



**Asia-Pacific
Economic Cooperation**

APEC

ENERGY HANDBOOK

2018

**ENERGY WORKING GROUP
JULY 2021**

ENERGY STATISTICS AND TRAINING OFFICE
ASIA PACIFIC ENERGY RESEARCH CENTRE



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Preface

The APEC Energy Handbook 2018 is a handy, pocket-sized summary of key energy data and a supplement to APEC Energy Statistics 2018, which was released in July 2021.

This handbook consists of the following sections:

1. Primary Energy Supply
2. Transformation
3. Final Energy Consumption
4. Energy Balances
5. Energy Outlook
6. Energy Indicators

The supply section contains total primary energy supply by energy while the transformation section shows oil refining and power generation. The consumption section indicates both final energy consumption by sectors and by energy. The energy balances section includes regional energy balance tables while the outlook section shows projected energy demand until year 2050 taken from the APEC Energy Demand and Supply Outlook 7th Edition published by the Asia Pacific Energy Research Centre in May 2019. The energy indicators section contains several energy indicators based on population, GDP and energy consumption.

This handbook was 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 aims to assist in the identification of significant trends in energy supply and demand consistent with projects and priorities under the APEC Energy Working Group. It has been prepared in close cooperation with the twenty-one member economies.

Inquiries about figures and graphs in this handbook could be addressed to:

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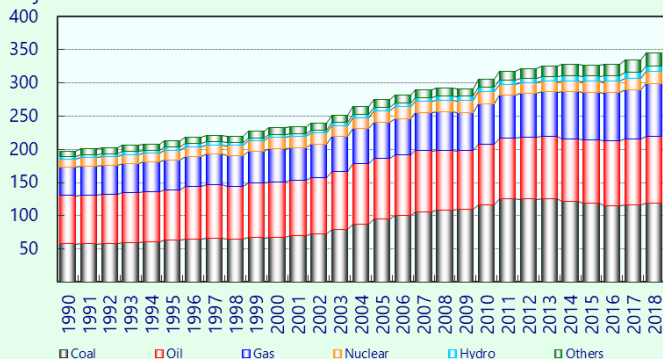
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Total primary energy supply by energy APEC

Exajoules



Exajoules

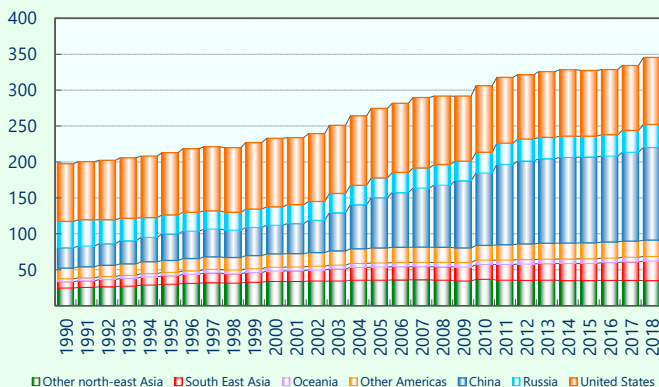
	1990	1995	2000	2005	2010	2018
Coal	57.8	63.2	67.9	95.2	116.8	118.7
Oil	73.2	76.0	83.3	91.8	90.6	100.5
Gas	42.1	44.9	50.3	53.4	61.4	79.4
Nuclear	12.0	14.5	16.3	17.6	18.1	18.4
Hydro	3.9	4.5	4.5	5.2	6.4	8.9
Others	8.5	9.8	10.5	11.5	13.0	19.7
Total	197.4	212.9	232.9	274.7	306.2	345.5

Share (%)

	1990	1995	2000	2005	2010	2018
Coal	29.3	29.7	29.2	34.6	38.1	34.4
Oil	37.1	35.7	35.8	33.4	29.6	29.1
Gas	21.3	21.1	21.6	19.4	20.0	23.0
Nuclear	6.1	6.8	7.0	6.4	5.9	5.3
Hydro	2.0	2.1	1.9	1.9	2.1	2.6
Others	4.3	4.6	4.5	4.2	4.2	5.7

Total primary energy supply by region APEC

Exajoules



Exajoules

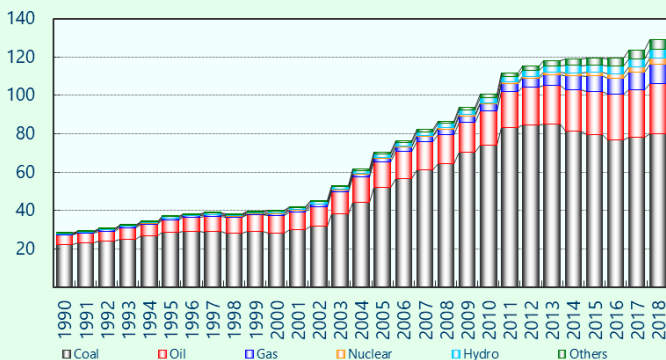
	1990	1995	2000	2005	2010	2018
Other north-east Asia	24.6	29.8	33.6	35.4	36.6	34.9
South East Asia	8.6	12.0	14.5	18.3	20.7	27.2
Oceania	4.1	4.6	5.4	5.6	6.2	6.4
Other Americas	15.0	16.6	18.5	20.8	20.4	22.7
China	28.1	36.9	39.8	70.2	100.6	129.1
Russia	36.8	26.7	25.9	27.3	28.8	31.8
United States	80.2	86.6	95.2	97.1	92.8	93.4
Total	197.4	212.9	232.9	274.7	306.2	345.5

Share (%)

	1990	1995	2000	2005	2010	2018
Other north-east Asia	12.5	14.0	14.4	12.9	11.9	10.1
South East Asia	4.3	5.6	6.2	6.7	6.8	7.9
Oceania	2.1	2.2	2.3	2.0	2.0	1.9
Other Americas	7.6	7.8	7.9	7.6	6.7	6.6
China	14.2	17.3	17.1	25.5	32.9	37.4
Russia	18.6	12.5	11.1	9.9	9.4	9.2
United States	40.6	40.6	40.9	35.3	30.3	27.0

Total primary energy supply by energy China

Exajoules



Exajoules

	1990	1995	2000	2005	2010	2018
Coal	22.3	28.7	28.3	52.2	74.0	80.0
Oil	4.8	6.5	9.3	13.3	17.9	26.2
Gas	.6	.7	.9	1.7	3.6	10.3
Nuclear	-	.1	.2	.6	.8	3.2
Hydro	.5	.7	.8	1.4	2.6	4.4
Others	.0	.2	.5	.9	1.7	5.0
Total	28.1	36.9	39.8	70.2	100.6	129.1

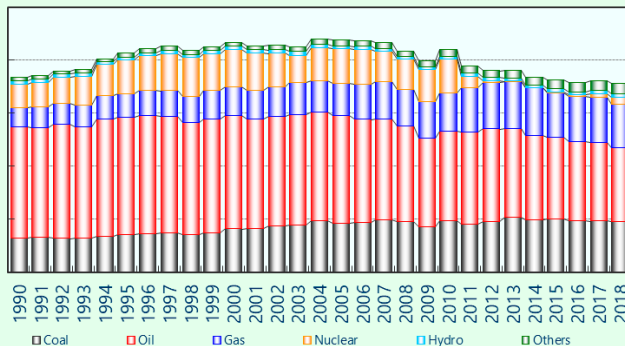
Share (%)

	1990	1995	2000	2005	2010	2018
Coal	79.3	77.8	70.9	74.4	73.6	61.9
Oil	17.1	17.7	23.2	19.0	17.8	20.3
Gas	2.0	1.8	2.3	2.5	3.5	8.0
Nuclear	-	0.4	0.5	0.8	0.8	2.5
Hydro	1.6	1.9	2.0	2.0	2.6	3.4
Others	0.0	0.4	1.2	1.3	1.7	3.9

Total primary energy supply by energy Japan

Exajoules

25



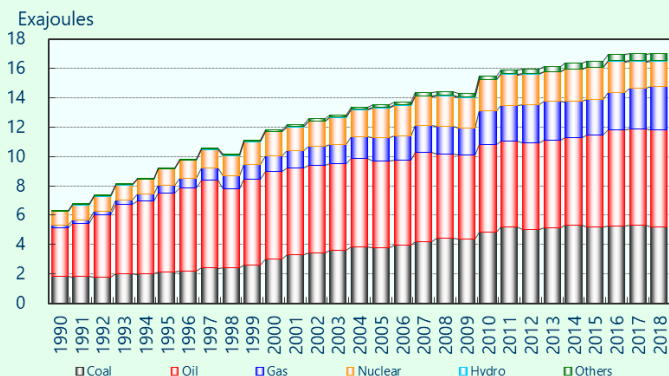
Exajoules

	1990	1995	2000	2005	2010	2018
Coal	3.2	3.5	4.1	4.6	4.8	4.8
Oil	10.5	11.1	10.7	10.2	8.5	7.0
Gas	1.8	2.2	2.7	3.0	3.6	4.1
Nuclear	2.2	3.2	3.5	3.3	3.1	0.7
Hydro	0.3	0.3	0.3	0.3	0.3	0.3
Others	0.3	0.4	0.4	0.5	0.6	1.0
Total	18.4	20.6	21.7	21.9	21.0	17.8

Share (%)

	1990	1995	2000	2005	2010	2018
Coal	17.5	17.0	18.7	21.2	23.0	26.9
Oil	57.1	53.7	49.2	46.6	40.4	39.0
Gas	10.1	10.8	12.7	13.5	17.1	22.8
Nuclear	12.0	15.4	16.2	15.2	15.0	4.0
Hydro	1.7	1.4	1.4	1.3	1.4	1.6
Others	1.7	1.7	1.8	2.3	3.0	5.7

Total primary energy supply by energy Other north-east Asia*



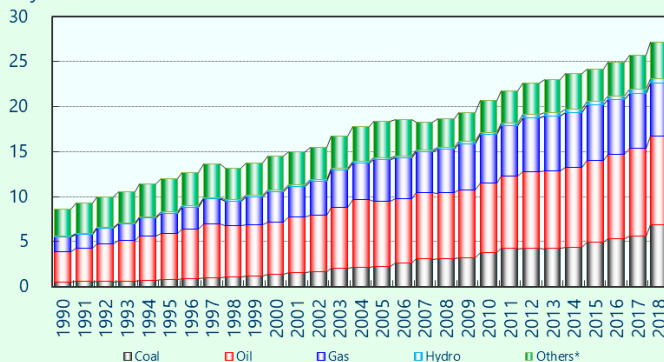
	Exajoules					
	1990	1995	2000	2005	2010	2018
Coal	1.8	2.0	3.1	3.8	4.9	5.3
Oil	3.3	5.4	6.0	5.9	6.0	6.6
Gas	0.2	0.5	1.1	1.6	2.3	3.0
Nuclear	0.9	1.1	1.6	2.0	2.1	1.8
Hydro	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.1	0.1	0.2	0.3	0.5
Total	6.2	9.1	11.9	13.6	15.6	17.1

	Share (%)					
	1990	1995	2000	2005	2010	2018
Coal	28.4	22.4	25.9	28.3	31.6	31.1
Oil	52.7	58.9	50.3	43.3	38.4	38.3
Gas	2.8	5.4	8.9	11.8	14.8	17.3
Nuclear	15.0	12.2	13.5	15.0	13.3	10.3
Hydro	0.7	0.3	0.3	0.2	0.2	0.2
Others	0.4	0.8	1.1	1.4	1.7	2.9

*In this page, Other north-east Asia includes Hong Kong, China; Republic of Korea and Chinese Taipei

Total primary energy supply by energy South-East Asia

Exajoules



Exajoules

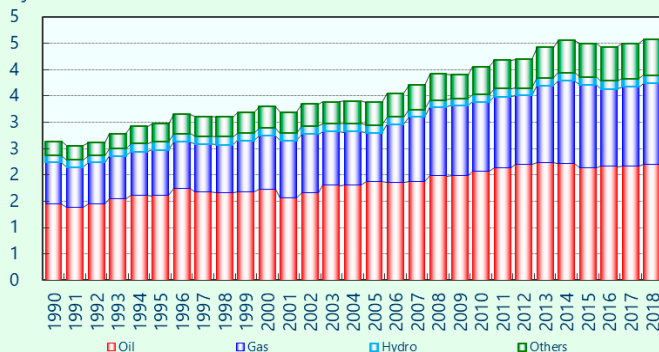
	1990	1995	2000	2005	2010	2018
Coal	0.5	0.7	1.3	2.3	3.8	6.9
Oil	3.4	5.2	5.8	7.2	7.7	9.8
Gas	1.6	2.3	3.4	4.6	5.4	5.9
Nuclear	-	-	-	-	-	-
Hydro	0.1	0.1	0.2	0.2	0.2	0.5
Others	2.9	3.6	3.7	4.0	3.6	4.0
Total	8.6	12.0	14.5	18.3	20.7	27.2

Share (%)

	1990	1995	2000	2005	2010	2018
Coal	5.9	6.2	9.3	12.4	18.4	25.4
Oil	39.7	43.2	40.1	39.5	37.0	36.1
Gas	19.0	18.9	23.7	25.3	26.1	21.8
Nuclear	-	-	-	-	-	-
Hydro	1.1	1.1	1.1	1.0	1.1	2.0
Others	34.3	30.5	25.7	21.8	17.3	14.8

Total primary energy supply by energy Oceania

Exajoules



Exajoules

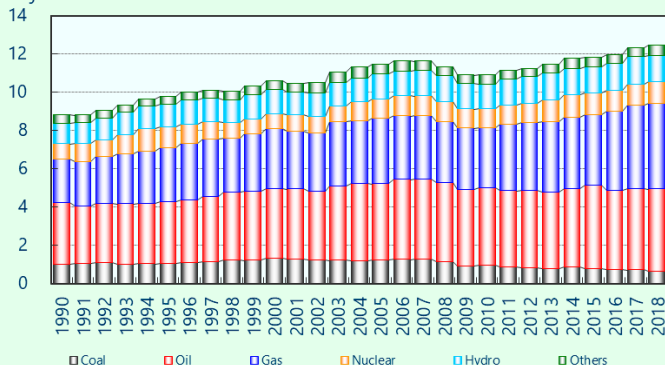
	1990	1995	2000	2005	2010	2018
Coal	1.5	1.6	2.1	2.2	2.2	1.8
Oil	1.5	1.6	1.7	1.9	2.1	2.2
Gas	0.8	0.9	1.0	0.9	1.3	1.5
Nuclear	-	-	-	-	-	-
Hydro	0.1	0.2	0.1	0.1	0.1	0.2
Others	0.3	0.3	0.4	0.4	0.5	0.7
Total	4.1	4.6	5.4	5.6	6.2	6.4

