362	32			328
Non-specified others				65	2			63
Non-energy				372				
<b>2015</b>								
Indigenous production	1 935		2 159					
Import	220		5 446	2 182	1 129		64	748
Export	- 977		-1 804	- 195				- 21
International marine bunkers				- 336				- 58
International aviation bunkers				- 841			- 841	
Stock changes	189		149	8	3		- 7	- 12
<b>Total primary energy supply</b>	<b>1 367</b>		<b>5 950</b>	<b>818</b>	<b>1 132</b>		<b>- 784</b>	<b>657</b>
<b>Transfers</b>			<b>- 215</b>	<b>224</b>	<b>1</b>		<b>- 2</b>	<b>2</b>
<b>Total transformation sector</b>	<b>- 717</b>	<b>95</b>	<b>-5 809</b>	<b>5 852</b>	<b>1 538</b>		<b>1 136</b>	<b>2 188</b>
Main activity producers	- 266							
Autoproducers	- 6	- 180						
Gas processing								
Petroleum refineries			-5 809	5 852	1 538		1 136	2 188
Coal transformation	- 445	275						
Other transformation								
Losses & own use	- 42	- 54		- 369				
Discrepancy	- 41	- 1	74	- 312	- 179		- 77	- 2
<b>Total final consumption</b>	<b>567</b>	<b>40</b>		<b>6 213</b>	<b>2 492</b>		<b>273</b>	<b>2 861</b>
<b>Total final energy consumption</b>	<b>567</b>	<b>40</b>		<b>5 876</b>	<b>2 492</b>		<b>273</b>	<b>2 861</b>
Industry sector	488	40		419	10			337
Iron and steel		40						
Chemical & petrochemical								
Non-metallic minerals	78							
Other industries	410			419	10			337
Transport sector				4 806	2 443		273	2 014
Domestic air transport				284	11		273	
Road				4 337	2 432			1 897
Rail				48				48
Inland waterways				137				69
Other transport								
Other sector	79			651	39			510
Residential	9			71				2
Commerce and public services	23			141	7			103
Agriculture	47			369	30			337
Non-specified others				70	2			68
Non-energy				337				

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				4 230	2 212		5 032	1 471			16 410	8 715
	27		305								8 460	
- 164	- 28										- 2 625	
- 252											- 301	
											- 866	
1			- 86	- 21							- 107	
- 415	- 1		219	4 209	2 212		5 032	1 471			20 971	8 715
	197		8								8	
471		284	205	- 1 095	- 2 213		- 4 840	- 181	3 700	34	- 4 982	- 7 234
				- 1 058	- 2 212		- 4 795	- 24	3 574		- 4 624	- 7 031
				- 37	- 1		- 45	- 157	126	34	- 255	- 203
471		284	205								73	
											- 176	
		- 284	- 50	- 221					- 370		- 1 033	
- 20	- 3		- 10	19	1				- 25	- 34	- 349	
36	193		372	2 912			192	1 290	3 305		14 615	1 482
36	193			1 662			192	1 290	3 305		12 993	1 482
	76			1 316			108	1 088	1 197		4 651	1 196
				52					124		213	
				744					33		777	
				33					25		110	
	76			487			108	1 088	1 015		3 551	1 196
36	7							3	5		4 891	3
											284	
	7							3			4 458	3
											47	
36											97	
									5		5	
	110			346			84	199	2 103		3 451	283
	74			137			16	194	1 058		1 490	210
	34			174			54	5	815		1 226	59
	2			35			14		218		658	14
									12		77	
			372	1 250							1 622	
				4 044	2 094		5 083	1 175			16 490	8 352
	9		232								7 848	
- 130	- 44										- 2 976	
- 278											- 336	
			24	46							- 841	
											392	
- 408	- 35		256	4 090	2 094		5 083	1 175			20 577	8 352
	224		- 1								9	
493		329	168	- 1 213	- 2 094		- 4 899	- 157	3 787	33	- 5 122	- 7 150
				- 1 174	- 2 093		- 4 855	- 23	3 655		- 4 756	- 6 971
				- 39	- 1		- 44	- 134	132	33	- 239	- 179
493		329	168								43	
											- 170	
		- 329	- 40	- 226					- 420		- 1 111	
- 17	- 7		- 46	41				3	- 33	- 33	- 302	
68	182		337	2 692			184	1 021	3 334		14 051	1 204
68	182			1 614			184	1 021	3 334		12 636	1 204
	72			1 242			97	860	1 183		4 329	957
				51					108		199	
				649					34		683	
				36					28		142	
	72			506			97	860	1 013		3 305	957
68	8			1				3	5		4 815	3
											284	
	8			1				3			4 341	3
											48	
68									5		137	
											5	
	102			371			87	158	2 146		3 492	244
	69			146			16	153	1 081		1 476	168
	31			190			54	5	818		1 231	59
	2			35			17		235		703	17
									12		82	
			337	1 078							1 415	

## Major energy indicators of New Zealand

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	12 791	18 325	18 275	19 147	19 268	20 442	20 577	20 971
Indigenous production	11 485	16 837	16 086	15 989	16 103	16 937	16 490	16 410
Import	3 812	7 200	7 418	7 479	7 916	7 829	7 848	8 460
Export	-1 697	-4 293	-3 981	-3 730	-3 310	-3 275	-2 976	-2 625
Final energy consumption	9 099	11 963	11 847	11 921	12 103	12 593	12 636	12 993
Industry	3 598	4 069	3 955	3 922	4 118	4 491	4 329	4 651
Transport	2 958	4 566	4 575	4 539	4 585	4 624	4 815	4 891
Residential	1 209	1 478	1 467	1 465	1 444	1 449	1 476	1 490
Commerce & public services	800	1 147	1 119	1 190	1 180	1 208	1 231	1 226
Others	534	703	731	805	776	821	785	735
<b>Coal &amp; coal products</b>								
Primary energy supply	1 185	1 313	1 436	1 640	1 431	1 398	1 367	1 153
Indigenous production	1 423	3 138	2 893	2 883	2 740	2 339	1 935	1 631
Import	1	134	91	1	267	236	220	230
Export	-239	-1 708	-1 535	-1 582	-1 503	-1 246	-977	-859
Transformation sector	-310	-636	-704	-994	-741	-652	-622	-459
Power generation	-168	-498	-534	-836	-579	-480	-452	-283
Final energy consumption	675	600	550	563	609	614	607	550
Industry	542	513	441	440	497	543	528	490
Transport	2							
Residential	87	12	17	9	7	7	9	7
Commerce & public services	35	32	29	31	33	25	23	24
Others	9	43	63	83	72	39	47	29
<b>Crude oil &amp; NGL</b>								
Primary energy supply	4 374	5 480	5 662	6 048	5 743	5 569	5 950	5 774
Indigenous production	1 966	2 746	2 382	2 121	1 856	2 079	2 159	1 834
Import	3 293	5 233	5 370	5 618	5 481	5 263	5 446	5 574
Export	-965	-2 453	-2 144	-1 839	-1 527	-1 751	-1 804	-1 574
Transformation sector	-4 237	-5 360	-5 559	-5 793	-5 540	-5 389	-5 809	-5 684
Petroleum refineries	-4 879	-5 360	-5 559	-5 793	-5 540	-5 389	-5 809	-5 684
<b>Petroleum products</b>								
Primary energy supply	-864	705	436	430	630	947	818	1 120
Import	518	1 832	1 956	1 858	2 167	2 329	2 182	2 656
Export	-493	-132	-302	-309	-280	-278	-195	-192
Transformation sector	4 968	5 369	5 600	5 808	5 568	5 426	5 852	5 756
Power generation	-6			-1	-1	-1		-1
Petroleum refineries	4 974	5 369	5 600	5 809	5 569	5 427	5 852	5 757
Final energy consumption	3 708	5 482	5 519	5 518	5 605	5 718	5 876	5 994
Industry	284	346	331	364	420	420	419	452
Transport	2 894	4 556	4 563	4 527	4 576	4 615	4 806	4 883
Residential	12	69	72	73	74	68	71	78
Commerce & public services	168	128	141	121	114	133	141	154
Others	350	383	412	433	421	482	439	427
<b>Gas</b>								
Primary energy supply	3 871	3 728	3 410	3 840	3 979	4 394	4 090	4 209
Indigenous production	3 871	3 855	3 481	3 798	4 023	4 386	4 044	4 230
Import								
Export								
Transformation sector	-1 990	-1 762	-1 510	-1 529	-1 526	-1 252	-1 213	-1 095
Power generation	-1 240	-1 762	-1 510	-1 529	-1 526	-1 252	-1 213	-1 095
Final energy consumption	1 497	1 230	1 176	1 246	1 401	1 735	1 614	1 662
Industry	1 228	920	897	907	1 071	1 372	1 242	1 316
Transport	57	1	1	1	1		1	
Residential	75	129	123	135	132	141	146	137
Commerce & public services	94	148	119	169	164	187	190	174
Others	43	32	36	34	33	35	35	35
<b>Electricity</b>								
Power generation	2 774	3 837	3 800	3 785	3 701	3 724	3 787	3 700
Thermal	554	1 036	916	1 072	958	778	757	594
Hydro	1 994	2 105	2 138	1 949	1 963	2 074	2 094	2 213
Nuclear								
Others	226	696	746	764	780	872	936	893
Final energy consumption	2 428	3 368	3 319	3 320	3 292	3 332	3 334	3 305
Industry	963	1 267	1 264	1 198	1 189	1 211	1 183	1 197
Transport	5	5	5	5	5	5	5	5
Residential	877	1 094	1 081	1 076	1 061	1 064	1 081	1 058
Commerce & public services	458	778	767	803	803	804	818	815
Others	125	224	202	238	234	248	247	230

## Major economic indicators of New Zealand

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	3.33	4.35	4.38	4.41	4.44	4.51	4.60	4.69
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	83	147	151	154	157	163	170	176
GDP, Billion USD (PPP, constant 2011)	79	140	144	147	150	155	162	168
Nominal, Billion USD (Current)	45	147	168	176	191	201	178	189
GDP per Capita *3								
Real Term (constant 2010 USD)	24 830	33 692	34 337	35 003	35 436	36 143	37 039	37 528
GDP, PPP (constant 2011 USD)	23 671	32 119	32 735	33 369	33 782	34 455	35 310	35 777
Nominal (Current USD)	13 647	33 692	38 427	39 970	42 949	44 561	38 649	40 332
Nominal GDP & its Components (Billions of Current NZD) *1								
Gross Domestic Product	76	203	213	217	233	242	255	272
Household Final Consumption Expenditure	46	118	125	129	134	140	146	156
General Government Final Consumption Expenditure	14	40	41	42	43	45	47	49
Gross Fixed Capital Formation	16	40	42	45	49	54	59	65
Stock Change		1	1	1	2	1	1	N.A.
Exports of Goods and Services	20	62	65	63	67	68	70	70
Imports of Goods and Services	20	57	61	61	63	66	68	69
Real GDP & its Components (Billions of 2005 NZD) *1								
Gross Domestic Product	115	203	209	214	218	226	236	244
Household Final Consumption Expenditure	65	118	122	125	129	134	139	146
General Government Final Consumption Expenditure	24	40	40	40	41	43	44	44
Gross Fixed Capital Formation	20	40	42	45	49	53	55	58
Stock Change	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Exports of Goods and Services	27	62	63	65	65	68	71	72
Imports of Goods and Services	22	57	61	61	66	71	73	77
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	13	9	9	10	9	9	9	9
Industry	23	19	18	18	18	18	18	18
Services, etc.	58	64	64	64	64	64	64	64
Manufacturing Production Index (2010=100) *2	74.5	100.0	97.6	98.1	98.7	101.1	102.4	104.4
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	9.4	31.4	37.7	37.3	39.4	41.6	34.4	33.7
Imports, c.i.f.	9.5	30.6	37.1	38.3	39.6	42.5	36.6	36.1
Balance of Payments (Billions of Current USD) *2								
Trade Balance	N.A.	2.0	2.2	0.1	1.1	1.0	2.0	1.4
Current Account	N.A.	-3.4	-4.8	-6.9	-5.9	-6.4	1.2	-1.0
Overall Balance	N.A.	1.0	5.7	0.4	-7.3	-3.0	2.3	-0.5
Foreign Exchange Rate (NZD/USD) *1	1.68	1.39	1.27	1.23	1.22	1.21	1.43	1.44
PPP conversion factor, GDP (NZD/USD) *1	1.54	1.50	1.49	1.50	1.45	1.44	1.46	1.47
Price Indices								
GDP Deflator (2005=100) *3	66.4	100.0	102.1	101.6	106.5	107.1	107.8	111.2
Producer Price Index (2010=100) *2	61.4	100.0	104.7	105.8	107.4	107.4	105.1	105.6
Consumer Price Index (2010=100) *2	64.7	100.0	104.0	105.1	106.3	107.6	107.9	108.6
Growth Rate (%) *3								
Real GDP	0.6	1.0	2.7	2.5	2.0	3.5	4.4	3.5
Population	0.9	1.1	0.8	0.5	0.8	1.5	1.9	2.1
Price								
Producer Prices	4.6	2.7	4.7	1.0	1.5	0.1	-2.1	0.5
Consumer Prices	6.1	2.3	4.0	1.1	1.1	1.2	0.3	0.6

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

Note : N.A. means "not available"  
: NZD means New Zealand Dollar, USD means United States Dollar  
: PPP means Purchasing Power Parity



**Papua New Guinea**

## Energy balance table of Papua New Guinea

	Coal	Coal products	Crude oil & NGL	Petroleum products				
				Total	Gasoline	Naphtha	Jet fuel	Kerosene
<b>2016</b>								
Indigenous production			1 178					
Import			1 382	952	56		66	414
Export			-1 178	-469		-455		
International marine bunkers								
International aviation bunkers								
Stock changes			32	50	-2		2	26
<b>Total primary energy supply</b>			<b>1 415</b>	<b>533</b>	<b>54</b>	<b>-455</b>	<b>68</b>	<b>440</b>
Transfers				-1	77	-76	-47	45
<b>Total transformation sector</b>			<b>-1 422</b>	<b>740</b>		<b>541</b>	<b>112</b>	<b>470</b>
Main activity producers				-79				
Autoproducers				-555				-93
Gas processing								
Petroleum refineries			-1 422	1 375		541	112	563
Coal transformation								
Other transformation								
Losses & own use								
Discrepancy			7					
<b>Total final consumption</b>				<b>1 273</b>	<b>131</b>	<b>11</b>	<b>133</b>	<b>45</b>
<b>Total final energy consumption</b>				<b>1 273</b>	<b>131</b>	<b>11</b>	<b>133</b>	<b>45</b>
<b>Industry sector</b>				<b>481</b>		<b>11</b>		<b>439</b>
Iron and steel								
Chemical & petrochemical								
Non-metallic minerals								
Other industries				481		11		439
<b>Transport sector</b>				<b>643</b>	<b>131</b>		<b>133</b>	<b>370</b>
Domestic air transport								
Road								
Rail								
Inland waterways								
Other transport				643	131		133	370
<b>Other sector</b>				<b>148</b>			<b>45</b>	<b>101</b>
Residential								
Commerce and public services								
Agriculture								
Non-specified others				148			45	101
<b>Non-energy</b>								
<b>2015</b>								
Indigenous production			1 221					
Import			625	1 285	60		81	660
Export			-1 221					
International marine bunkers								
International aviation bunkers								
Stock changes			-11	-5	-1	-38		17
<b>Total primary energy supply</b>			<b>614</b>	<b>1 280</b>	<b>60</b>	<b>-38</b>	<b>81</b>	<b>677</b>
Transfers				-1	67	-182	16	45
<b>Total transformation sector</b>			<b>-614</b>	<b>-26</b>		<b>229</b>	<b>36</b>	<b>161</b>
Main activity producers				-80				
Autoproducers				-555				-103
Gas processing								
Petroleum refineries			-614	609		229	36	264
Coal transformation								
Other transformation								
Losses & own use								
Discrepancy			1					
<b>Total final consumption</b>				<b>1 253</b>	<b>127</b>	<b>10</b>	<b>132</b>	<b>45</b>
<b>Total final energy consumption</b>				<b>1 253</b>	<b>127</b>	<b>10</b>	<b>132</b>	<b>45</b>
<b>Industry sector</b>				<b>467</b>		<b>10</b>		<b>426</b>
Iron and steel								
Chemical & petrochemical								
Non-metallic minerals								
Other industries				467		10		426
<b>Transport sector</b>				<b>637</b>	<b>127</b>		<b>132</b>	<b>369</b>
Domestic air transport								
Road								
Rail								
Inland waterways								
Other transport				637	127		132	369
<b>Other sector</b>				<b>149</b>			<b>45</b>	<b>101</b>
Residential								
Commerce and public services								
Agriculture								
Non-specified others				149			45	101
<b>Non-energy</b>								

Note: The above energy balances tables were estimated by the CA.



unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				6 656	86		361				8 282	448
414	1			-5 873							2 335	
			- 14								-7 521	
24											82	
439	1		- 14	783	86		361				3 178	448
											- 1	
- 411	15		14	- 130	- 86		- 361		382		- 877	- 448
- 79					- 56				80		- 55	- 56
- 463				- 130	- 31		- 361		303		- 775	- 392
130	15		14								- 47	
				- 616					- 39		- 655	
				- 37							- 30	
27	16								343		1 616	
27	16								343		1 616	
18	14								252		733	
18	14								252		733	
9											643	
9											643	
	3								92		240	
	3								92		240	
				7 832	87		363				9 502	450
464	19			-6 947							1 910	
											-8 168	
26	- 9										- 16	
490	10			884	87		363				3 228	450
			- 5								- 1	
- 464	6		5	- 128	- 87		- 363		372		- 847	- 450
- 80					- 57				79		- 58	- 57
- 452				- 128	- 30		- 363		293		- 784	- 393
68	6		5								- 5	
				- 756					- 38		- 794	
											1	
27	16								334		1 587	
27	16								334		1 587	
18	13								244		711	
18	13								244		711	
9											637	
9											637	
	3								89		239	
	3								89		239	

## Major energy indicators of Papua New Guinea

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	864	2 086	2 119	2 178	2 321	2 615	3 228	3 178
Indigenous production	4 611	1 458	1 464	1 330	1 374	2 772	9 502	8 282
Import	796	1 583	1 550	1 628	1 681	1 961	1 910	2 335
Export	-4 512	- 886	- 886	- 772	- 781	-2 006	-8 168	-7 521
Final energy consumption	612	1 249	1 292	1 357	1 434	1 509	1 587	1 616
Industry	190	591	590	603	640	663	711	733
Transport	209	429	465	507	538	588	637	643
Residential	34							
Commerce & public services								
Others	179	229	237	247	257	258	239	240
<b>Coal &amp; coal products</b>								
Primary energy supply	1							
Indigenous production								
Import	1							
Export								
Transformation sector								
Power generation								
Final energy consumption	1							
Industry								
Transport								
Residential								
Commerce & public services								
Others	1							
<b>Crude oil &amp; NGL</b>								
Primary energy supply		972	973	1 069	1 354	1 079	614	1 415
Indigenous production	4 500	890	890	756	799	819	1 221	1 178
Import		993	982	1 111	1 274	1 115	625	1 382
Export	-4 500	- 886	- 886	- 755	- 781	- 787	-1 221	-1 178
Transformation sector		- 966	- 966	-1 063	-1 337	-1 063	- 614	-1 422
Petroleum refineries		- 966	- 966	-1 063	-1 337	-1 063	- 614	-1 422
<b>Petroleum products</b>								
Primary energy supply	752	546	573	535	393	803	1 280	533
Import	795	590	568	517	406	846	1 285	952
Export	- 12			- 17				- 469
Transformation sector		427	439	537	726	375	- 26	740
Power generation	- 346	- 516	- 516	- 531	- 583	- 614	- 635	- 634
Petroleum refineries		943	956	1 068	1 309	989	609	1 375
Final energy consumption	398	969	1 009	1 070	1 133	1 194	1 253	1 273
Industry	87	385	385	396	420	435	467	481
Transport	209	429	465	507	538	588	637	643
Residential	24							
Commerce & public services								
Others	78	154	160	167	175	171	149	148
<b>Gas</b>								
Primary energy supply	72	123	128	127	127	283	884	783
Indigenous production	72	123	128	127	127	1 502	7 832	6 656
Import								
Export						-1 219	-6 947	-5 873
Transformation sector		- 118	- 123	- 120	- 123	- 147	- 128	- 130
Power generation		- 118	- 123	- 120	- 123	- 147	- 128	- 130
Final energy consumption	72							
Industry								
Transport								
Residential								
Commerce & public services								
Others	72							
<b>Electricity</b>								
Power generation	154	312	315	324	341	359	372	382
Thermal	114	194	196	203	219	235	249	260
Hydro	40	82	83	85	86	88	87	86
Nuclear								
Others		36	36	36	36	36	36	36
Final energy consumption	142	276	279	287	302	315	334	343
Industry	103	201	201	207	220	228	244	252
Transport								
Residential	11							
Commerce & public services								
Others	28	75	78	80	82	87	89	92

## Major economic indicators of Papua New Guinea

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	4.31	7.11	7.27	7.43	7.59	7.76	7.92	8.08
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	6.43	14.25	14.41	15.08	15.66	18.07	19.22	20.43
GDP, Billion USD (PPP, constant 2011)	10.24	22.69	22.94	24.00	24.92	28.77	30.29	30.87
Nominal, Billion USD (Current)	3.22	14.25	17.99	21.30	21.26	23.06	21.80	20.49
GDP per Capita *3								
Real Term (constant 2010 USD)	1 491	2 005	1 982	2 029	2 062	2 330	2 426	2 527
GDP, PPP (constant 2011 USD)	2 374	3 192	3 155	3 230	3 282	3 709	3 825	3 818
Nominal (Current USD)	747	2 005	2 474	2 866	2 800	2 973	2 753	2 534
Nominal GDP & its Components (Billions of Current PGK) *1								
Gross Domestic Product	3	39	43	44	48	57	60	64
Household Final Consumption Expenditure	2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
General Government Final Consumption Expenditure	1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Gross Fixed Capital Formation	1	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	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Imports of Goods and Services	2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Real GDP & its Components (Billions of 1998 PGK) *1								
Gross Domestic Product	20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Household Final Consumption Expenditure	3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
General Government Final Consumption Expenditure	1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Gross Fixed Capital Formation	1	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	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Imports of Goods and Services	3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Industry	6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Services, etc.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Industrial Production Index	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	1.2	5.7	6.9	6.3	6.0	8.8	8.5	8.2
Imports, c.i.f.	1.2	4.0	4.8	5.3	6.1	4.5	2.9	2.4
Balance of Payments (Billions of Current USD) *2								
Trade Balance	0.1	2.2	2.7	1.6	N.A.	N.A.	N.A.	N.A.
Current Account	-0.1	-0.9	-0.7	-2.8	N.A.	N.A.	N.A.	N.A.
Overall Balance	0.1	0.2	0.0	-0.9	N.A.	N.A.	N.A.	N.A.
Foreign Exchange Rate (PGK/USD) *1	0.96	2.72	2.37	2.08	2.24	2.46	2.77	3.13
PPP conversion factor, GDP (PGK/USD) *1	0.46	1.74	1.86	1.82	1.85	1.87	1.77	1.87
Price Indices								
GDP Deflator (1998=100) *3	15.7	89.2	97.1	96.5	100.0	103.1	103.1	103.1
Wholesale Price Index	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Consumer Price Index (2010=100) *2	21.4	100.0	104.4	109.2	114.6	120.6	127.8	136.3
Growth Rate (%) *3								
Real GDP	-3.0	10.1	1.1	4.6	3.8	15.4	6.3	6.3
Population	2.6	2.3	2.3	2.2	2.2	2.1	2.1	2.1
Price								
Wholesale Prices	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Consumer Prices	7.0	6.0	4.4	4.5	5.0	5.2	6.0	6.7

Source \*1 : *World Development Indicators*, World Bank  
\*2 : *International Financial Statistics*, International Monetary Fund

\*3 : Calculated from \*1 and \*2 by ESTO

Note : N.A. means "not available"  
: PGK means Kina, USD means United States Dollar  
: PPP means Purchasing Power Parity



**Peru**

## Energy balance table of Peru

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2016</b>									
Indigenous production	175		5 553						
Import	427	80	5 323	4 787	851		307		3 571
Export	-115		-117	-5 083	-2 277		-655		-368
International marine bunkers									
International aviation bunkers									
Stock changes	318	-21	14	69	35		723		-1 047
<b>Total primary energy supply</b>	<b>804</b>	<b>59</b>	<b>10 774</b>	<b>-226</b>	<b>-1 391</b>		<b>375</b>		<b>2 156</b>
Transfers			-2 109	3 300	1 565		-1		452
<b>Total transformation sector</b>	<b>-299</b>		<b>-7 965</b>	<b>8 157</b>	<b>1 927</b>		<b>664</b>		<b>2 826</b>
Main activity producers	-215			-270					-136
Autoproducers	-84			-161					-128
Gas processing									
Petroleum refineries			-7 965	8 588	1 927		664		3 090
Coal transformation									
Other transformation									
Losses & own use				-252	-14				
Discrepancy	51		-699	-48	-27				
<b>Total final consumption</b>	<b>556</b>	<b>59</b>		<b>10 931</b>	<b>2 059</b>		<b>1 038</b>		<b>5 434</b>
<b>Total final energy consumption</b>	<b>556</b>	<b>59</b>		<b>10 663</b>	<b>2 059</b>		<b>1 038</b>		<b>5 434</b>
Industry sector	556	59		982					526
Iron and steel	38	59		163					163
Chemical & petrochemical									
Non-metallic minerals									
Other industries	518			819					362
Transport sector				8 517	2 015		1 038		4 735
Domestic air transport				1 038			1 038		
Road				7 295	2 015				4 735
Rail				185					
Inland waterways									
Other transport									
Other sector				1 164	44				174
Residential				864					
Commerce and public services				163					81
Agriculture				57	15				42
Non-specified others				79	29				50
Non-energy				268					
<b>2015</b>									
Indigenous production	170		6 394						
Import	283	24	4 333	3 265	214		358		2 673
Export	-177		-402	-2 975	-1 590		-627		
International marine bunkers									
International aviation bunkers									
Stock changes	508	2	309	380	102		533		220
<b>Total primary energy supply</b>	<b>784</b>	<b>27</b>	<b>10 633</b>	<b>670</b>	<b>-1 274</b>		<b>264</b>		<b>2 893</b>
Transfers			-135	1 800	1 321				-940
<b>Total transformation sector</b>	<b>-165</b>		<b>-9 013</b>	<b>8 054</b>	<b>1 762</b>		<b>644</b>		<b>3 259</b>
Main activity producers	-63			-122					-50
Autoproducers	-102			-146					-80
Gas processing									
Petroleum refineries			-9 013	8 322	1 762		644		3 389
Coal transformation									
Other transformation									
Losses & own use				-244	-13				-1
Discrepancy	80		-1 485	138	42		28		104
<b>Total final consumption</b>	<b>699</b>	<b>27</b>		<b>10 417</b>	<b>1 838</b>		<b>936</b>		<b>5 315</b>
<b>Total final energy consumption</b>	<b>699</b>	<b>27</b>		<b>10 112</b>	<b>1 838</b>		<b>936</b>		<b>5 315</b>
Industry sector	698	27		1 243	24				784
Iron and steel	97	27		425					392
Chemical & petrochemical									
Non-metallic minerals									
Other industries	601			819	24				392
Transport sector				7 698	1 789		936		4 327
Domestic air transport				936			936		
Road				6 620	1 789				4 327
Rail				142					
Inland waterways									
Other transport									
Other sector	1			1 171	25				204
Residential				829					
Commerce and public services	1			169					85
Agriculture				49	24				25
Non-specified others				124	1				94
Non-energy				305					

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				12 648	2 079		145	2 472			23 072	4 696
22	37							344	2		10 964	344
-1 783				-5 181					-3		-10 499	
266	90		3								380	
-1 495	126		3	7 467	2 079		145	2 816	-1		23 916	5 040
-299	1 555		29								1 191	
2 134	219	147	240	-4 291	-2 079		-112	-319	4 469		-2 438	-2 510
-134				-4 064	-2 034		-112	-123	4 283		-2 536	-2 269
-33				-227	-45			-139	186		-468	-183
2 301	219	147	240								623	
								-57			-57	-57
-108		-126	-3	-1 238					-541		-2 031	
		-21		-227				8	-25		-941	
231	1 900		268	1 712			33	2 505	3 902		19 698	2 538
231	1 900			1 712			33	2 505	3 902		19 429	2 538
47	410			1 040				157	2 347		5 141	157
									1 261		1 522	
47	410			1 040				157	1 086		3 620	157
185	545			584				351	4		9 456	351
											1 038	
	545			584				351			8 230	351
185											185	
									4		4	
	946			88			33	1 996	1 551		4 832	2 029
	864			69			20	1 990	808		3 751	2 010
	82			19			13	3	743		941	16
								3			60	3
											79	
			268								268	
				11 419	2 039		97	2 518			22 637	4 654
	20										7 905	
-731	-26			-4 320					-5		-7 878	
-549	42		31								1 198	
-1 280	36		31	7 100	2 039		97	2 518	-5		23 862	4 654
-153	1 546		25								1 665	
1 771	208	160	250	-3 921	-2 039		-72	-361	4 169		-3 348	-2 472
-71				-3 700	-1 988		-72	-135	3 951		-2 127	-2 195
-67				-221	-51			-167	217		-470	-218
1 909	208	160	250								-692	
								-59			-59	-59
-90		-137	-3	-1 227					-506		-1 977	
-17	2	-22	2	-221					-19		-1 507	
232	1 791		305	1 730			26	2 157	3 639		18 695	2 183
232	1 791			1 730			26	2 157	3 639		18 390	2 183
62	374			1 003				124	2 121		5 215	124
1	32			50					962		1 560	
61	341			953				124	1 159		3 655	124
142	503			575					4		8 277	
											936	
	503			575							7 195	
142											142	
									4		4	
27	914			153			25	2 034	1 514		4 898	2 059
	829			54			16	2 028	791		3 717	2 043
	85			99			10	3	722		1 005	13
								3			52	3
27	1										124	
			305								305	