Share (%)

	1990	1995	2000	2005	2010	2018
Coal	36.4	35.3	38.5	39.8	34.8	28.8
Oil	35.1	35.0	32.1	33.3	33.4	34.2
Gas	18.9	18.8	19.1	16.7	21.0	24.0
Nuclear	-	-	-	-	-	-
Hydro	3.2	3.5	2.8	2.5	2.3	2.4
Others	6.4	7.4	7.6	7.7	8.5	10.6

Total primary energy supply by energy Canada

Exajoules



Exajoules

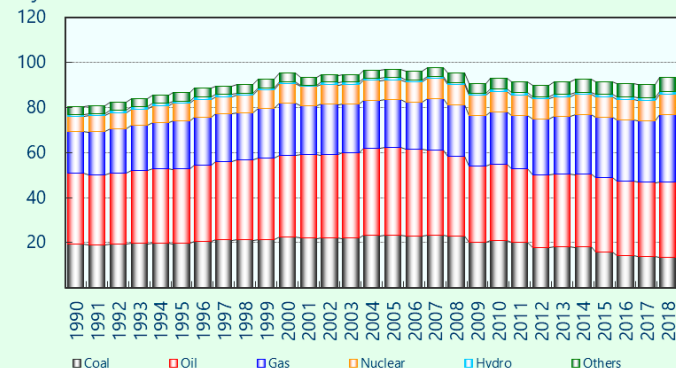
	1990	1995	2000	2005	2010	2018
Coal	1.0	1.1	1.3	1.3	1.0	0.6
Oil	3.2	3.2	3.6	4.0	4.0	4.3
Gas	2.3	2.8	3.1	3.4	3.2	4.5
Nuclear	0.8	1.1	0.8	1.0	1.0	1.1
Hydro	1.1	1.2	1.3	1.3	1.3	1.4
Others	0.5	0.4	0.5	0.5	0.5	0.5
Total	8.8	9.8	10.6	11.5	10.9	12.5

Share (%)

	1990	1995	2000	2005	2010	2018
Coal	11.5	10.8	12.5	11.0	8.9	5.1
Oil	36.2	33.0	34.3	34.7	36.9	34.8
Gas	25.9	28.7	29.3	29.6	29.0	35.8
Nuclear	9.2	10.9	7.5	8.8	9.1	8.8
Hydro	12.1	12.3	12.2	11.4	11.6	11.1
Others	5.1	4.2	4.3	4.6	4.6	4.3

Total primary energy supply by energy United States

Exajoules



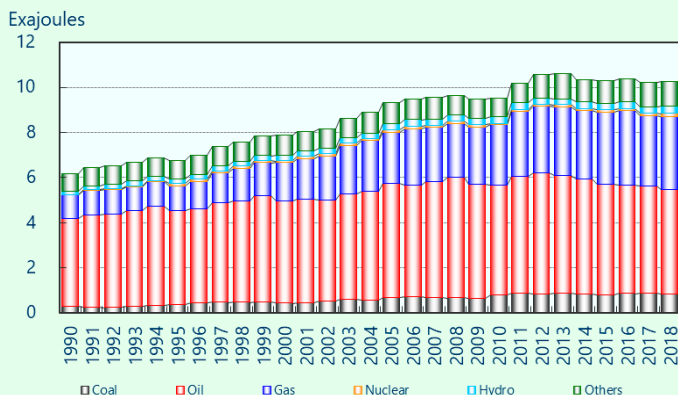
Exajoules

	1990	1995	2000	2005	2010	2018
Coal	19.3	19.8	22.4	23.4	21.0	13.4
Oil	31.7	32.9	36.5	38.9	33.8	33.6
Gas	18.4	21.2	22.9	21.2	23.3	29.7
Nuclear	6.7	7.8	8.7	8.8	9.2	9.2
Hydro	1.0	1.1	0.9	1.0	0.9	1.1
Others	3.2	3.7	3.8	3.7	4.6	6.5
Total	80.2	86.6	95.2	97.1	92.8	93.4

Share (%)

	1990	1995	2000	2005	2010	2018
Coal	24.0	22.9	23.5	24.1	22.7	14.4
Oil	39.5	38.0	38.3	40.1	36.4	35.9
Gas	22.9	24.5	24.1	21.9	25.1	31.8
Nuclear	8.3	9.0	9.1	9.1	9.9	9.8
Hydro	1.2	1.3	1.0	1.0	1.0	1.1
Others	4.0	4.2	4.0	3.9	5.0	7.0

Total primary energy supply by energy Other Americas



Exajoules

	1990	1995	2000	2005	2010	2018
Coal	0.3	0.4	0.4	0.7	0.8	0.8
Oil	3.9	4.2	4.5	5.1	4.9	4.6
Gas	1.0	1.1	1.7	2.3	2.7	3.2
Nuclear	0.0	0.1	0.1	0.1	0.1	0.1
Hydro	0.2	0.2	0.2	0.3	0.3	0.3
Others	0.8	0.8	0.9	0.9	0.8	1.1
Total	6.2	6.8	7.9	9.3	9.5	10.3

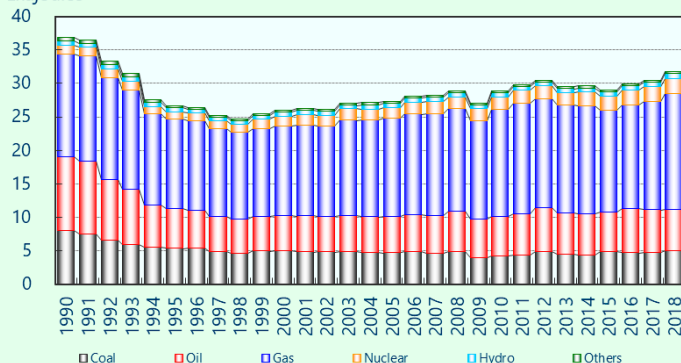
Share (%)

	1990	1995	2000	2005	2010	2018
Coal	4.6	5.2	5.6	7.1	8.1	8.1
Oil	63.0	61.6	57.0	54.3	51.1	45.3
Gas	16.7	16.4	21.9	24.5	28.2	31.3
Nuclear	0.5	1.4	1.1	1.3	0.7	1.5
Hydro	2.5	3.1	3.1	2.8	3.0	3.0
Others	12.6	12.3	11.3	10.1	8.8	10.8

* In this page, Other Americas comprise Chile, Mexico, and Peru.

Total primary energy supply by energy Russia

Exajoules



Exajoules

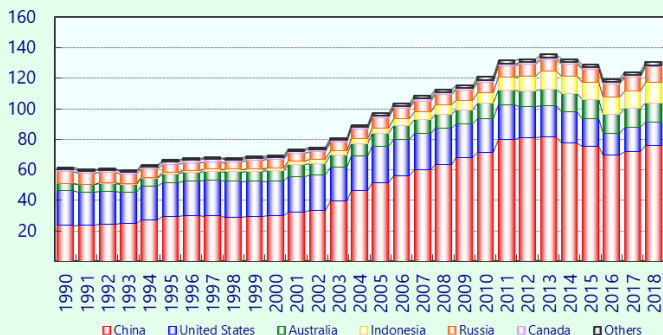
	1990	1995	2000	2005	2010	2018
Coal	8.0	5.4	5.0	4.7	4.2	5.0
Oil	11.0	6.0	5.3	5.4	5.8	6.2
Gas	15.4	13.3	13.4	14.6	16.1	17.3
Nuclear	1.3	1.1	1.4	1.6	1.9	2.2
Hydro	0.6	0.6	0.6	0.6	0.6	0.7
Others	0.5	0.3	0.3	0.3	0.3	0.3
Total	36.8	26.7	25.9	27.3	28.8	31.8

Share (%)

	1990	1995	2000	2005	2010	2018
Coal	21.6	20.2	19.3	17.2	14.7	15.7
Oil	30.0	22.4	20.4	19.8	20.2	19.5
Gas	41.8	49.7	51.5	53.7	55.7	54.5
Nuclear	3.6	4.1	5.6	6.0	6.5	7.1
Hydro	1.6	2.4	2.3	2.3	2.1	2.2
Others	1.4	1.2	1.0	1.0	0.9	1.0

Indigenous production of coal* APEC

Exajoules



Exajoules

	1990	1995	2000	2005	2010	2018
China	23.6	29.6	30.1	51.6	71.2	76.1
United States	22.7	22.2	22.5	23.7	22.3	15.4
Australia	4.4	5.4	6.9	8.4	10.3	12.0
Indonesia	.3	1.0	1.9	3.8	6.8	13.7
Russia	8.0	5.4	5.4	6.6	7.0	10.1
Canada	1.6	1.7	1.4	1.4	1.4	1.3
Others	1.1	1.0	1.1	1.6	2.0	1.9
Total	61.7	66.4	69.2	97.0	120.9	130.6

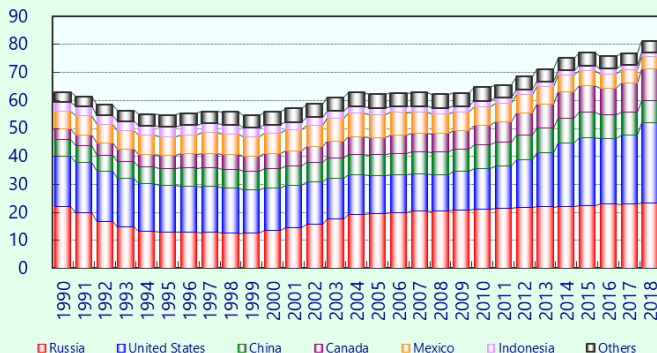
Share (%)

	1990	1995	2000	2005	2010	2018
China	38.3	44.7	43.4	53.1	58.9	58.3
United States	36.8	33.4	32.5	24.4	18.4	11.8
Australia	7.2	8.1	10.0	8.7	8.5	9.2
Russia	13.0	8.2	7.7	6.8	5.7	7.7
Indonesia	0.4	1.6	2.7	3.9	5.6	10.5
Canada	2.6	2.6	2.1	1.5	1.2	1.0
Others	1.8	1.5	1.6	1.6	1.7	1.5

*Coal: hard coal, anthracite and lignite

Indigenous production of crude oil* APEC

Exajoules



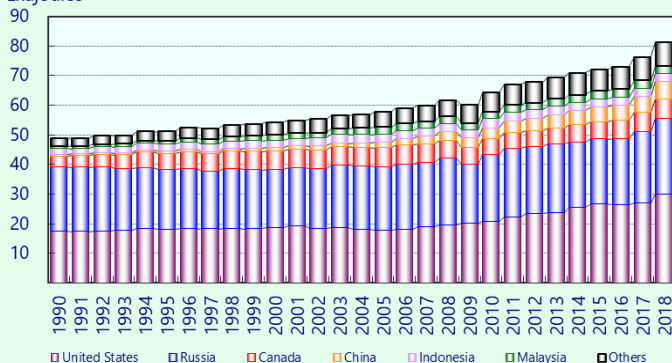
	Exajoules					
	1990	1995	2000	2005	2010	2018
Russia	22.0	12.8	13.5	19.6	21.2	23.4
United States	18.1	16.7	15.3	13.5	14.6	28.7
China	5.8	6.3	6.8	7.6	8.5	7.9
Canada	3.9	4.8	5.4	6.0	7.0	11.2
Mexico	6.4	6.6	7.2	8.3	6.5	4.4
Indonesia	3.2	3.5	3.1	2.3	2.1	1.7
Others	3.5	4.2	4.6	4.9	4.9	4.0
Total	62.9	54.8	55.8	62.2	64.7	81.3

	Share (%)					
	1990	1995	2000	2005	2010	2018
Russia	35.0	23.4	24.2	31.6	32.8	28.8
United States	28.8	30.4	27.4	21.7	22.5	35.3
China	9.2	11.5	12.2	12.2	13.1	9.8
Canada	6.3	8.7	9.6	9.6	10.8	13.8
Mexico	10.2	12.0	12.8	13.3	10.0	5.4
Indonesia	5.0	6.3	5.5	3.7	3.2	2.1
Others	5.5	7.6	8.2	7.9	7.6	4.9

*Crude oil includes NGL and condensates

Indigenous production of natural gas APEC

Exajoules

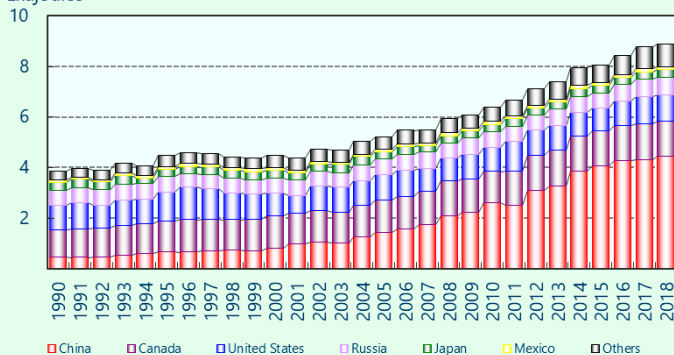


	Exajoules					
	1990	1995	2000	2005	2010	2018
United States	17.5	18.2	18.7	17.6	20.7	30.1
Russia	21.6	20.1	19.7	21.6	22.6	25.4
Canada	3.7	5.5	6.2	6.5	5.4	6.5
China	.6	.7	1.0	1.8	3.6	6.0
Indonesia	2.1	2.4	2.5	2.8	3.1	2.6
Malaysia	.6	1.1	1.9	2.4	2.4	2.6
Others	2.6	3.2	4.2	5.1	6.4	8.3
Total	48.8	51.1	54.3	57.8	64.2	81.4