## Major energy indicators of Peru

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	9 944	17 512	21 296	21 901	21 512	22 788	23 862	23 916
Indigenous production	10 599	18 814	21 650	22 309	23 201	24 082	22 637	23 072
Import	1 667	7 459	8 280	8 025	8 475	7 620	7 905	10 964
Export	-2 263	-7 075	-9 152	-9 922	-10 333	-8 805	-7 878	-10 499
Final energy consumption	8 671	15 245	15 567	16 158	17 316	17 279	18 390	19 429
Industry	1 954	4 234	4 400	4 521	4 941	4 854	5 215	5 141
Transport	2 497	6 020	6 320	6 817	7 319	7 312	8 277	9 456
Residential	3 630	3 893	3 526	3 599	3 624	3 665	3 717	3 751
Commerce & public services	295	925	1 096	1 043	1 241	1 285	1 005	941
Others	295	172	225	177	191	162	176	140
<b>Coal &amp; coal products</b>								
Primary energy supply	145	813	799	848	880	841	810	863
Indigenous production	68	64	114	148	137	147	170	175
Import	71	701	433	456	750	378	307	507
Export		- 75	- 119	- 115	- 113	- 200	- 177	- 115
Transformation sector	- 37	- 276	- 289	- 307	- 329	- 202	- 165	- 299
Power generation		- 276	- 289	- 307	- 329	- 202	- 165	- 299
Final energy consumption	91	657	557	574	573	692	726	615
Industry	84	657	557	574	573	692	724	615
Transport								
Residential								
Commerce & public services	7						1	
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	7 204	11 050	10 505	10 984	10 817	10 857	10 633	10 774
Indigenous production	6 549	7 115	6 740	6 900	7 357	7 506	6 394	5 553
Import	887	4 805	4 640	4 818	4 286	4 212	4 333	5 323
Export	- 150	- 956	- 803	- 805	- 741	- 783	- 402	- 117
Transformation sector	-7 427	-10 246	-9 765	-9 646	-9 165	-9 380	-9 013	-7 965
Petroleum refineries	-7 427	-10 320	-9 965	-9 724	-9 351	-9 566	-9 013	-7 965
<b>Petroleum products</b>								
Primary energy supply	-1 387	-4 133	- 309	- 544	- 615	- 830	670	- 226
Import	709	1 877	2 991	2 750	3 127	2 659	3 265	4 787
Export	-2 114	-4 105	-3 561	-4 352	-4 067	-3 198	-2 975	-5 083
Transformation sector	6 625	9 533	9 000	8 899	8 840	9 097	8 054	8 157
Power generation	- 759	- 524	- 573	- 423	- 373	- 305	- 268	- 431
Petroleum refineries	7 384	10 057	9 573	9 322	9 213	9 402	8 322	8 588
Final energy consumption	4 935	8 110	8 517	8 813	9 492	9 396	10 112	10 663
Industry	1 001	1 273	1 306	1 286	1 312	1 249	1 243	982
Transport	2 497	5 690	5 962	6 314	6 791	6 761	7 698	8 517
Residential	853	652	668	712	789	801	829	864
Commerce & public services	288	323	356	324	409	424	169	163
Others	295	172	225	177	191	162	173	137
<b>Gas</b>								
Primary energy supply	407	4 947	5 674	6 143	5 781	7 225	7 100	7 467
Indigenous production	407	6 863	10 339	10 793	11 193	11 849	11 419	12 648
Import								
Export		-1 917	-4 666	-4 650	-5 412	-4 624	-4 320	-5 181
Transformation sector	- 67	-2 816	-3 149	-3 536	-3 232	-3 774	-3 921	-4 291
Power generation	- 67	-2 816	-3 149	-3 536	-3 232	-3 774	-3 921	-4 291
Final energy consumption	67	1 022	1 251	1 284	1 761	1 670	1 730	1 712
Industry	25	641	745	683	1 052	906	1 003	1 040
Transport		330	358	503	527	549	575	584
Residential	41	6	9	16	23	35	54	69
Commerce & public services		45	140	82	159	180	99	19
Others								
<b>Electricity</b>								
Power generation	1 187	3 087	3 257	3 432	3 723	3 914	4 169	4 469
Thermal	276	1 305	1 388	1 536	1 797	1 920	2 023	2 234
Hydro	900	1 723	1 810	1 836	1 871	1 909	2 039	2 079
Nuclear								
Others	12	58	58	59	55	85	107	157
Final energy consumption	1 013	2 715	2 949	3 117	3 290	3 414	3 639	3 902
Industry	647	1 511	1 645	1 738	1 871	1 972	2 121	2 347
Transport						3	4	4
Residential	367	654	710	750	753	767	791	808
Commerce & public services		551	594	628	665	672	722	743
Others								



## Major economic indicators of Peru

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	21.83	29.37	29.76	30.16	30.57	30.97	31.38	31.77
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	58	148	157	166	176	180	186	194
GDP, Billion USD (PPP, constant 2011)	116	292	311	330	349	358	369	384
Nominal, Billion USD (Current)	29	148	172	193	201	201	190	192
GDP per Capita *3								
Real Term (constant 2010 USD)	2 680	5 022	5 271	5 521	5 766	5 825	5 937	6 095
GDP, PPP (constant 2011 USD)	5 313	9 957	10 449	10 944	11 430	11 548	11 770	12 082
Nominal (Current USD)	1 333	5 022	5 772	6 388	6 583	6 492	6 053	6 031
Nominal GDP & its Components (Billions of Current PEN) *1								
Gross Domestic Product	5	417	473	508	544	571	605	647
Household Final Consumption Expenditure	4	257	286	316	343	367	394	419
General Government Final Consumption Expenditure		44	49	55	63	73	80	87
Gross Fixed Capital Formation	1	98	110	127	138	140	140	139
Stock Change		1	4	- 2	1	1	7	4
Exports of Goods and Services	1	116	144	139	135	129	129	145
Imports of Goods and Services	1	99	121	128	136	138	144	148
Real GDP & its Components (Billions of 2007 PEN) *1								
Gross Domestic Product	151	382	406	431	456	467	482	502
Household Final Consumption Expenditure	106	236	252	271	287	298	310	320
General Government Final Consumption Expenditure	16	41	44	47	51	55	60	63
Gross Fixed Capital Formation	21	96	106	121	128	125	116	111
Stock Change	1	4	7	2	5	6	11	10
Exports of Goods and Services	27	108	114	118	117	113	118	131
Imports of Goods and Services	20	103	117	128	132	131	132	134
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	7	6	6	6	6	6	6	5
Industry	35	37	36	35	35	34	34	34
Services, etc.	59	48	49	49	49	51	51	51
Manufacturing Production Index (2010=100) *2	41.2	100.0	108.6	110.1	116.4	N.A.	N.A.	N.A.
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	3.2	35.8	46.4	47.4	42.9	39.5	34.4	37.0
Imports, c.i.f.	2.6	30.0	37.7	42.5	43.7	42.3	37.9	36.3
Balance of Payments (Billions of Current USD) *2								
Trade Balance	0.4	7.2	9.9	7.1	1.2	N.A.	N.A.	N.A.
Current Account	-1.4	-3.8	-3.0	-5.4	-9.4	-8.9	-2.6	-3.1
Overall Balance	-2.0	9.6	6.3	14.3	-0.2	N.A.	N.A.	N.A.
Foreign Exchange Rate (PEN/USD) *1	0.19	2.83	2.75	2.64	2.70	2.84	3.18	3.38
PPP conversion factor, GDP (PEN/USD) *1	0.07	1.45	1.52	1.51	1.50	1.52	1.54	1.56
Price Indices								
GDP Deflator (2007=100) *3	3.6	109.1	116.4	117.8	119.1	122.2	125.4	129.0
Wholesale Price Index (2010=100) *2	4.7	100.0	106.3	108.2	108.6	110.6	110.6	110.6
Consumer Price Index (2010=100) *2	3.1	100.0	103.4	107.1	110.2	113.7	117.8	122.0
Growth Rate (%) *3								
Real GDP	-5.0	8.3	6.3	6.1	5.9	2.4	3.3	4.0
Population	2.1	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Price								
Wholesale Prices	6 737.4	1.8	6.3	1.8	0.4	1.8	0.0	0.0
Consumer Prices	7 481.7	1.5	3.4	3.7	2.8	3.2	3.6	3.6

Source \*1: *World Development Indicators*, World Bank  
\*2: *International Financial Statistics*, International Monetary Fund  
\*3: Calculated from \*1 and \*2 by ESTO  
Note : N.A. means "not available"  
: PEN means Nuevo Sol, USD means United States Dollar  
: PPP means Purchasing Power Parity

## Energy prices in Peru in 2016

## Currency Exchange Rate

Currency Exchange Rate	Local currency / US Dollar	3.38
Local Currency Unit		PEN

## IMPORT PRICES

## WHOLESALE PRICES

## CONSUMER PRICES

	Unit	Amount		Unit	Amount		Unit	Amount
Coal and Coal Products			Coal and Coal Products			Coal and Coal Products		
Coking Coal			Coking Coal			Coking Coal		
Anthracite			Anthracite			Anthracite		
Other bituminous coal			Other bituminous coal			Other bituminous coal		
Sub-bituminous Coal			Sub-bituminous Coal			Sub-bituminous Coal		
Lignite			Lignite			Lignite		
Peat			Peat			Peat		
Patent Fuel			Patent Fuel			Patent Fuel		
Coke			Coke			Coke		
Coal Tar			Coal Tar			Coal Tar		
BKB/PB			BKB/PB			BKB/PB		
			Gas Works Gas			Gas Works Gas		
Oil and Oil Products			Oil and Oil Products			Oil and Oil Products		
Crude Oil	(US\$/Bbl)	41.59	Crude Oil			Crude Oil		
Natural Gas Liquids			Natural Gas Liquids			Natural Gas Liquids		
Ethane			Ethane			Ethane		
LPG	(US\$/Bbl)	37.86	LPG	PEN/liter	1.36	LPG	PEN/liter	1.37
Naphtha			Naphtha			Naphtha		
Motor Gasoline			Motor Gasoline	PEN/Gallon	12.01	Motor Gasoline (regular)	PEN/Gallon	11.63
Aviation Gasoline			Aviation Gasoline			Aviation Gasoline		
Gasoline Type Jet Fuel			Gasoline Type Jet Fuel			Gasoline Type Jet Fuel		
Kerosene Type Jet Fuel			Kerosene Type Jet Fuel			Kerosene Type Jet Fuel		
Other Kerosene			Other Kerosene			Other Kerosene		
Gas/Diesel Oil	(US\$/Bbl)	59.04	Gas/Diesel Oil	PEN/Gallon	8.78	Gas/Diesel Oil	PEN/Gallon	9.11
Fuel Oil			Fuel Oil			Fuel Oil		
White Spirit SBP			White Spirit SBP			White Spirit SBP		
Lubricants	(US\$/Bbl)	210.12	Lubricants			Lubricants		
Bitumen			Bitumen			Bitumen		
Paraffin Waxes			Paraffin Waxes			Paraffin Waxes		
Petroleum Coke			Petroleum Coke			Petroleum Coke		
Natural Gas			Natural Gas			Natural Gas		
Natural Gas			Natural Gas	PEN/m3	1.50	Natural Gas	PEN/m3	1.52
Liquefied Natural Gas			Liquefied Natural Gas			Liquefied Natural Gas		
Compressed Natural Gas			Compressed Natural Gas			Compressed Natural Gas		
Electricity			Electricity			Electricity		
Electricity			Electricity	US cent/ kWh	6.55	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

**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>2016</b>									
Indigenous production	5 917		702						
Import	10 572		10 569	10 885	1 959	953	865	32	4 761
Export	-3 607		- 674	-1 245	- 245	- 201			
International marine bunkers				- 50					- 6
International aviation bunkers				-1 296			-1 296		
Stock changes	205		- 217	- 127	36	- 14	- 8	- 3	- 148
<b>Total primary energy supply</b>	<b>13 086</b>		<b>10 380</b>	<b>8 169</b>	<b>1 749</b>	<b>738</b>	<b>- 439</b>	<b>30</b>	<b>4 607</b>
<b>Transfers</b>									
Total transformation sector	-10 232		-10 498	8 731	2 358	277	1 006	66	3 444
Main activity producers	-10 232			-1 230					- 481
Autoproducers									
Gas processing									
Petroleum refineries			-10 498	9 961	2 358	277	1 006	66	3 925
Coal transformation									
Other transformation									
Losses & own use			- 121						
Discrepancy			240	- 308	- 40	- 125	22	3	32
<b>Total final consumption</b>	<b>2 854</b>		<b>16 591</b>	<b>4 067</b>	<b>889</b>	<b>589</b>	<b>99</b>	<b>8 083</b>	
<b>Total final energy consumption</b>	<b>2 677</b>		<b>15 463</b>	<b>4 067</b>		<b>589</b>	<b>99</b>	<b>8 083</b>	
Industry sector	2 677			1 458			19	656	
Iron and steel	228			107				16	
Chemical & petrochemical	12			190			17	45	
Non-metallic minerals	2 059			208				54	
Other industries	379			953			1	542	
Transport sector				11 021	4 060		589	6 157	
Domestic air transport				594	5		589		
Road				9 581	3 895			5 673	
Rail				2				2	
Inland waterways				844	160			482	
Other transport									
Other sector				2 984	8		80	1 270	
Residential				1 122			79		
Commerce and public services				1 632				1 058	
Agriculture				42	3			34	
Non-specified others				187	5		1	179	
Non-energy	177			1 129		889			
<b>2015</b>									
Indigenous production	3 913		827						
Import	9 120		10 471	10 152	2 143	827	722	25	3 822
Export	-1 639		- 832	-1 324	- 209	- 232			
International marine bunkers				- 27					- 10
International aviation bunkers				-1 216			-1 216		
Stock changes	240		- 36	- 83	- 53	20	- 9	2	- 57
<b>Total primary energy supply</b>	<b>11 634</b>		<b>10 431</b>	<b>7 502</b>	<b>1 880</b>	<b>616</b>	<b>- 502</b>	<b>27</b>	<b>3 756</b>
<b>Transfers</b>									
Total transformation sector	-9 265		-10 181	8 853	2 548	331	913	60	3 772
Main activity producers	-9 265			-1 413					- 288
Autoproducers									
Gas processing									
Petroleum refineries			-10 420	10 266	2 548	331	913	60	4 059
Coal transformation									
Other transformation			239						
Losses & own use									
Discrepancy	- 19		- 250	-1 283	- 729	- 222	29	16	- 73
<b>Total final consumption</b>	<b>2 350</b>		<b>15 072</b>	<b>3 699</b>	<b>725</b>	<b>440</b>	<b>103</b>	<b>7 454</b>	
<b>Total final energy consumption</b>	<b>2 218</b>		<b>14 025</b>	<b>3 699</b>		<b>440</b>	<b>103</b>	<b>7 454</b>	
Industry sector	2 218			1 382			18	587	
Iron and steel	218			111			1	16	
Chemical & petrochemical	10			198			15	39	
Non-metallic minerals	1 771			202				40	
Other industries	219			871			1	492	
Transport sector				10 185	3 691		440	5 841	
Domestic air transport				446	6		440		
Road				8 724	3 530			5 165	
Rail				2				2	
Inland waterways				1 013	156			675	
Other transport									
Other sector				2 459	8		85	1 026	
Residential				973			85		
Commerce and public services				1 292				843	
Agriculture				34	2			33	
Non-specified others				159	6			150	
Non-energy	132			1 047		725			

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				3 270	698		9 699	9 877			30 163	20 273
1 034	1 071		211					145			32 171	145
- 229	- 4		- 566								- 5 526	
- 44											- 50	
											- 1 296	
35	- 4		- 20					27			- 113	27
797	1 063		- 376	3 270	698		9 699	10 049			55 349	20 445
- 3	494		1 089	- 3 205	- 698		- 9 699	- 2 369	7 809		- 20 161	- 12 765
- 749				- 3 082	- 698		- 9 699	- 289	7 809		- 17 421	- 10 685
				- 123							- 123	
747	494		1 089								- 537	
								- 2 080			- 2 080	- 2 080
				- 123					- 1 431		- 1 675	
270	4		- 474	123							54	
1 064	1 561		239	65				7 679	6 377		33 567	7 679
1 064	1 561			65				7 679	6 377		32 261	7 679
653	130			65				1 176	2 074		7 450	1 176
75	16								423		758	
121	7							1	126		328	1
146	8							1	158		2 425	1
311	99			65				1 174	1 367		3 938	1 174
203	13							430	9		11 460	430
											594	
	13							425			10 006	425
									9		11	
203								5			849	5
209	1 417							6 073	4 294		13 351	6 073
	1 043							5 709	2 204		9 035	5 709
201	374							361	1 872		3 865	361
5								1	192		234	1
3								3	26		217	3
			239								1 306	
				2 877	745		9 574	10 029			27 966	20 348
1 463	894		257					169			29 913	169
- 427	- 5		- 451								- 3 795	
- 17											- 27	
											- 1 216	
23	- 4		- 6								121	
1 042	884		- 201	2 877	745		9 574	10 199			52 962	20 518
- 211	488		952	- 2 719	- 745		- 9 574	- 2 663	7 088		- 19 206	- 12 982
- 1 125				- 2 719	- 745		- 9 574	- 158	7 088		- 16 787	- 10 477
											- 154	
914	488		952								- 2 266	- 2 505
								- 2 505			- 1 364	
				- 108					- 1 256		- 1 558	- 6
130	- 4		- 430					- 6				
961	1 368		321	50				7 530	5 831		30 834	7 530
961	1 368			50				7 530	5 831		29 655	7 530
637	140			50				1 132	1 936		6 718	1 132
78	17								395		723	
138	6								118		326	
144	18								147		2 120	
278	100			50				1 132	1 276		3 549	1 132
183	30								8		10 194	
											446	
	30										8 724	
									8		10	
183											1 013	
141	1 198							6 397	3 887		12 743	6 397
	888							6 045	1 956		8 974	6 045
138	310							353	1 727		3 372	353
									179		213	
									24		184	
			321								1 179	

## Major energy indicators of the Philippines

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	28 267	41 688	42 249	45 625	45 564	48 460	52 962	55 349
Indigenous production	17 181	25 382	25 573	26 391	25 593	27 564	27 966	30 163
Import	12 555	21 617	20 964	22 074	23 163	25 750	29 913	32 171
Export	- 641	-3 883	-2 864	-2 442	-2 608	-4 656	-3 795	-5 526
Final energy consumption	19 058	25 079	24 796	25 702	26 798	27 825	29 655	32 261
Industry	4 511	5 871	5 747	5 845	6 296	6 508	6 718	7 450
Transport	4 290	8 097	7 789	8 108	8 466	8 822	10 194	11 460
Residential	9 132	8 099	8 217	8 402	8 623	8 731	8 974	9 035
Commerce & public services	841	2 668	2 743	3 028	3 056	3 410	3 372	3 865
Others	283	343	301	319	358	353	397	451
<b>Coal &amp; coal products</b>								
Primary energy supply	1 358	7 030	7 726	9 316	10 003	10 642	11 634	13 086
Indigenous production	649	3 510	3 632	3 879	3 743	4 012	3 913	5 917
Import	709	5 788	5 786	6 278	7 608	8 013	9 120	10 572
Export		-2 163	-1 444	-1 675	-1 795	-3 044	-1 639	-3 607
Transformation sector	- 559	-5 090	-5 785	-6 300	-7 806	-8 227	-9 265	-10 232
Power generation	- 559	-5 090	-5 785	-6 300	-7 806	-8 227	-9 265	-10 232
Final energy consumption	526	1 831	1 736	1 784	2 082	2 261	2 218	2 677
Industry	526	1 831	1 736	1 784	2 082	2 261	2 218	2 677
Transport								
Residential								
Commerce & public services								
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	10 825	9 054	9 019	9 033	7 751	8 211	10 431	10 380
Indigenous production	229	922	313	220	220	975	827	702
Import	10 597	9 095	9 124	8 872	7 756	8 717	10 471	10 569
Export		- 862	- 329	- 141	- 187	- 942	- 832	- 674
Transformation sector	-10 242	-8 650	-9 187	-8 280	-7 746	-7 970	-10 181	-10 498
Petroleum refineries	-10 242	-8 733	-9 277	-8 402	-7 894	-8 319	-10 420	-10 498
<b>Petroleum products</b>								
Primary energy supply	- 220	4 528	3 734	4 793	5 963	6 848	7 502	8 169
Import	1 249	6 639	5 905	6 755	7 582	8 829	10 152	10 885
Export	- 641	- 857	-1 091	- 626	- 626	- 671	-1 324	-1 245
Transformation sector	7 939	7 071	8 263	7 256	6 686	6 357	8 853	8 731
Power generation	-2 135	-1 487	- 796	- 971	-1 077	-1 378	-1 413	-1 230
Petroleum refineries	10 074	8 558	9 059	8 227	7 762	7 735	10 266	9 961
Final energy consumption	7 619	11 607	11 179	11 422	11 935	12 486	14 025	15 463
Industry	2 225	1 431	1 318	1 275	1 281	1 205	1 382	1 458
Transport	4 290	8 087	7 778	8 097	8 455	8 813	10 185	11 021
Residential	766	930	916	901	880	863	973	1 122
Commerce & public services	98	942	980	967	1 124	1 432	1 292	1 632
Others	240	216	186	182	194	172	194	229
<b>Gas</b>								
Primary energy supply		3 054	3 293	3 160	2 910	3 061	2 877	3 270
Indigenous production		3 054	3 293	3 160	2 910	3 061	2 877	3 270
Import								
Export								
Transformation sector		-2 865	-3 137	-3 015	-2 737	-2 872	-2 719	-3 205
Power generation		-2 865	-3 137	-3 015	-2 737	-2 872	-2 719	-3 082
Final energy consumption			1	1	63	78	50	65
Industry					63	78	50	65
Transport			1	1	1			
Residential								
Commerce & public services								
Others								
<b>Electricity</b>								
Power generation	2 264	5 826	5 938	6 271	6 473	6 644	7 088	7 809
Thermal	1 236	4 293	4 254	4 486	4 761	4 941	5 285	5 918
Hydro	521	671	812	882	862	786	745	698
Nuclear								
Others	507	862	873	904	850	918	1 058	1 193
Final energy consumption	1 824	4 753	4 824	5 092	5 295	5 448	5 831	6 377
Industry	855	1 598	1 663	1 726	1 778	1 843	1 936	2 074
Transport		10	10	10	10	10	8	9
Residential	482	1 620	1 608	1 694	1 773	1 803	1 956	2 204
Commerce & public services	444	1 398	1 430	1 529	1 574	1 613	1 727	1 872
Others	43	128	115	133	160	178	203	218

## Major economic indicators of the Philippines

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	61.95	93.73	95.28	96.87	98.48	100.10	101.72	103.32
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	95	200	207	221	236	251	266	284
GDP, Billion USD (PPP, constant 2011)	248	525	544	580	621	659	699	747
Nominal, Billion USD (Current)	44	200	224	250	272	285	293	305
GDP per Capita *3								
Real Term (constant 2010 USD)	1 526	2 130	2 171	2 279	2 400	2 506	2 616	2 752
GDP, PPP (constant 2011 USD)	4 010	5 597	5 707	5 989	6 307	6 586	6 875	7 233
Nominal (Current USD)	715	2 130	2 353	2 582	2 760	2 843	2 878	2 951
Nominal GDP & its Components (Billions of Current PHP) *1								
Gross Domestic Product	1 077	9 003	9 708	10 561	11 538	12 634	13 322	14 480
Household Final Consumption Expenditure	767	6 442	7 133	7 838	8 464	9 164	9 826	10 652
General Government Final Consumption Expenditure	109	875	942	1 145	1 251	1 334	1 456	1 611
Gross Fixed Capital Formation	249	1 848	1 819	2 069	2 380	2 612	2 929	3 557
Stock Change	11	2	168	-146	-71	-15	-103	-41
Exports of Goods and Services	296	3 134	3 110	3 255	3 233	3 653	3 783	4 050
Imports of Goods and Services	359	3 297	3 463	3 599	3 719	4 114	4 569	5 348
Real GDP & its Components (Billions of 2000 PHP) *1								
Gross Domestic Product	2 700	5 702	5 910	6 305	6 751	7 165	7 600	8 123
Household Final Consumption Expenditure	1 775	3 946	4 166	4 443	4 692	4 953	5 267	5 633
General Government Final Consumption Expenditure	348	570	582	672	706	729	784	850
Gross Fixed Capital Formation	609	1 182	1 160	1 285	1 437	1 540	1 801	2 254
Stock Change	49	1	57	-120	53	13	38	20
Exports of Goods and Services	870	2 886	2 813	3 054	3 025	3 407	3 695	4 090
Imports of Goods and Services	934	2 884	2 868	3 028	3 162	3 476	3 984	4 721
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	15	12	12	11	10	10	9	9
Industry	35	33	32	32	33	33	33	34
Services, etc.	49	56	56	57	57	57	57	57
Manufacturing Production Index (2010=100) *2	N.A.	100.0	101.1	108.9	124.1	133.1	136.4	152.3
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	8.1	51.5	48.3	52.1	56.7	62.1	58.8	57.4
Imports, c.i.f.	13.0	58.5	63.7	65.3	65.7	68.7	74.8	89.4
Balance of Payments (Billions of Current USD) *2								
Trade Balance	-4.0	-16.9	-20.4	-18.9	-17.7	-17.3	-23.3	-35.5
Current Account	-2.7	7.2	5.6	6.9	11.4	10.8	7.3	-1.2
Overall Balance	-0.6	21.0	11.1	13.8	9.3	1.2	5.0	-1.3
Foreign Exchange Rate (PHP/USD) *1	24.31	45.11	43.31	42.23	42.45	44.40	45.50	47.49
PPP conversion factor, GDP (PHP/USD) *1	6.71	17.52	17.85	17.88	17.95	18.19	17.89	17.97
Price Indices								
GDP Deflator (2000=100) *3	39.9	157.9	164.3	167.5	170.9	176.3	175.3	178.3
Producer Price Index (2010=100) *2	N.A.	100.0	100.9	100.3	92.7	91.9	85.7	81.6
Consumer Price Index (2010=100) *2	28.6	100.0	104.7	107.9	110.7	114.7	115.4	116.9
Growth Rate (%) *3								
Real GDP	3.0	7.6	3.7	6.7	7.1	6.1	6.1	6.9
Population	2.6	1.6	1.7	1.7	1.7	1.6	1.6	1.6
Price								
Producer Prices	N.A.	-4.9	0.9	-0.6	-7.6	-0.9	-6.7	-4.8
Consumer Prices	12.2	3.8	4.7	3.0	2.6	3.6	0.7	1.3

Source \*1 : *World Development Indicators*, World Bank  
\*2 : *International Financial Statistics*, International Monetary Fund

\*3 : Calculated from \*1 and \*2 by ESTO  
Note : N.A. means "not available"  
: PHP means Philippine Peso, USD means United States Dollar  
: PPP means Purchasing Power Parity

## Energy prices in the Philippines in 2016

## Currency Exchange Rate

Currency Exchange Rate	Local currency / US Dollar	
Local Currency Unit		PHP

IMPORT PRICES			WHOLESALE PRICES			CONSUMER PRICES		
	Unit	Amount		Unit	Amount		Unit	Amount
<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>		
Coking Coal			Coking Coal			Coking Coal		
Anthracite			Anthracite			Anthracite		
Other bituminous coal			Other bituminous coal			Other bituminous coal		
Sub-bituminous Coal	USD/tonne	87.85	Sub-bituminous Coal			Sub-bituminous Coal		
Lignite			Lignite			Lignite		
Peat			Peat			Peat		
Patent Fuel			Patent Fuel			Patent Fuel		
Coke			Coke			Coke		
Coal Tar			Coal Tar			Coal Tar		
BKB/PB			BKB/PB			BKB/PB		
			Gas Works Gas			Gas Works Gas		
<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>		
Crude Oil	USD/bbl	42.16	Crude Oil			Crude Oil		
Natural Gas Liquids			Natural Gas Liquids			Natural Gas Liquids		
Ethane			Ethane			Ethane		
LPG	USD/bbl	37.78	LPG	PHP/kg	46.61	LPG	PHP/L	28.96
Naphtha	USD/bbl	43.25	Naphtha			Naphtha		
Motor Gasoline	USD/bbl	55.36	Motor Gasoline	PHP/L	49.49	Motor Gasoline (regular)	PHP/L	39.80
Aviation Gasoline	USD/bbl	111.41	Aviation Gasoline			Aviation Gasoline		
Gasoline Type Jet Fuel			Gasoline Type Jet Fuel			Gasoline Type Jet Fuel		
Kerosene Type Jet Fuel	USD/bbl	52.46	Kerosene Type Jet Fuel	PHP/L	38.72	Kerosene Type Jet Fuel	PHP/L	38.72
Other Kerosene	USD/bbl	54.42	Other Kerosene	PHP/L	30.51	Other Kerosene	PHP/L	31.78
Gas/Diesel Oil	USD/bbl	51.49	Gas/Diesel Oil	PHP/L	32.38	Gas/Diesel Oil	PHP/L	25.36
Fuel Oil	USD/bbl	36.28	Fuel Oil	PHP/L	32.00	Fuel Oil	PHP/L	32.00
White Spirit SBP			White Spirit SBP			White Spirit SBP		
Lubricants			Lubricants			Lubricants		
Bitumen	USD/bbl	38.03	Bitumen			Bitumen		
Paraffin Waxes			Paraffin Waxes			Paraffin Waxes		
Petroleum Coke			Petroleum Coke			Petroleum Coke		
<b>Natural Gas</b>			<b>Natural Gas</b>			<b>Natural Gas</b>		
Natural Gas			Natural Gas			Natural Gas	USD/GJ	6.06
Liquefied Natural Gas			Liquefied Natural Gas			Liquefied Natural Gas		
Compressed Natural Gas			Compressed Natural Gas			Compressed Natural Gas		
<b>Electricity</b>			<b>Electricity</b>			<b>Electricity</b>		
Electricity			Electricity			Industrial		
						Commercial		
						Residential		
						Others		
<b>Other Energy Products</b>			<b>Other Energy Products</b>			<b>Other Energy Products</b>		
Condensate	USD/bbl	55.51				Auto LPG	PHP/L	28.64



**Russia**

## Energy balance table of Russia

	Coal	Coal products	Crude oil & NGL	Total	Petroleum products				
					Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2016</b>									
Indigenous production	209 159		550 364						
Import	13 951	51	753	1 162	188	6	13		83
Export	-107 467	-1 567	-256 134	-106 137	-5 482	- 589	-2 498		-38 781
International marine bunkers				-10 743					-9 134
International aviation bunkers				-4 882			-4 882		
Stock changes	- 798	- 40	- 414	- 708	- 345	- 99			- 354
<b>Total primary energy supply</b>	<b>114 845</b>	<b>-1 556</b>	<b>294 569</b>	<b>-121 308</b>	<b>-5 639</b>	<b>- 682</b>	<b>-7 367</b>		<b>-48 186</b>
<b>Transfers</b>									
Total transformation sector	-103 994	9 637	-287 427	269 172	42 041	27 267	12 248		76 168
Main activity producers	-45 314			-1 484					
Autoproducers	-12 436	-3 102	- 842	-5 327					-1 414
Gas processing									
Petroleum refineries			-286 585	275 983	42 041	27 267	12 248		77 582
Coal transformation	-46 244	12 739							
Other transformation									
Losses & own use	-1 062	- 964	-7 101	-11 798					-2 989
Discrepancy	-5 258	- 1	- 1	-1 607	- 2	1	2		- 1
<b>Total final consumption</b>	<b>4 531</b>	<b>7 116</b>	<b>40</b>	<b>134 459</b>	<b>36 400</b>	<b>26 586</b>	<b>4 883</b>		<b>24 992</b>
<b>Total final energy consumption</b>	<b>4 316</b>	<b>7 116</b>	<b>40</b>	<b>86 770</b>	<b>36 400</b>		<b>4 883</b>		<b>24 992</b>
Industry sector	1 144	7 116	22	16 005					3 365
Iron and steel		6 898		154					
Chemical & petrochemical	99	63	18	9 754					142
Non-metallic minerals	843	71	1	118					83
Other industries	202	84	3	5 979					3 140
Transport sector				57 625	36 400		4 883		15 713
Domestic air transport				4 889	6		4 883		
Road				49 291	36 123				12 738
Rail				1 574	29				1 506
Inland waterways				435	15				346
Other transport				1 436	227				1 123
Other sector	3 172		18	13 140					5 914
Residential	1 872			7 663					940
Commerce and public services	1 236			2 125					1 940
Agriculture	63		8	2 807					2 741
Non-specified others	1		10	545					293
Non-energy	215			47 689		26 586			
<b>2015</b>									
Indigenous production	200 270		536 284						
Import	14 239	63	3 543	1 961	858	9	20		109
Export	-98 044	-1 702	-247 532	-117 844	-4 988	- 621	-2 401		-39 062
International marine bunkers				-13 502					-10 816
International aviation bunkers				-5 066			-5 066		
Stock changes	1 572	85	-2 280	1 173	87	119			289
<b>Total primary energy supply</b>	<b>118 037</b>	<b>-1 554</b>	<b>290 015</b>	<b>-133 278</b>	<b>-4 043</b>	<b>- 493</b>	<b>-7 447</b>		<b>-49 480</b>
<b>Transfers</b>									
Total transformation sector	-108 778	9 622	-284 053	274 394	41 233	27 802	12 515		75 424
Main activity producers	-47 929			-1 670					
Autoproducers	-13 578	-3 126	- 594	-7 557					-1 909
Gas processing									
Petroleum refineries			-283 459	283 621	41 233	27 802	12 515		77 333
Coal transformation	-47 271	12 748							
Other transformation									
Losses & own use	- 929	-1 058	-5 870	-14 770					-3 373
Discrepancy	-3 359	- 1	- 1	8 285	- 1		- 1		4 927
<b>Total final consumption</b>	<b>4 971</b>	<b>7 009</b>	<b>91</b>	<b>134 631</b>	<b>37 189</b>	<b>27 309</b>	<b>5 067</b>		<b>27 498</b>
<b>Total final energy consumption</b>	<b>4 787</b>	<b>7 009</b>	<b>91</b>	<b>88 390</b>	<b>37 189</b>		<b>5 067</b>		<b>27 498</b>
Industry sector	1 226	7 009	23	14 451					3 496
Iron and steel		6 767		168					
Chemical & petrochemical	111	58	20	8 413					106
Non-metallic minerals	901	74	1	79					46
Other industries	214	110	2	5 791					3 344
Transport sector				59 591	37 189		5 067		16 709
Domestic air transport				5 075	8		5 067		
Road				50 875	36 961				13 475
Rail				1 602	49				1 532
Inland waterways				577	9				477
Other transport				1 462	162				1 225
Other sector	3 561		68	14 348					7 293
Residential	2 083			8 161					1 989
Commerce and public services	1 385			2 379					1 828
Agriculture	92		10	3 292					3 222
Non-specified others	1		58	516					254
Non-energy	184			46 241		27 309			

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				538 402	15 874	51 579	165	8 135			1373 678	18 951
1	123		748	7 342				6	275		23 540	6
-49 711	-5 358		-3 718	-175 120				-32	-1 521		-647 978	-32
-1 609											-10 743	
											-4 882	
106	59		-75	689				14			-1 257	30
-51 213	-5 176		-3 045	371 313	15 874	51 579	165	8 123	-1 246		732 358	18 955
54 168	24 437	17 571	15 272	-201 605	-15 873	-51 580	-166	-4 449	93 632	128 357	-164 296	-16 693
-1 484				-132 561	-15 759	-51 580	-166		87 202	59 257	-100 405	-15 925
-3 033	-19	-861		-66 830	-114			-4 369	6 430	69 100	-17 490	-688
58 685	24 456	18 432	15 272								-10 602	
											-33 505	
				-2 214				-80			-2 294	-80
-438	-43	-8 328		-18 899				-144	-28 355	-23 083	-91 406	
-1 606			-1	-22	-1	1	1	-2	-1	1	-6 890	
911	19 218	9 243	12 226	150 787				3 528	64 030	105 275	469 766	2 261
911	7 770	9 243	2 571	116 629				3 528	64 030	105 275	387 704	2 261
368	458	9 243	2 571	36 418				1 144	28 060	42 924	132 833	64
154				12 583				451	5 170	6 856	32 112	14
26	343	9 243		5 688				48	4 037	12 240	31 947	3
15	20			9 045				32	1 492	2 160	13 762	1
173	95		2 571	9 102				613	17 361	21 668	55 012	46
187	442			29 569					7 099		94 293	
											4 889	
	430			159							49 450	
39									4 169		5 743	
74											435	
74	12			29 410					2 930		33 776	
356	6 870			50 642				2 384	28 871	62 351	160 578	2 197
	6 723			47 038				1 105	13 861	43 012	114 551	1 105
103	82			2 304				1 153	13 517	16 889	37 224	1 027
1	65			1 299				126	1 476	2 433	8 212	65
252				1					17	17	591	
	11 448		9 655	34 158							82 062	
				524 328	14 445	51 270	157	7 687			1334 441	17 539
1	137		827	7 231				8	566		27 611	8
-65 426	-4 051		-1 295	-164 973				-42	-1 569		-631 706	-42
-2 686											-13 502	
											-5 066	
555	51		72	-2 332				11			-1 771	8
-67 556	-3 863		-396	364 254	14 445	51 270	157	7 664	-1 003		710 007	17 513
66 056	20 442	18 510	12 412	-207 439	-14 445	-51 270	-158	-4 352	91 626	124 365	-170 488	-15 407
-1 670				-139 641	-14 316	-51 270	-158		85 436	57 024	-112 524	-14 474
-4 842	-18	-788		-65 804	-129			-4 282	6 190	67 341	-21 539	-863
72 568	20 460	19 298	12 412								162	
											-34 523	
				-1 994				-70			-2 064	-70
-862	-77	-10 458		-17 417				-238	-28 173	-21 070	-89 525	
3 327	32	2	-1	1 812			1	-34	2		6 705	
965	16 534	8 054	12 015	141 210				3 040	62 452	103 295	456 699	2 076
965	7 439	8 054	2 178	108 323				3 040	62 452	103 295	377 387	2 076
379	344	8 054	2 178	35 500				895	28 289	36 543	123 936	90
168				12 553				403	5 265	6 752	31 908	15
19	234	8 054		5 717				42	3 957	12 005	30 323	5
11	22			10 194				11	1 604	2 371	15 235	
181	88		2 178	7 036				439	17 463	15 415	46 470	70
177	449			27 218					7 061		93 870	
											5 075	
	439			80							50 955	
21									4 260		5 862	
91											577	
65	10			27 138					2 801		31 401	
409	6 646			45 605				2 145	27 102	66 752	159 581	1 986
22	6 150			42 337				1 074	12 600	48 203	114 458	1 074
123	428			2 161				936	13 084	16 193	36 138	818
2	68			1 107				135	1 398	2 348	8 382	94
262									20	8	603	
	9 095		9 837	32 887							79 312	

## Major energy indicators of the Russia

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	879 174	689 001	721 978	740 027	719 812	724 491	710 007	732 358
Indigenous production	1293 077	1279 512	1299 548	1316 146	1331 045	1319 459	1334 441	1373 678
Import	120 444	22 888	30 562	27 669	27 359	27 239	27 611	23 540
Export	-532 992	-602 033	-600 704	-593 714	-622 085	-598 121	-631 706	-647 978
Final energy consumption	584 795	380 279	391 933	381 876	367 687	382 093	377 387	387 704
Industry	208 654	126 331	128 122	131 243	123 233	125 900	123 936	132 833
Transport	115 871	96 492	98 422	93 630	93 854	94 755	93 870	94 293
Residential	83 495	111 475	117 536	109 922	105 387	115 332	114 458	114 551
Commerce & public services	36 275	37 023	35 881	35 845	36 726	36 660	36 138	37 224
Others	140 500	8 958	11 972	11 236	8 487	9 446	8 985	8 803
<b>Coal &amp; coal products</b>								
Primary energy supply	191 052	101 441	103 332	117 812	108 198	103 816	116 483	113 289
Indigenous production	192 378	166 361	164 566	185 109	184 275	189 742	200 270	209 159
Import	35 088	15 311	19 206	18 264	17 527	15 906	14 302	14 002
Export	-40 422	-85 948	-80 571	-85 179	-91 065	-100 177	-99 746	-109 034
Transformation sector	-127 228	-89 815	-93 927	-101 408	-94 408	-87 620	-99 156	-94 357
Power generation	-104 930	-70 840	-73 132	-72 961	-69 594	-59 738	-64 633	-60 852
Final energy consumption	54 710	13 974	15 386	13 081	11 586	10 867	11 796	11 432
Industry	14 557	9 874	11 349	8 898	8 625	8 248	8 235	8 260
Transport								
Residential	11 881	1 548	1 553	1 561	1 002	1 455	2 083	1 872
Commerce & public services	20 581	2 473	2 415	2 563	1 904	1 078	1 385	1 236
Others	7 691	79	69	59	55	86	93	64
<b>Crude oil &amp; NGL</b>								
Primary energy supply	321 937	256 924	267 032	281 417	285 811	300 904	290 015	294 569
Indigenous production	526 252	506 540	514 865	521 251	524 195	528 660	536 284	550 364
Import	18 592	1 105	468	840	858	1 482	3 543	753
Export	-222 907	-248 266	-248 812	-241 149	-237 788	-224 551	-247 532	-256 134
Transformation sector	-308 934	-251 965	-262 076	-276 400	-280 684	-294 829	-284 053	-287 427
Petroleum refineries	-307 419	-251 178	-261 284	-275 604	-279 902	-294 214	-283 459	-286 585
<b>Petroleum products</b>								
Primary energy supply	-58 159	-117 847	-109 666	-113 630	-127 437	-134 690	-133 278	-121 308
Import	7 329	2 832	4 199	1 728	1 832	2 217	1 961	1 162
Export	-64 273	-111 999	-103 927	-106 611	-117 532	-116 332	-117 844	-106 137
Transformation sector	209 140	239 710	238 235	243 803	261 206	277 870	274 394	269 172
Power generation	-60 579	-10 327	-15 831	-15 834	-9 845	-10 236	-9 227	-6 811
Petroleum refineries	269 719	250 037	254 066	259 637	271 051	288 106	283 621	275 983
Final energy consumption	125 712	77 491	82 515	82 304	84 309	89 321	88 390	86 770
Industry	24 456	11 038	10 116	11 259	12 029	13 732	14 451	16 005
Transport	72 882	56 302	59 348	58 695	59 486	60 383	59 591	57 625
Residential	8 771	4 719	5 768	6 291	7 056	8 206	8 161	7 663
Commerce & public services	421	1 663	2 508	2 171	2 174	2 491	2 379	2 125
Others	19 182	3 769	4 775	3 888	3 564	4 509	3 808	3 352
<b>Gas</b>								
Primary energy supply	367 287	383 543	395 990	387 118	386 186	385 418	364 254	371 313
Indigenous production	516 675	540 157	552 885	540 793	554 305	531 330	524 328	538 402
Import	56 422	3 498	6 553	6 606	6 736	7 063	7 231	7 342
Export	-201 662	-154 175	-165 316	-158 822	-174 112	-155 790	-164 973	-175 120
Transformation sector	-227 684	-222 990	-238 607	-243 009	-239 756	-227 667	-207 439	-201 605
Power generation	-227 684	-221 313	-236 878	-241 336	-238 138	-225 597	-205 445	-199 391
Final energy consumption	121 969	109 238	105 249	96 363	97 123	106 359	108 323	116 629
Industry	30 485	32 363	31 224	34 076	33 718	37 184	35 500	36 418
Transport	34 044	32 857	31 305	27 020	26 581	26 611	27 218	29 569
Residential	47 122	40 442	39 703	32 263	33 519	39 591	42 337	47 038
Commerce & public services	8 780	3 021	2 486	2 397	2 250	2 095	2 161	2 304
Others	1 538	555	531	607	1 055	878	1 107	1 300
<b>Electricity</b>								
Power generation	93 065	89 090	90 541	91 944	90 935	91 345	91 626	93 632
Thermal	68 616	59 837	61 124	62 109	60 232	60 402	60 047	60 547
Hydro	14 269	14 315	14 260	14 265	15 577	15 070	14 445	15 873
Nuclear	10 174	14 656	14 873	15 268	14 836	15 545	16 810	16 909
Others	6	282	284	302	290	328	323	303
Final energy consumption	71 092	62 484	62 668	63 653	63 981	63 444	62 452	64 030
Industry	41 430	28 104	28 618	29 114	28 951	28 694	28 289	28 060
Transport	8 924	7 333	7 769	7 915	7 787	7 761	7 061	7 099
Residential	9 197	11 152	11 254	11 367	12 012	12 547	12 600	13 861
Commerce & public services	5 752	14 522	13 726	13 918	13 909	13 050	13 084	13 517
Others	5 789	1 373	1 301	1 339	1 322	1 392	1 418	1 493

## Major economic indicators of Russia

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	148.29	142.85	142.96	143.20	143.51	143.82	144.10	144.34
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	1 414	1 525	1 606	1 664	1 694	1 706	1 658	1 654
GDP, Billion USD (PPP, constant 2011)	3 061	3 301	3 475	3 602	3 667	3 694	3 589	3 581
Nominal, Billion USD (Current)	N.A.	1 525	2 052	2 210	2 297	2 064	1 368	1 285
GDP per Capita *3								
Real Term (constant 2010 USD)	9 534	10 675	11 230	11 621	11 804	11 865	11 507	11 462
GDP, PPP (constant 2011 USD)	20 639	23 108	24 310	25 156	25 551	25 684	24 909	24 811
Nominal (Current USD)	N.A.	10 675	14 351	15 435	16 007	14 349	9 496	8 901
Nominal GDP & its Components (Billions of Current RUR) *1								
Gross Domestic Product		46 309	60 283	68 164	73 134	79 200	83 387	86 149
Household Final Consumption Expenditure		23 843	30 165	34 740	38 722	42 304	43 651	45 309
General Government Final Consumption Expenditure		8 671	10 527	12 156	13 552	14 207	14 795	15 751
Gross Fixed Capital Formation		10 014	12 953	14 689	15 926	16 828	16 942	18 403
Stock Change		458	1 783	2 041	990	787	1 299	1 269
Exports of Goods and Services		13 529	16 865	18 325	18 863	21 426	23 854	22 139
Imports of Goods and Services		9 790	12 011	13 787	14 920	16 352	17 153	17 683
Real GDP & its Components (Billions of 2000 RUR) *1								
Gross Domestic Product	73 623	79 404	83 601	86 657	88 204	88 856	86 343	86 149
Household Final Consumption Expenditure	20 402	42 613	45 433	49 014	51 564	52 563	47 447	45 309
General Government Final Consumption Expenditure	19 028	16 412	16 113	16 537	16 678	16 324	15 824	15 751
Gross Fixed Capital Formation	36 412	16 800	19 890	20 887	21 168	20 796	18 740	18 403
Stock Change	12 788	1 863	4 254	4 329	2 648	1 576	635	1 269
Exports of Goods and Services	13 110	19 376	19 435	19 699	20 598	20 703	21 468	22 139
Imports of Goods and Services	14 758	19 549	23 518	25 794	26 707	24 768	18 373	17 683
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	5	4	4	4	4	4	4	4
Industry	41	30	30	30	29	29	29	29
Services, etc.	51	56	55	56	56	57	57	57
Industrial Production Index (2010=100) *2	N.A.	100.0	105.0	108.5	110.5	113.2	112.3	113.8
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	N.A.	400.6	522.0	529.3	521.8	496.8	341.4	281.9
Imports, c.i.f.	N.A.	248.6	323.8	335.4	341.3	307.9	193.0	191.6
Balance of Payments (Billions of Current USD) *2								
Trade Balance	N.A.	147.0	196.9	191.7	180.6	188.9	148.4	90.2
Current Account	N.A.	67.5	97.3	71.3	33.4	57.5	67.8	24.5
Overall Balance	N.A.	45.9	21.3	40.4	-13.2	-115.5	-1.5	13.2
Foreign Exchange Rate (RUR/USD) *1	N.A.	30.37	29.38	30.84	31.84	38.38	60.94	67.06
PPP conversion factor, GDP (RUR/USD) *1	0.00	15.82	17.35	18.46	19.42	21.01	23.02	23.67
Price Indices								
GDP Deflator (2000=100) *3	0.0	58.3	72.1	78.7	82.9	89.1	96.6	100.0
Industrial Production Index (2010=100) *2	N.A.	100.0	105.0	108.5	110.5	113.2	112.3	113.8
Consumer Price Index (2010=100) *2	N.A.	100.0	108.4	113.9	121.6	131.2	151.5	162.2
Growth Rate (%)								
Real GDP (*3)	-3.0	4.5	5.3	3.7	1.8	0.7	-2.8	-0.2
Population (*3)	0.4	0.0	0.1	0.2	0.2	0.2	0.2	0.2
Price (*2)								
Industrial Production	N.A.	7.3	5.0	3.3	1.8	2.5	N.A.	N.A.
Consumer Price Index	N.A.	6.8	8.4	5.1	6.8	7.8	15.5	7.0

Source

\*1 : *World Development Indicators*, World Bank\*2 : *International Financial Statistics*, International Monetary Fund

\*3 : Calculated from \*1 and \*2 by ESTO

Note

: N.A. means "not available"

: RUR means Russian Ruble, USD means United States Dollar

: PPP means Purchasing Power Parity



**Singapore**

## Energy balance table of Singapore

	Coal	Coal products	Crude oil & NGL	Petroleum products					
				Total	Gasoline	Naphtha	Jet fuel	Kerosene	Gas/diesel oil
<b>2016</b>									
Indigenous production									
Import	420	7	48 886	121 385	16 910	7 168	3 133	21	18 921
Export			- 751	-97 565	-25 880	-1 098	-6 158	- 299	-25 480
International marine bunkers				-46 826					-2 059
International aviation bunkers				-7 815	- 1		-7 814		
Stock changes			- 20	146	31				- 277
<b>Total primary energy supply</b>	<b>420</b>	<b>7</b>	<b>48 115</b>	<b>-30 675</b>	<b>-8 940</b>	<b>6 070</b>	<b>-10 839</b>	<b>- 278</b>	<b>-8 895</b>
Transfers			7 173	-7 231		-3 310			-2 033
<b>Total transformation sector</b>	<b>- 259</b>		<b>-55 288</b>	<b>52 869</b>	<b>9 817</b>	<b>3 941</b>	<b>10 839</b>	<b>278</b>	<b>12 614</b>
Main activity producers	- 259			- 47					- 2
Autoproducers				- 84					
Gas processing									
Petroleum refineries			-55 288	53 000	9 817	3 941	10 839	278	12 616
Coal transformation									
Other transformation									
Losses & own use				-2 060					
Discrepancy				- 5		- 1			- 1
<b>Total final consumption</b>	<b>161</b>	<b>7</b>		<b>12 898</b>	<b>877</b>	<b>6 700</b>			<b>1 685</b>
<b>Total final energy consumption</b>	<b>161</b>	<b>7</b>		<b>5 632</b>	<b>877</b>				<b>1 685</b>
Industry sector	161	7		3 398					433
Iron and steel									
Chemical & petrochemical				2 779					
Non-metallic minerals									
Other industries	161	7		619					433
Transport sector				2 129	877				1 252
Domestic air transport									
Road				2 093	877				1 216
Rail									
Inland waterways				36					36
Other transport									
Other sector				105					
Residential				27					
Commerce and public services				78					
Agriculture									
Non-specified others									
<b>Non-energy</b>				<b>7 266</b>		<b>6 700</b>			
<b>2015</b>									
Indigenous production									
Import	400	7	45 575	114 888	15 632	9 612	2 009	2	17 122
Export			- 754	-90 468	-25 356	- 782	-4 956	- 328	-23 385
International marine bunkers				-43 484					-1 781
International aviation bunkers				-7 379	- 1		-7 378		
Stock changes			- 20	-1 257	- 220				- 277
<b>Total primary energy supply</b>	<b>400</b>	<b>7</b>	<b>44 801</b>	<b>-27 700</b>	<b>-9 945</b>	<b>8 830</b>	<b>-10 325</b>	<b>- 326</b>	<b>-8 321</b>
Transfers			6 678	-6 806		-4 096			-1 405
<b>Total transformation sector</b>	<b>- 243</b>		<b>-51 479</b>	<b>49 129</b>	<b>10 835</b>	<b>1 967</b>	<b>10 324</b>	<b>326</b>	<b>11 448</b>
Main activity producers	- 243			- 14					- 1
Autoproducers				- 208					
Gas processing									
Petroleum refineries			-51 479	49 351	10 835	1 967	10 324	326	11 449
Coal transformation									
Other transformation									
Losses & own use				-1 920					
Discrepancy				- 5	- 1	- 1	1		- 1
<b>Total final consumption</b>	<b>157</b>	<b>7</b>		<b>12 698</b>	<b>889</b>	<b>6 700</b>			<b>1 721</b>
<b>Total final energy consumption</b>	<b>157</b>	<b>7</b>		<b>5 446</b>	<b>889</b>				<b>1 721</b>
Industry sector	157	7		3 150					423
Iron and steel									
Chemical & petrochemical				2 544					
Non-metallic minerals									
Other industries	157	7		606					423
Transport sector				2 187	889				1 298
Domestic air transport									
Road				2 135	889				1 246
Rail									
Inland waterways				52					52
Other transport									
Other sector				109					
Residential				28					
Commerce and public services				81					
Agriculture									
Non-specified others									
<b>Non-energy</b>				<b>7 252</b>		<b>6 700</b>			

Note: The above energy balance tables were obtained from IEA.



unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
73 898	10		1 324	8 712			12	656			668	340
-30 334	-267		-8 049					69			179 479	69
-44 767											-98 316	
											-46 826	
											-7 815	
392				37							163	
-811	-257		-6 725	8 749			12	725			27 353	409
-1 888											-58	
4 052	376	3 553	7 399	-7 528			-12	-725	4 443		-6 500	-409
-45				-6 641			-12	-725	3 926		-3 758	-409
-12		-72		-887					517		-454	
4 109	376	3 625	7 399								-2 288	
-498		-1 562		-11					-262		-2 333	
-2	1	-1	-1	-35							-40	
853	120	1 990	673	1 175					4 181		18 422	
853	120	1 990	107	1 175					4 181		11 156	
853	15	1 990	107	1 012					1 630		6 208	
789		1 990									2 779	
64	15		107	1 012					1 630		3 429	
				10					227		2 366	
				10					227		2 103	
											227	
											36	
	105			153					2 324		2 582	
	27			55					653		735	
	78			96					1 647		1 821	
				2					24		26	
			566								7 266	
69 273	10		1 228	8 508			6	614			620	313
-28 586	-242		-6 833					63			169 441	63
-41 703											-91 222	
											-43 484	
											-7 379	
											-1 240	
-760				37							-1 240	
-1 776	-232		-5 605	8 545			6	677			26 736	376
-1 305											-128	
4 403	359	3 210	6 257	-7 343			-6	-677	4 335		-6 284	-376
-13				-6 542			-6	-677	3 858		-3 624	-376
-31		-177		-801					477		-532	
4 447	359	3 387	6 257								-2 128	
-466		-1 454		-10					-249		-2 179	
-1		-1	-1	14					-1		8	
855	127	1 755	651	1 206					4 085		18 153	
855	127	1 755	99	1 206					4 085		10 901	
855	18	1 755	99	1 056					1 621		5 991	
789		1 755									2 544	
66	18		99	1 056					1 621		3 447	
				13					210		2 410	
				13							2 148	
									210		210	
											52	
	109			137					2 254		2 500	
	28			54					621		703	
	81			81					1 609		1 771	
				2					24		26	
			552								7 252	

## Major energy indicators of Singapore

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	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	11 527	25 419	26 282	25 695	25 519	26 316	26 736	27 353
Indigenous production	70	588	605	623	643	649	620	668
Import	61 402	156 958	165 969	157 376	157 451	159 791	169 441	179 479
Export	-36 878	-87 590	-93 462	-83 810	-84 327	-85 697	-91 222	-98 316
Final energy consumption	3 094	9 982	10 466	10 426	10 831	10 811	10 901	11 156
Industry	605	5 206	5 491	5 451	5 874	5 894	5 991	6 208
Transport	1 358	2 511	2 690	2 635	2 560	2 490	2 410	2 366
Residential	279	653	638	652	664	676	703	735
Commerce & public services	819	1 578	1 616	1 661	1 709	1 730	1 771	1 821
Others	33	34	31	27	24	21	26	26
<b>Coal &amp; coal products</b>								
Primary energy supply	22	7	7	25	266	396	407	427
Indigenous production								
Import	37	7	7	25	266	396	407	427
Export	-15							
Transformation sector	-1			-2	-134	-229	-243	-259
Power generation	-1			-2	-134	-229	-243	-259
Final energy consumption	21	7	7	23	132	162	164	168
Industry	21	7	7	23	132	162	164	168
Transport								
Residential								
Commerce & public services								
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	41 678	46 782	49 468	48 889	44 730	41 654	44 801	48 115
Indigenous production								
Import	43 533	47 316	49 658	49 314	45 668	42 394	45 575	48 886
Export	-19	-479	-481	-484	-566	-584	-754	-751
Transformation sector	-41 678	-53 281	-56 328	-56 674	-52 114	-49 153	-51 479	-55 288
Petroleum refineries	-41 678	-53 281	-56 328	-56 674	-52 114	-49 153	-51 479	-55 288
<b>Petroleum products</b>								
Primary energy supply	-30 243	-29 172	-31 085	-31 744	-29 034	-25 633	-27 700	-30 675
Import	17 832	102 421	109 017	100 135	102 603	107 672	114 888	121 385
Export	-36 844	-87 111	-92 981	-83 326	-83 761	-85 113	-90 468	-97 565
Transformation sector	36 896	48 423	51 500	52 936	50 243	47 176	49 129	52 869
Power generation	-4 415	-2 208	-2 213	-1 605	-751	-258	-222	-131
Petroleum refineries	41 381	50 631	53 713	54 541	50 994	47 434	49 351	53 000
Final energy consumption	1 897	5 225	5 590	5 473	5 535	5 381	5 446	5 632
Industry	111	2 787	2 999	2 940	3 078	3 010	3 150	3 398
Transport	1 342	2 310	2 473	2 415	2 338	2 263	2 187	2 129
Residential	43	33	31	31	31	28	28	27
Commerce & public services	401	95	87	87	88	80	81	78
Others								
<b>Gas</b>								
Primary energy supply		7 214	7 287	7 902	8 887	9 206	8 545	8 749
Indigenous production								
Import		7 214	7 287	7 902	8 887	9 285	8 508	8 712
Export								
Transformation sector	62	-5 966	-6 142	-6 754	-7 608	-8 070	-7 343	-7 528
Power generation		-5 966	-6 142	-6 754	-7 608	-8 070	-7 343	-7 528
Final energy consumption	62	1 117	1 172	1 130	1 298	1 279	1 206	1 175
Industry		966	1 011	975	1 136	1 127	1 056	1 012
Transport		21	26	20	18	17	13	10
Residential	30	49	50	51	52	53	54	55
Commerce & public services		80	84	83	91	81	81	96
Others	32	1	1	1	1	1	2	2
<b>Electricity</b>								
Power generation	1 351	3 900	3 957	4 039	4 124	4 246	4 335	4 443
Thermal	1 336	3 799	3 853	3 930	4 006	4 121	4 202	4 307
Hydro								
Nuclear								
Others	15	101	104	109	118	125	133	136
Final energy consumption	1 114	3 633	3 697	3 800	3 866	3 989	4 085	4 181
Industry	473	1 446	1 474	1 513	1 528	1 595	1 621	1 630
Transport	16	180	191	200	204	210	210	227
Residential	206	571	557	570	581	595	621	653
Commerce & public services	418	1 403	1 445	1 491	1 530	1 569	1 609	1 647
Others	1	33	30	26	23	20	24	24

## Major economic indicators of Singapore

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	3.05	5.08	5.18	5.31	5.40	5.47	5.54	5.61
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	68	236	251	262	275	286	292	299
GDP, Billion USD (PPP, constant 2011)	105	366	389	405	426	443	452	463
Nominal, Billion USD (Current)	39	236	276	291	304	312	304	310
GDP per Capita *3								
Real Term (constant 2010 USD)	22 178	46 569	48 505	49 262	50 948	52 244	52 785	53 354
GDP, PPP (constant 2011 USD)	34 345	72 116	75 113	76 286	78 897	80 904	81 741	82 622
Nominal (Current USD)	12 766	46 569	53 239	54 717	56 389	56 959	54 940	55 241
Nominal GDP & its Components (Billions of Current SGD) *1								
Gross Domestic Product	71	322	347	363	381	395	418	428
Household Final Consumption Expenditure	32	115	124	133	140	146	153	154
General Government Final Consumption Expenditure	7	33	34	33	38	39	44	46
Gross Fixed Capital Formation	22	84	88	97	106	112	116	114
Stock Change	3	7	6	12	11	7	-3	2
Exports of Goods and Services	125	644	705	716	739	755	742	720
Imports of Goods and Services	118	560	612	631	654	663	634	608
Real GDP & its Components (Billions of 2010 SGD) *1								
Gross Domestic Product	92	322	343	357	375	390	398	408
Household Final Consumption Expenditure	41	115	119	124	129	133	140	142
General Government Final Consumption Expenditure	8	33	32	32	35	35	38	40
Gross Fixed Capital Formation	24	84	89	96	102	108	110	110
Stock Change	7	7	5	11	11	7	-4	2
Exports of Goods and Services	105	644	687	699	740	765	801	810
Imports of Goods and Services	96	560	589	605	641	660	687	688
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industry	26	26	26	26	25	25	24	24
Services, etc.	68	68	69	69	70	71	72	71
Industrial Production Index (2010=100) *2	27.4	100.0	107.8	108.2	110.0	112.9	107.1	111.1
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	52.7	351.9	409.5	408.4	410.2	409.3	346.6	338.1
Imports, c.i.f.	60.8	310.8	365.8	379.7	373.0	366.2	296.7	291.9
Balance of Payments (Billions of Current USD) *2								
Trade Balance	-1.6	62.0	73.4	72.6	76.1	85.0	89.8	85.5
Current Account	3.1	55.4	61.1	49.4	50.3	58.2	56.5	58.8
Overall Balance	7.0	37.8	18.7	25.2	18.8	5.3	2.7	-1.7
Foreign Exchange Rate (SGD/USD) *1	1.81	1.36	1.26	1.25	1.25	1.27	1.37	1.38
PPP conversion factor, GDP (SGD/USD) *1	1.04	0.90	0.89	0.88	0.86	0.85	0.87	0.86
Price Indices								
GDP Deflator (2010=100) *3	76.5	100.0	101.2	101.8	101.6	101.3	104.9	104.9
Wholesale Price Index (2010=100) *2	91.2	100.0	108.4	109.0	106.0	102.5	N.A.	N.A.
Consumer Price Index (2010=100) *2	71.8	100.0	105.2	110.1	112.7	113.8	113.2	112.6
Growth Rate (%) *3								
Real GDP	10.0	15.2	6.4	4.1	5.1	3.9	2.2	2.4
Population	4.0	1.8	2.1	2.5	1.6	1.3	1.2	1.3
Price								
Wholesale Prices	1.7	4.7	8.4	0.5	-2.7	-3.3	N.A.	N.A.
Consumer Prices	3.5	2.8	5.2	4.6	2.4	1.0	-0.5	-0.5

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

Note : N.A. means "not available"  
: SGD means Singapore Dollar, USD means United States Dollar  
: PPP means Purchasing Power Parity