	Share (%)					
	1990	1995	2000	2005	2010	2018
United States	35.9	35.6	34.5	30.5	32.3	37.0
Russia	44.3	39.3	36.3	37.4	35.2	31.2
Canada	7.6	10.7	11.4	11.2	8.4	8.0
China	1.2	1.3	1.9	3.2	5.6	7.3
Indonesia	4.4	4.6	4.7	4.8	4.8	3.2
Malaysia	1.3	2.2	3.5	4.2	3.7	3.2
Others	5.3	6.3	7.8	8.8	9.9	10.2

Indigenous production of hydro power APEC

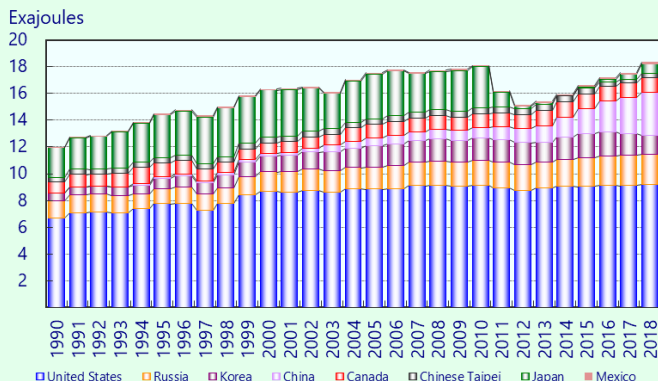
Exajoules



	Exajoules					
	1990	1995	2000	2005	2010	2018
China	0.5	0.7	0.8	1.4	4.1	4.4
Canada	1.1	1.2	1.3	1.3	1.4	1.4
United States	1.0	1.1	0.9	1.0	0.9	1.1
Russia	0.6	0.6	0.6	0.6	0.6	0.7
Japan	0.3	0.3	0.3	0.3	0.3	0.3
Mexico	0.1	0.1	0.1	0.1	0.1	0.1
Others	0.3	0.4	0.5	0.5	0.7	0.9
Total	3.9	4.5	4.5	5.2	8.1	8.9

	Share (%)					
	1990	1995	2000	2005	2010	2018
China	11.8	15.3	17.9	27.4	50.4	49.9
Canada	27.7	27.0	28.8	25.0	17.1	15.6
United States	25.5	25.3	20.3	18.8	11.2	12.0
Russia	15.5	14.1	13.2	11.9	7.5	7.7
Japan	8.2	6.3	6.7	5.3	3.9	3.3
Mexico	2.2	2.2	2.7	1.9	1.4	1.3
Others	9.0	9.7	10.5	9.7	8.5	10.2

Indigenous production of nuclear power APEC

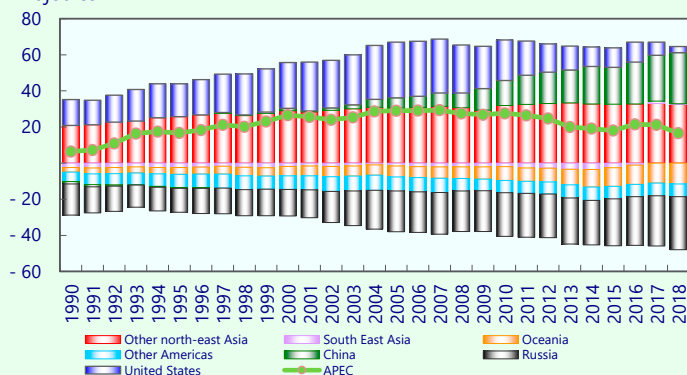


	Exajoules					
	1990	1995	2000	2005	2010	2018
United States	6.7	7.8	8.7	8.8	9.2	9.2
China	0.0	0.1	0.2	0.6	0.8	3.2
Russia	1.3	1.1	1.4	1.6	1.9	2.2
Korea	0.6	0.7	1.2	1.6	1.6	1.5
Canada	0.8	1.1	0.8	1.0	1.0	1.1
Chinese Taipei	0.4	0.4	0.4	0.4	0.5	0.3
Japan	2.2	3.2	3.5	3.3	3.1	0.7
Mexico	0.0	0.1	0.1	0.1	0.1	0.1
Total	12.0	14.5	16.3	17.6	18.1	18.4

	Share (%)					
	1990	1995	2000	2005	2010	2018
United States	55.7	53.8	53.3	50.4	50.6	50.0
China	-	1.0	1.1	3.3	4.5	17.5
Russia	10.9	7.6	8.8	9.4	10.3	12.2
Korea	4.8	5.0	7.3	9.1	9.0	7.9
Canada	6.8	7.4	4.9	5.7	5.5	6.0
Chinese Taipei	3.0	2.7	2.6	2.5	2.5	1.6
Japan	18.4	21.9	21.5	18.9	17.4	3.9
Mexico	0.3	0.6	0.5	0.7	0.4	0.8

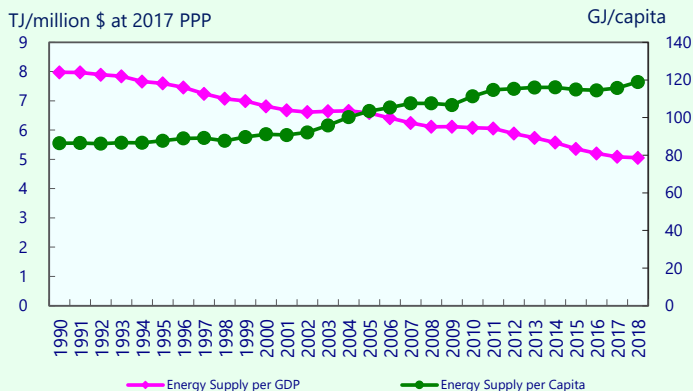
Net import by region APEC

Exajoules



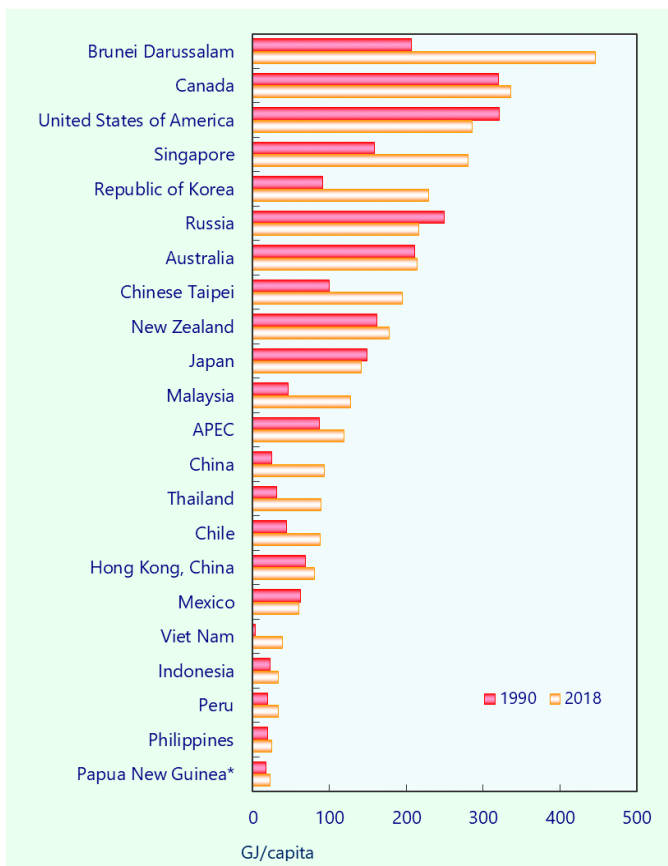
	Exajoules					
	1990	1995	2000	2005	2010	2018
Australia	-2.7	-3.7	-5.3	-6.2	-7.8	-11.7
Brunei Darussalam	-0.6	-0.7	-0.8	-0.8	-0.7	-0.5
Canada	-2.5	-5.0	-5.3	-5.4	-6.0	-9.5
Chile	0.3	0.5	0.7	0.9	0.9	1.1
China	-1.4	-0.4	1.4	5.8	13.9	28.3
Hong Kong, China	0.5	0.6	0.8	1.0	1.3	1.4
Indonesia	-2.9	-3.7	-3.4	-3.7	-6.0	-8.5
Japan	15.8	17.1	18.0	18.2	17.2	16.2
Korea	2.9	5.6	6.9	7.4	9.3	10.6
Malaysia	-1.1	-1.2	-1.1	-1.2	-0.6	-0.1
Mexico	-2.9	-2.9	-3.0	-3.3	-1.7	1.2
New Zealand	0.1	0.1	0.1	0.2	0.1	0.3
Papua New Guinea	0.0	-0.2	-0.1	0.0	0.0	0.0
Peru	0.0	0.1	0.1	0.1	0.0	0.1
Philippines	0.5	0.7	0.8	0.7	0.7	1.4
Russia	-17.3	-13.2	-14.6	-22.6	-24.2	-29.4
Singapore	1.0	1.4	1.7	2.1	2.8	3.9
Chinese Taipei	1.7	2.4	3.2	3.9	4.2	4.4
Thailand	0.8	1.3	1.4	2.0	2.2	3.2
United States	14.3	18.1	25.4	30.8	22.3	3.4
Viet Nam	0.0	-0.2	-0.4	-0.7	-0.3	1.0
Total	6.4	16.7	26.6	29.0	27.6	16.6

Total primary energy supply per GDP & capita APEC



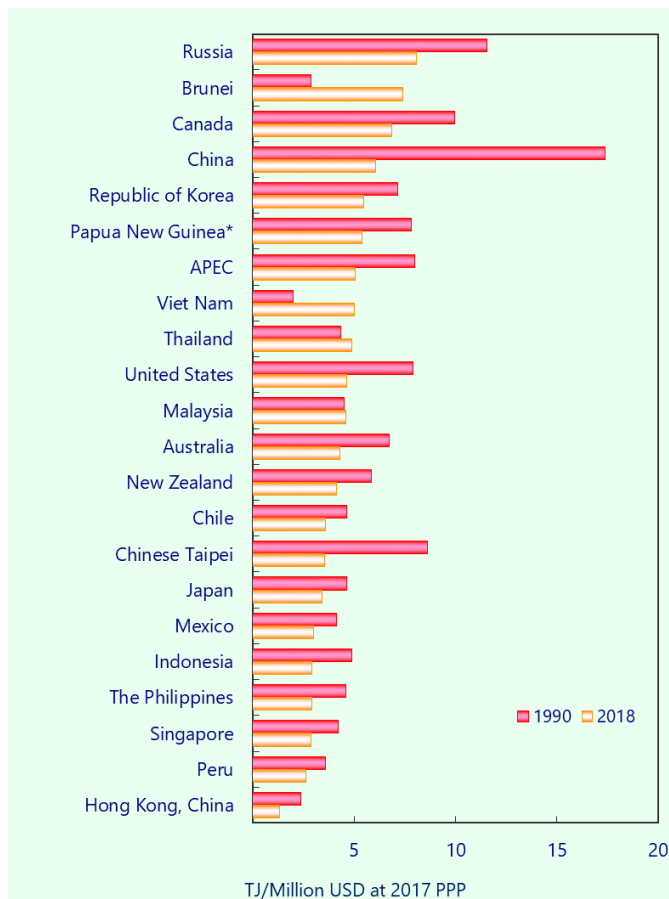
	1990	1995	2000	2005	2010	2018
Population (million)	2 286	2 429	2 554	2 654	2 750	2 905
Primary Energy Supply per Capita (GJ)	86.35	87.65	91.19	103.52	111.34	118.96
	1990	1995	2000	2005	2010	2018
GDP (\$ 2017 PPP)	24 761	28 050	34 173	41 701	50 335	65 678
Primary Energy Supply per GDP (TJ/million \$ at 2017 PPP)	8.0	7.6	6.8	6.6	6.1	5.1

Total primary energy supply per capita 1990 vs 2018 by economy



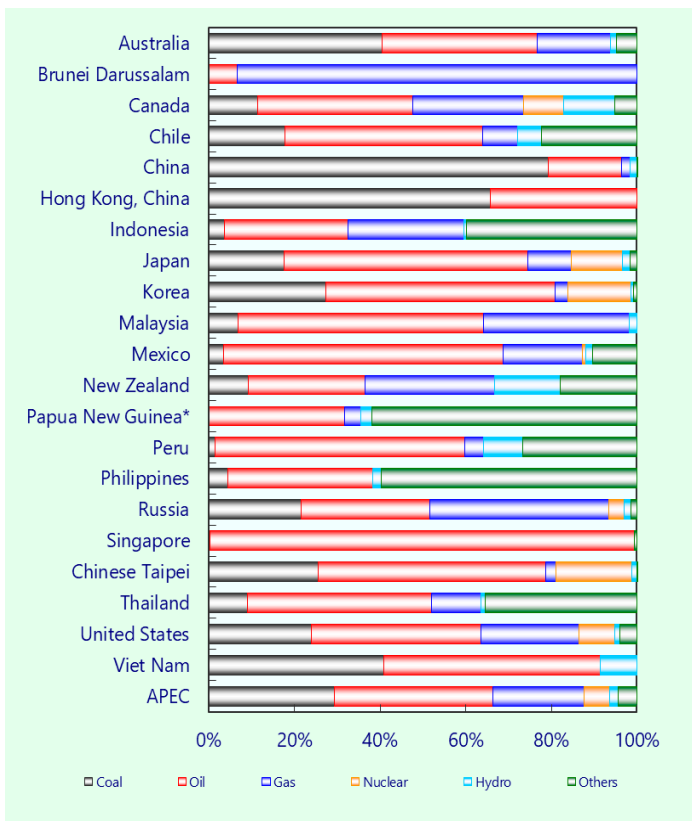
*1994 and 2018 data used for Papua New Guinea