## Energy prices in Singapore in 2016

## Currency Exchange Rate

Currency Exchange Rate	Local currency / US Dollar	
Local Currency Unit		SGD

IMPORT PRICES	WHOLESALE PRICES		CONSUMER PRICES				
	Unit	Amount	Unit	Amount			
<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>		<b>Coal and Coal Products</b>		
Coking Coal			Coking Coal		Coking Coal		
Anthracite			Anthracite		Anthracite		
Other bituminous coal			Other bituminous coal		Other bituminous coal		
Sub-bituminous Coal			Sub-bituminous Coal		Sub-bituminous Coal		
Lignite			Lignite		Lignite		
Peat			Peat		Peat		
Patent Fuel			Patent Fuel		Patent Fuel		
Coke			Coke		Coke		
Coal Tar			Coal Tar		Coal Tar		
BKB/PB			BKB/PB		BKB/PB		
			Gas Works Gas		Gas Works Gas		
<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>		<b>Oil and Oil Products</b>		
Crude Oil			Crude Oil		Crude Oil		
Natural Gas Liquids			Natural Gas Liquids		Natural Gas Liquids		
Ethane			Ethane		Ethane		
LPG			LPG		LPG		
Naphtha			Naphtha		Naphtha		
Motor Gasoline			Motor Gasoline		Motor Gasoline (regular)		
Aviation Gasoline			Aviation Gasoline		Aviation Gasoline		
Gasoline Type Jet Fuel			Gasoline Type Jet Fuel		Gasoline Type Jet Fuel		
Kerosene Type Jet Fuel			Kerosene Type Jet Fuel		Kerosene Type Jet Fuel		
Other Kerosene			Other Kerosene		Other Kerosene		
Gas/Diesel Oil			Gas/Diesel Oil		Gas/Diesel Oil		
Fuel Oil			Fuel Oil		Fuel Oil		
White Spirit SBP			White Spirit SBP		White Spirit SBP		
Lubricants			Lubricants		Lubricants		
Bitumen			Bitumen		Bitumen		
Paraffin Waxes			Paraffin Waxes		Paraffin Waxes		
Petroleum Coke			Petroleum Coke		Petroleum Coke		
<b>Natural Gas</b>			<b>Natural Gas</b>		<b>Natural Gas</b>		
Natural Gas			Natural Gas		Natural Gas		
Liquefied Natural Gas			Liquefied Natural Gas		Liquefied Natural Gas		
Compressed Natural Gas			Compressed Natural Gas		Compressed Natural Gas		
<b>Electricity</b>			<b>Electricity</b>		<b>Electricity</b>		
Electricity			Electricity		Industrial		
					Commercial		
					Residential	SGD cents/kWh	18.90
					Others		
<b>Other Energy Products</b>			<b>Other Energy Products</b>		<b>Other Energy Products</b>		
Condensate					Auto LPG		

**Chinese Taipei**

## Energy balance table of Chinese Taipei

	Coal	Coal products	Crude oil & NGL	Petroleum products				
				Total	Gasoline	Naphtha	Jet fuel	Kerosene
<b>2016</b>								
Indigenous production			8					
Import	36 672	133	44 845	19 729	130	12 907	211	
Export	- 1			-17 530	-4 701		- 913	-8 933
International marine bunkers				-1 296				- 92
International aviation bunkers				-2 747			-2 747	
Stock changes	392		141	2	- 153	- 21	- 36	77
<b>Total primary energy supply</b>	<b>37 063</b>	<b>133</b>	<b>44 994</b>	<b>-1 843</b>	<b>-4 724</b>	<b>12 886</b>	<b>-3 485</b>	<b>- 3</b>
<b>Transfers</b>				<b>-518</b>	<b>3 143</b>	<b>-3 008</b>	<b>- 12</b>	<b>10</b>
<b>Total transformation sector</b>	<b>-30 671</b>	<b>2 484</b>	<b>-45 068</b>	<b>43 611</b>	<b>9 667</b>	<b>7 798</b>	<b>3 733</b>	<b>8</b>
Main activity producers	-19 131			-2 443				- 110
Autoproducers	-4 684	-1 037		- 736				
Gas processing								
Petroleum refineries			-45 068	46 791	9 667	7 798	3 733	8
Coal transformation	-6 857	3 520						13 700
Other transformation								
Losses & own use		-1 249		-2 285	- 3			- 26
Discrepancy	- 96	209	74	463	99	- 50	- 5	1
<b>Total final consumption</b>	<b>6 296</b>	<b>1 578</b>		<b>39 429</b>	<b>8 181</b>	<b>17 626</b>	<b>231</b>	<b>6</b>
<b>Total final energy consumption</b>	<b>6 266</b>	<b>1 349</b>		<b>16 582</b>	<b>8 181</b>		<b>231</b>	<b>6</b>
Industry sector	6 266	1 349		1 824	5			95
Iron and steel	187	1 349		174				6
Chemical & petrochemical	3 924			658				58
Non-metallic minerals	1 243			196				11
Other industries	912			795	5			21
Transport sector				12 398	8 146		96	4 022
Domestic air transport				96			96	
Road				12 121	8 146			3 936
Rail				18				18
Inland waterways				162				69
Other transport								
Other sector				2 360	30		135	6
Residential				1 136				642
Commerce and public services				882	30		135	6
Agriculture				4				1
Non-specified others				339				312
<b>Non-energy</b>	<b>30</b>	<b>229</b>		<b>22 847</b>		<b>17 626</b>		
<b>2015</b>								
Indigenous production			8					
Import	36 257	124	44 172	19 062	155	13 950		73
Export				-16 494	-4 300	- 50	-1 023	-9 035
International marine bunkers				-1 098				- 91
International aviation bunkers				-2 556			-2 556	
Stock changes	- 466	23	- 224	- 171	- 207	172		- 137
<b>Total primary energy supply</b>	<b>35 791</b>	<b>148</b>	<b>43 956</b>	<b>-1 257</b>	<b>-4 351</b>	<b>14 073</b>	<b>-3 580</b>	<b>-9 190</b>
<b>Transfers</b>				<b>- 700</b>	<b>3 848</b>	<b>-3 402</b>	<b>- 47</b>	<b>- 81</b>
<b>Total transformation sector</b>	<b>-29 051</b>	<b>2 635</b>	<b>-43 994</b>	<b>41 566</b>	<b>8 231</b>	<b>7 951</b>	<b>3 835</b>	<b>3</b>
Main activity producers	-18 231			-2 496				- 118
Autoproducers	-4 846	-1 036		- 375				
Gas processing								
Petroleum refineries			-43 994	44 437	8 231	7 951	3 835	3
Coal transformation	-5 973	3 671						13 925
Other transformation								
Losses & own use		-1 274		-1 460	- 5			- 25
Discrepancy	-1 197	16	38	700	195	- 49	60	2
<b>Total final consumption</b>	<b>5 543</b>	<b>1 524</b>		<b>38 849</b>	<b>7 918</b>	<b>18 573</b>	<b>268</b>	<b>5</b>
<b>Total final energy consumption</b>	<b>5 469</b>	<b>1 400</b>		<b>16 406</b>	<b>7 918</b>		<b>268</b>	<b>5</b>
Industry sector	5 469	1 400		1 919	6			97
Iron and steel	171	1 307		287				6
Chemical & petrochemical	3 719	93		640				58
Non-metallic minerals	1 203			258				11
Other industries	376			733	5			22
Transport sector				12 045	7 883		86	3 966
Domestic air transport				86			86	
Road				11 808	7 883			3 873
Rail				22				22
Inland waterways				128				70
Other transport								
Other sector				2 441	30		182	5
Residential				1 125				667
Commerce and public services				964	30		182	5
Agriculture				4				1
Non-specified others				349				343
<b>Non-energy</b>	<b>75</b>	<b>124</b>		<b>22 443</b>		<b>18 573</b>		

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				263	564	8 169	324	1 549			10 876	1 878
1 702	2 074		2 704	17 770							119 149	
-1 278	- 5		-1 700								-17 531	
-1 204											-1 296	
											-2 747	
103	35			58							594	
- 677	2 105		1 004	18 091	564	8 169	324	1 549			109 045	1 878
- 268	- 84		- 299								- 518	
2 667	1 335	2 111	2 701	-14 001	- 564	-8 169	- 221	-1 447	22 713		-31 333	-1 689
-2 334				-13 202	- 564	-8 169	- 125	- 31	19 542		-24 122	- 689
- 162		- 2	- 572	- 59			- 96	-1 417	3 171		-4 856	-1 000
				- 741							- 741	
5 163	1 335	2 113	3 273								1 723	
											-3 337	
- 59	- 86	-2 111		- 187			- 2		-1 729		-5 450	- 2
149	1		135	- 759					- 650		- 759	
1 813	3 271		3 541	3 145			101	102	20 335		70 985	188
1 813	1 505		87	3 145			101	102	20 335		47 879	188
1 385	253		87	1 710				102	11 669		22 920	87
147	9		12	192					1 299		3 200	
415	111		74	380					3 152		8 115	
176	9			164					459		2 062	
646	123			974				102	6 758		9 543	87
94	39								117		12 515	
											96	
	39										12 121	
									117		135	
94											162	
335	1 213			1 435			101		8 549		12 445	101
	1 136			762			98		4 071		6 067	98
306	76			673			3		4 227		5 784	3
3									168		172	
26									83		421	
	1 767		3 455								23 106	
				299	350	9 504	309	1 637			12 107	2 296
1 024	1 630		2 229	17 906							117 521	
- 963	- 9		-1 115								-16 494	
-1 007											-1 098	
											-2 556	
14	- 14			9				4			- 825	4
- 931	1 607		1 115	18 213	350	9 504	309	1 641			108 655	2 300
- 835	- 9		- 173								- 700	
3 445	1 127	1 292	1 876	-13 811	- 350	-9 504	- 206	-1 524	22 190		-32 049	-2 080
-2 377				-13 756	- 350	-9 504	- 133		18 735		-25 736	- 483
- 212		- 4	- 159	- 62			- 73	-1 519	3 455		-4 456	-1 593
				7							7	
6 035	1 127	1 296	2 035								443	
											-2 303	
											- 4	- 4
- 78	- 60	-1 292		- 339					-2 451		-5 524	
349	- 27		- 51	- 922				- 23	215		-1 173	- 23
1 950	2 638		2 766	3 142			102	95	19 954		69 210	197
1 950	1 523		11	3 142			102	95	19 954		46 568	197
1 527	278		11	1 771				95	11 503		22 156	95
252	17		11	242					1 368		3 375	
451	131			398				16	2 613		7 479	16
239	9			197					494		2 152	
585	121			934				79	7 028		9 150	79
59	52								116		12 161	
											86	
	52										11 808	
									116		138	
59											128	
364	1 194			1 372			102		8 336		12 251	102
	1 125			725			99		3 885		5 834	99
336	69			647			3		4 207		5 820	3
2									164		167	
25									80		429	
	1 115		2 755								22 642	

## Major energy indicators of Chinese Taipei

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	46 391	111 199	107 318	107 160	108 055	110 646	108 655	109 045
Indigenous production	10 617	13 301	13 477	13 313	13 495	13 659	12 107	10 876
Import	40 693	117 600	110 117	112 807	114 544	118 440	117 521	119 149
Export	- 539	-15 841	-13 426	-16 442	-17 165	-16 988	-16 494	-17 531
Final energy consumption	21 088	46 062	46 437	45 724	46 356	45 700	46 568	47 879
Industry	8 054	22 353	22 497	22 106	22 664	21 733	22 156	22 920
Transport	6 513	11 854	12 025	11 789	11 792	11 911	12 161	12 515
Residential	3 117	5 719	5 827	5 713	5 697	5 750	5 834	6 067
Commerce & public services	2 500	5 606	5 550	5 545	5 637	5 725	5 820	5 784
Others	904	530	538	572	566	581	596	594
<b>Coal &amp; coal products</b>								
Primary energy supply	10 378	39 186	36 992	36 073	36 797	36 851	35 939	37 197
Indigenous production	264							
Import	11 132	39 106	37 081	35 799	36 898	36 811	36 381	36 805
Export	- 16	- 78	- 66	- 76	- 9	- 47		- 1
Transformation sector	-8 247	-31 059	-28 123	-27 734	-27 369	-27 947	-26 416	-28 188
Power generation	-5 078	-28 700	-25 940	-25 579	-25 133	-25 362	-24 113	-24 851
Final energy consumption	3 180	6 767	6 870	6 759	7 232	6 860	6 869	7 615
Industry	3 174	6 767	6 870	6 759	7 232	6 860	6 869	7 615
Transport								
Residential								
Commerce & public services	5							
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	21 368	45 915	42 648	47 074	44 527	44 536	43 956	44 994
Indigenous production	162	13	10	10	9	8	8	8
Import	21 986	46 059	41 908	46 603	44 038	45 349	44 172	44 845
Export								
Transformation sector	-21 368	-46 059	-42 627	-47 354	-44 572	-44 649	-43 994	-45 068
Petroleum refineries	-21 368	-46 059	-42 627	-47 354	-44 572	-44 721	-43 994	-45 068
<b>Petroleum products</b>								
Primary energy supply	4 138	-1 035	-1 057	-5 335	-2 787	-1 275	-1 257	-1 843
Import	6 879	18 569	15 869	14 469	17 572	19 395	19 062	19 729
Export	- 523	-15 763	-13 360	-16 366	-17 156	-16 941	-16 494	-17 530
Transformation sector	18 492	44 012	40 474	45 254	42 632	41 825	41 566	43 611
Power generation	-5 273	-2 990	-2 555	-2 222	-2 254	-2 156	-2 871	-3 180
Petroleum refineries	23 764	47 002	43 028	47 476	44 885	43 981	44 437	46 791
Final energy consumption	10 882	18 149	17 782	16 942	16 607	16 417	16 406	16 582
Industry	5 223	3 869	3 413	2 856	2 527	2 220	1 919	1 824
Transport	6 496	11 754	11 921	11 683	11 683	11 797	12 045	12 398
Residential	1 240	1 186	1 168	1 137	1 114	1 091	1 125	1 136
Commerce & public services	1 113	1 035	975	927	953	962	964	882
Others	-3 190	305	304	339	329	347	353	342
<b>Gas</b>								
Primary energy supply	1 373	14 082	15 532	16 397	16 338	17 187	18 213	18 091
Indigenous production	1 056	237	264	354	305	303	299	263
Import	696	13 866	15 260	15 935	16 035	16 885	17 906	17 770
Export								
Transformation sector	- 261	-11 539	-11 959	-12 258	-12 167	-12 794	-13 811	-14 001
Power generation	- 243	-10 472	-11 294	-11 623	-12 003	-12 761	-13 818	-13 261
Final energy consumption	565	2 124	2 378	2 661	2 809	3 007	3 142	3 145
Industry	185	1 014	1 218	1 441	1 548	1 657	1 771	1 710
Transport								
Residential	450	695	737	751	734	738	725	762
Commerce & public services	91	415	423	468	527	612	647	673
Others	- 160							
<b>Electricity</b>								
Power generation	7 757	21 247	21 687	21 533	21 702	22 358	22 190	22 713
Thermal	4 381	16 895	17 280	17 133	17 181	17 847	18 172	18 537
Hydro	549	362	345	489	467	372	350	564
Nuclear	2 826	3 580	3 622	3 476	3 581	3 645	3 137	2 723
Others		411	440	435	473	493	532	889
Final energy consumption	6 591	18 778	19 178	19 138	19 491	19 188	19 954	20 335
Industry	3 735	10 563	10 869	10 928	11 240	10 869	11 503	11 669
Transport	17	100	103	106	110	114	116	117
Residential	1 410	3 735	3 820	3 722	3 747	3 820	3 885	4 071
Commerce & public services	1 290	4 156	4 152	4 150	4 157	4 152	4 207	4 227
Others	139	225	234	233	237	234	244	251



## Major economic indicators of Chinese Taipei

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	20.40	21.93	22.09	22.28	22.41	22.52	22.60	22.69
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	162	465	483	493	503	524	528	535
GDP, PPP (constant 2015 US\$) *1	335	892	928	966	982	997	1 062	1 127
Nominal, Billion USD (Current)	165	465	473	504	509	508	N.A.	N.A.
GDP per Capita *3								
Real Term (constant 2010 USD)	7 923	20 073	20 781	21 127	21 538	22 347	22 471	22 742
GDP, PPP (constant 2015 US\$) *1	16 397	38 493	39 975	41 438	41 991	42 551	45 214	47 855
Nominal (Current USD)	8 101	20 073	20 345	21 620	21 757	21 677	N.A.	N.A.
Nominal GDP & its Components (Billions of Current TWD) *2								
Gross Domestic Product	4 480	14 119	14 312	14 687	15 231	16 112	16 771	17 152
Private Final Consumption	2 341	7 498	7 799	8 035	8 248	8 589	8 756	9 032
Government Final Consumption	810	2 099	2 168	2 254	2 243	2 343	2 346	2 466
Gross Fixed Capital Formation	1 111	3 336	3 347	3 282	3 379	3 521	3 513	3 570
Changes in Inventories	31	189	36	22	- 19	28	9	
Exports	2 020	10 014	10 420	10 345	10 580	11 254	10 776	10 771
Imports	1 833	9 015	9 457	9 252	9 200	9 595	8 620	8 686
Real GDP & its Components (Billions of 2011 TWD) *2								
Gross Domestic Product	4 793	13 788	14 312	14 608	14 929	15 530	15 655	15 876
Private Final Consumption	3 092	7 563	7 799	7 941	8 126	8 406	8 627	8 827
Government Final Consumption	1 245	2 126	2 168	2 214	2 197	2 278	2 275	2 360
Gross Fixed Capital Formation	1 563	3 386	3 347	3 259	3 432	3 533	3 586	3 622
Changes in Inventories	45	196	36	19	- 48	30	26	- 18
Exports	2 080	10 000	10 420	10 462	10 828	11 463	11 420	11 641
Imports	2 930	9 501	9 457	9 288	9 604	10 149	10 259	10 613
Sectional Shares of Real GDP (%) *2								
Agriculture	N.A.	2	2	2	2	2	1	1
Industry	N.A.	32	33	33	33	34	34	34
Services	N.A.	66	65	65	65	64	65	65
Industrial Production Index (2011=100) *1	N.A.	95.8	100.0	99.8	100.4	106.8	N.A.	N.A.
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	67.4	274.6	308.3	301.2	305.4	296.0	N.A.	N.A.
Imports, c.i.f.	54.8	251.2	281.4	270.5	269.9	273.2	N.A.	N.A.
Balance of Payments (Billions of Current USD) *3								
Balance on Goods and Services	N.A.	26.0	28.4	31.2	39.4	48.8	62.4	60.3
Current Account	N.A.	36.8	37.9	43.2	49.9	60.4	74.9	72.8
Overall Balance	N.A.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Foreign Exchange Rate (TWD/USD) *1	27.11	30.37	30.29	29.14	29.95	31.72	N.A.	N.A.
PPP conversion factor, GDP (TWD/USD) *1	N.A.	15.57	15.57	N.A.	N.A.	N.A.	N.A.	N.A.
Price Indices								
GDP Deflator (2011=100) *2	93.5	102.4	100.0	100.5	102.0	103.8	107.1	108.0
Wholesale Price Index (2011=100) *2	74.0	95.9	100.0	98.8	96.4	95.9	87.4	84.6
Consumer Price Index (2011=100) *2	69.6	98.6	100.0	101.9	102.7	104.0	103.7	105.1
Growth Rate (%) *2								
Real GDP	5.6	10.6	3.8	2.1	2.2	4.0	0.8	1.4
Population	1.2	0.2	0.3	0.4	0.2	0.3	0.2	0.2
Price								
Wholesale Prices	-0.6	5.5	4.3	-1.2	-2.4	-0.6	-8.8	-3.3
Consumer Prices	4.1	1.0	1.4	1.9	0.8	1.2	-0.3	1.4

Source \*1: *Taiwan Statistical Data Book*, National Development Council (Chinese Taipei)

\*2: Statistics from Statistical Bureau, Chinese Taipei

\*3: *Financial Statistics Monthly*, Central Bank, Chinese Taipei

\*4: Calculated from \*1 and \*2 by ESTO

Note : N.A. means "not available"  
: TWD means New Taiwan Dollar, USD means United States Dollar  
: PPP means Purchasing Power Parity

## Energy prices in Chinese Taipei in 2016

## Currency Exchange Rate

Currency Exchange Rate	Local currency / US Dollar	32.32
Local Currency Unit		TWD

## IMPORT PRICES

## WHOLESALE PRICES

## CONSUMER PRICES

IMPORT PRICES			WHOLESALE PRICES			CONSUMER PRICES		
	Unit	Amount		Unit	Amount		Unit	Amount
<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>		
Coking Coal	USD/tonne	131.80	Coking Coal			Coking Coal		
Anthracite	USD/tonne	101.72	Anthracite			Anthracite		
Other bituminous coal	USD/tonne	67.47	Other bituminous coal			Other bituminous coal		
Sub-bituminous Coal	USD/tonne	46.94	Sub-bituminous Coal			Sub-bituminous Coal		
Lignite			Lignite			Lignite		
Peat			Peat			Peat		
Patent Fuel			Patent Fuel			Patent Fuel		
Coke	USD/tonne	217.01	Coke			Coke		
Coal Tar			Coal Tar			Coal Tar		
BKB/PB			BKB/PB			BKB/PB		
			Gas Works Gas			Gas Works Gas		
<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>		
Crude Oil	USD/bbl	39.53	Crude Oil			Crude Oil		
Natural Gas Liquids			Natural Gas Liquids			Natural Gas Liquids		
Ethane			Ethane			Ethane		
LPG	USD/tonne	351.10	LPG	TWD/kg	18.76	LPG	TWD/kg	18.76
Naphtha	USD/tonne	394.97	Naphtha			Naphtha		
Motor Gasoline			Motor Gasoline	TWD/L	23.45	Motor Gasoline	TWD/L	26.57
Aviation Gasoline			Aviation Gasoline			Aviation Gasoline		
Gasoline Type Jet Fuel			Gasoline Type Jet Fuel			Gasoline Type Jet Fuel		
Kerosene Type Jet Fuel			Kerosene Type Jet Fuel			Kerosene Type Jet Fuel		
Other Kerosene			Other Kerosene	TWD/L	35.30	Other Kerosene	TWD/L	35.30
Gas/Diesel Oil			Gas/Diesel Oil	TWD/L	20.97	Gas/Diesel Oil	TWD/L	22.60
Fuel Oil	USD/kL	305.60	Fuel Oil	TWD/kL	12,147.00	Fuel Oil	TWD/kL	12,147.00
White Spirit SBP			White Spirit SBP			White Spirit SBP		
Lubricants			Lubricants			Lubricants		
Bitumen	USD/tonne		Bitumen			Bitumen		
Paraffin Waxes			Paraffin Waxes			Paraffin Waxes		
Petroleum Coke			Petroleum Coke			Petroleum Coke		
<b>Natural Gas</b>			<b>Natural Gas</b>			<b>Natural Gas</b>		
Natural Gas			Natural Gas	TWD/m <sup>3</sup>	9.70	Natural Gas	TWD/m <sup>3</sup>	10.89
Liquefied Natural Gas	USD/tonne	326.01	Liquefied Natural Gas	TWD/m <sup>3</sup>	10.57	Liquefied Natural Gas		
Compressed Natural Gas			Compressed Natural Gas			Compressed Natural Gas		
<b>Electricity</b>			<b>Electricity</b>			<b>Electricity</b>		
Electricity			Electricity	TWD/ kWh	2.62	Industrial	TWD/ kWh	2.54
						Commercial	TWD/ kWh	3.57
						Residential	TWD/ kWh	2.53
						Others		
<b>Other Energy Products</b>			<b>Other Energy Products</b>			<b>Other Energy Products</b>		

**Thailand**

## Energy balance table of Thailand

	Coal	Coal products	Crude oil & NGL	Petroleum products				
				Total	Gasoline	Naphtha	Jet fuel	Kerosene
<b>2016</b>								
Indigenous production	4 300		20 066					
Import	6 579	7 142	44 249	2 669	1 166		73	721
Export	- 23	- 3	- 1 638	-9 192	-1 054		- 459	- 22
International marine bunkers								
International aviation bunkers				-4 510			-4 510	
Stock changes	-1 505	-3 086	6 321	-3 518	-1 202		- 68	-1 803
<b>Total primary energy supply</b>	<b>9 351</b>	<b>4 052</b>	<b>68 999</b>	<b>-14 551</b>	<b>-1 090</b>		<b>-4 965</b>	<b>-1 825</b>
Transfers			-6 205	6 206				
<b>Total transformation sector</b>	<b>-7 579</b>	<b>- 561</b>	<b>-57 190</b>	<b>49 042</b>	<b>9 121</b>		<b>5 791</b>	<b>1 834</b>
Main activity producers	-7 579	- 561		-108				- 33
Autoproducers								
Gas processing								
Petroleum refineries			-57 190	48 653	9 121		5 791	1 834
Coal transformation								23 423
Other transformation				497				
Losses & own use				-1 465				
Discrepancy			1 484	3				3
<b>Total final consumption</b>	<b>1 771</b>	<b>3 491</b>	<b>7 088</b>	<b>39 236</b>	<b>8 031</b>		<b>826</b>	<b>9</b>
<b>Total final energy consumption</b>	<b>1 771</b>	<b>3 491</b>		<b>35 574</b>	<b>8 031</b>		<b>826</b>	<b>9</b>
Industry sector	1 771	3 491		6 601	31		9	4 986
Iron and steel	85			451			2	295
Chemical & petrochemical	75	159		578	5		2	310
Non-metallic minerals	1 305	2 907		460	3		2	342
Other industries	306	424		5 113	23		3	4 039
Transport sector				23 485	7 958		826	11 742
Domestic air transport					826		826	
Road				21 192	7 958			11 507
Rail				77				77
Inland waterways				1 390				157
Other transport								
Other sector				5 488	43			2 960
Residential				1 877				
Commerce and public services				608				
Agriculture				2 992	43			2 949
Non-specified others				10				10
Non-energy			7 088	3 662				
<b>2015</b>								
Indigenous production	3 859		18 587					
Import	6 876	6 970	44 903	2 420	705		4	106
Export	- 16		- 136	-11 934	-1 368		-1 525	- 15
International marine bunkers								
International aviation bunkers				-5 706			-5 706	
Stock changes	-3 864	-2 079	4 880	-2 486	- 630		5	-1 177
<b>Total primary energy supply</b>	<b>6 856</b>	<b>4 890</b>	<b>68 235</b>	<b>-17 705</b>	<b>-1 294</b>		<b>-7 221</b>	<b>-1 192</b>
Transfers			-5 188	5 634				
<b>Total transformation sector</b>	<b>-6 260</b>	<b>-1 147</b>	<b>-56 858</b>	<b>52 050</b>	<b>10 028</b>		<b>7 577</b>	<b>1 202</b>
Main activity producers	-6 260	-1 147		-188				- 25
Autoproducers				- 6				
Gas processing				473				
Petroleum refineries			-58 817	51 772	10 028		7 577	1 202
Coal transformation								24 995
Other transformation			1 960					
Losses & own use				-1 447				
Discrepancy	63		47	- 431				
<b>Total final consumption</b>	<b>659</b>	<b>3 744</b>	<b>6 236</b>	<b>38 101</b>	<b>8 734</b>		<b>355</b>	<b>10</b>
<b>Total final energy consumption</b>	<b>659</b>	<b>3 744</b>		<b>35 225</b>	<b>8 734</b>		<b>355</b>	<b>10</b>
Industry sector	659	3 744		5 938	50			4 621
Iron and steel	76	78		364				273
Chemical & petrochemical	3	164		868				162
Non-metallic minerals	515	3 174		340				307
Other industries	66	328		4 366	50			3 878
Transport sector				22 876	8 663		355	10 753
Domestic air transport				355			355	
Road				21 225	8 663			10 523
Rail				78				78
Inland waterways				1 218				152
Other transport								
Other sector				6 412	21			3 925
Residential				1 843				
Commerce and public services				623				
Agriculture				3 946	21			3 925
Non-specified others								
Non-energy			6 236	2 876				

Note: Others excludes non-commercial biomass supply and consumption.

unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				28 437	314		346	27 312			80 775	27 972
114	537		57	12 832				63	1 705		75 239	63
-3 091	-97		-284					-23	-123		-11 002	-23
											-4 510	
-240	48		-11	37				60			-1 692	60
-3 218	489		-238	41 305	314		346	27 412	1 581		138 810	28 072
	4 415		1 791									1
5 307	2 320		1 280	-27 068	-314		-340	-14 674	16 137		-42 547	-15 327
-75				-27 068	-314		-340	-7 432	16 137		-27 266	-8 086
5 382	1 823		1 280								-8 537	
	497							-7 241			-6 744	-7 241
	-1 465			-7 887					-1 454		-10 806	
				1 561							3 048	
2 089	5 760		2 833	7 912			7	12 738	16 264		88 507	12 745
2 089	4 931			6 091			7	12 738	16 264		75 937	12 745
857	719			3 624				7 237	6 779		29 504	7 237
46	109			348					617		1 501	
41	219			1 091				601	1 030		3 534	601
40	73			898				703	577		6 850	703
731	317			1 288				5 932	4 555		17 618	5 932
1 232	1 727			2 466					10		25 960	
											826	
	1 727			2 466							23 658	
									10		87	
1 232											1 390	
	2 485			1			7	5 502	9 475		20 473	5 508
	1 877							5 502	3 795		11 174	5 502
	608			1			7		5 658		6 274	7
									23		3 015	
											10	
	829		2 833	1 820							12 570	
				28 486	334		234	25 255			76 754	25 822
144	1 414		47	13 175				105	1 240		75 689	105
-3 181	-42		-369					-25	-195		-12 305	-25
											-5 706	
-140	-159		-41					32			-3 517	32
-3 177	1 213		-363	41 661	334		234	25 367	1 045		130 916	25 934
	4 704		930								446	
4 800	2 261		1 213	-25 547	-334		-234	-11 242	15 854	12	-33 703	-11 809
-163				-25 547	-334		-233		12 754		-20 954	-566
-6							-1	-3 725	3 100	12	-620	-3 726
	473										473	
4 970	1 788		1 213								-7 045	
								-7 517			-5 557	-7 517
	-1 447			-8 204					-1 300		-10 951	
	-431			-2				-23		-12	-359	-23
1 623	6 300		1 780	7 908			1	14 102	15 598		86 349	14 103
1 623	5 204			6 070			1	14 102	15 598		75 399	14 103
557	700			3 358				7 811	6 615		28 125	7 811
79	10			386					660		1 565	
47	656			707				506	1 035		3 281	506
23	6			938				772	665		6 404	772
407	27			1 327				6 533	4 255		16 875	6 533
1 066	2 039			2 710					9		25 595	
											355	
	2 039			2 710							23 935	
1 066									9		87	
											1 218	
	2 466			1			1	6 291	8 975		21 679	6 292
	1 843							6 291	3 564		11 698	6 291
	623			1			1		5 378		6 002	1
									33		3 979	
	1 096		1 780	1 838							10 950	