Total primary energy supply per GDP 1990 vs 2018 by economy



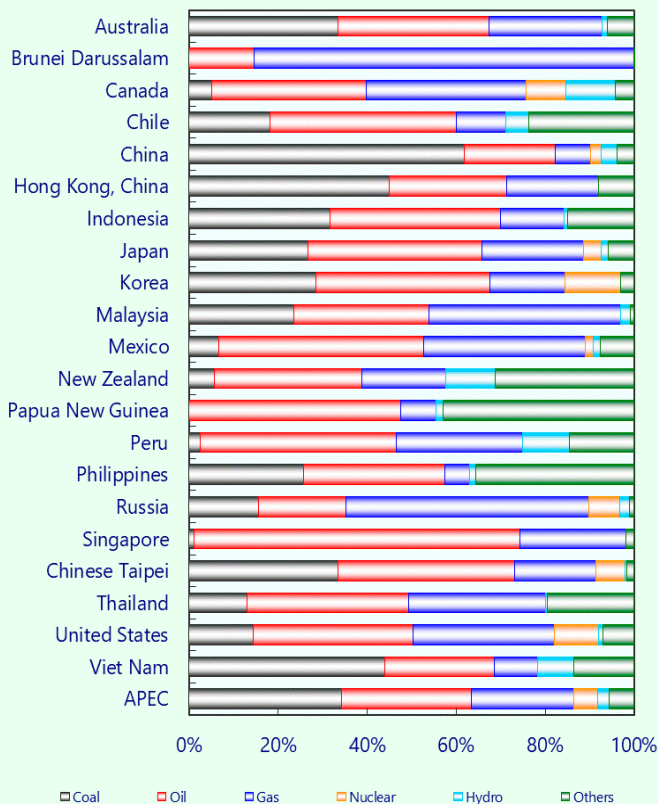
*1994 and 2018 data used for Papua New Guinea

Primary energy mix by economy 1990



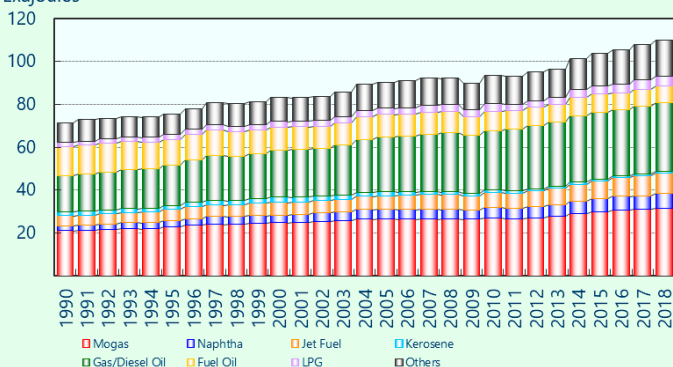
*1994 data used for Papua New Guinea

Primary energy mix by economy 2018



Petroleum refining by product APEC

Exajoules

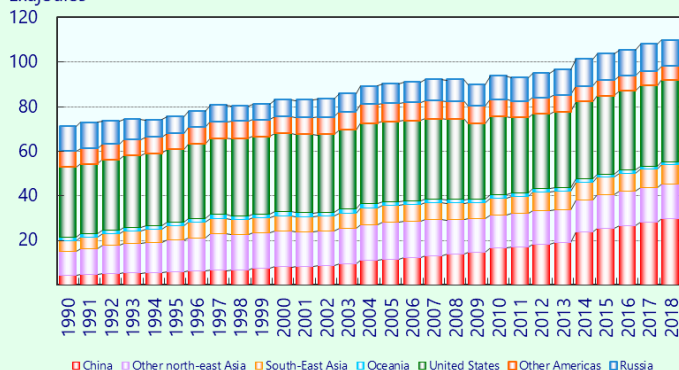


	Exajoules					
	1990	1995	2000	2005	2010	2018
Mogas	21.1	22.8	24.8	26.4	27.0	31.4
Naphtha	2.3	3.0	3.5	4.5	4.9	6.9
Jet Fuel	4.7	5.1	6.0	6.5	6.9	9.7
Kerosene	1.7	1.9	2.3	1.9	1.2	.8
Gas/Diesel Oil	16.9	18.6	21.8	25.5	27.8	32.0
Fuel Oil	13.4	12.2	11.0	10.5	9.0	7.7
LPG	1.9	2.3	2.7	2.9	3.6	4.6
Others	9.1	9.6	10.9	11.9	13.3	16.9
Total	71.2	75.5	83.1	90.2	93.7	109.9

	Share (%)					
	1990	1995	2000	2005	2010	2018
Mogas	29.6	30.2	29.9	29.3	28.8	28.6
Naphtha	3.3	4.0	4.2	5.0	5.2	6.3
Jet Fuel	6.6	6.7	7.3	7.2	7.4	8.9
Kerosene	2.4	2.5	2.8	2.1	1.3	0.7
Gas/Diesel Oil	23.8	24.7	26.2	28.3	29.7	29.1
Fuel Oil	18.8	16.1	13.2	11.6	9.6	7.0
LPG	2.7	3.0	3.3	3.2	3.8	4.2
Others	12.8	12.7	13.1	13.2	14.1	15.3

Petroleum refining by region APEC

Exajoules

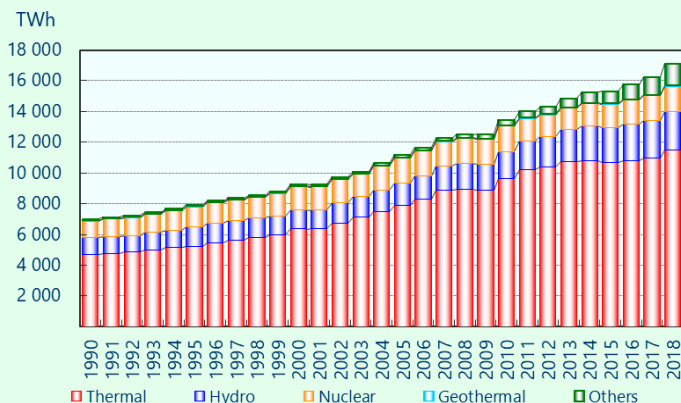


	Exajoules					
	1990	1995	2000	2005	2010	2018
China	4.5	5.9	8.2	11.6	16.6	29.7
Other north-east Asia	10.5	14.3	15.9	16.3	15.0	15.5
South-East Asia	4.8	6.3	6.8	7.6	7.3	8.8
Oceania	1.6	1.7	1.8	1.7	1.6	1.3
United States	31.6	32.6	35.3	36.1	35.2	36.8
Other Americas	7.1	7.3	7.5	8.1	7.6	6.2
Russia	11.3	7.5	7.5	8.7	10.5	11.8
Total	71.2	75.5	83.1	90.2	93.7	109.9

	Share (%)					
	1990	1995	2000	2005	2010	2018
China	6.3	7.8	9.9	12.9	17.7	27.0
Other north-east Asia	14.7	18.9	19.1	18.1	16.0	14.1
South-East Asia	6.7	8.3	8.1	8.4	7.8	8.0
Oceania	2.2	2.3	2.2	1.9	1.7	1.1
United States	44.3	43.2	42.5	40.0	37.6	33.5
Other Americas	9.9	9.6	9.1	9.0	8.2	5.6
Russia	15.9	9.9	9.1	9.7	11.2	10.7

Electricity generation by type

APEC

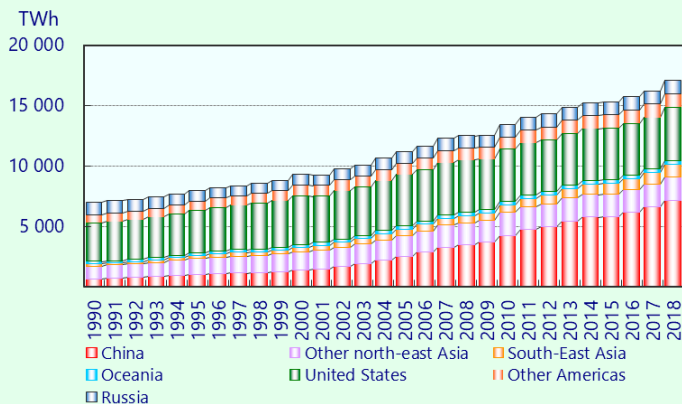


	TWh					
	1990	1995	2000	2005	2010	2018
Thermal	4 703	5 234	6 383	7 920	9 614	11 491
Hydro	1 079	1 248	1 250	1 452	1 780	2 474
Nuclear	1 094	1 326	1 496	1 608	1 658	1 681
Geothermal	35	34	41	48	53	60
Others	106	103	109	154	353	1 409
Total	7 016	7 944	9 279	11 181	13 457	17 115

	Share (%)					
	1990	1995	2000	2005	2010	2018
Thermal	67.0	65.9	68.8	70.8	71.4	67.1
Hydro	15.4	15.7	13.5	13.0	13.2	14.5
Nuclear	15.6	16.7	16.1	14.4	12.3	9.8
Geothermal	0.5	0.4	0.4	0.4	0.4	0.4
Others	1.5	1.3	1.2	1.4	2.6	8.2

Note: Others comprise power generated from other renewable energy sources.

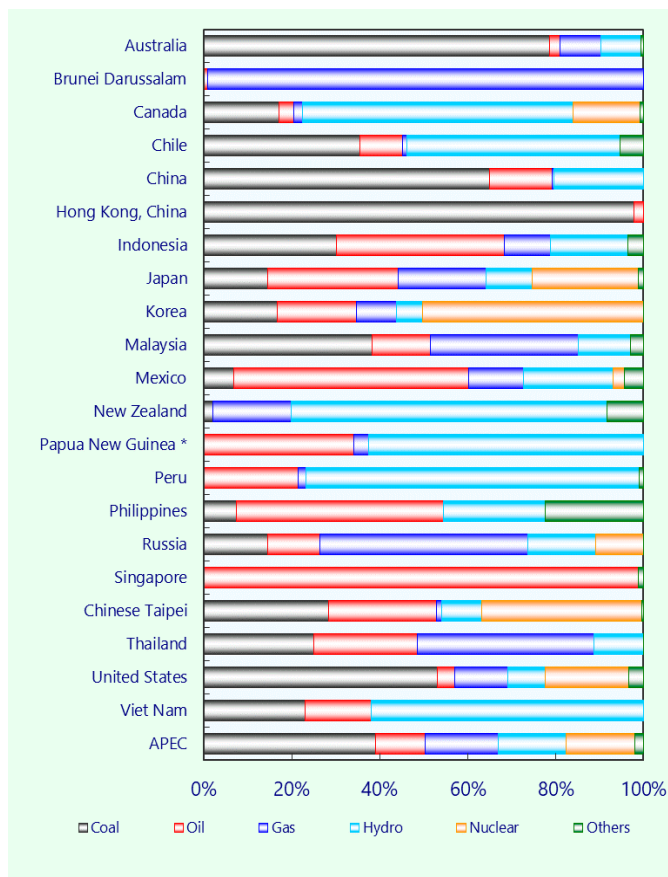
Electricity generation by region APEC



	TWh					
	1990	1995	2000	2005	2010	
China	621	1 019	1 356	2 500	4 207	7 166
Other north-east Asia	1 067	1 296	1 540	1 733	1 925	1 949
South-East Asia	227	245	358	505	661	1 016
Oceania	187	210	252	275	301	310
United States	3 203	3 558	4 026	4 268	4 351	4 434
Other Americas	630	756	871	949	976	1 127
Russia	1 082	859	876	951	1 036	1 113
Total	7 016	7 944	9 279	11 181	13 457	17 115

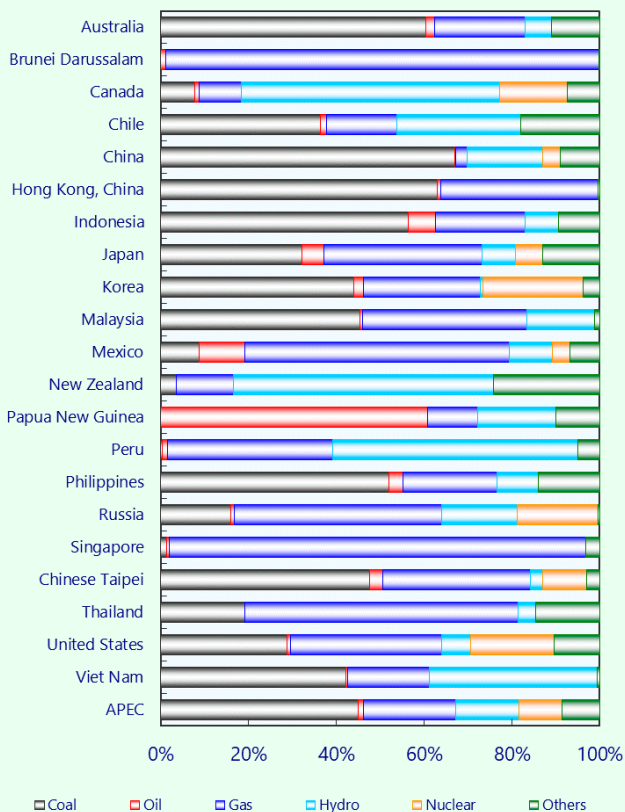
	Share (%)					
	1990	1995	2000	2005	2010	0
China	8.9	12.8	14.6	22.4	31.3	41.9
Other north-east Asia	15.2	16.3	16.6	15.5	14.3	11.4
South-East Asia	3.2	3.1	3.9	4.5	4.9	5.9
Oceania	2.7	2.6	2.7	2.5	2.2	1.8
United States	45.6	44.8	43.4	38.2	32.3	25.9
Other Americas	9.0	9.5	9.4	8.5	7.3	6.6
Russia	15.4	10.8	9.4	8.5	7.7	6.5

Electricity generation by economy 1990

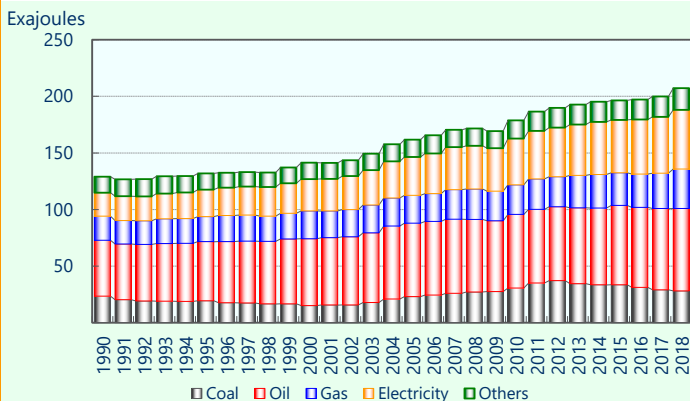


*1994 data used for Papua New Guinea

Electricity generation by economy 2018



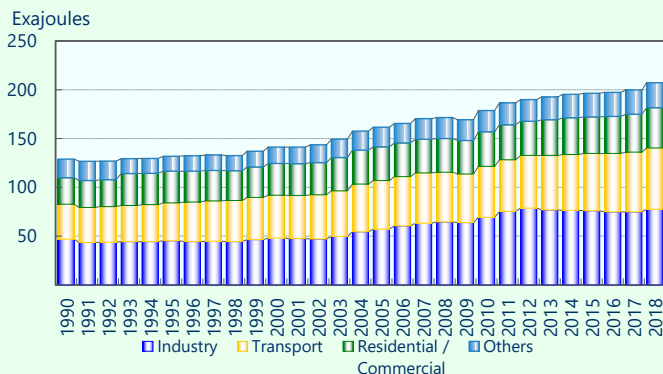
Total final energy consumption by energy APEC



	Exajoules					
	1990	1995	2000	2005	2010	2018
Coal	23.0	18.9	14.8	22.6	30.2	27.7
Oil	49.5	52.3	59.1	65.0	65.0	72.9
Gas	21.3	22.1	24.6	24.5	26.2	34.8
Electricity	20.7	23.8	28.0	33.9	40.8	52.4
Others	14.2	14.4	14.5	15.3	16.2	19.1
Total	128.6	131.5	141.0	161.3	178.4	206.8

	Share (%)					
	1990	1995	2000	2005	2010	2018
Coal	17.9	14.4	10.5	14.0	16.9	13.4
Oil	38.5	39.8	41.9	40.3	36.5	35.2
Gas	16.6	16.8	17.4	15.2	14.7	16.8
Electricity	16.1	18.1	19.9	21.0	22.9	25.3
Others	11.0	10.9	10.3	9.5	9.1	9.2

Total final energy consumption by sector APEC

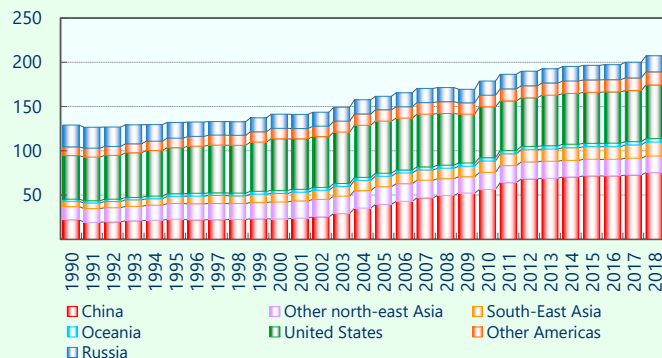


	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	46.8	45.5	48.1	57.2	69.4	77.6
Transport	36.0	38.7	43.9	49.8	52.2	62.7
Residential / Commercial	27.1	32.5	32.5	34.6	35.4	41.2
Others	18.6	14.8	16.5	19.7	21.3	25.3
Total	128.6	131.5	141.0	161.3	178.4	206.8

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	36.4	34.6	34.1	35.5	38.9	37.5
Transport	28.0	29.5	31.1	30.9	29.3	30.3
Residential / Commercial	21.1	24.7	23.0	21.4	19.9	19.9
Others	14.5	11.2	11.7	12.2	12.0	12.2

Total final energy consumption by region APEC

Exajoules



Exajoules

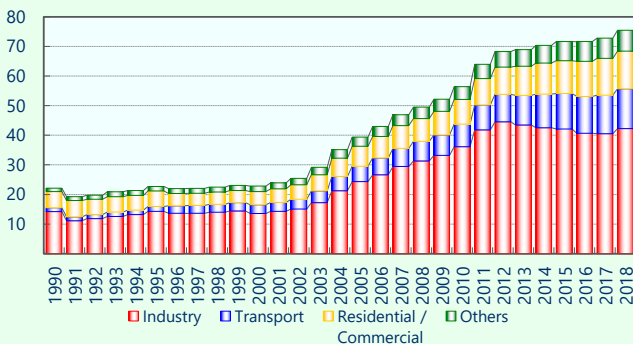
	1990	1995	2000	2005	2010	2018
China	22.2	22.7	22.9	39.4	56.4	75.4
Other north-east Asia	14.5	17.4	19.0	19.6	18.9	18.2
South-East Asia	5.8	8.1	9.6	12.0	12.7	15.9
Oceania	2.6	2.9	3.3	3.4	3.6	3.9
United States	49.2	51.8	58.3	58.9	57.7	60.5
Other Americas	9.9	10.8	11.9	12.6	13.1	14.7
Russia	24.5	17.7	16.0	15.4	15.9	18.2
Total	128.6	131.5	141.0	161.3	178.4	206.8

Share (%)

	1990	1995	2000	2005	2010	2018
China	17.2	17.3	16.2	24.4	31.6	36.4
Other north-east Asia	11.3	13.3	13.5	12.1	10.6	8.8
South-East Asia	4.5	6.2	6.8	7.4	7.1	7.7
Oceania	2.0	2.2	2.3	2.1	2.0	1.9
United States	38.2	39.4	41.4	36.5	32.3	29.2
Other Americas	7.7	8.2	8.4	7.8	7.3	7.1
Russia	19.0	13.5	11.3	9.5	8.9	8.8

Total final energy consumption by sector China

Exajoules

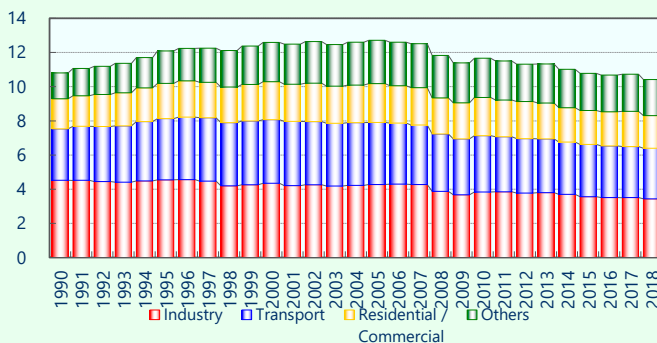


	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	14.2	14.3	13.6	24.3	36.1	42.3
Transport	1.2	1.6	2.9	5.2	7.6	13.4
Residential / Commercial	5.5	5.3	4.5	6.7	8.3	12.7
Others	1.1	1.5	1.9	3.1	4.3	7.0
Total	22.2	22.7	22.9	39.4	56.4	75.4

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	64.3	62.9	59.4	61.8	64.0	56.1
Transport	5.6	7.1	12.9	13.2	13.5	17.8
Residential / Commercial	24.9	23.3	19.5	17.1	14.8	16.8
Others	5.2	6.6	8.3	7.9	7.7	9.3

Total final energy consumption by sector Japan

Exajoules

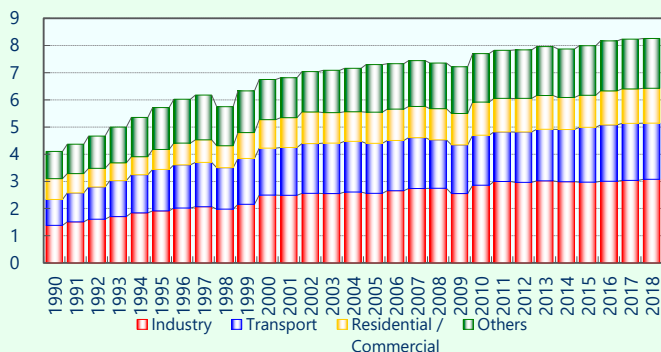


	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	4.5	4.6	4.3	4.3	3.8	3.4
Transport	3.0	3.6	3.7	3.6	3.3	3.0
Residential / Commercial	1.8	2.1	2.2	2.3	2.2	1.9
Others	1.5	1.9	2.3	2.5	2.3	2.1
Total	10.8	12.1	12.6	12.7	11.7	10.4

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	41.9	37.6	34.5	33.7	32.9	33.0
Transport	27.9	29.7	29.6	28.6	28.2	28.3
Residential / Commercial	16.2	17.0	17.6	17.9	19.2	18.4
Others	14.1	15.7	18.3	19.9	19.7	20.3

Total final energy consumption by sector Other north-east Asia*

Exajoules



Exajoules

	1990	1995	2000	2005	2010	2018
Industry	1.4	1.9	2.5	2.6	2.9	3.1
Transport	1.0	1.5	1.7	1.8	1.8	2.1
Residential / Commercial	0.8	0.7	1.0	1.2	1.2	1.3
Others	0.6	1.2	1.1	1.4	1.4	1.4
Total	3.7	5.3	6.4	7.0	7.4	7.9

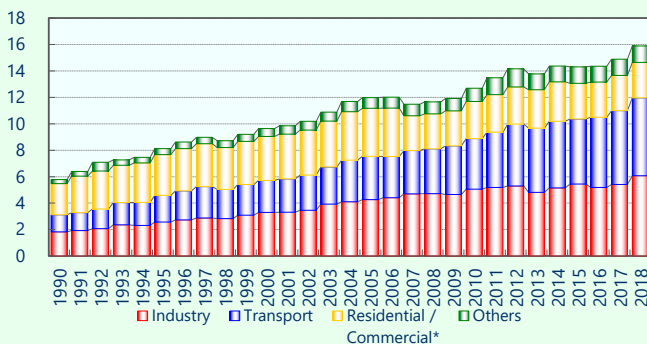
Share (%)

	1990	1995	2000	2005	2010	2018
Industry	37.3	36.1	39.6	37.5	39.4	39.4
Transport	25.6	28.6	27.1	26.5	25.0	26.1
Residential / Commercial	20.7	13.8	16.4	16.6	16.6	16.2
Others	16.4	21.5	17.0	19.4	19.0	18.2

*In this page, Other north-east Asia includes Hong Kong, China; Republic of Korea and Chinese Taipei

Total final energy consumption by sector South-East Asia

Exajoules



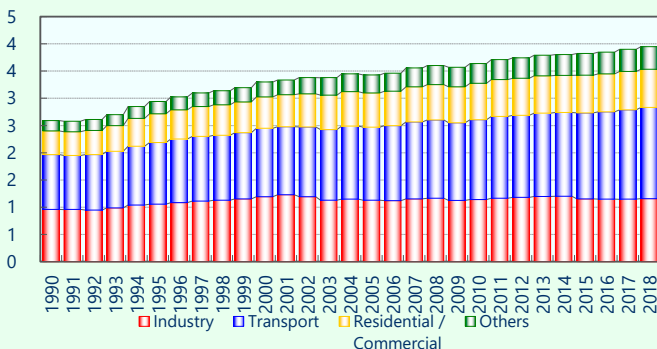
	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	1.8	2.6	3.3	4.3	5.1	6.1
Transport	1.3	2.0	2.4	3.3	3.8	5.9
Residential / Commercial*	2.4	3.1	3.3	3.6	2.8	2.7
Others	0.3	0.5	0.6	0.8	1.0	1.2
Total	5.8	8.1	9.6	12.0	12.7	15.9

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	31.7	31.7	34.2	35.6	39.8	38.3
Transport	22.3	24.8	25.2	27.3	30.2	37.0
Residential / Commercial*	40.7	37.9	34.4	30.3	22.1	16.9
Others	5.3	5.6	6.2	6.8	7.8	7.8

* Abrupt increase in 2004 is due to the availability of traditional biomass data from Viet Nam

Total final energy consumption by sector Oceania

Exajoules



Exajoules

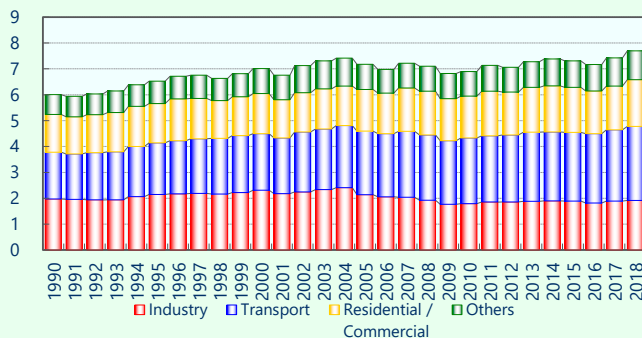
	1990	1995	2000	2005	2010	2018
Industry	1.0	1.1	1.2	1.1	1.1	1.2
Transport	1.0	1.1	1.3	1.3	1.5	1.7
Residential / Commercial	0.4	0.5	0.6	0.6	0.7	0.7
Others	0.2	0.2	0.3	0.3	0.4	0.4
Total	2.6	2.9	3.3	3.4	3.6	3.9

Share (%)

	1990	1995	2000	2005	2010	2018
Industry	37.1	36.0	36.2	32.9	31.4	29.3
Transport	38.9	38.4	38.1	39.1	40.3	42.4
Residential / Commercial	16.7	17.9	17.5	18.3	18.3	17.8
Others	7.3	7.7	8.2	9.6	9.9	10.5

Total final energy consumption by sector Canada

Exajoules

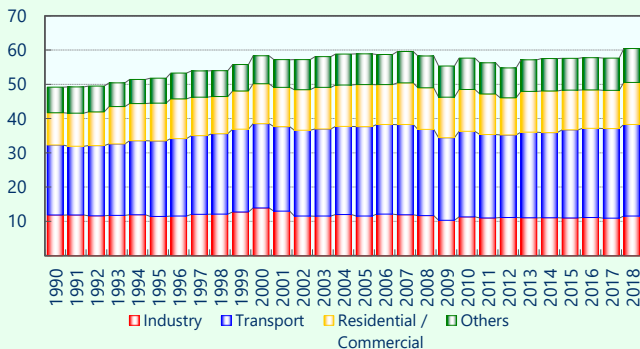


	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	2.0	2.1	2.3	2.1	1.8	1.9
Transport	1.8	2.0	2.2	2.5	2.5	2.9
Residential / Commercial	1.5	1.5	1.6	1.6	1.6	1.8
Others	0.8	0.9	1.0	1.0	1.0	1.1
Total	6.0	6.5	7.0	7.2	6.9	7.7

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	32.9	32.9	33.0	29.8	26.0	24.9
Transport	30.1	30.7	31.1	34.3	36.8	37.1
Residential / Commercial	24.2	23.3	22.1	22.4	23.5	23.5
Others	12.8	13.2	13.7	13.5	13.8	14.5