## Major energy indicators of Thailand

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	42 479	125 090	124 890	127 792	129 533	133 679	130 916	138 810
Indigenous production	26 282	76 844	76 980	79 395	83 052	80 813	76 754	80 775
Import	18 944	64 949	64 389	69 838	70 140	69 773	75 689	75 239
Export	- 810	-12 195	-11 259	-16 557	-15 808	-11 066	-12 305	-11 002
Final energy consumption	28 885	66 632	66 095	69 185	77 360	70 915	75 399	75 937
Industry	8 729	25 570	24 479	26 749	26 397	26 889	28 125	29 504
Transport	9 618	21 179	21 581	22 529	24 861	22 859	25 595	25 960
Residential	7 237	11 049	11 119	10 383	11 461	11 565	11 698	11 174
Commerce & public services	1 268	4 691	4 633	5 157	10 576	5 528	6 002	6 274
Others	2 033	4 143	4 282	4 368	4 065	4 074	3 979	3 026
<b>Coal &amp; coal products</b>								
Primary energy supply	3 819	14 473	15 296	14 243	12 960	13 039	11 746	13 403
Indigenous production	3 629	4 917	5 938	4 790	4 731	4 730	3 859	4 300
Import	180	10 135	9 882	11 059	10 309	13 188	13 846	13 720
Export		- 13	- 4	- 6	- 6	- 18	- 16	- 26
Transformation sector	-2 885	-6 943	-8 876	-8 541	-8 039	-8 413	-7 406	-8 140
Power generation	-2 885	-6 943	-8 876	-8 541	-8 039	-8 413	-7 406	-8 140
Final energy consumption	934	7 530	6 421	5 970	5 327	4 629	4 403	5 262
Industry	934	7 530	6 421	5 970	5 327	4 629	4 403	5 262
Transport								
Residential								
Commerce & public services								
Others								
<b>Crude oil &amp; NGL</b>								
Primary energy supply	12 860	59 439	59 109	60 378	60 940	62 514	68 235	68 999
Indigenous production	2 752	18 295	17 910	17 497	17 498	17 417	18 587	20 066
Import	10 961	42 757	41 814	45 074	45 062	41 892	44 903	44 249
Export	- 767	-1 589	-1 808	-2 423	-1 620	- 645	- 136	-1 638
Transformation sector	-11 689	-48 436	-47 060	-49 377	-54 205	-51 694	-56 858	-57 190
Petroleum refineries	-11 689	-49 254	-47 947	-50 530	-55 829	-53 568	-58 817	-57 190
<b>Petroleum products</b>								
Primary energy supply	5 848	-14 198	-13 096	-14 520	-16 513	-11 374	-17 705	-14 551
Import	7 731	163	2 091	2 908	3 231	3 780	2 420	2 669
Export	- 21	-10 423	-9 229	-13 808	-14 013	-10 238	-11 934	-9 192
Transformation sector	8 939	39 422	38 656	50 901	43 352	43 692	52 050	49 042
Power generation	-2 548	- 263	- 453	- 508	- 384	- 397	- 194	- 108
Petroleum refineries	11 488	39 684	39 109	51 409	43 735	44 089	51 772	48 653
Final energy consumption	15 410	28 762	29 258	31 273	33 736	31 531	35 225	35 574
Industry	3 053	2 812	2 897	3 829	4 951	4 966	5 938	6 601
Transport	9 618	19 576	19 536	20 062	22 138	20 024	22 876	23 485
Residential	468	1 667	2 040	2 407	1 923	2 165	1 843	1 877
Commerce & public services	459	1 204	1 090	1 183	915	416	623	608
Others	1 812	3 504	3 694	3 791	3 809	3 959	3 946	3 003
<b>Gas</b>								
Primary energy supply	4 695	42 113	40 416	45 246	46 158	41 753	41 661	41 305
Indigenous production	4 695	30 908	30 813	35 434	35 827	31 998	28 486	28 437
Import		11 205	9 603	9 812	10 330	9 754	13 175	12 832
Export								
Transformation sector	-4 177	-30 891	-27 724	-29 784	-22 919	-24 380	-25 547	-27 068
Power generation	-4 177	-24 758	-20 929	-22 424	-22 919	-24 380	-25 547	-27 068
Final energy consumption	264	3 769	4 485	5 094	5 339	5 566	6 070	6 091
Industry	264	3 409	2 447	2 635	2 629	2 740	3 358	3 624
Transport		1 597	2 036	2 458	2 709	2 826	2 710	2 466
Residential								
Commerce & public services		1	2	1	1	1	1	1
Others		-1 238						
<b>Electricity</b>								
Power generation	3 794	13 701	13 320	14 744	14 498	15 004	15 854	16 137
Thermal	3 370	12 797	12 152	13 357	13 417	13 834	14 623	13 952
Hydro	421	460	682	725	465	458	334	314
Nuclear								
Others	2	444	485	662	615	712	898	1 871
Final energy consumption	3 285	12 840	12 802	13 913	13 725	14 461	15 598	16 264
Industry	1 562	5 851	5 843	6 221	5 830	5 871	6 615	6 779
Transport		6	9	9	14	9	9	10
Residential	693	2 856	2 821	3 134	3 239	3 366	3 564	3 795
Commerce & public services	809	3 487	3 540	3 972	4 386	5 099	5 378	5 658
Others	221	639	588	576	256	115	33	23

## Major economic indicators of Thailand

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	56.58	67.21	67.53	67.84	68.14	68.42	68.66	68.86
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	142	341	344	369	379	383	394	407
GDP, Billion USD (PPP, constant 2011)	376	906	914	980	1 007	1 016	1 047	1 082
Nominal, Billion USD (Current)	85	341	371	398	420	407	401	412
GDP per Capita *3								
Real Term (constant 2010 USD)	2 503	5 075	5 094	5 437	5 559	5 591	5 740	5 910
GDP, PPP (constant 2011 USD)	6 650	13 487	13 535	14 448	14 771	14 857	15 252	15 706
Nominal (Current USD)	1 508	5 075	5 491	5 860	6 168	5 954	5 846	5 979
Nominal GDP & its Components (Billions of Current THB) *1								
Gross Domestic Product	2 184	10 808	11 307	12 357	12 915	13 230	13 747	14 533
Household Final Consumption Expenditure	1 235	5 639	5 988	6 544	6 747	6 942	7 025	7 280
General Government Final Consumption Expenditure	205	1 708	1 825	2 021	2 119	2 243	2 366	2 456
Gross Fixed Capital Formation	882	2 593	2 921	3 336	3 278	3 261	3 373	3 491
Stock Change	21	147	108	127	268	- 98	- 331	- 331
Exports of Goods and Services	745	7 186	8 011	8 622	8 798	9 167	9 446	9 899
Imports of Goods and Services	909	6 567	7 781	8 492	8 432	8 270	7 862	7 782
Real GDP & its Components (Billions of 1988 THB) *1								
Gross Domestic Product	3 418	8 232	8 302	8 903	9 142	9 232	9 511	9 823
Household Final Consumption Expenditure	1 899	4 314	4 393	4 688	4 732	4 774	4 877	5 027
General Government Final Consumption Expenditure	414	1 256	1 302	1 396	1 421	1 460	1 505	1 530
Gross Fixed Capital Formation	1 547	2 004	2 102	2 327	2 303	2 252	2 351	2 417
Stock Change	39	107	68	82	175	- 64	- 68	- 338
Exports of Goods and Services	1 178	6 068	6 645	6 972	7 159	7 170	7 218	7 367
Imports of Goods and Services	1 449	5 666	6 368	6 727	6 840	6 477	6 478	6 390
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	12	7	8	7	7	7	6	6
Industry	33	40	38	38	37	37	37	37
Services, etc.	N.A.	53	55	55	56	57	58	58
Industrial Production Index	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	23.1	193.3	222.6	229.1	228.5	227.5	214.3	215.4
Imports, c.i.f.	33.0	182.9	228.8	249.1	250.4	227.7	202.7	194.2
Balance of Payments (Billions of Current USD) *2								
Trade Balance	-6.8	26.7	12.2	0.0	0.0	17.2	26.8	36.5
Current Account	-7.3	11.5	9.4	-1.7	-4.9	15.2	32.1	48.2
Overall Balance	1.8	35.3	1.1	11.3	-7.1	-0.6	15.3	27.2
Foreign Exchange Rate (THB/USD) *1	25.59	31.69	30.49	31.08	30.73	32.48	34.25	35.30
PPP conversion factor, GDP (THB/USD) *1	8.98	12.17	12.37	12.38	12.40	12.36	12.33	12.46
Price Indices								
GDP Deflator (1988=100) *3	63.9	131.3	136.2	138.8	141.3	143.3	144.5	148.0
Producer Price Index (2010=100) *2	42.5	100.0	105.4	106.5	106.8	107.0	102.6	101.4
Consumer Price Index (2010=100) *2	49.8	100.0	103.8	106.9	109.3	111.3	110.3	110.6
Growth Rate (%) *3								
Real GDP	11.2	7.5	0.8	7.2	2.7	1.0	3.0	3.3
Population	1.4	0.5	0.5	0.5	0.4	0.4	0.4	0.3
Price								
Producer Prices	3.5	9.4	5.4	1.0	0.3	0.1	-4.1	-1.2
Consumer Prices	5.9	3.2	3.8	3.0	2.2	1.9	-0.9	0.2

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

Note : N.A. means "not available"  
: THB means Baht, USD means United States Dollar  
: PPP means Purchasing Power Parity

## Energy prices in Thailand in 2016

## Currency Exchange Rate

Currency Exchange Rate	Local currency / US Dollar	
Local Currency Unit		THB

## IMPORT PRICES

## WHOLESALE PRICES

## CONSUMER PRICES

	Unit	Amount		Unit	Amount		Unit	Amount
<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>			<b>Coal and Coal Products</b>		
Coking Coal			Coking Coal			Coking Coal		
Anthracite	THB/tonne	4,279	Anthracite			Anthracite		
Other bituminous coal			Other bituminous coal			Other bituminous coal		
Sub-bituminous Coal	THB/tonne	2,267	Sub-bituminous Coal			Sub-bituminous Coal		
Lignite	THB/tonne	1,329	Lignite			Lignite		
Peat			Peat			Peat		
Patent Fuel			Patent Fuel			Patent Fuel		
Coke	THB/tonne	11,252	Coke			Coke		
Coal Tar			Coal Tar			Coal Tar		
BKB/PB	THB/tonne	1,572	BKB/PB			BKB/PB		
			Gas Works Gas			Gas Works Gas		
<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>			<b>Oil and Oil Products</b>		
Crude Oil			Crude Oil			Crude Oil		
Natural Gas Liquids			Natural Gas Liquids			Natural Gas Liquids		
Ethane			Ethane			Ethane		
LPG			LPG	THB/kg	16.99	LPG	THB/kg	20.47
Naphtha			Naphtha			Naphtha		
Motor Gasoline			Motor Gasoline	THB/L	28.75	Motor Gasoline (regular)	THB/L	31.80
Aviation Gasoline			Aviation Gasoline			Aviation Gasoline		
Gasoline Type Jet Fuel			Gasoline Type Jet Fuel			Gasoline Type Jet Fuel		
Kerosene Type Jet Fuel			Kerosene Type Jet Fuel			Kerosene Type Jet Fuel		
Other Kerosene			Other Kerosene	THB/L	16.68	Other Kerosene	THB/L	22.93
Gas/Diesel Oil			Gas/Diesel Oil	THB/L	21.38	Gas/Diesel Oil	THB/L	23.26
Fuel Oil			Fuel Oil	THB/L	9.84	Fuel Oil	THB/L	19.38
White Spirit SBP			White Spirit SBP			White Spirit SBP		
Lubricants			Lubricants			Lubricants		
Bitumen			Bitumen			Bitumen		
Paraffin Waxes			Paraffin Waxes			Paraffin Waxes		
Petroleum Coke			Petroleum Coke			Petroleum Coke		
Natural Gas			Natural Gas			Natural Gas		
Natural Gas	THB/SCF	5.72	Natural Gas			Natural Gas		
Liquefied Natural Gas	THB/SCF	4.32	Liquefied Natural Gas			Liquefied Natural Gas		
Compressed Natural Gas			Compressed Natural Gas			Compressed Natural Gas		
Electricity			Electricity			Electricity		
Electricity			Electricity			Industrial		
						Commercial		
						Residential		
						Others		
<b>Other Energy Products</b>			<b>Other Energy Products</b>			<b>Other Energy Products</b>		



**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>2016</b>									
Indigenous production	348 463		560 147						
Import	5 064	143	437 181	74 738	34 613	1 233	7 629	117	8 373
Export	-35 581	- 625	-50 837	-187 331	-35 281		-8 695	- 447	-58 721
International marine bunkers				-16 768					-3 160
International aviation bunkers				-24 622			-24 622		
Stock changes	23 587	521	-4 326	- 892	- 705	12	- 579	66	- 856
<b>Total primary energy supply</b>	<b>341 533</b>	<b>39</b>	<b>942 165</b>	<b>-154 875</b>	<b>-1 373</b>	<b>1 245</b>	<b>-26 267</b>	<b>- 264</b>	<b>-54 364</b>
Transfers			-81 129	83 864	2 896		33	24	2 130
<b>Total transformation sector</b>	<b>-329 606</b>	<b>5 139</b>	<b>-860 618</b>	<b>841 376</b>	<b>383 335</b>	<b>8 840</b>	<b>81 080</b>	<b>638</b>	<b>234 561</b>
Main activity producers	-313 826	- 225		-5 862			- 10	- 38	-1 267
Autoproducers	-1 545	- 361		-1 676					- 32
Gas processing	-1 935								
Petroleum refineries			-865 569	848 914	383 335	8 840	81 090	676	235 860
Coal transformation	-12 300	5 725							
Other transformation			4 951						
Losses & own use	- 32	-1 103		-34 472	-1 073		- 40	- 1	-5 861
Discrepancy	1 534	- 2	2 580	5 496	- 1				- 4
<b>Total final consumption</b>	<b>13 429</b>	<b>4 073</b>	<b>2 998</b>	<b>741 389</b>	<b>383 784</b>	<b>10 085</b>	<b>54 806</b>	<b>397</b>	<b>176 462</b>
<b>Total final energy consumption</b>	<b>13 429</b>	<b>4 073</b>		<b>626 621</b>	<b>383 784</b>		<b>54 806</b>	<b>397</b>	<b>171 854</b>
Industry sector	12 891	4 073		20 206	279				13 064
Iron and steel	244	3 447		180					93
Chemical & petrochemical	2 612			3 086					1 794
Non-metallic minerals	4 582			1 418					626
Other industries	5 453	626		15 522	279				10 551
Transport sector				564 833	378 460		54 806		130 884
Domestic air transport				55 286	480		54 806		
Road				489 926	373 586				116 239
Rail				11 544					11 544
Inland waterways				8 077	4 394				3 101
Other transport									
Other sector	538			41 582	5 045			397	27 906
Residential				14 145				228	9 395
Commerce and public services	538			13 293	1 464			169	8 855
Agriculture				14 144	3 581				9 656
Non-specified others									
<b>Non-energy</b>			<b>2 998</b>	<b>114 768</b>		<b>10 085</b>			<b>4 608</b>
<b>2015</b>									
Indigenous production	431 282		582 410						
Import	5 960	88	408 366	74 744	33 300	1 514	6 851	217	11 190
Export	-43 430	- 536	-45 282	-171 598	-28 286		-8 349	- 642	-58 526
International marine bunkers				-16 830					-7 271
International aviation bunkers				-23 702			-23 702		
Stock changes	-18 947	- 381	-11 963	-6 608	939	20	38	- 62	-3 482
<b>Total primary energy supply</b>	<b>374 865</b>	<b>- 829</b>	<b>933 531</b>	<b>-143 994</b>	<b>5 953</b>	<b>1 534</b>	<b>-25 162</b>	<b>-487</b>	<b>-58 089</b>
Transfers			-77 232	79 137	2 540		- 369	- 30	2 234
<b>Total transformation sector</b>	<b>-356 225</b>	<b>5 610</b>	<b>-850 590</b>	<b>830 547</b>	<b>371 446</b>	<b>8 741</b>	<b>78 324</b>	<b>722</b>	<b>241 133</b>
Main activity producers	-337 881	- 203		-6 593			- 16	- 110	-1 625
Autoproducers	-2 061	- 643		-2 295				- 2	- 51
Gas processing	-1 993								
Petroleum refineries			-855 401	839 435	371 446	8 741	78 340	834	242 809
Coal transformation	-14 290	6 456							
Other transformation			4 811						
Losses & own use	- 38	-1 288		-33 570	-1 569		- 38	- 2	-5 777
Discrepancy	-2 580	- 1	-1 407	5 530		2		- 1	1
<b>Total final consumption</b>	<b>16 022</b>	<b>3 492</b>	<b>4 302</b>	<b>737 650</b>	<b>378 370</b>	<b>10 277</b>	<b>52 755</b>	<b>202</b>	<b>179 502</b>
<b>Total final energy consumption</b>	<b>16 022</b>	<b>3 492</b>		<b>622 901</b>	<b>378 370</b>		<b>52 755</b>	<b>202</b>	<b>174 925</b>
Industry sector	15 350	3 492		19 373	165				12 420
Iron and steel	107	2 802		191					88
Chemical & petrochemical	3 203			2 647					1 608
Non-metallic minerals	5 685			1 569					567
Other industries	6 355	690		14 966	165				10 157
Transport sector				561 406	373 030		52 755		134 854
Domestic air transport				53 251	496		52 755		
Road				488 332	368 184				120 045
Rail				11 705					11 705
Inland waterways				8 118	4 350				3 104
Other transport									
Other sector	672			42 122	5 175			202	27 651
Residential				15 637				162	10 776
Commerce and public services	672			11 664	900			40	7 209
Agriculture				14 821	4 275				9 666
Non-specified others									
<b>Non-energy</b>			<b>4 302</b>	<b>114 749</b>		<b>10 277</b>			<b>4 577</b>

unit: ktOE

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				627 317	23 187	218 848	35 619	102 108			1915 689	156 291
11 559	4 955		6 259	69 549				3 209	5 985		595 869	3 209
-16 329	-31 032		-36 826	-52 677				-2 970	-802		-330 823	-2 970
-13 608											-16 768	
											-24 622	
-65	2 174		-939	8 695				-301			27 284	-301
-18 443	-23 903		-31 506	652 884	23 187	218 848	35 619	102 046	5 183		2166 629	156 229
											2 735	
	48 067		30 822									
20 504	11 788	16 403	84 227	-250 984	-23 187	-218 848	-33 365	-21 137	369 699	12 133	-509 398	-73 761
-1 621			-2 926	-234 168	-23 057	-218 848	-32 166	-15 308	354 159	12 133	-477 168	-67 328
-20		-1 423	-201	-13 558	-130		-1 199	-5 829	15 540		-8 758	-6 433
				1 130							-805	
22 145	11 788	17 826	87 354								-16 655	
											-6 575	
				-4 388							563	
-110	-210	-15 189	-11 988	-58 375				-139	-47 477	-5 504	-147 102	-139
	8		5 493	-7 436			-1	-4	-1	1	2 167	
1 843	35 750	1 214	77 048	336 089			2 253	80 766	327 404	6 630	1515 031	82 325
1 843	10 953		2 984	317 407			2 253	80 766	327 404	6 630	1378 583	82 325
495	3 384		2 984	123 292				29 731	68 521	5 239	263 953	29 260
17	70			7 665				2	3 452	192	15 182	2
254	1 038			43 653				296	10 720	3 210	63 577	99
5	367		420	8 805				427	3 132	4	18 368	424
219	1 909		2 564	63 169				29 006	51 217	1 833	166 826	28 735
582	101			17 389				38 654	911		621 787	38 654
											55 286	
	101			986				38 303	325		529 540	38 303
								276	586		12 406	276
582								75			8 152	75
				16 403							16 403	
766	7 468			176 726			2 253	12 381	257 972	1 391	492 843	14 411
	4 522			102 194			530	9 163	121 226		247 258	9 692
765	2 040			73 040			1 723	2 056	116 951	1 391	208 992	3 557
1	906			1 492				1 162	3 534		20 332	1 162
									16 261		16 261	
	24 797	1 214	74 064	18 682							136 448	
11 655	4 269		5 748	636 668	21 584	216 339	31 354	102 911			2022 548	151 194
-17 521	-24 375		-33 899	62 896				2 288	6 515		560 857	2 288
-9 559				-40 437				-2 198	-782		-304 263	-2 198
								-175			-17 005	-175
											-23 702	
-1 262	-1 970		-829	-12 358				-525			-50 782	-525
-16 687	-22 076		-28 980	646 769	21 584	216 339	31 354	102 301	5 733		2187 653	150 584
108	47 937		26 717								1 905	
19 657	11 696	15 410	83 418	-244 987	-21 584	-216 339	-28 797	-22 236	369 479	9 988	-525 134	-68 636
-2 154			-2 688	-225 556	-21 459	-216 339	-27 872	-15 747	354 186	9 988	-487 476	-61 919
-34		-1 992	-216	-16 251	-125		-925	-6 489	15 293		-13 496	-6 717
				1 076							-917	
21 845	11 696	17 402	86 322								-15 966	
											-7 834	
				-4 256							555	
-180	-273	-14 249	-11 482	-57 799				-146	-50 119	-4 531	-147 491	-146
1	11	-1	5 517	-10 728			1		1		-9 184	
2 899	37 295	1 160	75 190	333 255			2 558	79 919	325 094	5 457	1507 749	81 803
2 899	10 557		3 193	317 878			2 558	79 919	325 094	5 457	1373 321	81 803
600	2 995		3 193	117 908				29 786	69 326	4 312	259 547	29 336
27	76			8 572				2	4 137	158	15 969	2
202	837			39 097				237	9 805	2 643	57 632	97
4	390		608	7 957				448	3 084	3	18 746	447
367	1 692		2 585	62 282				29 099	52 300	1 508	167 200	28 790
664	103			16 595				35 958	763		614 722	35 958
											53 251	
	103			926				35 585	176		525 019	35 585
								295	587		12 587	295
664								78			8 196	78
				15 669							15 669	
1 635	7 459			183 375			2 558	14 175	255 005	1 145	499 052	16 509
	4 699			108 418			491	10 827	120 517		255 890	11 318
1 635	1 880			73 508			2 067	2 155	116 894	1 145	208 105	3 999
	880			1 449				1 193	3 275		20 738	1 192
									14 319		14 319	
	26 738	1 160	71 997	15 377							134 428	

## Major energy indicators of the United States

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	1915 051	2216 885	2186 794	2147 610	2184 637	2210 694	2187 653	2166 629
Indigenous production	1652 506	1724 475	1782 586	1816 266	1872 921	2010 232	2022 548	1915 689
Import	452 497	725 415	691 547	635 692	581 381	548 113	560 857	595 869
Export	-110 605	-191 720	-239 521	-260 182	-266 423	-290 061	-304 263	-330 823
Final energy consumption	1174 463	1377 635	1344 487	1309 051	1365 193	1374 326	1373 321	1378 583
Industry	283 736	270 428	262 665	265 400	264 586	264 812	259 547	263 953
Transport	487 567	595 752	581 646	575 710	595 899	593 435	614 722	621 787
Residential	209 877	270 118	262 116	240 107	264 339	270 690	255 890	247 258
Commerce & public services	159 267	207 352	205 624	196 005	206 406	211 451	208 105	208 992
Others	34 016	33 985	32 436	31 829	33 963	33 938	35 057	36 593
<b>Coal &amp; coal products</b>								
Primary energy supply	460 254	502 610	479 055	424 599	432 190	431 644	374 036	341 572
Indigenous production	542 320	531 840	536 360	495 485	477 187	485 031	431 282	348 463
Import	2 119	11 440	8 233	5 819	5 056	6 362	6 048	5 207
Export	-67 987	-48 240	-63 379	-74 210	-68 079	-57 196	-43 966	-36 206
Transformation sector	-409 628	-471 401	-444 985	-391 616	-405 916	-405 099	-350 615	-324 467
Power generation	-396 005	-462 776	-435 829	-382 402	-397 056	-396 009	-340 788	-315 957
Final energy consumption	55 658	26 856	24 579	21 935	22 417	22 206	19 514	17 502
Industry	46 020	25 347	23 279	21 033	21 649	21 353	18 842	16 964
Transport								
Residential	1 487							
Commerce & public services	2 412	1 509	1 300	902	768	853	672	538
Others	5 739							
<b>Crude oil &amp; NGL</b>								
Primary energy supply	783 540	876 468	876 927	876 121	877 359	910 499	933 531	942 165
Indigenous production	432 545	347 602	358 136	409 210	465 253	544 081	582 410	560 147
Import	351 036	539 779	522 908	480 686	430 693	405 380	408 366	437 181
Export	-2 100	-9 302	-9 000	-10 946	-20 177	-35 550	-45 282	-50 837
Transformation sector	-755 277	-819 594	-820 450	-820 315	-825 635	-846 726	-850 590	-860 618
Petroleum refineries	-755 277	-819 594	-824 469	-824 607	-830 293	-851 510	-855 401	-865 569
<b>Petroleum products</b>								
Primary energy supply	-26 698	-69 948	-95 896	-104 244	-103 758	-137 425	-143 994	-154 875
Import	62 246	83 347	74 896	70 027	69 931	67 036	74 744	74 738
Export	-36 778	-105 624	-128 708	-134 751	-139 019	-159 283	-171 598	-187 331
Transformation sector	726 219	829 904	797 561	791 630	801 294	819 429	830 547	841 376
Power generation	-27 245	-10 843	-8 745	-7 496	-8 508	-9 380	-8 888	-7 538
Petroleum refineries	753 819	840 747	806 306	799 126	809 802	828 809	839 435	848 914
Final energy consumption	578 135	637 583	604 186	585 559	603 737	598 783	622 901	626 621
Industry	44 253	30 208	20 275	20 140	20 395	17 892	19 373	20 206
Transport	471 802	555 511	538 910	526 207	540 691	540 818	561 406	564 833
Residential	26 368	20 959	17 147	14 242	16 303	15 276	15 637	14 145
Commerce & public services	21 308	15 291	13 005	10 662	10 665	9 842	11 664	13 293
Others	14 404	15 614	14 849	14 308	15 683	14 955	14 821	14 144
<b>Gas</b>								
Primary energy supply	438 232	556 076	568 764	594 905	606 557	627 598	646 769	652 884
Indigenous production	418 088	494 788	531 059	558 375	564 025	606 247	636 668	627 317
Import	35 160	86 917	80 618	72 715	66 733	62 272	62 896	69 549
Export	-1 975	-26 153	-34 621	-37 093	-36 056	-34 682	-40 437	-52 677
Transformation sector	-88 617	-183 881	-188 643	-230 537	-210 229	-209 682	-244 987	-250 984
Power generation	-89 736	-185 087	-189 776	-227 407	-206 936	-206 412	-241 807	-247 726
Final energy consumption	289 104	309 842	310 616	298 249	325 798	337 263	317 878	317 407
Industry	109 886	109 887	111 362	117 038	115 519	120 636	117 908	123 292
Transport	15 410	16 306	16 638	17 670	20 102	17 211	16 595	17 389
Residential	102 556	110 963	109 263	96 466	113 852	118 729	108 418	102 194
Commerce & public services	61 252	71 193	72 045	65 833	75 054	79 416	73 508	73 040
Others		1 493	1 308	1 242	1 271	1 271	1 449	1 492
<b>Electricity</b>								
Power generation	275 442	374 408	372 024	367 231	368 626	371 480	369 479	369 699
Thermal	190 229	263 431	254 866	253 226	250 376	250 895	248 298	241 811
Hydro	23 491	22 551	27 664	23 947	23 290	22 483	21 584	23 187
Nuclear	52 597	72 148	70 641	68 897	70 692	71 430	71 405	72 233
Others	9 125	16 277	18 853	21 161	24 267	26 672	28 193	32 468
Final energy consumption	226 487	325 735	324 973	320 444	323 952	325 792	325 094	327 404
Industry	74 522	71 059	73 221	72 735	72 785	70 598	69 326	68 521
Transport	355	551	564	588	622	654	763	911
Residential	79 466	124 309	122 339	118 194	119 607	121 838	120 517	121 226
Commerce & public services	72 144	114 377	114 193	113 830	115 081	116 073	116 894	116 951
Others		15 439	14 656	15 097	15 857	16 629	17 594	19 795

## Major economic indicators of the United States

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	249.62	309.34	311.64	313.99	316.23	318.62	321.04	323.41
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	9 064	14 964	15 204	15 542	15 803	16 209	16 673	16 920
GDP, Billion USD (PPP, constant 2011)	9 252	15 273	15 518	15 863	16 129	16 544	17 017	17 270
Nominal, Billion USD (Current)	5 980	14 964	15 518	16 155	16 692	17 428	18 121	18 624
GDP per Capita *3								
Real Term (constant 2010 USD)	36 312	48 375	48 786	49 498	49 972	50 872	51 933	52 319
GDP, PPP (constant 2011 USD)	37 062	49 374	49 794	50 520	51 004	51 922	53 006	53 399
Nominal (Current USD)	23 954	48 375	49 794	51 451	52 782	54 697	56 444	57 589
Nominal GDP & its Components (Billions of Current USD) *1								
Gross Domestic Product	5 980	14 964	15 518	16 155	16 692	17 428	18 121	18 624
Household Final Consumption Expenditure	3 826	10 202	10 689	11 051	11 361	11 864	12 332	12 821
General Government Final Consumption Expenditure	948	2 522	2 531	2 544	2 524	2 563	2 611	2 658
Gross Fixed Capital Formation	1 269	2 691	2 836	3 064	3 206	3 433	3 590	3 632
Stock Change	15	62	42	62	92	78	112	35
Exports of Goods and Services	552	1 852	2 106	2 198	2 277	2 374	2 265	2 215
Imports of Goods and Services	630	2 365	2 686	2 764	2 769	2 883	2 789	2 736
Real GDP & its Components (Billions of 2005 USD) *1								
Gross Domestic Product	9 064	14 964	15 204	15 542	15 803	16 209	16 673	16 920
Household Final Consumption Expenditure	5 766	10 202	10 433	10 585	10 740	11 048	11 450	11 763
General Government Final Consumption Expenditure	1 836	2 522	2 455	2 434	2 376	2 365	2 396	2 420
Gross Fixed Capital Formation	1 658	2 753	2 832	3 028	3 148	3 283	3 434	3 387
Stock Change	19	62	40	58	83	72	106	35
Exports of Goods and Services	672	1 852	1 979	2 047	2 118	2 209	2 218	2 210
Imports of Goods and Services	763	2 365	2 494	2 550	2 578	2 694	2 827	2 863
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	N.A.	1	1	1	1	1	1	1
Industry	N.A.	20	20	20	20	20	19	19
Services, etc.	N.A.	76	76	76	76	76	76	76
Industrial Production Index (2010=100) *2	68.2	100.0	103.1	106.2	108.4	111.7	110.6	108.4
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	393.6	1 278.5	1 482.5	1 545.7	1 579.6	1 620.5	1 502.6	1 451.0
Imports, c.i.f.	517.0	1 969.2	2 266.0	2 336.5	2 329.1	2 412.5	2 315.3	2 250.2
Balance of Payments (Billions of Current USD) *2								
Trade Balance	-111.0	-648.7	-741.0	-741.1	-700.5	-749.9	-761.9	-751.1
Current Account	-79.0	-431.3	-445.7	-426.8	-348.8	-365.2	-407.8	-432.9
Overall Balance	-26.0	16.8	95.0	32.7	47.9	-71.6	-88.2	-45.8
Foreign Exchange Rate (USD/USD) *1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PPP conversion factor, GDP (USD/USD) *1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Price Indices								
GDP Deflator (2010=100) *3	66.0	100.0	102.1	103.9	105.6	107.5	108.7	110.1
Producer Prices Index (2010=100) *2	62.9	100.0	103.9	105.8	107.2	108.9	108.0	108.4
Consumer Price Index (2010=100) *1	59.9	100.0	103.2	105.3	106.8	108.6	108.7	110.1
Growth Rate (%) *3								
Real GDP	1.9	2.5	1.6	2.2	1.7	2.6	2.9	1.5
Population	1.1	0.8	0.7	0.8	0.7	0.8	0.8	0.7
Price								
Producer Prices	3.6	6.8	3.9	1.8	1.4	1.6	-0.9	0.4
Consumer Prices	5.4	1.6	3.2	2.1	1.5	1.6	N.A.	N.A.