Total final energy consumption by sector United States

Exajoules



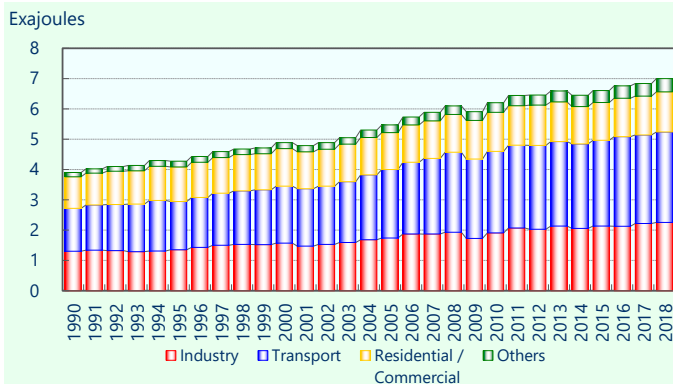
Exajoules

	1990	1995	2000	2005	2010	2018
Industry	11.9	11.4	13.9	11.6	11.3	11.6
Transport	20.4	22.1	24.6	26.1	24.9	26.7
Residential / Commercial	9.4	11.0	11.6	12.3	12.2	12.2
Others	7.5	7.3	8.1	8.9	9.2	10.0
Total	49.2	51.8	58.3	58.9	57.7	60.5

Share (%)

	1990	1995	2000	2005	2010	2018
Industry	24.2	22.1	23.8	19.7	19.6	19.1
Transport	41.5	42.6	42.2	44.3	43.2	44.2
Residential / Commercial	19.1	21.3	20.0	20.9	21.2	20.2
Others	15.2	14.0	14.0	15.2	15.9	16.5

Total final energy consumption by sector Other Americas*

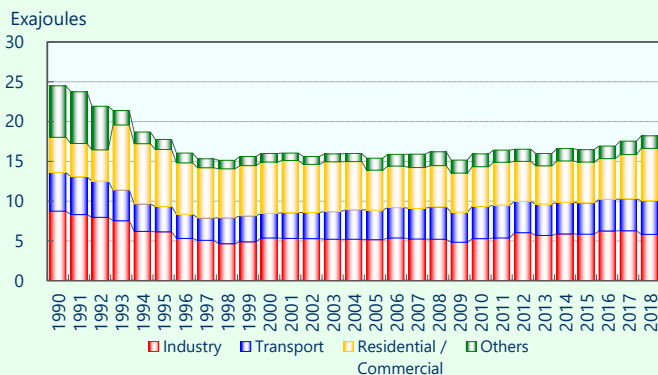


	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	1.3	1.3	1.6	1.7	1.9	2.2
Transport	1.4	1.6	1.9	2.3	2.7	3.0
Residential / Commercial	1.0	1.1	1.2	1.2	1.3	1.3
Others	0.1	0.2	0.2	0.3	0.3	0.4
Total	3.9	4.3	4.9	5.5	6.2	7.0

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	33.3	31.6	32.1	31.8	30.8	32.1
Transport	36.4	37.2	38.5	41.3	43.4	42.7
Residential / Commercial	26.8	26.8	25.3	22.3	20.8	18.9
Others	3.5	4.4	4.1	4.6	5.0	6.2

*Other Americas include Chile; Mexico and Peru.

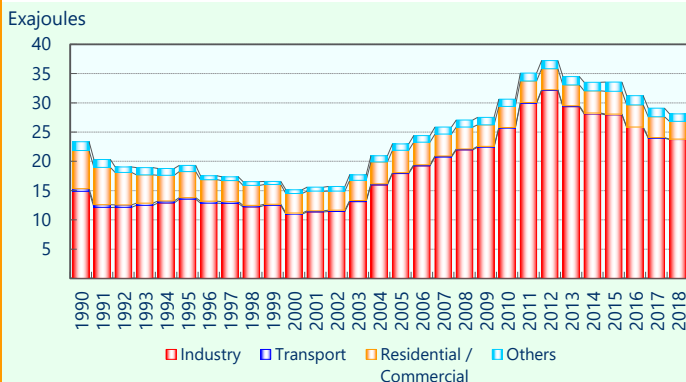
Total final energy consumption by sector Russia



	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	8.7	6.1	5.4	5.2	5.3	5.8
Transport	4.9	3.2	3.1	3.7	4.0	4.2
Residential / Commercial	4.4	7.2	6.4	5.0	5.0	6.6
Others	6.5	1.2	1.1	1.5	1.6	1.6
Total	24.5	17.7	16.0	15.4	15.9	18.2

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	35.7	34.6	33.5	33.5	33.2	32.0
Transport	19.8	18.0	19.5	24.1	25.4	23.2
Residential / Commercial	18.1	40.4	40.3	32.7	31.4	36.1
Others	26.4	7.0	6.6	9.7	10.0	8.7

Coal* demand by sector APEC



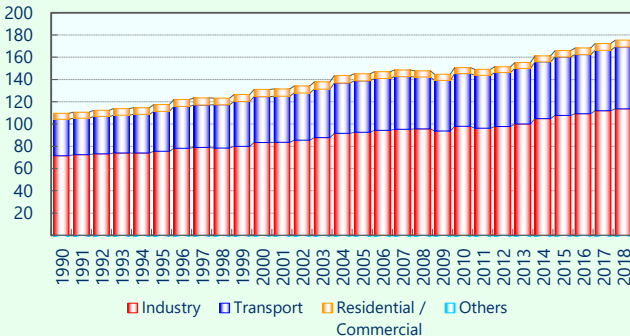
	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	14.9	13.5	11.0	17.9	25.6	23.7
Transport	0.5	0.3	0.2	0.2	0.1	0.1
Residential / Commercial	6.1	4.1	2.9	3.4	3.2	2.6
Others	1.5	1.1	0.6	1.1	1.2	1.3
Total	23.0	18.9	14.8	22.6	30.2	27.7

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	64.7	71.5	74.5	79.2	84.8	85.7
Transport	2.0	1.5	1.3	0.8	0.4	0.3
Residential / Commercial	26.6	21.4	19.8	15.2	10.6	9.5
Others	6.6	5.6	4.3	4.8	4.1	4.5

*Coal and Coal Products

Oil demand by sector APEC

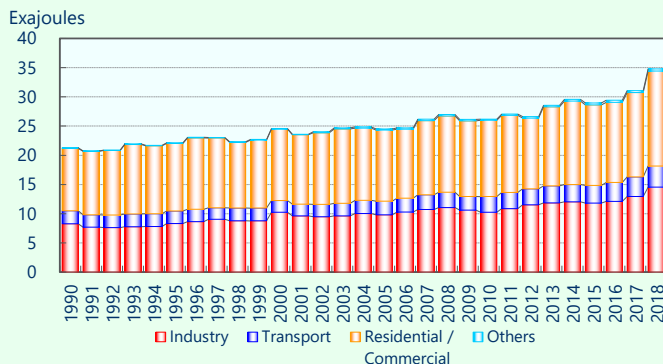
Exajoules



	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	71.4	75.6	83.5	92.5	97.9	113.8
Transport	32.8	35.8	41.1	46.2	47.4	55.5
Residential / Commercial	5.4	6.1	6.5	6.5	5.5	6.1
Others	- 60.2	- 65.2	- 72.0	- 80.2	- 85.8	- 102.5
Total	49.5	52.3	59.1	65.0	65.0	72.9

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	144.4	144.6	141.3	142.4	150.6	156.1
Transport	66.3	68.4	69.6	71.1	72.8	76.1
Residential / Commercial	11.0	11.6	11.1	10.0	8.5	8.4
Others	-121.7	-124.7	-122.0	-123.4	-131.9	-140.7

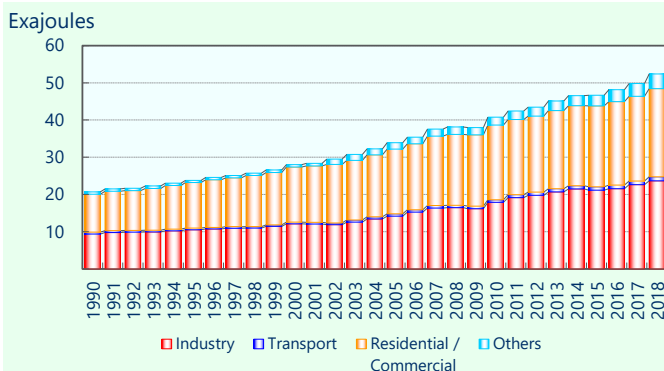
Gas demand by sector APEC



	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	8.3	8.3	10.3	9.8	10.3	14.6
Transport	2.2	2.1	2.0	2.3	2.7	3.6
Residential / Commercial	10.7	11.6	12.2	12.2	13.0	16.2
Others	0.1	0.1	0.1	0.2	0.2	0.4
Total	21.3	22.1	24.6	24.5	26.2	34.8

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	39.0	37.6	41.7	40.0	39.2	41.9
Transport	10.3	9.7	8.1	9.6	10.2	10.4
Residential / Commercial	50.3	52.3	49.7	49.7	49.8	46.7
Others	0.4	0.4	0.5	0.7	0.8	1.1

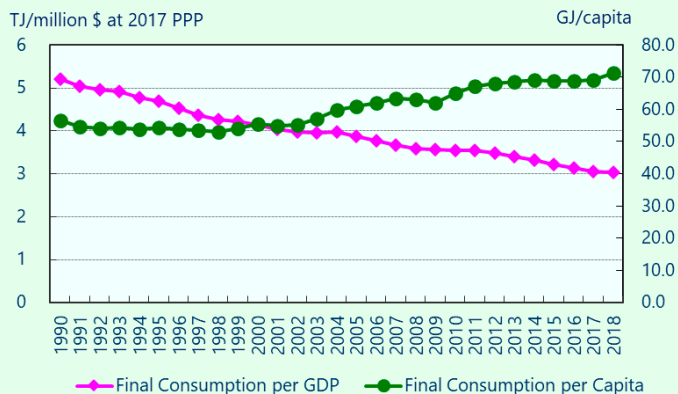
Electricity demand by sector APEC



	Exajoules					
	1990	1995	2000	2005	2010	2018
Industry	9.4	10.5	12.1	14.2	17.9	23.7
Transport	0.5	0.4	0.4	0.6	0.7	1.1
Residential / Commercial	10.2	12.2	14.8	17.4	20.0	23.7
Others	0.6	0.6	0.7	1.7	2.1	3.9
Total	20.7	23.8	28.0	33.9	40.8	52.4

	Share (%)					
	1990	1995	2000	2005	2010	2018
Industry	45.4	44.3	43.3	41.9	43.9	45.2
Transport	2.5	1.8	1.6	1.8	1.8	2.0
Residential / Commercial	49.2	51.5	52.7	51.3	49.1	45.2
Others	2.9	2.5	2.3	5.0	5.3	7.5

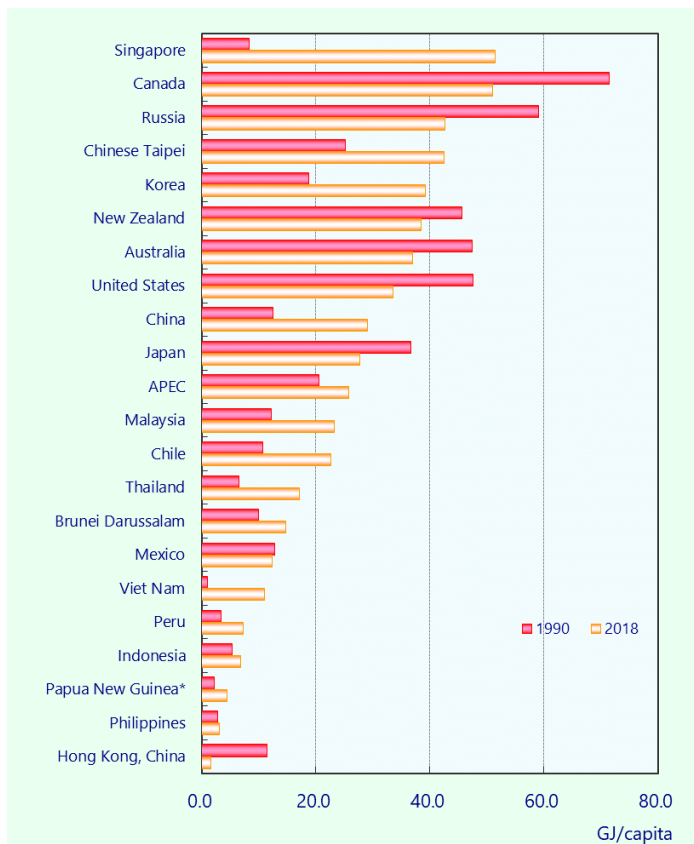
Final consumption per capita and GDP APEC



	1990	1995	2000	2005	2010	2018
Population (million)	2 286	2 429	2 554	2 654	2 750	2 905
Final Consumption per Capita (GJ)	56.25	54.14	55.19	60.78	64.86	71.21

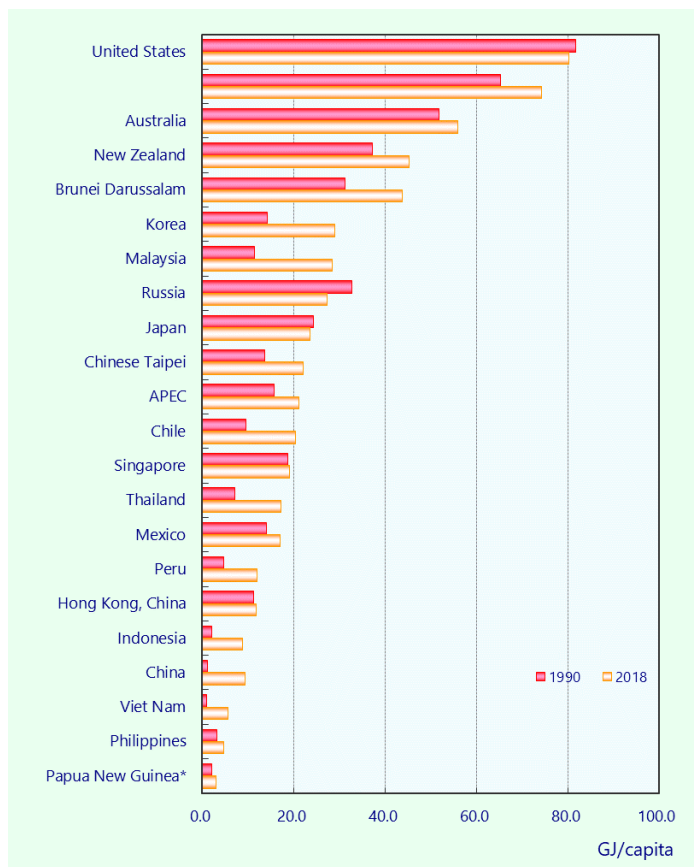
	1990	1995	2000	2005	2010	2018
GDP (billion \$ at 2017 PPP)	24 761	28 050	34 173	41 701	50 335	68 384
Final Consumption per GDP (TJ/million \$ at 2017 PPP)	5.19	4.69	4.13	3.87	3.54	3.47