Source \*1 : World Development Indicators, World Bank

\*2 : International Financial Statistics, International Monetary Fund

\*3 : Calculated from \*1 and \*2 by ESTO

Note

: N.A. means "not available"

: USD means United States Dollar

: PPP means Purchasing Power Parity



**Viet Nam**

## Energy balance table of Viet Nam

	Coal	Coal products	Crude oil & NGL	Petroleum products				
				Total	Gasoline	Naphtha	Jet fuel	Kerosene
<b>2016</b>								
Indigenous production	21 575		16 613					
Import	7 391		51	13 828	2 612		1 585	51
Export	- 696		- 8 671	- 1 467	- 226		- 495	
International marine bunkers								
International aviation bunkers				- 1 183			- 1 183	
Stock changes	- 378		258	54	27			13
<b>Total primary energy supply</b>	<b>27 892</b>		<b>8 251</b>	<b>11 232</b>	<b>2 414</b>		<b>- 94</b>	<b>51</b>
<b>Transfers</b>			<b>- 1 109</b>	<b>1 080</b>	<b>746</b>			
<b>Total transformation sector</b>	<b>- 16 144</b>		<b>- 7 142</b>	<b>6 575</b>	<b>2 916</b>		<b>388</b>	<b>2 811</b>
Main activity producers	- 16 144			- 464				- 101
Autoproducers								
Gas processing								
Petroleum refineries			- 7 142	7 039	2 916		388	2 912
Coal transformation								
Other transformation								
Losses & own use								
Discrepancy				89				
<b>Total final consumption</b>	<b>11 748</b>			<b>18 976</b>	<b>6 075</b>		<b>295</b>	<b>51</b>
<b>Total final energy consumption</b>	<b>11 748</b>			<b>18 319</b>	<b>6 075</b>		<b>295</b>	<b>51</b>
Industry sector	8 908			7 134	910			28
Iron and steel	1 638			242				4
Chemical & petrochemical	1 050			143				3
Non-metallic minerals	4 202			1 208				3
Other industries	2 018			5 541	910			17
Transport sector				8 923	5 046		295	11
Domestic air transport				295			295	
Road				8 424	5 046			
Rail								
Inland waterways								
Other transport				204				11
Other sector	2 840			2 262	118			12
Residential	14			460				7
Commerce and public services	2 786			1 312				4
Agriculture	40			490	118			2
Non-specified others								364
Non-energy				657				
<b>2015</b>								
Indigenous production	23 231		18 364					
Import	3 879		40	12 055	2 815		1 442	42
Export	- 979		- 9 679	- 1 265	- 255		- 383	
International marine bunkers								
International aviation bunkers				- 1 007			- 1 007	
Stock changes	- 67		- 510	208	62		- 2	- 9
<b>Total primary energy supply</b>	<b>26 064</b>		<b>8 215</b>	<b>9 991</b>	<b>2 622</b>		<b>50</b>	<b>33</b>
<b>Transfers</b>			<b>- 1 146</b>	<b>1 116</b>	<b>802</b>			
<b>Total transformation sector</b>	<b>- 13 368</b>		<b>- 7 069</b>	<b>6 693</b>	<b>2 884</b>		<b>202</b>	<b>3 028</b>
Main activity producers	- 13 368			- 316				- 101
Autoproducers								
Gas processing								
Petroleum refineries			- 7 069	7 009	2 884		202	3 129
Coal transformation								
Other transformation								
Losses & own use								
Discrepancy	- 1 190			- 4				
<b>Total final consumption</b>	<b>11 507</b>			<b>17 796</b>	<b>6 308</b>		<b>251</b>	<b>33</b>
<b>Total final energy consumption</b>	<b>11 507</b>			<b>17 097</b>	<b>6 308</b>		<b>251</b>	<b>33</b>
Industry sector	9 223			7 020	1 022			19
Iron and steel	1 234			295				2
Chemical & petrochemical	1 509			223				2
Non-metallic minerals	4 349			928				3
Other industries	2 131			5 574	1 022			13
Transport sector				8 091	5 138		251	5
Domestic air transport				251			251	
Road				7 664	5 138			
Rail								
Inland waterways								
Other transport				176				5
Other sector	2 284			1 986	148			8
Residential	20			400				3
Commerce and public services	2 247			988				2
Agriculture	17			598	148			2
Non-specified others								444
Non-energy				699				



unit: ktoe

Fuel oil	LPG	Refinery gas	Other products	Gas	Hydro	Nuclear	Geo-thermal, solar, etc.	Others	Electricity	Heat	Total	Total renewables
				8 271	5 496		17	8 383			60 356	13 897
877	1 342		512						235		21 506	
- 200			- 23						- 64		-10 898	
	13										-1 183	
											- 66	
676	1 355		488	8 271	5 496		17	8 383	172		69 715	13 897
	335										- 28	
- 244	534		169	-7 587	-5 496		- 17	- 797	15 511		-15 097	-6 310
- 363				-7 587	-5 496		- 17	- 797	15 511		-14 994	-6 310
120	534		169								- 103	
									-1 740		-1 740	
89									- 172		- 83	
522	2 225		657	684				7 587	13 770		52 766	7 587
522	2 225			684				7 587	13 770		52 109	7 587
310	1 535			684				3 523	7 409		27 658	3 523
10	58								857		2 738	
3	18			684					628		2 505	
107	387							362	1 493		7 264	362
189	1 071							3 161	4 431		15 151	3 161
193	2										8 923	
											295	
	2										8 424	
193											204	
19	688							4 064	6 362		15 528	4 064
	453							4 064	4 720		9 258	4 064
18	230								1 330		5 429	
1	4								311		841	
			657								658	
				8 271	4 827		10	8 760			63 463	13 597
704	1 180		555						206		16 180	
- 126			- 25						- 70		-11 992	
- 3	83										-1 007	
											- 369	
574	1 263		530	8 271	4 827		10	8 760	136		66 274	13 597
	314										- 31	
- 78	489		169	-7 860	-4 827		- 10	- 29	13 951		-12 518	-4 865
- 215				-7 860	-4 827		- 10	- 29	13 951		-12 458	-4 865
136	489		169								- 60	
									-1 612		-1 612	
- 3									- 136		-1 330	
492	2 066		699	411				8 731	12 338		50 783	8 731
492	2 066			411				8 731	12 338		50 085	8 731
306	1 478			411				3 970	6 627		27 252	3 970
8	81								735		2 264	
2	23			411					721		2 864	
89	286							344	1 581		7 202	344
208	1 087							3 627	3 591		14 922	3 627
170	5										8 091	
											251	
	5										7 664	
170											176	
16	583							4 761	5 711		14 742	4 761
	397							4 470	4 332		9 223	4 471
15	182								1 178		4 414	
1	4							291	200		1 106	291
			699								699	

## Major energy indicators of Viet Nam

ktoe

	1990	2010	2011	2012	2013	2014	2015	2016
<b>Total</b>								
Primary energy supply	5 414	57 575	57 810	58 760	59 578	60 110	65 744	69 317
Indigenous production	5 811	65 039	67 412	68 460	67 488	63 789	62 932	59 947
Import	2 947	13 450	13 449	11 932	10 764	12 527	16 180	21 506
Export	-3 125	-21 315	-20 416	-19 990	-17 299	-14 804	-11 992	-10 898
Final energy consumption	2 442	45 604	47 861	48 600	49 597	46 446	48 660	51 427
Industry		17 833	19 001	19 626	20 739	23 469	27 028	28 121
Transport	1 413	10 071	10 817	10 702	10 527	10 013	8 091	8 923
Residential	480	15 470	15 531	15 815	15 707	9 929	8 003	7 795
Commerce & public services	334	1 650	1 888	1 839	2 021	2 121	4 414	5 429
Others	215	580	624	618	603	914	1 124	1 160
<b>Coal &amp; coal products</b>								
Primary energy supply	2 212	14 730	15 605	15 785	17 239	19 957	26 064	27 892
Indigenous production	2 597	24 646	26 102	23 734	22 985	22 998	23 231	21 575
Import		656	766	963	1 272	1 734	3 879	7 391
Export	-442	-11 104	-9 611	-8 521	-7 169	-4 069	-979	-696
Transformation sector	-888	-4 837	-5 510	-6 106	-6 680	-8 501	-13 368	-16 144
Power generation	-888	-4 837	-5 510	-6 106	-6 680	-8 501	-13 368	-16 144
Final energy consumption	304	9 894	10 095	9 678	10 559	11 456	11 507	11 748
Industry		8 306	8 560	8 299	8 953	9 933	9 223	8 908
Transport	14							
Residential	207	1 204	1 137	1 084	1 190	1 123	20	14
Commerce & public services	19	364	378	277	395	381	2 247	2 786
Others	64	20	20	18	21	20	17	40
<b>Crude oil &amp; NGL</b>								
Primary energy supply		7 232	6 683	6 824	7 578	8 525	8 215	8 251
Indigenous production	2 750	16 010	16 226	17 808	17 834	18 018	18 364	16 613
Import							40	51
Export	-2 664	-8 279	-8 536	-9 643	-8 709	-9 492	-9 679	-8 671
Transformation sector		-6 968	-6 415	-6 534	-7 260	-8 248	-7 069	-7 142
Petroleum refineries		-6 968	-6 415	-6 534	-7 260	-8 248	-7 069	-7 142
<b>Petroleum products</b>								
Primary energy supply	2 737	10 831	10 104	9 109	7 892	8 730	9 991	11 243
Import	2 947	12 312	12 257	10 738	9 178	10 593	12 055	13 828
Export	-19	-1 850	-2 175	-1 721	-1 306	-1 167	-1 265	-1 467
Transformation sector	-381	4 628	5 046	5 637	6 761	5 861	6 693	6 575
Power generation	-381	-1 161	-594	-127	-145	-175	-316	-464
Petroleum refineries		5 789	5 640	5 763	6 906	6 036	7 009	7 039
Final energy consumption	1 850	13 882	14 794	14 334	13 964	13 645	17 097	18 319
Industry		1 798	1 867	1 612	1 441	1 651	7 020	7 134
Transport	1 394	10 071	10 817	10 702	10 527	10 013	8 091	8 923
Residential	75	859	886	865	867	812	400	460
Commerce & public services	265	675	712	684	679	737	988	1 312
Others	116	479	511	471	449	432	598	490
<b>Gas</b>								
Primary energy supply	3	8 123	7 560	8 253	8 522	8 937	8 271	8 271
Indigenous production	3	8 123	7 560	8 253	8 522	8 937	8 271	8 271
Import								
Export								
Transformation sector	-3	-7 631	-6 711	-6 815	-7 062	-6 256	-7 860	-7 587
Power generation	-3	-7 631	-6 711	-6 815	-7 062	-6 256	-7 860	-7 587
Final energy consumption		492	849	1 438	1 460	2 413	411	684
Industry		492	849	1 438	1 460	2 413	411	684
Transport								
Residential								
Commerce & public services								
Others								
<b>Electricity</b>								
Power generation	746	8 162	8 924	10 112	10 950	12 317	13 951	15 511
Thermal	284	5 788	5 398	5 562	6 471	7 157	9 108	9 991
Hydro	462	2 369	3 519	4 540	4 468	5 146	4 827	5 496
Nuclear								
Others		4	6	10	11	14	16	23
Final energy consumption	288	7 461	8 140	9 064	9 988	11 045	12 338	13 770
Industry		3 919	4 307	4 757	5 295	5 950	6 627	7 409
Transport	5							
Residential	198	2 850	2 942	3 300	3 613	3 930	4 332	4 720
Commerce & public services	50	611	798	878	946	1 003	1 178	1 330
Others	35	81	93	128	134	163	200	311

## Major economic indicators of Viet Nam

	1990	2010	2011	2012	2013	2014	2015	2016
Population (Millions) *1	68.21	88.47	89.44	90.45	91.50	92.54	93.57	94.57
Gross Domestic Product *3								
Real Term, Billion USD (constant 2010)	29	116	123	130	137	145	155	164
GDP, Billion USD (PPP, constant 2011)	99	390	414	436	460	487	520	552
Nominal, Billion USD (Current)	6	116	136	156	171	186	193	205
GDP per Capita *3								
Real Term (constant 2010 USD)	432	1 310	1 377	1 433	1 494	1 565	1 651	1 735
GDP, PPP (constant 2011 USD)	1 453	4 408	4 633	4 821	5 024	5 265	5 555	5 838
Nominal (Current USD)	94	1 310	1 515	1 723	1 871	2 012	2 065	2 171
Nominal GDP & its Components (Billions of Current VND) *1								
Gross Domestic Product	41 955	2157 828	2779 880	3245 419	3584 262	3937 856	4192 862	4502 733
Household Final Consumption Expenditure	35 559	1436 289	1844 377	2093 261	2346 161	2591 337	2849 540	3086 298
General Government Final Consumption Expenditure	5 177	129 313	164 323	192 362	220 642	246 711	265 545	293 106
Gross Fixed Capital Formation	N.A.	704 401	745 494	785 337	847 475	938 452	1033 780	1066 160
Stock Change	N.A.	65 810	81 538	98 823	108 649	118 180	126 667	130 579
Exports of Goods and Services	15 120	1553 687	2206 971	2597 264	2997 380	3402 495	3764 320	4215 636
Imports of Goods and Services	18 996	1730 902	2321 858	2483 567	2920 030	3273 530	3731 151	4100 294
Real GDP & its Components (Billions of 2010 VND) *1								
Gross Domestic Product	548 308	2157 828	2292 483	2412 778	2543 596	2695 796	2875 856	3054 470
Household Final Consumption Expenditure	N.A.	1436 289	1495 133	1568 084	1649 311	1750 249	1913 547	2053 236
General Government Final Consumption Expenditure	N.A.	129 313	138 524	148 481	159 261	170 409	182 270	196 013
Gross Fixed Capital Formation	N.A.	704 401	649 365	661 526	696 578	761 052	832 235	914 777
Stock Change	N.A.	65 810	68 179	73 051	78 033	82 500	87 574	94 346
Exports of Goods and Services	73 737	1553 687	1721 244	1991 636	2337 663	2607 900	2937 635	3344 890
Imports of Goods and Services	91 438	1730 902	1801 807	1965 677	2306 613	2601 967	3073 334	3543 103
Sectional Shares of Real GDP (%) *1								
Agriculture, Fishery and Forest	34	18	18	18	17	17	16	15
Industry	25	32	33	33	33	33	34	35
Services, etc.	42	37	37	38	38	38	38	39
Industrial Production Index	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
External Trade (Billions of Current USD) *1								
Exports, f.o.b.	2.4	72.2	96.9	114.5	132.0	150.2	162.1	176.6
Imports, c.i.f.	2.8	84.8	106.7	113.8	132.0	147.8	165.6	174.8
Balance of Payments (Billions of Current USD) *1								
Trade Balance	N.A.	-5.1	-0.5	9.9	8.7	N.A.	N.A.	N.A.
Current Account	N.A.	-4.3	0.2	9.4	7.7	9.4	0.9	8.2
Overall Balance	N.A.	1.9	6.6	17.4	7.5	N.A.	N.A.	N.A.
Foreign Exchange Rate (VND/USD) *1	6 538	18 613	20 510	20 828	20 933	21 148	21 698	21 935
PPP conversion factor, GDP (VND/USD) *1	655	5 647	6 709	7 308	7 534	7 672	7 575	7 563
Price Indices								
GDP Deflator (2010=100) *3	7.7	100.0	121.3	134.5	140.9	146.1	145.8	147.4
Producer Price Index (2010=100)	N.A.	100.0	118.4	122.5	128.9	133.1	132.4	131.5
Consumer Price Index (2010=100)	N.A.	100.0	118.7	129.5	138.0	144.5	145.8	150.5
Growth Rate (%) *3								
Real GDP	5.1	6.4	6.2	5.2	5.4	6.0	6.7	6.2
Population	2.2	1.0	1.1	1.1	1.2	1.1	1.1	1.1
Price								
Producer Prices	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Consumer Prices	N.A.	8.9	18.7	9.1	6.6	4.7	0.9	3.2

Source \*1 : *World Development Indicators*, World Bank  
\*2 : *International Financial Statistics*, International Monetary Fund

\*3 : Calculated from \*1 and \*2 by ESTO

Note : N.A. means "not available"  
: VND means Dong, USD means United States Dollar  
: PPP means Purchasing Power Parity



**APEC Region**

## Primary energy supply table in 2016

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Primary energy</b>									
Indigenous production	390 493	17 588	475 713	12 537	2 291 753	66	438 688	31 853	51 279
Import	48 868	386	88 074	27 344	625 196	31 474	48 104	421 983	310 785
Export	-308 558	-13 663	-284 306	-1 202	-72 992	-471	-248 896	-19 593	-64 274
International marine bunkers	-636		-418	-130	-9 671	-9 104		-4 638	-10 557
International aviation bunkers	-4 094	-78	-636	-584	-8 614	-6 303		-6 564	-4 923
Stock change	3 679	77	1 670	-170	54 545	-1 262	-13 888	3 404	-49
Total	129 752	4 310	280 097	37 795	2 880 216	14 400	224 008	426 444	282 261
<b>Coal &amp; coal products</b>									
Indigenous production	292 031		30 025	1 014	1 708 384		268 244	788	768
Import	162		4 561	6 624	122 354	7 030	2 293	117 311	81 366
Export	-252 014		-18 089	-454	-11 893		-194 704	-635	
Stock change	3 575		460	-96	71 403	-334	-22 590	-413	-667
Total	43 754		16 957	7 088	1 890 248	6 695	53 243	117 050	81 467
<b>Crude oil, NGL &amp; petroleum products</b>									
Indigenous production	17 567	6 459	224 019	256	203 663		43 978	478	689
Import	43 580	386	64 761	17 063	435 903	20 414	45 752	206 825	189 811
Export	-13 450	-6 126	-189 893	-445	-56 467	-368	-22 960	-18 958	-64 274
International marine bunkers	-636		-418	-130	-9 671	-9 104		-4 638	-10 557
International aviation bunkers	-4 094	-78	-636	-584	-8 614	-6 303		-6 564	-4 923
Stock change	104	43	711	-45	-16 858	-927	8 702	2 649	-949
Total	43 071	685	98 544	16 115	547 956	3 712	75 472	179 793	109 797
<b>Gas</b>									
Indigenous production	72 514	11 129	146 033	1 013	123 461		63 372	3 747	138
Import	5 126		16 994	3 656	66 408	3 028		97 847	39 608
Export	-43 094	-7 538	-68 767	-303	-3 007		-30 878		
Stock change		34	499	-18				1 168	1 567
Total	34 546	3 625	94 759	4 348	186 862	3 028	32 494	102 762	41 313
<b>Nuclear power</b>									
Indigenous production			26 354		55 028			4 687	42 209
<b>Hydro power</b>									
Indigenous production	1 296		33 284	2 001	99 999		1 606	6 878	245
<b>Geothermal, solar, etc</b>									
Indigenous production	1 939	0.1	2 950	471	25 685	1	9 166	6 562	818

## Primary energy supply table in 2015

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Primary energy</b>									
Indigenous production	381 149	18 503	472 028	12 080	2 424 581	65	442 292	24 405	51 243
Import	48 326	335	87 027	25 067	543 408	31 135	49 347	433 072	299 794
Export	-297 895	-14 574	-275 558	-856	-58 268	-803	-266 802	-17 645	-62 776
International marine bunkers	-757		-216	-128	-9 227	-8 741		-4 230	-9 430
International aviation bunkers	-3 890	-77	-864	-567	-7 799	-6 181		-6 333	-4 407
Stock change	-1 799	-9	-1 628	-86	4 876	-1 416	-5 164	-2 126	-1 906
Total	125 134	4 177	280 789	35 510	2 897 571	14 059	219 673	427 143	272 518
<b>Coal &amp; coal products</b>									
Indigenous production	298 581		30 770	1 262	1 858 627		271 401	671	785
Import	167		5 294	5 676	100 492	7 044	1 769	117 965	81 128
Export	-254 000		-18 206	-367	-9 790		-215 120	-439	
Stock change	-1 827		210	-12	13 821	-350	-7 003	-959	-1 077
Total	42 921		18 068	6 559	1 963 150	6 694	51 047	117 238	80 836
<b>Crude oil, NGL &amp; petroleum products</b>									
Indigenous production	18 090	6 696	226 266	296	217 050		45 547	517	658
Import	43 022	335	63 448	16 258	388 100	20 122	47 577	214 521	179 712
Export	-14 605	-6 374	-184 645	-489	-43 986	-701	-21 361	-17 206	-62 776
International marine bunkers	-757		-216	-128	-9 227	-8 741		-4 230	-9 430
International aviation bunkers	-3 890	-77	-864	-567	-7 799	-6 181		-6 333	-4 407
Stock change	28	98	558	-76	-8 945	-1 066	1 839	-393	-1 079
Total	41 888	677	104 547	15 294	535 193	3 433	73 602	186 876	102 678
<b>Gas</b>									
Indigenous production	56 379	11 807	139 152	846	119 795		64 265	2 409	169
Import	5 137		16 551	3 133	54 283	2 953		100 585	38 944
Export	-29 290	-8 199	-66 007		-2 888		-30 076		
Stock change		-107	-2 396	2				-774	234
Total	32 226	3 501	87 300	3 981	171 190	2 953	34 189	102 220	39 347
<b>Nuclear power</b>									
Indigenous production			26 527		44 508			1 162	42 930
<b>Hydro power</b>									
Indigenous production	1 149		32 862	2 053	95 844		1 182	7 207	185
<b>Geothermal, solar, etc</b>									
Indigenous production	1 774	0.1	2 566	321	16 309	1	8 642	6 169	663

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

## Primary energy supply table in 2016 (Continued)

ktoe

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
92 137	180 464	16 410	8 282	23 072	30 163	1 373 678	668	10 876	80 775	1 915 689	59 947	7 502 130
49 670	84 703	8 460	2 335	10 964	32 171	23 540	179 479	119 149	75 239	595 869	21 506	2 805 298
- 59 730	- 75 252	- 2 625	- 7 521	- 10 499	- 5 526	- 647 978	- 98 316	- 17 531	- 11 002	- 330 823	- 10 898	- 2 291 658
- 297	- 896	- 301			- 50	- 10 743	- 46 826	- 1 296		- 16 768		- 112 332
- 2 413	- 3 715	- 866			- 1 296	- 4 882	- 7 815	- 2 747	- 4 510	- 24 622	- 1 183	- 85 845
1 077	- 146	- 107	82	380	- 113	- 1 257	163	594	- 1 692	27 284	- 55	74 217
80 444	185 158	20 971	3 178	23 916	55 349	732 358	27 353	109 045	138 810	2 166 629	69 317	7 891 811
1 521	6 960	1 631		175	5 917	209 159			4 300	348 463	21 575	2 900 955
17 160	5 637	230		507	10 572	14 002	427	36 805	13 720	5 207	7 391	453 358
- 15	- 1	- 859		- 115	- 3 607	- 109 034		- 1	- 26	- 36 206	- 696	- 628 350
244	- 213	151		297	205	- 838		392	- 4 591	24 108	- 378	70 715
18 910	12 383	1 153		863	13 086	113 289	427	37 197	13 403	341 572	27 892	2 796 678
35 704	124 685	1 834	1 178	5 553	702	550 364		8	20 066	560 147	16 613	1 813 963
26 213	43 320	8 230	2 335	10 111	21 454	1 915	170 271	64 574	46 918	511 919	13 879	1 945 633
- 28 833	- 75 060	- 1 766	- 1 647	- 5 200	- 1 919	- 362 271	- 98 316	- 17 530	- 10 830	- 238 168	- 10 138	- 1 224 618
- 297	- 896	- 301			- 50	- 10 743	- 46 826	- 1 296		- 16 768		- 112 332
- 2 413	- 3 715	- 866			- 1 296	- 4 882	- 7 815	- 2 747	- 4 510	- 24 622	- 1 183	- 85 845
867	- 149	- 237	82	83	- 344	- 1 122	126	143	2 803	- 5 218	323	- 9 212
31 239	88 185	6 894	1 948	10 547	18 548	173 261	17 440	43 151	54 448	787 290	19 493	2 327 589
52 446	30 433	4 230	6 656	12 648	3 270	538 402		263	28 437	627 317	8 271	1 733 780
6 295	35 554					7 342	8 712	17 770	12 832	69 549		390 721
- 30 739	- 22		- 5 873	- 5 181		- 175 120				- 52 677		- 423 199
	216	- 21				689	37	58	37	8 695		12 960
28 002	66 181	4 209	783	7 467	3 270	371 313	8 749	18 091	41 305	652 884	8 271	1 714 262
	2 753					51 579		8 169		218 848		409 627
1 722	2 640	2 212	86	2 079	698	15 874		564	314	23 187	5 496	200 181
27	4 325	5 032	361	145	9 699	165	12	324	346	35 619	17	103 664

## Primary energy supply table in 2015 (Continued)

ktoe

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
94 219	189 585	16 490	9 502	22 637	27 966	1 334 441	620	12 107	76 754	2 022 548	62 932	7 696 149
46 343	70 674	7 848	1 910	7 905	29 913	27 611	169 441	117 521	75 689	560 857	16 180	2 649 404
- 57 954	- 72 235	- 2 976	- 8 168	- 7 878	- 3 795	- 631 706	- 91 222	- 16 494	- 12 305	- 304 263	- 11 992	- 2 216 164
- 346	- 850	- 336			- 27	- 13 502	- 43 484	- 1 098		- 17 005		- 109 377
- 2 505	- 3 451	- 841			- 1 216	- 5 066	- 7 379	- 2 556	- 5 706	- 23 702	- 1 007	- 83 548
347	1 166	392	- 16	1 198	121	- 1 771	- 1 240	- 825	- 3 517	- 50 782	- 369	- 64 555
80 104	184 889	20 577	3 228	23 862	52 962	710 007	26 736	108 655	130 916	2 187 653	65 744	7 871 909
1 612	5 774	1 935		170	3 913	200 270			3 859	431 282	23 231	3 134 143
16 040	5 287	220		307	9 120	14 302	407	36 381	13 846	6 048	3 879	425 373
- 156	- 2	- 977		- 177	- 1 639	- 99 746			- 16	- 43 966	- 979	- 645 579
10	381	189		510	240	1 657		- 442	- 5 943	- 19 328	- 67	- 19 991
17 506	11 440	1 367		810	11 634	116 483	407	35 939	11 746	374 036	26 064	2 893 946
34 018	130 949	2 159	1 221	6 394	827	536 284		8	18 587	582 410	18 364	1 846 341
22 588	35 070	7 628	1 910	7 598	20 624	5 504	160 463	63 235	47 323	483 110	12 095	1 840 243
- 26 418	- 72 009	- 1 999	- 1 221	- 3 377	- 2 156	- 365 376	- 91 222	- 16 494	- 12 069	- 216 880	- 10 943	- 1 172 307
- 346	- 850	- 336			- 27	- 13 502	- 43 484	- 1 098		- 16 830		- 109 202
- 2 505	- 3 451	- 841			- 1 216	- 5 066	- 7 379	- 2 556	- 5 706	- 23 702	- 1 007	- 83 548
451	639	157	- 16	688	- 119	- 1 107	- 1 277	- 395	2 394	- 18 571	- 302	- 26 495
27 788	90 348	6 768	1 894	11 303	17 933	156 737	17 101	42 699	50 530	789 537	18 206	2 295 032
56 477	34 366	4 044	7 832	11 419	2 877	524 328		299	28 486	636 668	8 271	1 709 889
7 714	30 175					7 231	8 508	17 906	13 175	62 896		369 191
- 31 198	- 25		- 6 947	- 4 320		- 164 973				- 40 437		- 384 360
	146	46				- 2 332	37	9		- 12 358		- 17 494
32 993	64 662	4 090	884	7 100	2 877	364 254	8 545	18 213	41 661	646 769	8 271	1 677 226
	3 016					51 270		9 504		216 339		395 256
1 197	2 650	2 094	87	2 039	745	14 445		350	334	21 584	4 827	190 834
23	4 204	5 083	363	97	9 574	157	6	309	234	31 354	10	87 861

Final energy consumption table in 2016

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Total</b>	<b>76 687</b>	<b>854</b>	<b>167 624</b>	<b>25 925</b>	<b>1 736 459</b>	<b>6 787</b>	<b>153 361</b>	<b>259 492</b>	<b>128 752</b>
Coal & coal products	2 468		2 426	218	648 596		8 905	32 053	8 857
Crude oil, NGL & petroleum products	39 005	556	71 561	14 490	413 695	2 343	60 437	112 404	44 698
Gas	12 399	17	42 567	1 436	117 849	610	13 747	28 702	21 532
Electricity	18 214	280	40 814	6 033	438 743	3 790	18 576	83 107	44 478
Others	4 601		10 256	3 748	117 576	44	51 697	3 226	9 187
<b>Industry</b>	<b>22 822</b>	<b>116</b>	<b>41 938</b>	<b>10 612</b>	<b>1 034 764</b>	<b>331</b>	<b>39 481</b>	<b>98 360</b>	<b>47 819</b>
Coal & coal products	2 461		2 420	217	542 115		8 891	31 462	8 299
Crude oil, NGL & petroleum products	3 626	102	5 715	3 884	84 959	98	4 527	17 144	3 578
Gas	7 240		13 875	819	52 778	25	13 367	14 622	7 509
Electricity	6 645	14	14 510	3 750	288 393	208	5 860	33 030	22 819
Others	2 850		5 418	1 942	66 519		6 836	2 101	5 614
<b>Transport</b>	<b>32 921</b>	<b>434</b>	<b>61 111</b>	<b>8 835</b>	<b>271 831</b>	<b>2 112</b>	<b>47 010</b>	<b>72 423</b>	<b>34 912</b>
Coal & coal products					2 021				
Crude oil, NGL & petroleum products	31 935	434	55 178	8 726	237 584	2 038	44 751	70 352	32 985
Gas	285		3 627	24	21 463			72	1 201
Electricity	540		594	85	10 763	71	19	2 000	231
Others	161		1 712			4	2 240		495
<b>Agriculture</b>	<b>2 507</b>		<b>6 822</b>		<b>45 395</b>			<b>2 698</b>	<b>1 621</b>
Coal & coal products					14 537				
Crude oil, NGL & petroleum products	2 302		5 139		17 684			2 282	341
Gas	54		821		97				3
Electricity	151		862		9 390			279	1 190
Others					3 687			137	87
<b>Residential &amp; commercial</b>	<b>18 437</b>	<b>303</b>	<b>56 906</b>	<b>6 177</b>	<b>279 330</b>	<b>4 344</b>	<b>64 450</b>	<b>84 646</b>	<b>42 315</b>
Coal & coal products	7		6		68 964		14	591	558
Crude oil, NGL & petroleum products	1 142	20	5 529	1 620	37 028	207	8 738	21 261	5 895
Gas	4 820	17	24 244	593	39 224	585	380	14 009	12 819
Electricity	10 878	266	24 063	2 191	92 402	3 511	12 697	47 798	20 052
Others	1 590		3 064	1 773	41 711	40	42 621	988	2 991

Final energy consumption table in 2015

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Total</b>	<b>76 707</b>	<b>909</b>	<b>169 912</b>	<b>24 795</b>	<b>1 691 989</b>	<b>6 760</b>	<b>156 481</b>	<b>261 332</b>	<b>125 884</b>
Coal & coal products	2 343		2 526	226	652 230		9 838	32 557	10 253
Crude oil, NGL & petroleum products	38 768	598	71 155	13 729	403 682	2 334	61 897	113 969	43 523
Gas	12 710	20	44 301	1 384	109 575	601	16 766	29 908	20 503
Electricity	18 185	292	40 567	5 760	415 501	3 781	17 445	82 053	42 590
Others	4 701		11 363	3 696	111 002	44	50 535	2 845	9 015
<b>Industry</b>	<b>23 445</b>	<b>140</b>	<b>42 812</b>	<b>10 503</b>	<b>1 018 791</b>	<b>351</b>	<b>46 585</b>	<b>99 041</b>	<b>48 078</b>
Coal & coal products	2 336		2 520	223	543 887		9 832	31 952	9 598
Crude oil, NGL & petroleum products	3 948	124	5 132	3 933	82 661	104	7 660	17 396	3 420
Gas	7 711		14 061	771	47 953	27	16 361	15 048	7 413
Electricity	6 588	17	14 645	3 633	279 867	221	5 511	32 952	22 560
Others	2 862		6 454	1 943	64 422		7 222	1 694	5 087
<b>Transport</b>	<b>32 554</b>	<b>456</b>	<b>61 120</b>	<b>8 460</b>	<b>252 625</b>	<b>2 100</b>	<b>41 928</b>	<b>73 954</b>	<b>33 858</b>
Coal & coal products	1				2 416				
Crude oil, NGL & petroleum products	31 531	456	55 270	8 340	220 410	2 024	41 229	72 010	32 085
Gas	268		3 547	27	20 120			77	1 164
Electricity	508		527	93	9 680	71	18	1 867	191
Others	246		1 776			5	681		418
<b>Agriculture</b>	<b>2 379</b>		<b>6 792</b>		<b>44 027</b>			<b>2 714</b>	<b>1 556</b>
Coal & coal products					13 809				
Crude oil, NGL & petroleum products	2 130		5 116		17 717			2 279	464
Gas	29		841		84				3
Electricity	220		837		8 943			289	1 002
Others			- 2		3 475			146	87
<b>Residential &amp; commercial</b>	<b>18 329</b>	<b>313</b>	<b>59 126</b>	<b>5 578</b>	<b>274 184</b>	<b>4 309</b>	<b>63 919</b>	<b>84 254</b>	<b>39 969</b>
Coal & coal products	6		6	3	70 337		6	605	655
Crude oil, NGL & petroleum products	1 159	18	5 637	1 246	44 944	207	8 960	20 916	5 389
Gas	4 702	20	25 852	582	37 374	574	405	14 783	11 923
Electricity	10 869	275	24 560	2 025	83 310	3 489	11 916	46 945	18 580
Others	1 593		3 071	1 722	38 219	39	42 631	1 005	3 422

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



Final energy consumption table in 2016 (Continued)

ktoe

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
45 305	116 374	12 993	1 616	19 429	32 261	387 704	11 156	47 879	75 937	1 378 583	51 427	4 736 607
1 783	1 767	550		615	2 677	11 432	168	7 615	5 262	17 502	11 748	764 643
25 270	70 436	5 994	1 273	10 663	15 463	86 810	5 632	16 582	35 574	626 621	18 319	1 677 826
5 488	13 760	1 662		1 712	65	116 629	1 175	3 145	6 091	317 407	684	706 677
12 386	23 246	3 305	343	3 902	6 377	64 030	4 181	20 335	16 264	327 404	13 770	1 149 579
377	7 165	1 482		2 538	7 679	108 803		203	12 745	89 649	6 905	437 882
15 309	35 059	4 651	733	5 141	7 450	132 833	6 208	22 920	29 504	263 953	28 121	1 848 124
1 783	1 767	490		615	2 677	8 260	168	7 615	5 262	16 964	8 908	650 375
2 423	7 065	452	481	982	1 458	16 027	3 398	1 824	6 601	20 206	7 134	191 685
5 283	12 753	1 316		1 040	65	36 418	1 012	1 710	3 624	123 292	684	297 432
5 819	12 548	1 197	252	2 347	2 074	28 060	1 630	11 669	6 779	68 521	7 409	523 535
	926	1 196		157	1 176	44 068		102	7 237	34 970	3 985	185 098
21 540	52 943	4 891	643	9 456	11 460	94 293	2 366	12 515	25 960	621 787	8 923	1 398 366
												2 021
20 949	52 822	4 883	643	8 517	11 021	57 625	2 129	12 398	23 485	564 833	8 923	1 252 211
184	23			584		29 569	10		2 466	17 389		76 895
29	98	5		4	9	7 099	227	117	10	911		22 811
377		3		351	430					38 654		44 428
144	4 145	658		60	234	8 212		172	3 015	20 332	1 160	97 176
		29				63					40	14 669
97	3 170	362		57	42	2 815		4	2 992	14 144	490	51 921
		35				1 299				1 492		3 801
47	975	218			192	1 476		168	23	3 534	311	18 817
		14		3	1	2 559				1 162	319	7 968
8 042	21 735	2 716		4 692	12 900	151 775	2 556	11 851	17 448	456 250	13 224	1 260 097
		31				3 108				538	2 800	76 618
1 530	7 379	232		1 027	2 755	9 788	105	2 018	2 485	27 438	1 772	137 970
21	984	311		88		49 342	151	1 435	1	175 234		324 259
6 491	7 133	1 873		1 551	4 077	27 378	2 300	8 297	9 453	238 177	6 050	526 637
	6 239	269		2 026	6 069	62 159		101	5 508	14 863	2 601	194 614

Final energy consumption table in 2015 (Continued)

ktoe

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
43 076	114 487	12 636	1 587	18 390	29 655	377 387	10 901	46 568	75 399	1 373 321	48 660	4 666 834
1 777	3 769	607		726	2 218	11 796	164	6 869	4 403	19 514	11 507	773 322
25 106	67 985	5 876	1 253	10 112	14 025	88 481	5 446	16 406	35 225	622 901	17 097	1 659 569
4 823	13 451	1 614		1 730	50	108 323	1 206	3 142	6 070	317 878	411	694 467
11 369	22 138	3 334	334	3 639	5 831	62 452	4 085	19 954	15 598	325 094	12 338	1 112 340
	7 144	1 205		2 183	7 530	106 335		197	14 103	87 934	7 306	427 137
13 728	35 356	4 329	711	5 215	6 718	123 936	5 991	22 156	28 125	259 547	27 028	1 822 586
1 777	3 769	528		724	2 218	8 235	164	6 869	4 403	18 842	9 223	657 100
2 185	6 254	419	467	1 243	1 382	14 474	3 150	1 919	5 938	19 373	7 020	188 201
4 551	12 397	1 242		1 003	50	35 500	1 056	1 771	3 358	117 908	411	288 591
5 215	12 037	1 183	244	2 121	1 936	28 289	1 621	11 503	6 615	69 326	6 627	512 711
	899	957		124	1 132	37 438		95	7 811	34 098	3 746	175 983
20 900	51 096	4 815	637	8 277	10 194	93 870	2 410	12 161	25 595	614 722	8 091	1 359 823
												2 417
20 628	50 981	4 806	637	7 698	10 185	59 591	2 187	12 045	22 876	561 406	8 091	1 224 484
249	17	1		575		27 218	13		2 710	16 595		72 582
23	98	5		4	8	7 061	210	116	9	763		21 252
		3								35 958		39 088
230	3 995	703		52	213	8 382		167	3 979	20 738	1 124	97 052
		47				92					17	13 965
190	3 130	369		49	34	3 302		4	3 946	14 821	598	54 148
		35				1 107				1 449		3 548
40	865	239			179	1 398		164	33	3 276	200	17 684
		13		3		2 483				1 192	309	7 706
7 554	21 761	2 707		4 722	12 346	150 596	2 474	11 654	17 700	463 995	12 417	1 257 908
		32		1		3 468				672	2 267	78 058
1 440	7 620	212		998	2 265	10 540	109	2 089	2 466	27 301	1 388	144 903
23	1 037	336		153		44 498	135	1 372	1	181 926		325 696
6 091	6 859	1 899		1 514	3 684	25 684	2 230	8 092	8 942	237 411	5 511	509 886
	6 245	228		2 056	6 397	66 406		102	6 292	16 685	3 251	199 365

**Demand & supply table of coal in 2016**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Indigenous production	292 031		30 025	1 014	1 708 384		268 244	788	768
Import	19		3 919	6 624	122 330	7 030	2 293	115 820	81 131
Export	- 251 555		- 18 060	- 349	- 4 953		- 194 704		
Stock change	3 584		573	- 148	61 021	- 334	- 22 590	- 413	- 667
<b>Primary energy supply</b>	<b>44 079</b>		<b>16 457</b>	<b>7 141</b>	<b>1 886 782</b>	<b>6 695</b>	<b>53 243</b>	<b>116 195</b>	<b>81 232</b>
Main activity producers	- 39 849		- 14 472	- 6 955	- 795 013	- 6 695	- 44 335	- 62 761	- 46 546
Autoproducers					- 178 189			- 4 633	- 5 473
Coal transformation	- 2 465		- 1 920	- 366	- 386 386		- 18	- 33 900	- 24 081
Refining									
Gas processing					- 5 878				
Other transformation									
<b>Final energy consumption</b>	<b>2 028</b>		<b>920</b>	<b>136</b>	<b>515 654</b>		<b>8 891</b>	<b>14 469</b>	<b>5 032</b>

**Demand & supply table of crude oil & NGL in 2016**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Indigenous production	17 567	6 459	224 019	256	203 663		43 978	478	689
Import	16 193	5	52 041	8 607	381 007		21 979	166 809	149 275
Export	- 11 664	- 6 126	- 168 564		- 2 941		- 18 595		- 522
Stock change	165	29	- 125	46	- 17 428		5 728	1 428	- 927
<b>Primary energy supply</b>	<b>22 261</b>	<b>368</b>	<b>107 371</b>	<b>8 909</b>	<b>564 301</b>		<b>53 091</b>	<b>168 715</b>	<b>148 515</b>
Main activity producers					- 131			- 3 151	
Autoproducers									
Coal transformation									
Refining	- 22 352	- 266	- 94 385	- 10 124	- 617 001		- 55 664	- 165 424	- 155 876
Gas processing									
Other transformation	132		2 361						10 598
<b>Final energy consumption</b>	<b>15</b>				<b>3 097</b>				

**Demand & supply table of gas in 2016**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Indigenous production	72 514	11 129	146 033	1 013	123 461		63 372	3 747	138
Import	5 126		16 994	3 656	66 408	3 028		97 847	39 608
Export	- 43 094	- 7 538	- 68 767	- 303	- 3 007		- 30 878		
Stock change		34	499	- 18				1 168	1 567
<b>Primary energy supply</b>	<b>34 546</b>	<b>3 625</b>	<b>94 759</b>	<b>4 348</b>	<b>186 862</b>	<b>3 028</b>	<b>32 494</b>	<b>102 762</b>	<b>41 313</b>
Main activity producers	- 9 247	- 1 170	- 8 368	- 2 071	- 30 802	- 2 419	- 10 937	- 70 418	- 19 312
Autoproducers	- 2 772	- 161	- 6 458	- 64	- 8 551			- 3 067	- 1 236
Coal transformation									
Refining									
Gas processing		- 374		4	614		2 090	3 152	
Other transformation	- 119		- 2 993						
<b>Final energy consumption</b>	<b>13 150</b>	<b>556</b>	<b>45 693</b>	<b>1 695</b>	<b>122 579</b>	<b>610</b>	<b>13 747</b>	<b>28 893</b>	<b>21 532</b>

Note: Gas = Natural gas/ LNG

**Demand & supply table of coal in 2016 (continued)**

ktoe

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
1 521	6 960	1 631		175	5 917	209 159			4 300	348 463	21 575	2 900 955
17 160	4 884	230		427	10 572	13 951	420	36 672	6 579	5 064	7 391	442 514
- 15	- 1	- 859		- 115	- 3 607	- 107 467		- 1	- 23	- 35 581	- 696	- 617 987
244	- 213	151		318	205	- 798		392	- 1 505	23 587	- 378	63 030
18 910	11 630	1 153		804	13 086	114 845	420	37 063	9 351	341 533	27 892	2 788 512
- 17 090	- 8 890	- 108		- 215	- 10 232	- 45 314	- 259	- 19 131	- 7 579	- 313 826	- 16 144	- 1 455 413
		- 7		- 84		- 12 436		- 4 684		- 1 545		- 207 050
	- 1 265	- 432				- 46 244		- 6 857		- 12 300		- 516 234
										- 1 935		- 7 813
1 783	1 044	513		556	2 677	4 316	161	6 266	1 771	13 429	11 748	591 395

**Demand & supply table of crude oil & NGL in 2016 (continued)**

ktoe

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
35 704	124 685	1 834	1 178	5 553	702	550 364		8	20 066	560 147	16 613	1 813 963
10 881	511	5 574	1 382	5 323	10 569	753	48 886	44 845	44 249	437 181	51	1 406 123
- 16 627	- 65 726	- 1 574	- 1 178	- 117	- 674	- 256 134	- 751		- 1 638	- 50 837	- 8 671	- 612 338
70	- 133	- 60	32	14	- 217	- 414	- 20	141	6 321	- 4 326	258	- 9 417
30 028	59 337	5 774	1 415	10 774	10 380	294 569	48 115	44 994	68 999	942 165	8 251	2 598 330
						- 842						- 3 282
												- 842
- 29 998	- 53 412	- 5 684	- 1 422	- 7 965	- 10 498	- 286 585	- 55 288	- 45 068	- 57 190	- 865 569	- 7 142	- 2 546 914
	100									4 951		18 142
						40						3 152

**Demand & supply table of gas in 2016 (continued)**

ktoe

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
52 446	30 433	4 230	6 656	12 648	3 270	538 402		263	28 437	627 317	8 271	1 733 780
6 295	35 554					7 342	8 712	17 770	12 832	69 549		390 721
- 30 739	- 22		- 5 873	- 5 181		- 175 120				- 52 677		- 423 199
	216	- 21				689	37	58	37	8 695		12 960
28 002	66 181	4 209	783	7 467	3 270	371 313	8 749	18 091	41 305	652 884	8 271	1 714 262
- 11 698	- 26 805	- 1 058		- 4 064	- 3 082	- 132 561	- 6 641	- 13 202	- 27 068	- 234 168	- 7 587	- 622 678
- 965	- 9 407	- 37	- 130	- 227		- 66 830	- 887	- 59		- 13 558		- 114 408
1 019	234				- 123			- 741		1 130		7 004
- 985						- 2 214				- 4 388		- 10 699
10 855	14 259	2 912		1 712	65	150 787	1 175	3 145	7 912	336 089	684	778 049

**Demand & supply table of coal in 2015**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Indigenous production	298 581		30 770	1 262	1 858 627		271 401	671	785
Import	83		4 688	5 674	100 467	7 044	1 769	116 057	80 860
Export	- 253 391		- 18 156	- 339	- 3 170		- 215 120		
Stock change	- 1 827		369		12 740	- 350	- 7 003	- 959	- 1 077
Primary energy supply	43 446		17 671	6 597	1 968 665	6 694	51 047	115 769	80 568
Main activity producers	- 38 742		- 15 124	- 6 556	- 778 958	- 6 694	- 41 207	- 54 723	- 47 280
Autoproducers					- 165 031			- 12 276	- 4 811
Coal transformation	- 2 741		- 1 994	- 365	- 390 971		- 8	- 33 205	- 24 319
Refining									
Gas processing					- 6 480				
Other transformation									
Final energy consumption	1 910		1 140	161	536 287		9 832	14 742	4 801

**Demand & supply table of crude oil & NGL in 2015**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Indigenous production	18 090	6 696	226 266	296	217 050		45 547	517	658
Import	19 845	9	51 490	8 699	335 483		20 247	169 499	142 110
Export	- 12 725	- 6 366	- 161 959		- 2 866		- 17 039		- 346
Stock change	263	95	- 252	- 37	- 6 238		- 434	- 785	- 1 426
Primary energy supply	25 473	434	115 545	8 958	543 429		48 320	169 231	140 996
Main activity producers					- 125			- 5 223	
Autoproducers					- 67				
Coal transformation									
Refining	- 25 511	- 434	- 93 410	- 10 322	- 545 202		- 52 415	- 163 840	- 147 910
Gas processing									
Other transformation	81		2 432		10 715				9 755
Final energy consumption	15				3 421				

**Demand & supply table of gas in 2015**

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
Indigenous production	56 379	11 807	139 152	846	119 795		64 265	2 409	169
Import	5 137		16 551	3 133	54 283	2 953		100 585	38 944
Export	- 29 290	- 8 199	- 66 007		- 2 888		- 30 076		
Stock change		- 107	- 2 396	2				- 774	234
Primary energy supply	32 226	3 501	87 300	3 981	171 190	2 953	34 189	102 220	39 347
Main activity producers	- 9 146	- 1 220	- 8 798	- 1 901	- 26 564	- 2 352	- 10 096	- 69 322	- 18 297
Autoproducers	- 2 742	- 171	- 6 404	- 39	- 7 040			- 3 928	- 875
Coal transformation									
Refining									
Gas processing				2	1 298		558	4 274	
Other transformation	- 73		- 3 181						
Final energy consumption	13 519	464	47 543	1 514	114 126	601	16 766	30 089	20 503

Note: Gas = Natural gas/ LNG

**Demand & supply table of coal in 2015 (Continued)**

ktoe

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
1 612	5 774	1 935		170	3 913	200 270			3 859	431 282	23 231	3 134 143
16 040	4 821	220		283	9 120	14 239	400	36 257	6 876	5 960	3 879	414 737
- 156	- 2	- 977		- 177	- 1 639	- 98 044			- 16	- 43 430	- 979	- 635 594
10	381	189		508	240	1 572		- 466	- 3 864	- 18 947	- 67	- 18 550
17 506	10 974	1 367		784	11 634	118 037	400	35 791	6 856	374 865	26 064	2 894 735
- 15 616	- 8 728	- 266		- 63	- 9 265	- 47 929	- 243	- 18 231	- 6 260	- 337 881	- 13 368	- 1 447 134
	- 13	- 6		- 102		- 13 578		- 4 846		- 2 061		- 202 724
	- 1 747	- 445				- 47 271		- 5 973		- 14 290		- 523 330
										- 1 993		- 8 473
1 777	3 000	567		699	2 218	4 787	157	5 469	659	16 022	11 507	615 734

**Demand & supply table of crude oil & NGL in 2015 (Continued)**

ktoe

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
34 018	130 949	2 159	1 221	6 394	827	536 284		8	18 587	582 410	18 364	1 846 341
8 387	401	5 446	625	4 333	10 471	3 543	45 575	44 172	44 903	408 366	40	1 323 644
- 16 103	- 62 281	- 1 804	- 1 221	- 402	- 832	- 247 532	- 754		- 136	- 45 282	- 9 679	- 587 325
57	368	149	- 11	309	- 36	- 2 280	- 20	- 224	4 880	- 11 963	- 510	- 18 095
26 360	69 437	5 950	614	10 633	10 431	290 015	44 801	43 956	68 235	933 531	8 215	2 564 566
						- 594						- 5 348
												- 661
- 24 948	- 65 964	- 5 809	- 614	- 9 013	- 10 420	- 283 459	- 51 479	- 43 994	- 58 817	- 855 401	- 7 069	- 2 456 032
389	210				239				1 960	4 811		30 592
						91			6 236	4 302		14 065

**Demand & supply table of gas in 2015 (Continued)**

ktoe

Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
56 477	34 366	4 044	7 832	11 419	2 877	524 328		299	28 486	636 668	8 271	1 709 889
7 714	30 175					7 231	8 508	17 906	13 175	62 896		369 191
- 31 198	- 25		- 6 947	- 4 320		- 164 973				- 40 437		- 384 360
	146	46				- 2 332	37	9		- 12 358		- 17 494
32 993	64 662	4 090	884	7 100	2 877	364 254	8 545	18 213	41 661	646 769	8 271	1 677 226
- 12 662	- 26 533	- 1 174		- 3 700	- 2 719	- 139 641	- 6 542	- 13 756	- 25 547	- 225 556	- 7 860	- 613 386
- 1 646	- 8 063	- 39	- 128	- 221		- 65 804	- 801	- 62		- 16 251		- 114 214
- 5 480	489							7		1 076		2 224
						- 1 994				- 4 256		- 9 504
9 054	13 937	2 692		1 730	50	141 210	1 206	3 142	7 908	333 255	411	759 721

## Power generation table in 2016

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea	Malaysia
<b>Total</b>	256 319	4 745	667 191	79 308	6 142 486	38 199	247 919	1 063 257	557 672	156 665
Thermal	219 115	4 744	132 358	44 989	4 437 068	38 153	217 970	866 760	379 015	135 571
Coal	163 130		62 132	30 231	4 249 778	38 153	135 381	352 954	234 699	69 153
Oil	5 575	50	8 242	2 913	23 839		20 800	116 547	17 757	1 184
Gas	50 410	4 694	61 984	11 845	163 450		61 789	397 259	126 559	65 234
Hydro	15 074		387 097	23 274	1 193 374	2	18 677	86 542	2 847	20 024
Nuclear			101 143		213 287			18 167	161 995	
Geothermal							10 656	2 512		
Others	22 130	1.1	46 593	11 045	298 757	45	617	89 276	13 815	1 070
<b>Main activity producers</b>	232 235	4 271	600 476	72 332	5 420 768	38 154	247 919	892 109	522 801	150 442
Thermal	203 220	4 270	109 303	43 928	3 715 350	38 153	217 970	769 141	346 292	129 853
Coal	163 130		62 098	30 231	3 547 928	38 153	135 381	327 732	213 076	69 153
Oil	1 307	50	6 386	2 358	21 654		20 800	62 395	13 037	1 028
Gas	38 783	4 219	40 819	11 339	145 769		61 789	379 014	120 179	59 672
Hydro	15 074		356 171	23 113	1 193 374		18 677	82 662	2 847	20 019
Nuclear			101 143		213 287			18 167	161 995	
Geothermal							10 656	2 416		
Others	13 941	1.1	33 859	5 291	298 757	2	617	19 724	11 667	570
<b>Autoproducers</b>	24 084	475	66 715	6 976	721 718	45		171 148	34 871	6 223
Thermal	15 895	475	23 055	1 061	721 718			97 619	32 723	5 718
Coal			34		701 851			25 223	21 623	
Oil	4 268		1 856	555	2 186			54 152	4 720	156
Gas	11 627	475	21 165	506	17 681			18 245	6 380	5 562
Hydro			30 926	161		2		3 880		5
Nuclear										
Geothermal								96		
Others	8 189		12 734	5 754		43		69 552	2 148	500

## Power generation table in 2015

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea	Malaysia
<b>Total</b>	251 331	4 666	668 035	75 387	5 814 573	37 971	233 684	1 055 517	548 922	150 123
Thermal	217 871	4 665	141 773	42 515	4 284 188	37 921	209 405	910 996	371 960	135 175
Coal	158 610		65 176	28 002	4 122 709	25 815	124 657	334 757	236 586	63 474
Oil	6 799	47	8 087	3 156	21 975	206	30 611	84 041	12 518	1 739
Gas	52 462	4 618	68 510	11 357	139 504	11 900	54 137	492 198	122 856	69 962
Hydro	13 361		382 182	23 881	1 130 270	2	13 741	89 012	2 146	13 924
Nuclear			101 809		170 789			4 459	164 762	
Geothermal	1						10 048	2 582		
Others	20 098	1.1	42 271	8 991	229 326	48	489	48 468	10 054	1 024
<b>Main activity producers</b>	226 812	4 196	595 426	69 166	5 143 483	37 924	233 684	883 336	519 185	145 137
Thermal	200 504	4 195	114 961	41 778	3 613 098	37 921	209 405	792 362	344 145	130 610
Coal	158 610		65 142	28 002	3 468 786	25 815	124 657	266 657	215 225	63 474
Oil	1 532	47	6 202	2 729	20 031	206	30 611	73 907	9 131	1 556
Gas	40 362	4 148	43 617	11 047	124 281	11 900	54 137	451 798	119 789	65 580
Hydro	13 361		348 511	23 837	1 130 270		13 741	81 057	2 146	13 924
Nuclear			101 809		170 789			4 459	164 762	
Geothermal	1						10 048	2 384		
Others	12 946	1.1	30 145	3 551	229 326	2	489	3 074	8 132	603
<b>Autoproducers</b>	24 519	470	72 609	6 221	671 090	48		172 181	29 737	4 986
Thermal	17 367	470	26 812	737	671 090			118 634	27 815	4 565
Coal			34		653 922			68 100	21 361	
Oil	5 267		1 885	427	1 944			10 133	3 387	183
Gas	12 100	470	24 893	310	15 223			40 401	3 067	4 382
Hydro			33 671	44		2		7 955		
Nuclear										
Geothermal								198		
Others	7 152		12 126	5 440		46		45 394	1 922	421

Power generation table in 2016 (Continued)

GWh

Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
320 353	42 974	4 445	51 970	90 798	1 088 945	51 667	264 108	187 640	4 294 017	180 356	15 791 036
260 776	6 856	3 020	25 973	68 818	704 199	50 089	212 255	162 231	2 806 893	116 176	10 893 029
34 591	1 056		620	43 303	171 443	619	116 975	37 139	1 354 034	68 211	7 163 603
33 926	2	2 540	2 004	5 661	10 968	361	11 650	495	34 759	1 910	301 184
192 259	5 798	480	23 349	19 854	521 788	49 109	83 629	124 597	1 418 100	46 055	3 428 242
30 698	25 730	1 005	24 172	8 111	184 612		9 855	3 653	269 670	63 911	2 368 328
10 567					196 614		31 661		839 918		1 573 352
6 148	7 425	420		11 070	446			1	18 584		57 263
12 164	2 963		1 825	2 798	3 074	1 578	10 337	21 754	358 952	269	899 064
266 110	41 564	925	49 804	90 798	1 014 163	45 658	227 231	187 640	4 118 874	180 356	14 404 631
217 231	6 088	275	24 643	68 818	633 211	44 080	184 242	162 231	2 682 562	116 176	9 717 036
34 208	432		620	43 303	155 004	619	90 878	37 139	1 340 252	68 211	6 357 547
28 148	2	275	1 256	5 661	5 144	139	10 448	495	26 569	1 910	209 062
154 875	5 654		22 767	19 854	473 063	43 322	82 916	124 597	1 315 741	46 055	3 150 427
29 805	25 721	650	23 653	8 111	183 282		9 855	3 653	268 153	63 911	2 328 731
10 567					196 614		31 661		839 918		1 573 352
6 033	7 358			11 070	446			1	18 584		56 565
2 474	2 397		1 508	2 798	610	1 578	1 472	21 754	309 657	269	728 947
54 243	1 410	3 520	2 166		74 782	6 009	36 877		175 143		1 386 405
43 545	768	2 745	1 330		70 988	6 009	28 013		124 331		1 175 993
383	624				16 439		26 098		13 782		806 056
5 778		2 265	748		5 824	222	1 202		8 190		92 122
37 384	144	480	582		48 725	5 787	713		102 359		277 815
893	9	355	519		1 330				1 517		39 597
115	67	420									698
9 690	566		317		2 464		8 864		49 295		170 117

Power generation table in 2015 (Continued)

GWh

Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
310 719	44 040	4 324	48 472	82 413	1 065 623	50 415	258 020	184 350	4 297 048	162 218	15 343 981
251 636	8 748	2 890	23 524	61 450	698 401	48 864	207 861	170 073	2 882 404	105 909	10 818 298
33 808	1 880		302	36 686	158 550	603	119 064	28 993	1 470 997	56 469	7 073 790
31 577	1	2 401	1 565	5 886	10 102	352	12 689	1 014	38 837	1 293	283 577
186 251	6 867	489	21 657	18 878	529 749	47 909	76 108	140 066	1 372 570	48 147	3 460 931
30 815	24 355	1 012	23 707	8 665	167 993		7 505	3 838	251 018	56 118	2 245 592
11 577					195 470		36 471		830 288		1 515 239
6 331	7 855	422		11 044	457			1	18 727		57 467
10 360	3 082		1 242	1 254	3 302	1 551	6 183	10 438	314 611	191	707 385
262 704	42 506	917	45 947	82 413	993 627	44 866	218 698	148 298	4 119 184	162 218	13 981 102
212 385	7 930	257	21 730	61 450	630 719	43 315	172 326	143 815	2 758 087	105 909	9 645 863
33 461	1 213		220	36 686	146 101	603	84 961	25 000	1 454 960	56 469	6 262 693
25 540	1	257	470	5 886	5 090	26	11 575	989	29 999	1 293	235 982
153 384	6 716		21 040	18 878	479 528	42 686	75 790	117 826	1 273 128	48 147	3 147 188
30 051	24 346	661	23 112	8 665	166 498		7 505	3 838	249 564	56 118	2 201 876
11 577					195 470		36 471		830 288		1 515 239
6 291	7 784			11 044	457			1	18 727		56 736
2 400	2 446		1 106	1 254	483	1 551	2 395	644	262 518	191	561 389
48 015	1 534	3 407	2 525		71 996	5 549	39 322	36 052	177 864		1 362 879
39 251	818	2 634	1 794		67 682	5 549	35 535	26 258	124 317		1 172 435
347	667		82		12 449		34 104	3 993	16 037		811 096
6 037		2 145	1 095		5 012	326	1 113	25	8 838		47 596
32 867	151	489	617		50 221	5 223	318	22 240	99 442		313 743
764	9	351	595		1 495				1 454		43 716
40	71	422									731
7 960	636		136		2 819		3 787	9 794	52 093		145 997

## Fuel consumption table for power generation in 2016

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea	Malaysia
<b>Main activity producers</b>	- 49 709	- 1 183	- 24 904	- 10 727	- 866 507	- 9 205	- 60 511	- 152 706	- 72 179	- 29 184
Coal	- 39 849		- 14 472	- 6 955	- 795 013	- 6 695	- 44 335	- 62 761	- 46 546	- 17 090
Coke										
Coke oven gas					- 1 358			- 1 135	- 433	
Blast furnace gas								- 4 051	- 1 364	
Crude oil & NGL					- 131			- 3 151		
LPG								- 415		
Refinery gas					- 621					
Naphtha										
Diesel oil	- 207	- 13	- 196	- 443	- 298	- 91	- 4 119	- 373	- 92	- 165
Fuel oil	- 18		- 670	- 15	- 945		- 904	- 7 977	- 2 999	- 155
Natural gas	- 9 247	- 1 170	- 8 368	- 2 071	- 30 802	- 2 419	- 10 937	- 70 418	- 19 312	- 11 698
Others	- 388		- 1 198	- 1 243	- 37 340		- 216	- 2 426	- 1 433	- 76
<b>Autoproducers</b>	- 4 293	- 161	- 9 738	- 3 317	- 224 470	- 11		- 26 876	- 11 556	- 1 158
Coal					- 178 189			- 4 633	- 5 473	
Coke					- 42					
Coke oven gas			- 7		- 8 133			- 414	- 330	
Blast furnace gas					- 21 934			- 1 626	- 1 512	
Crude oil & NGL										
LPG					- 44			- 97		
Refinery gas			- 340		- 1 687			- 1 739		
Naphtha								- 2 262	- 1 279	
Diesel oil	- 896		- 99	- 68	- 62			- 2 538		- 46
Fuel oil	- 27		- 51	- 53	- 951			- 3 715		
Natural gas	- 2 772	- 161	- 6 458	- 64	- 8 551			- 3 067	- 1 236	- 965
Others	- 598		- 2 783	- 3 132	- 4 879	- 11		- 6 786	- 1 726	- 147