Energy consumption in industry: APEC



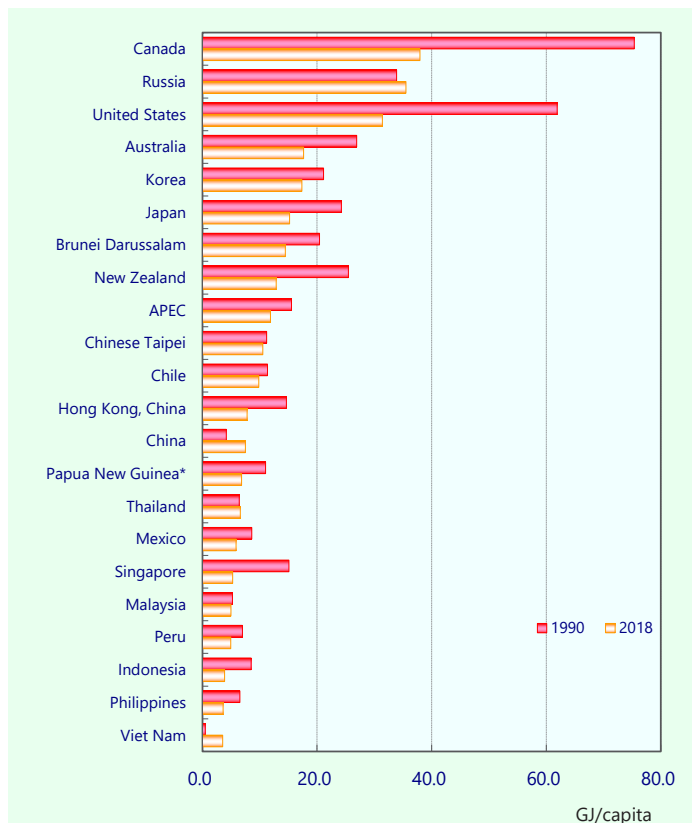
*1994 and 2018 data used for Papua New Guinea

Energy consumption in transportation: APEC



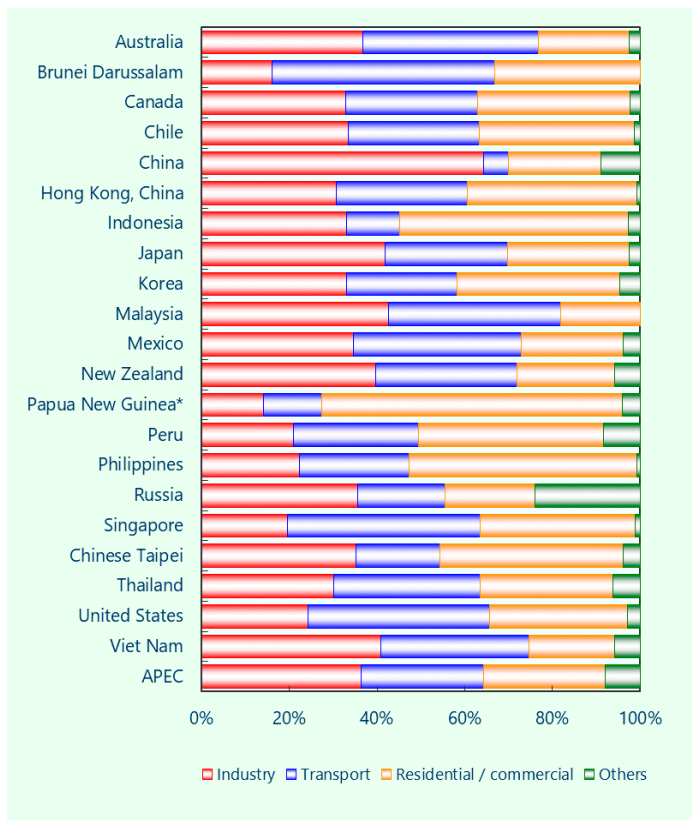
*1994 and 2018 data used for Papua New Guinea

Energy consumption in residential/ commercial: APEC



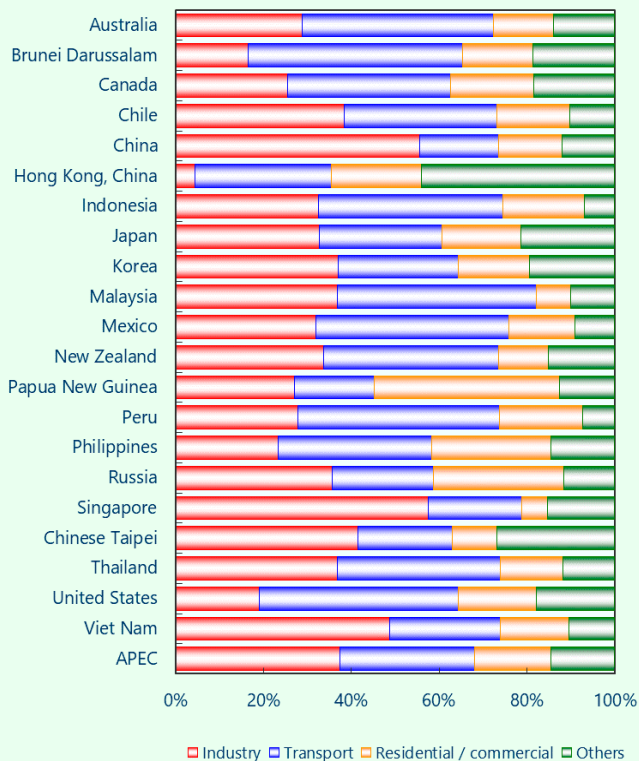
*1994 and 2018 data used for Papua New Guinea

Final energy consumption by sector 1990

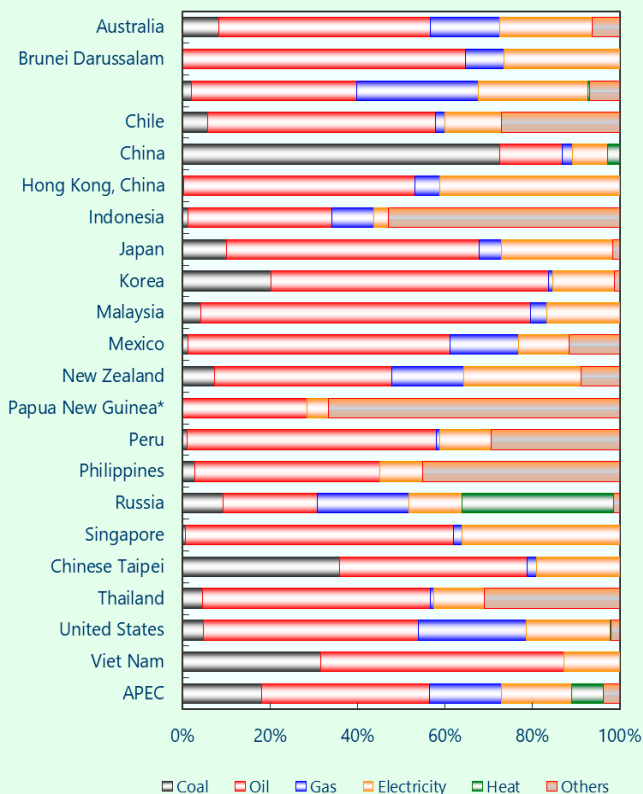


*1994 data used for Papua New Guinea

Final energy consumption by sector 2018

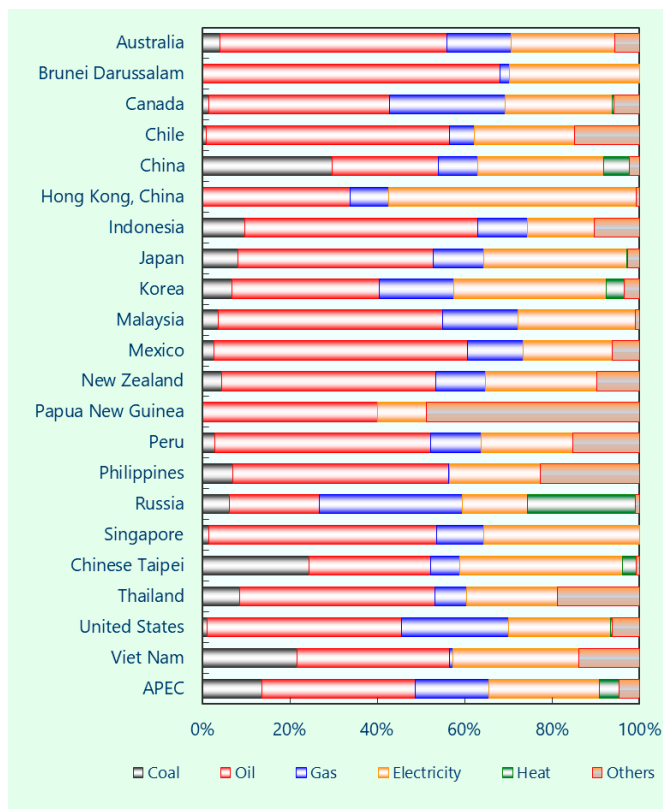


Final energy consumption by energy 1990



*1994 data used for Papua New Guinea

Final energy consumption by energy 2018



APEC, 2018

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	130 596		81 265	
2 Import	18 959	589	61 889	24 347
3 Export	- 28 622	- 450	- 29 473	- 28 285
4 International marine and aviation bunkers				- 8 598
5 Stock change	- 2 237	- 147	- 417	- 301
6 Total primary energy supply	118 738	- 8	113 327	- 12 860
7 Transfers			- 4 829	950
8 Main activity producers	- 73 621	- 616	- 27	- 1 447
9 Autoproducers	- 1 334	- 1 732	- 20	- 1 010
10 Gas processing	- 535			- 89
11 Petroleum refineries			- 107 848	109 934
12 Coal transformation	- 22 326	12 428		- 19
13 Other transformation			1 087	- 779
14 Loss & own-use	- 1 683	- 826	- 484	- 4 754
15 Discrepancy	2 725	- 173	- 679	459
16 Total final consumption	21 964	9 073	528	90 385
17 Total final energy consumption	19 257	8 463	3	72 875
18 Industry sector	15 470	8 279	3	7 108
19 Transport sector	72			55 443
20 Other sector	3 714	184		10 324
20.1 Residential & Commercial	2 498	149		6 139
20.2 Agriculture	536	29		2 355
20.3 Other	680	6		1 829
21 Non-energy	2 707	610	524	17 510

Australia, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	12 035		576	
2 Import	6	6	767	1 281
3 Export	- 10 318	- 16	- 458	- 96
4 International marine and aviation bunkers				- 223
5 Stock change	84		4	- 34
6 Total primary energy supply	1 807	- 9	889	928
7 Transfers			16	127
8 Main activity producers	- 1 574			- 8
9 Autoproducers				- 40
10 Gas processing				
11 Petroleum refineries			- 1 042	967
12 Coal transformation	- 122	68		
13 Other transformation				
14 Loss & own-use		- 36	- 2	- 175
15 Discrepancy	- 4		139	69
16 Total final consumption	106	23	1	1 868
17 Total final energy consumption	106	23	1	1 695
18 Industry sector	106	23	1	162
19 Transport sector				1 379
20 Other sector				154
20.1 Residential & Commercial				52
20.2 Agriculture				102
20.3 Other				
21 Non-energy				173

Unit: PJ

Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
81 403	8 896	18 350	5 860	13 911	2	340 285	26 991
18 761				192	468	125 204	192
- 21 023				- 331	- 435	- 108 620	- 331
						- 8 604	- 6
312				- 4		- 2 793	- 2
79 430	8 896	18 350	5 860	13 762	35	345 532	26 844
7						- 3 871	
- 27 499	- 8 761	- 18 350	- 5 248	- 2 994	67 458	- 71 106	- 15 915
- 4 629	- 135		- 392	- 1 075	5 716	- 4 611	- 1 321
- 1 009						- 1 633	
3						2 090	
				- 5		- 9 922	
- 478				- 402	3	- 569	- 402
- 7 929			- 2 614	- 24	- 11 260	- 26 960	- 17
1 136				- 18	27	3 477	- 19
39 033			221	9 244	61 980	232 427	9 170
34 792			221	9 244	61 980	206 835	9 170
14 561			6	3 578	28 626	77 631	3 358
3 613				2 526	1 074	62 729	2 526
16 617			215	3 140	32 280	66 475	3 285
16 234			209	2 883	28 038	56 123	3 019
167			2	261	1 006	4 357	261
216			5	23	3 236	5 995	6
4 241						25 592	

Unit: PJ

Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
4 237	57		107	219		17 231	379
168						2 229	
- 3 042						- 13 929	
						- 223	
						53	
1 363	57		107	219		5 360	379
						143	
- 354	- 57		- 58	- 18	824	- 1 245	- 133
- 161			- 32	- 30	115	- 149	- 63
						- 75	
						- 55	
- 327			- 55		- 171	- 711	
15						220	
536			17	171	768	3 489	184
480			17	171	768	3 260	184
258				117	273	939	113
17				5	21	1 423	5
205			17	49	473	898	66
204			17	49	466	787	66
1					8	111	
56						229	