## Fuel consumption table for power generation in 2015

	Australia	Brunei Darussalam	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea	Malaysia
<b>Main activity producers</b>	- 48 530	- 1 231	- 25 963	- 10 025	- 843 754	- 9 109	- 55 722	- 145 114	- 70 202	- 28 750
Coal	- 38 742		- 15 124	- 6 556	- 778 958	- 6 694	- 41 207	- 54 723	- 47 280	- 15 616
Coke										
Coke oven gas					- 1 268			- 1 047	- 446	
Blast furnace gas								- 3 370	- 1 356	
Crude oil & NGL					- 125			- 5 223		
LPG								- 208		
Refinery gas					- 555					
Naphtha										
Diesel oil	- 224	- 11	- 185	- 474	- 228	- 62	- 3 386	- 241	- 96	- 279
Fuel oil	- 26		- 737	- 12	- 976		- 863	- 9 435	- 2 033	- 101
Natural gas	- 9 146	- 1 220	- 8 798	- 1 901	- 26 564	- 2 352	- 10 096	- 69 322	- 18 297	- 12 662
Others	- 392		- 1 119	- 1 082	- 35 081		- 171	- 1 546	- 694	- 91
<b>Autoproducers</b>	- 4 318	- 171	- 9 683	- 2 869	- 207 975	- 13		- 38 401	- 10 939	- 1 813
Coal					- 165 031			- 12 276	- 4 811	
Coke					- 1 917					
Coke oven gas			- 7		- 7 444			- 469	- 312	
Blast furnace gas					- 19 713			- 2 137	- 1 621	
Crude oil & NGL					- 67					
LPG				- 1	- 39			- 150		
Refinery gas			- 327		- 1 449			- 1 855		
Naphtha								- 2 757	- 1 477	
Diesel oil	- 878		- 110	- 46	- 63			- 2 603		- 51
Fuel oil	- 152		- 41	- 74	- 991			- 4 124		
Natural gas	- 2 742	- 171	- 6 404	- 39	- 7 040			- 3 928	- 875	- 1 646
Others	- 546		- 2 794	- 2 709	- 4 221	- 13		- 8 102	- 1 843	- 116



## Fuel consumption table for power generation in 2016 (Continued)

ktoe

Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
- 42 319	- 1 191	- 79	- 4 672	- 14 834	- 179 359	- 7 672	- 34 806	- 42 749	- 569 389	- 24 195	- 2 198 079
- 8 890	- 108		- 215	- 10 232	- 45 314	- 259	- 19 131	- 7 579	- 313 826	- 16 144	- 1 455 413
									- 20		- 2 946
									- 205		- 5 620
											- 3 282
											- 415
											- 621
- 501	- 1		- 136	- 481		- 2	- 110	- 33	- 1 267	- 101	- 8 628
- 6 123		- 79	- 134	- 749	- 1 484	- 45	- 2 334	- 75	- 1 621	- 363	- 26 690
- 26 805	- 1 058		- 4 064	- 3 082	- 132 561	- 6 641	- 13 202	- 27 068	- 234 168	- 7 587	- 622 678
	- 24		- 123	- 289		- 725	- 31	- 7 994	- 18 282		- 71 787
- 12 797	- 369	- 686	- 610		- 92 906	- 971	- 7 932		- 22 969	- 1 070	- 421 889
	- 7		- 84		- 12 436		- 4 684		- 1 545		- 207 050
					- 2						- 44
- 11	- 40				- 1 579		- 281		- 57		- 10 852
- 112	- 128				- 1 521		- 613		- 304		- 27 749
					- 842						- 842
- 85					- 19						- 244
					- 861	- 72	- 2		- 1 423		- 6 125
											- 3 541
- 152		- 93	- 128		- 1 414				- 32		- 5 527
- 584		- 463	- 33		- 3 033	- 12	- 162		- 20		- 9 103
- 9 407	- 37	- 130	- 227		- 66 830	- 887	- 59		- 13 558		- 114 408
- 2 446	- 157		- 139		- 4 369		- 2 131		- 6 030	- 1 070	- 36 404

## Fuel consumption table for power generation in 2015 (Continued)

ktoe

Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam	Total
- 41 248	- 1 463	- 80	- 4 020	- 13 555	- 189 240	- 7 476	- 34 484	- 33 141	- 585 980	- 21 543	- 2 170 630
- 8 728	- 266		- 63	- 9 265	- 47 929	- 243	- 18 231	- 6 260	- 337 881	- 13 368	- 1 447 134
									- 20		- 2 781
									- 183		- 4 909
											- 5 348
											- 208
											- 555
- 346			- 50	- 288		- 1	- 118	- 25	- 1 625	- 101	- 7 740
- 5 641		- 80	- 71	- 1 125	- 1 670	- 13	- 2 377	- 163	- 2 154	- 215	- 27 693
- 26 533	- 1 174		- 3 700	- 2 719	- 139 641	- 6 542	- 13 756	- 25 547	- 225 556	- 7 860	- 613 386
	- 23		- 135	- 158		- 677		- 1 147	- 18 561		- 60 877
- 11 537	- 359	- 683	- 636		- 94 941	- 1 009	- 7 838	- 3 731	- 27 739	- 923	- 425 579
- 13	- 6		- 102		- 13 578		- 4 846		- 2 061		- 202 724
					- 17						- 1 934
- 8	- 46				- 1 554		- 286		- 84		- 10 210
- 134	- 134				- 1 555		- 611		- 559		- 26 463
					- 594						- 661
- 120					- 18						- 328
					- 788	- 177	- 4		- 1 992		- 6 592
											- 4 234
- 165		- 103	- 80		- 1 909				- 51		- 6 059
- 414		- 452	- 67		- 4 842	- 31	- 212	- 6	- 34		- 11 440
- 8 063	- 39	- 128	- 221		- 65 804	- 801	- 62		- 16 251		- 114 214
- 2 620	- 134		- 167		- 4 282		- 1 817	- 3 725	- 6 707	- 923	- 40 719

**Power generation capacity - total**

MW

	1990	2005	2010	2011	2012	2013	2014	2015	2016
Australia	38 451	50 142	60 068	61 939	64 246	64 026	66 557	66 353	65 559
Brunei Darussalam	334	759	889	895	724	806	920	923	923
Canada	104 141	123 211	132 375	132 959	132 598	132 598	140 340	148 150	144 023
Chile	5 099	12 586	16 231	17 549	18 153	18 515	20 513	22 431	25 798
China	137 891	509 410	962 180	1 064 550	1 144 750	1 247 280	1 370 190	1 525 270	1 650 509
Hong Kong, China	8 342	11 804	12 624	12 624	12 625	12 625	12 626	12 626	10 685
Indonesia	9 275	27 664	32 896	39 899	39 280	45 055	46 857	49 257	59 653
Japan	188 700	274 262	281 082	282 284	285 643	287 060	287 060	290 475	299 362
Korea	21 021	66 537	84 700	84 654	94 276	91 997	99 830	103 001	111 201
Malaysia	5 582	23 626	24 817	25 599	29 143	29 748	29 974	30 439	33 045
Mexico	27 371	52 497	62 290	61 600	62 136	63 611	66 238	67 333	72 334
New Zealand	7 176	8 854	9 457	9 765	9 615	9 622	9 704	9 455	9 288
Papua New Guinea	490	N.A.	N.A.	N.A.	N.A.	N.A.	845	855	858
Peru	4 143	6 201	N.A.	N.A.	9 699	11 051	10 269	10 908	14 009
Philippines	6 869	15 619	13 319	16 162	17 025	17 325	17 944	18 695	21 423
Russia	213 400	219 043	222 935	222 984	232 685	239 423	259 020	257 075	266 448
Singapore	3 667	10 106	10 265	10 222	10 488	11 221	12 863	13 042	13 474
Chinese Taipei	16 883	43 146	48 882	48 750	48 711	49 103	48 719	48 719	49 905
Thailand	8 725	26 269	31 486	31 486	33 178	34 973	34 973	35 808	48 276
United States	733 589	978 539	1 041 000	1 055 278	1 067 878	1 065 092	1 073 438	1 062 691	1 092 400
Viet Nam	2 537	11 340	21 542	23 527	26 475	30 662	34 215	38 523	38 643

**Power generation capacity - thermal power**

MW

	1990	2005	2010	2011	2012	2013	2014	2015	2016
Australia	30 130	40 815	49 028	49 626	50 459	49 509	49 977	49 710	47 786
Brunei Darussalam	334	759	888	894	723	805	919	922	922
Canada	31 201	37 174	40 424	38 939	34 660	34 660	34 174	40 946	35 076
Chile	2 421	7 324	10 050	10 871	11 125	10 838	12 324	13 616	15 736
China	101 845	384 130	706 630	768 520	819 170	862 380	894 420	970 460	1 060 944
Hong Kong, China	8 342	11 804	12 624	12 624	12 625	12 625	12 625	12 625	10 668
Indonesia	7 040	23 453	27 973	34 717	33 759	38 508	40 178	42 506	42 428
Japan	119 303	177 472	181 736	182 382	185 309	188 904	188 904	193 356	194 669
Korea	11 065	45 365	60 389	58 303	65 538	62 565	68 549	70 108	75 559
Malaysia	4 185	21 242	22 488	22 515	24 994	24 973	24 243	23 518	25 732
Mexico	18 155	39 540	47 736	47 070	46 707	48 047	48 797	49 421	53 047
New Zealand	2 296	2 886	2 929	3 138	2 988	2 738	2 661	2 389	2 221
Papua New Guinea	335	N.A.	N.A.	N.A.	N.A.	N.A.	543	553	556
Peru	1 744	2 938	4 682	N.A.	5 828	7 414	6 464	6 464	8 328
Philippines	3 661	10 393	9 041	10 772	11 504	11 784	12 047	12 365	14 465
Russia	149 700	149 915	151 114	151 114	157 845	163 926	182 465	179 148	187 611
Singapore	3 667	10 106	10 261	10 216	10 478	10 964	12 607	12 726	13 092
Chinese Taipei	9 177	32 756	37 924	37 632	37 063	37 242	36 607	36 607	37 451
Thailand	6 451	20 575	25 109	25 201	28 859	30 119	30 119	30 719	38 685
United States	536 667	767 316	793 551	798 833	793 352	787 297	789 624	773 980	769 999
Viet Nam	1 362	4 382	13 338	13 338	13 778	15 931	18 751	21 822	21 855

## Power generation capacity - hydro power

MW

	1990	2005	2010	2011	2012	2013	2014	2015	2016
Australia	8 321	8 535	8 773	8 788	8 790	8 037	8 048	8 048	8 724
Brunei Darussalam									
Canada	59 381	71 978	75 078	75 573	75 537	75 537	78 533	79 420	80 259
Chile	2 678	5 224	5 467	5 946	5 992	6 094	6 445	6 499	6 671
China	36 046	116 520	213 400	233 390	248 900	280 020	304 860	319 540	332 071
Hong Kong, China									
Indonesia	2 095	3 411	3 734	3 944	4 146	5 166	5 229	5 262	5 382
Japan	37 482	46 803	47 966	48 111	48 418	48 934	48 934	49 597	50 117
Korea	2 340	3 883	5 525	6 418	6 447	6 454	6 467	6 471	6 485
Malaysia	1 397	2 091	2 107	2 856	3 317	3 916	4 773	5 716	6 130
Mexico	7 838	10 598	11 626	11 646	11 650	11 653	12 464	12 223	12 580
New Zealand	4 619	5 346	5 254	5 254	5 254	5 263	5 263	5 340	5 340
Papua New Guinea	155	N.A.	N.A.	N.A.	N.A.	N.A.	249	249	249
Peru	2 400	3 207	3 318	N.A.	3 484	3 556	3 527	4 166	5 189
Philippines	2 153	3 222	2 914	3 491	3 521	3 521	3 543	3 600	3 618
Russia	43 400	45 797	47 430	47 479	49 445	50 104	50 845	50 998	51 016
Singapore									
Chinese Taipei	1 562	4 512	4 579	4 643	4 683	4 683	4 683	4 683	4 691
Thailand	2 274	3 476	3 488	3 488	3 508	3 524	3 524	3 524	3 519
United States	92 360	98 887	101 023	100 944	101 106	101 589	102 162	102 239	102 790
Viet Nam	1 176	4 155	8 180	10 165	12 643	14 661	15 394	16 587	16 669

## Power generation capacity - nuclear power

MW

	1990	2005	2010	2011	2012	2013	2014	2015	2016
Australia									
Brunei Darussalam									
Canada	13 538	13 345	12 665	12 665	13 370	13 370	14 033	14 033	14 033
Chile									
China		6 840	10 820	12 570	12 570	14 610	20 080	27 170	33 642
Hong Kong, China									
Indonesia									
Japan	31 645	48 222	48 847	48 960	48 960	46 148	46 148	44 264	41 482
Korea	7 616	17 176	17 716	18 716	20 716	20 716	20 716	21 716	23 116
Malaysia									
Mexico	675	1 365	1 365	1 365	1 610	1 400	1 400	1 510	1 608
New Zealand									
Papua New Guinea									
Peru									
Philippines									
Russia	20 300	23 242	24 300	24 300	25 304	25 304	25 304	26 304	27 189
Singapore									
Chinese Taipei	5 144	5 144	5 144	5 144	5 144	5 144	5 144	5 144	5 144
Thailand									
United States	99 643	99 988	101 167	101 419	101 885	99 240	98 569	98 672	99 565
Viet Nam									

## Power generation capacity - others

MW

	1990	2005	2010	2011	2012	2013	2014	2015	2016
Australia		792	2 267	3 525	4 997	6 480	8 532	8 595	9 049
Brunei Darussalam			1.2	1.2	1.2	1.2	1.2	1.2	1.2
Canada	21	714	4 208	5 782	9 031	9 031	13 600	13 751	14 655
Chile		38	714	732	1 036	1 583	1 744	2 316	3 391
China		1 920	31 330	50 070	64 110	90 270	150 830	208 100	223 853
Hong Kong, China							1	1	17
Indonesia	140	800	1 190	1 237	1 375	1 381	1 450	1 489	11 843
Japan	270	1 765	2 533	2 831	2 956	3 074	3 074	3 258	13 094
Korea		113	1 070	1 217	1 575	2 262	4 098	4 706	6 041
Malaysia		293	221	228	832	859	957	1 205	1 184
Mexico	703	994	1 563	1 519	2 169	2 511	3 577	4 179	5 099
New Zealand	261	622	1 274	1 373	1 373	1 621	1 780	1 726	1 727
Papua New Guinea		N.A.	N.A.	N.A.	N.A.	N.A.	53	53	53
Peru		55	N.A.	N.A.	387	81	278	278	492
Philippines	1 055	2 004	1 364	1 900	2 001	2 021	2 354	2 730	3 340
Russia		89	91	91	91	89	406	625	632
Singapore			4	6	10	257	257	317	382
Chinese Taipei	1 000	735	1 234	1 332	1 821	2 033	2 285	2 285	2 618
Thailand		2 218	2 889	2 797	811	1 330	1 330	1 564	6 072
United States	4 919	12 348	45 259	54 082	71 535	76 966	83 083	87 800	120 046
Viet Nam		2 803	24	24	54	70	70	114	120

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## A. Definition of products

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### Coal

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

#### 1. 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.

#### 2. Coking coal

A bituminous coal that can be used in the production of a coke capable of supporting a blast furnace charge.

#### 3. 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%.

#### 4. Sub-bituminous coal

A brown coal with a gross calorific value (moist, ash-free basis) equal to or greater than 20 MJ/kg but less than 24 MJ/kg.

#### 5. Lignite

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

#### 6. 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.

#### 7. Patent fuel

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

#### 8. Coke oven 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.

#### 9. Coal tar

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

#### 10. BKB/PB (Braunkohlenbriketts/Peat briquettes)

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

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

### **11. 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: (a) gases obtained from carbonisation or gasification of coals, cokes, biomass or waste; and (b) substitute natural gas (a methane-rich gas) made from synthesis gas.

### **12. Coke oven gas**

A gas produced from coke ovens during the manufacture of coke oven coke.

### **13. 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 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 or animal meal) is used in blast furnaces, part of the carbon supply may be considered renewable.

### **14. Oxygen steel furnace gas**

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

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## **Oil**

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### **1. Crude oil**

A mineral oil of fossil origin extracted by conventional means from underground reservoirs, and comprises 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.

### **2. Natural gas liquids (NGL)**

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

NGL 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 of the components of NGL except ethane are either liquid at the surface or are liquefied for disposal.

### **3. 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 naphthas, middle distillates, pyrolysis gasoline and heavy oils from vacuum distillation and petrochemical plants.

### **4. Additives/Oxygenates**

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



oxygenates such as alcohols (methanol, ethanol) and ethers such as methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME); (b) esters such as (e.g., rapeseed or dimethylester, etc.) and (c) chemical compounds such as tetramethyllead (TML), tetraethyllead (TEL) and detergents. Some additives and oxygenates may be derived from biomass while others may be of hydrocarbon origin.

## 5. 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;
- **Biodimethylether:** a diesel quality fuel produced from biomass and/or the biodegradable fraction of waste;
- **Bio-oil:** a pyrolysis oil fuel produced from biomass

## 6. Other hydrocarbons

These are non-conventional oil and hydrogen. Non-conventional oils refer to oils obtained by non-conventional production techniques, that is oils which 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.

## 7. 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.

## 8. Ethane

A naturally gaseous straight-chain hydrocarbon ( $C_2H_6$ ). Ethane is obtained at gas separation plants or from the refining of crude oil. It is a valuable feedstock for petrochemical manufacture.

## 9. Liquefied petroleum gases (LPG)

Refers to liquefied propane ( $C_3H_8$ ) and butane ( $C_4H_{10}$ ) 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.

## 10. 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 naphthas are as feedstock for high octane gasolines and the manufacture of olefins in the petrochemical industry.

## 11. Gasolines

Complex mixtures of volatile hydrocarbons distilling between approximately 25°C and 220°C and consisting of compounds in the  $C_4$  to  $C_{12}$  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.

## 12. Kerosenes

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.

## 13. 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.

## 14. 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.

## 15. 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 and sub-divided as: (a) white spirit - an industrial spirit with a flash point above 30°C and a distillation range of 135°C to 200°C; and (b) industrial spirit (SBP) - light oils distilling between 30°C and 200°C.

## 16. Lubricants

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

## 17. 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.

### 18. 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.

### 19. 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.

### 20. Other products

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

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## Gas

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### 1. Natural gas

A mixture of gaseous hydrocarbons, primarily methane, but generally also including ethane, propane and higher hydrocarbons in much smaller amounts and some noncombustible 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% or more methane), 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.

### 2. LNG

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

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## New and renewable energy

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### 1. 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.

### 2. 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, cutoffs, 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.

### 3. Bagasse

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

### 4. Charcoal

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

### 5. 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.

### 6. 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.

### 7. Industrial waste

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

### 8. 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.

### 9. 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.

### 10. Hydro

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

### 11. Geothermal

Electricity and heat generation produced from geothermal plants.

### 12. 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.

### 13. Tide/wave/ocean

Electricity generation produced from tide / wave / ocean.

### 14. Wind energy

Electricity produced from devices driven by wind.

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## Electricity and heat

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### 1. Thermal

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

### 2. Hydro

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

### 3. Nuclear

Electricity and heat generation from nuclear plants.

### 4. Geothermal

Electricity and heat generation from geothermal plants.

### 5. 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 photovoltaic and from solar thermal systems.
- **Heat:** solar energy exploited for hot water production by: Flat plate collectors, mainly of the thermosyphon type, 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 generation produced from tide / wave / ocean.
- **Wind:** electricity produced from devices driven by wind.
- **Biomass:** electricity and heat produced by fuelwood, woodwaste, bagasse, other biomass, biogas and liquid biofuels.

- **Waste:** electricity and heat produced by industrial waste and municipal solid waste.

**6. Others**

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

## B. Definition of flows

### Supply sector

Domestic supply is defined as *indigenous production + from other sources + imports - exports - international marine bunkers - international aviation bunkers ± stock changes*.

#### 1. Production

Production 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* is 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* is 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.

As regards 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: 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. There are a few examples:

- 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.

## 2. Imports and exports

**Imports of energy products** comprise all fuel and other energy products entering the national territory. Goods simply being transported through a country (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 country where such bunkering is carried out. Note that the "country of origin" of energy products should be recorded as a country 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 country (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 "country of destination" of energy products (that is country of the last known destination as it is known at the time of exportation) should be recorded as a

country 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: 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.

## 3. 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.

## 4. 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 on the basis of departure and landing locations and not by the nationality of the airline.

### 5. Stock changes

Stocks are quantities of energy products that can be held and used to: (a) maintain service under conditions where supply and demand are variable in their timing or amount due to normal market fluctuations, or (b) 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.

### 6. 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. *Interproduct 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 in order to meet its winter diesel specification.

### 7. 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.

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## Transformation sector

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Transformation is the process where the movement of part or all of 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 including: electricity plants, combined heat and power plants, heat plants, blast furnace/gas works, coke/patent fuel/BKB plants, petroleum refineries, petrochemical industry, liquefaction plants, and other plants.

### 1. 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.

### 2. 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.

### **3. 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.

### **4. Blast furnaces**

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.

### **5. Gas works**

Gas works plants are for the production of 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.

### **6. Coke ovens**

Coke ovens are facilities for the carbonisation of coal, principally coking coal, at high temperature. The

transformation process provide for the production of coke and by-products such as coke oven gas and coal tar.

### **7. 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.

### **8. 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.

### **9. 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.

### **10. 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.

### **11. 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.

### **12. 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.

### **13. Charcoal production plants**

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

### **14. Other transformation plants**

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

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## **Energy sector**

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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.

The energy sector is divided into the following sub-sectors: coal mines, patent fuel plants, coke ovens, gas work plants, natural gas blending plants, blast furnaces, BKB/PB plants, petroleum refineries, electricity, CHP and heat plants, liquefaction plants,

not elsewhere specified and distribution losses.

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.

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## **Final energy consumption sector**

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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.

### **1. Industry sector**

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.

### 1.1 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.

### 1.2 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)

### 1.3 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)

### 1.4 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

### 1.5 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)

### 1.6 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)

### **1.7 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)

### **1.8 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)

### **1.9 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)

### **1.10 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)

### **1.11 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)

### **1.12 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)

### **1.13 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)
- Jewellery, 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)

## **2. Transport sector**

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

### **2.1 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.

### **2.2 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.

### **2.3 Rail**

Refers to rail traffic, including industrial railways.

### **2.4 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.

### **2.5 Pipeline transport**

Refers to transport of goods through pipelines.

### **2.6 Not elsewhere specified**

Transport activities not included elsewhere.

## **3. Other sector**

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

### **3.1 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.

### **3.2 Residential**

Refers to all households including "households with employed persons." ISIC Division 97 and 98.

### **3.3 Agriculture**

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

### **3.4 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, mollusks 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.

### 3.5 Not elsewhere specified

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

### 3.6 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.

This is further classified into:

- **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

Energy prices are in either local currency units or in US dollars.

### Table 1. Import prices

These are import prices based on 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 cost, insurance and freight (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 or 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 buying fuel in filling stations, household 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 include the government services and streetlights. Others include agriculture and other sectors not included in industrial, commercial and residential.



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

### 1. Unit

For the purpose of presenting its energy balances APEC has adopted kcal and Joules.  $10^7$  kcal (41.868 gigajoules) 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.

### 2. Conversion (from original to TOE)

The Coordinating Agency 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.

### 3. Layout

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

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### Columns

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

**Column 1:** Coal includes all primary coal, such as anthracite, coking coal, other bituminous coal, sub-bituminous coal, lignite and peat.

**Column 2:** Coal products includes all fuels derived from coal including patent fuel, coke oven coke, gas coke, briquettes, coal tar, coke oven gas, blast furnace gas and oxygen steel furnace gas.

**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 = 0.000086 Mtoe).

**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.

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### Rows

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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 whether or not customs clearance has taken place.

**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) are 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 row petroleum refineries 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 include 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. For example: 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 used as raw material for chemical products such as methanol and ammonia/urea is also included.

## E. Conversion factors

### 1. 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.

### 2. Crude oil

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

### 3. Petroleum products

The conversion factors of each economy are applied.

### 4. 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

### 5. 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 = 0.086 Mtoe. 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 = 0.086 Mtoe. 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 = (0.086/0.33) Mtoe. In the case of electricity produced from geothermal heat the primary value is calculated using 1 TWh = (0.086/0.1) Mtoe.

### 6. Heat

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

### 7. 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:

Fuel wood and wood waste	3 702 kcal/kg
Bagasse	1 959 kcal/kg
Charcoal	6 898 kcal/kg
Industrial waste	3 344 kcal/kg
Municipal solid waste	3 344 kcal/kg
Other biomass	2 986 kcal/kg

**Average net calorific values of energy products in 2016**

	Australia	Brunei	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Korea
<b>Coal</b>									
Coking coal	6 807		5 972	6 840	6 523			6 533	6 740
Anthracite	6 377		6 301		6 523			6 310	4 809
Other bituminous coal	6 138		6 521	5 284	4 783	6 298	5 880	5 893	5 890
Sub-bituminous coal	4 413		4 275					5 738	5 100
Lignite	2 341		3 348		2 977				
Peat									
<b>Coal Products</b>									
Patent fuels								5 415	4 450
Coke oven coke	6 449		6 558	7 200	6 800			6 622	6 900
Coal tar	8 530			9 277	8 000				8 837
Coal briquettes	5 243				4 250		4 740	5 424	
<b>Crude oil and NGL</b>									
Crude oil	10 338	10 748	10 220	10 319	10 000		10 920	10 185	10 199
Natural gas liquids	10 846	10 900	10 801	11 495			11 934	11 086	
Refinery feedstocks	10 338		10 151	10 700	9 294		9 996		10 700
Additives/oxygenates		9 597	6 000	5 410	10 000		9 690		10 000
Other hydrocarbons	10 000		10 000		10 000		8 880		
<b>Petroleum products</b>									
Refinery gas	11 488	11 369	11 488	11 488	11 000			10 515	11 488
Ethane	11 799		11 799						
LPG	11 393	11 023	11 297	11 297	12 000	10 878	11 934	11 360	11 393
Naptha	10 318		10 748	10 748	9 176	10 540	11 064	10 707	10 318
Motor gasoline	10 653	10 688	10 700	10 700	10 300	10 217	11 064	10 222	10 653
Bio-ethanol	6 401		6 401		10 300				
Aviation gasoline	10 653	10 755	10 700	10 700			9 801		10 653
Gasoline-type jet fuel			10 700		10 300				
Kerosene-type jet fuel	10 629	10 648	10 653	10 653	10 300	10 262	10 398	10 270	10 629
Other kerosene	10 246	10 648	10 461	10 461	10 300	10 522	10 212	10 225	10 246
Gas/diesel oil	10 175	10 361	10 175	10 342	10 200	10 150	9 166	10 229	10 175
Bio-diesel	8 790		8 790		10 200	9 028	9 690		10 125
Fuel oil	10 175	9 716	9 602	9 602	10 000	9 912	10 319	10 043	10 175
White spirit SBP	10 270		10 270		9 176				10 270
Lubricants	10 246	9 984	10 032		9 176		9 996	10 285	10 246
Bitumen	9 267	9 554	9 554		9 176				9 267
Paraffin wax					9 176		9 996		9 554
Petroleum coke	8 073		7 643	7 643	7 350			7 555	8 073
Other products	9 554	11 023	9 554	9 554	9 310		9 996	9 503	9 554
<b>Natural gas</b>									
Natural gas	8 462	9 255	8 462	8 462	8 899	9 134	8 500	8 632	8 462
<b>New and renewables</b>									
Fuel wood and wood waste								3 702	
Bagasse									
Charcoal				6 645		6 998		6 898	
Other biomass					7 000		3 702		
Biogas									
Industrial waste								3 344	
Municipal solid waste							3 702	3 344	
Liquid biofuels									

Note: The Net Calorific Values are used to convert the unit of each product to tons of oil equivalent (toe). 1 toe = 10<sup>7</sup> kcal

Average Net Calorific Values of Energy Products in 2015 (continued)

kcal/kg (kcal/m <sup>3</sup> for Natural Gas)											
Malaysia	Mexico	New Zealand	Papua New Guinea	Peru	Philippines	Russia	Singapore	Chinese Taipei	Thailand	United States	Viet Nam
	6 998	7 233				6 807		6 660	6 600	6 771	
	6 374			6 500		6 927		6 745	7 500	7 010	5 600
6 300	6 180	6 202		6 500		6 056	6 162	5 678		6 357	
	4 809	4 848			5 278			4 667	6 300	4 549	
	2 710	3 465				3 563		3 957	2 532	3 331	
						2 380					
								3 610			
	6 779	7 046		6 735		6 930	6 735	6 650		6 894	
	9 069										
	4 299								6 300		
10 342	10 392	10 289	10 120	10 271	9 905	10 050	10 200	10 442	10 089	10 240	10 200
10 150	9 873	10 935	10 120	10 624	7 694	10 010			11 757	11 107	10 900
	10 115	10 482		10 569			10 230	10 442		10 399	
10 150	9 244			9 406					8 746	9 043	
10 150	10 000									12 182	
10 150	11 488	11 488		14 992		11 823	11 488	14 996		11 488	
	11 799								11 203	11 799	
10 878	11 297	11 393	11 393	11 080	10 760	10 987	11 297	11 893	11 800	11 297	10 900
	10 748		10 500		11 031	10 509	10 748	10 924		10 748	
10 500	10 700	10 653	10 654	10 402	10 570	10 509	10 700	10 494	10 148	10 700	10 500
		7 083		6 351	7 083				7 087	7 648	
	10 700	10 653			10 894	10 509	10 700	10 669		10 700	
								10 485			
10 318	10 653	10 629	10 632	10 231	9 957	10 270	10 653	10 038	10 274	10 653	10 300
10 318	10 461	10 246	10 233		9 855		10 461	10 600	10 185	10 461	10 300
10 150	10 175	10 175	10 284	9 847	10 049	10 175	10 342	10 066	10 308	10 175	10 200
9 864				11 157	9 416				10 133	10 074	
9 912	9 602	10 175	10 520	10 381	9 819	9 554	9 602	10 027	10 064	9 602	9 900
		10 270				10 414	10 270	11 538		10 270	
	10 032	10 246		10 402		10 032	10 032	9 600		10 032	10 070
	9 554	9 267			9 248	9 315	9 315	10 000		9 554	9 989
	9 554					9 554	9 554	10 664		9 554	
	7 643	8 073				7 643	7 643	8 200		7 643	
10 150	9 554	9 554	9 602	10 402	9 864		9 554	12 496	10 000	9 554	9 900
8 429	8 462	8 462	9 163	8 691	8 225	8 462	8 462	9 000		8 462	
				3 598	3 291				3 820		3 785
				1 499	2 166				1 800		1 785
				6 558					6 900		
4 489				3 596	5 160				3 030		3 000
								7 765			
					1 253			2 092	1 160		

**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
TWD	New Taiwan dollar	Chinese Taipei
HKD	Hong Kong dollar	Hong Kong, China
IDR	rupiah	Indonesia
JPY	yen	Japan
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	Philippines
RUB	Russian ruble	Russia
SGD	Singapore dollar	Singapore
THB	baht	Thailand
USD	US dollar	United States
VND	dong	Viet Nam