Brunei Darussalam, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production			246	
2 Import				16
3 Export			- 224	
4 International marine and aviation bunkers				- 4
5 Stock change			- 7	
6 Total primary energy supply			16	12
7 Transfers				
8 Main activity producers				- 1
9 Autoproducers				
10 Gas processing				1
11 Petroleum refineries			- 16	13
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				1
16 Total final consumption				27
17 Total final energy consumption				27
18 Industry sector				6
19 Transport sector				19
20 Other sector				2
20.1 Residential & Commercial				1
20.2 Agriculture				
20.3 Other				1
21 Non-energy				

Canada, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	1 299		11 185	
2 Import	199	30	1 827	566
3 Export	- 836	- 1	- 8 212	- 929
4 International marine and aviation bunkers				- 56
5 Stock change	- 53	3	- 32	- 13
6 Total primary energy supply	609	32	4 768	- 433
7 Transfers			- 315	470
8 Main activity producers	- 452			- 57
9 Autoproducers		- 2		- 23
10 Gas processing				
11 Petroleum refineries			- 4 101	3 911
12 Coal transformation	- 102	59		
13 Other transformation			156	
14 Loss & own-use				- 646
15 Discrepancy	- 14	- 18	- 508	758
16 Total final consumption	42	72		3 980
17 Total final energy consumption	38	70		3 193
18 Industry sector	38	70		257
19 Transport sector				2 583
20 Other sector				353
20.1 Residential & Commercial				125
20.2 Agriculture				228
20.3 Other				
21 Non-energy	3	2		787

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind, etc.	Others	Electricity and Heat	Total	Total Renewables
446						692	
						16	
- 281						- 505	
						- 4	
- 2						- 8	
163						191	
- 49						- 49	
- 6						- 6	
- 40						- 39	
						- 2	
- 46					- 4	- 50	
3					15	20	
26					12	65	
1					12	40	
					1	6	
						19	
1					11	14	
1					11	13	
						1	
25						25	

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind, etc.	Others	Electricity and Heat	Total	Total Renewables
6 477	1 389	1 099	135	575		22 160	2 090
808				56	48	3 533	56
- 2 804				- 58	- 221	- 13 062	- 58
						- 56	
- 20						- 115	
4 461	1 389	1 099	135	572	- 174	12 459	2 087
						155	
- 388	- 1 283	- 1 099	- 126	- 37	2 162	- 1 279	- 1 442
- 259	- 106		- 7	- 76	214	- 260	- 190
						- 190	
						- 42	
- 154						2	
- 1 420			- 120		- 328	- 2 394	
- 80				- 3	42	176	- 3
2 161			2	456	1 916	8 627	451
2 025			2	456	1 916	7 699	451
639				228	688	1 919	221
153				90	29	2 855	90
1 232			2	138	1 199	2 925	140
1 193				138	1 162	2 618	138
39					37	304	
			2		1	3	2
136						929	

Chile, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	38		17	
2 Import	274		377	356
3 Export	- 7	- 1		- 31
4 International marine and aviation bunkers				- 34
5 Stock change	- 5	- 1	2	- 2
6 Total primary energy supply	300	- 2	397	288
7 Transfers			40	- 39
8 Main activity producers	- 279			- 12
9 Autoproducers				- 4
10 Gas processing				
11 Petroleum refineries			- 440	419
12 Coal transformation	- 15	11		
13 Other transformation				
14 Loss & own-use		- 6		- 14
15 Discrepancy	1		3	13
16 Total final consumption	7	3		650
17 Total final energy consumption	7	3		639
18 Industry sector	7	3		151
19 Transport sector				392
20 Other sector				96
20.1 Residential & Commercial				76
20.2 Agriculture				9
20.3 Other				10
21 Non-energy				12

China, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	76 103		7 927	
2 Import	5 030	3	19 338	2 836
3 Export	- 123	- 279	- 110	- 2 686
4 International marine and aviation bunkers				- 401
5 Stock change	- 595	- 152	- 423	- 282
6 Total primary energy supply	80 415	- 428	26 732	- 533
7 Transfers				- 4 544
8 Main activity producers	- 45 936	- 353	- 6	- 105
9 Autoproducers		- 1 317		- 227
10 Gas processing	- 453			
11 Petroleum refineries			- 26 215	29 673
12 Coal transformation	- 16 516	9 150		
13 Other transformation				
14 Loss & own-use	- 1 636	- 369	- 156	- 1 382
15 Discrepancy	2 931	143	- 354	- 214
16 Total final consumption	18 806	6 826	1	22 667
17 Total final energy consumption	16 142	6 293	1	18 273
18 Industry sector	12 499	6 132	1	3 197
19 Transport sector	72			11 202
20 Other sector	3 570	160		3 874
20.1 Residential & Commercial	2 358	125		1 644
20.2 Agriculture	532	29		738
20.3 Other	680	6		1 492
21 Non-energy	2 664	534		4 394

Unit: PJ							Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	
44	84		42	345		571	471
145						1 151	
- 6						- 45	
				- 1		- 8	- 1
183	84		42	344		1 636	470
						1	
- 86	- 84		- 39	- 25	271	- 255	- 148
- 5				- 165	25	- 149	- 165
						- 21	
						- 3	
				- 6		- 6	- 6
- 12			- 13		- 24	- 56	
4				19	- 10	30	19
84			2	168	263	1 177	170
65			2	168	263	1 146	170
36				88	159	443	88
1					4	397	
28			2	80	100	306	82
26				79	91	273	79
1				1	9	20	1
			2			13	2
19						31	

Unit: PJ							Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	
5 967	4 435	3 212	1 958	3 071		102 672	8 687
4 442					20	31 669	
- 125					- 75	- 3 398	
						- 401	
						- 1 451	
10 284	4 435	3 212	1 958	3 071	- 55	129 092	8 687
						- 4 544	
- 2 057	- 4 435	- 3 212	- 1 958	- 1 344	31 047	- 28 359	- 6 961
						- 1 544	
- 1 039						- 1 492	
						3 459	
						- 7 366	
- 1 374			- 1 318	- 6	- 4 882	- 9 805	- 6
1 407				- 2	- 13	3 898	- 1
7 221				1 719	26 097	83 338	1 719
6 850				1 719	26 097	75 375	1 719
3 572				276	16 599	42 277	276
1 018				501	579	13 373	501
2 260				942	8 919	19 725	942
2 039				764	6 222	13 152	764
5				178	448	1 930	178
216					2 250	4 643	
372						7 963	

Hong Kong, China, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production				
2 Import	287			909
3 Export				- 9
4 International marine and aviation bunkers				- 752
5 Stock change	- 17			11
6 Total primary energy supply	270			159
7 Transfers				
8 Main activity producers	- 270			- 3
9 Autoproducers				
10 Gas processing				- 13
11 Petroleum refineries				
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				- 48
16 Total final consumption				95
17 Total final energy consumption				95
18 Industry sector				3
19 Transport sector				82
20 Other sector				10
20.1 Residential & Commercial				10
20.2 Agriculture				
20.3 Other				
21 Non-energy				

Indonesia, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	13 731		1 696	
2 Import	135		663	1 361
3 Export	- 8 774		- 436	- 69
4 International marine and aviation bunkers				
5 Stock change	- 2 259		120	93
6 Total primary energy supply	2 833		2 043	1 385
7 Transfers				
8 Main activity producers	- 2 244			- 161
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 2 004	2 421
12 Coal transformation				
13 Other transformation				- 113
14 Loss & own-use			- 39	- 5
15 Discrepancy				
16 Total final consumption	589			3 527
17 Total final energy consumption	589			3 237
18 Industry sector	589			225
19 Transport sector				2 369
20 Other sector				643
20.1 Residential & Commercial				549
20.2 Agriculture				
20.3 Other				94
21 Non-energy				290

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
				5		5	5
123					45	1 365	
					- 2	- 11	
						- 752	
						- 6	
123				5	43	600	5
- 110					131	- 251	
				- 2		- 2	- 2
13							
					- 15	- 15	
						- 48	
26				2	160	283	2
26				2	160	283	2
1					8	12	
					3	86	
25				2	148	185	2
25				2	148	185	2

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
2 611	78		506	892		19 514	1 474
					5	2 164	
- 1 332				- 73		- 10 684	- 73
						- 2 046	
1 279	78		506	819	5	8 948	1 401
- 392	- 78		- 506	- 186	1 022	- 2 545	- 768
197						197	
						418	
						- 113	
- 381			- 1		- 105	- 530	
135						135	
838				633	922	6 508	633
692				633	922	6 074	633
683				291	337	2 125	291
				177	1	2 548	177
9				164	584	1 401	164
9				164	584	1 306	164
						94	
145						435	

Japan, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	31		17	
2 Import	4 758	47	6 354	1 833
3 Export	- 1	- 42		- 741
4 International marine and aviation bunkers				- 492
5 Stock change		- 2	- 25	15
6 Total primary energy supply	4 788	3	6 346	614
7 Transfers			- 39	33
8 Main activity producers	- 2 502	- 144	- 21	- 256
9 Autoproducers	- 172	- 112		- 169
10 Gas processing				- 59
11 Petroleum refineries			- 6 488	6 597
12 Coal transformation	- 1 685	892		- 19
13 Other transformation			196	- 204
14 Loss & own-use	- 18	- 115	- 2	- 269
15 Discrepancy		- 45	12	- 231
16 Total final consumption	411	478	4	6 036
17 Total final energy consumption	411	442	1	4 656
18 Industry sector	408	437	1	716
19 Transport sector				2 871
20 Other sector	3	4		1 068
20.1 Residential & Commercial	3	4		886
20.2 Agriculture				129
20.3 Other				53
21 Non-energy		36	3	1 380

Korea, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	22		34	
2 Import	3 332	9	6 406	1 716
3 Export			- 26	- 2 944
4 International marine and aviation bunkers				- 622
5 Stock change	9		89	- 33
6 Total primary energy supply	3 363	9	6 504	- 1 884
7 Transfers			139	- 120
8 Main activity producers	- 2 156	- 83		- 65
9 Autoproducers	- 151	- 98		- 75
10 Gas processing				- 9
11 Petroleum refineries			- 7 041	6 850
12 Coal transformation	- 998	512		
13 Other transformation			520	- 481
14 Loss & own-use		- 123		- 247
15 Discrepancy	123	- 4	- 121	- 6
16 Total final consumption	181	212		3 963
17 Total final energy consumption	181	191		1 856
18 Industry sector	181	172		153
19 Transport sector				1 383
20 Other sector		19		320
20.1 Residential & Commercial		19		220
20.2 Agriculture				12
20.3 Other				88
21 Non-energy		21		2 106

Unit: PJ							Total	Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat			
93	291	708	359	607		2 107		991
3 950				58		16 999		58
						- 784		
						- 492		
17						5		
4 060	291	708	359	665		17 836		1 049
						- 6		
- 2 675	- 280	- 708	- 145	- 242	3 216	- 3 757		- 514
- 136	- 12		- 199	- 139	582	- 358		- 318
69						10		
						109		
				- 5		- 817		
				- 1	3	- 5		- 1
- 52			- 27	- 6	- 338	- 800		- 6
- 49				- 12	- 37	- 363		- 13
1 217			16	261	3 426	11 849		197
1 207			16	261	3 426	10 420		197
479				161	1 240	3 442		116
2				18	63	2 954		18
726			16	83	2 124	4 024		63
726			15	60	2 112	3 807		61
					10	140		
				22	1	77		1
9						1 429		

Unit: PJ							Total	Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat			
11	12	1 456	54	302	2	1 894		230
2 078						13 542		
						- 2 970		
- 91						- 622		
1 998	12	1 456	54	302	2	11 818		230
						19		
- 1 014	- 12	- 1 456	- 40	- 72	2 079	- 2 821		- 118
- 73			- 4	- 52	280	- 172		- 20
						- 9		
						- 190		
						- 486		
						39		
- 6			- 11		- 211	- 588		
33					- 5	20		
938			11	178	2 145	7 629		92
938			11	178	2 145	5 501		92
315				109	1 136	2 067		30
51				27	11	1 472		27
572			10	42	998	1 962		35
572			9	65	938	1 797		31
			1	3	50	67		4
					10	98		
						2 128		

Malaysia, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	70		1 423	
2 Import	868		388	827
3 Export			- 628	- 671
4 International marine and aviation bunkers				- 122
5 Stock change	8		- 19	20
6 Total primary energy supply	946		1 164	54
7 Transfers			- 85	85
8 Main activity producers	- 857			- 9
9 Autoproducers				- 6
10 Gas processing				23
11 Petroleum refineries			- 1 071	1 032
12 Coal transformation				
13 Other transformation				
14 Loss & own-use			- 8	- 25
15 Discrepancy	- 14		- 2	14
16 Total final consumption	76			1 168
17 Total final energy consumption	76			1 050
18 Industry sector	76			102
19 Transport sector				856
20 Other sector				92
20.1 Residential & Commercial				52
20.2 Agriculture				12
20.3 Other				28
21 Non-energy				118

Mexico, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	286		4 425	
2 Import	227	35	31	2 384
3 Export		- 1	- 2 765	- 301
4 International marine and aviation bunkers				- 218
5 Stock change	- 44		- 43	- 20
6 Total primary energy supply	469	33	1 648	1 845
7 Transfers			- 208	242
8 Main activity producers	- 324			- 287
9 Autoproducers		- 3		- 57
10 Gas processing				- 33
11 Petroleum refineries			- 1 571	1 512
12 Coal transformation	- 46	16		
13 Other transformation			3	- 1
14 Loss & own-use		- 15		- 157
15 Discrepancy	5	1	128	22
16 Total final consumption	104	33		3 086
17 Total final energy consumption	104	30		2 908
18 Industry sector	104	30		238
19 Transport sector				2 224
20 Other sector				446
20.1 Residential & Commercial				305
20.2 Agriculture				141
20.3 Other				
21 Non-energy		3		178

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
2 569	95		2	46		4 205	143
291						2 374	
- 1 143				- 17	- 5	- 2 465	- 17
						- 122	
				6		15	6
1 717	95		2	34	- 5	4 007	132
- 484	- 95		- 2	- 5	583	- 867	- 102
- 53				- 11	26	- 45	- 11
- 265						- 242	
						- 38	
- 35					- 51	- 119	
- 90					- 2	- 94	
790				18	550	2 602	18
352				18	550	2 046	18
346					274	797	
5				18	2	881	18
1					275	368	
1					272	325	
					2	15	
						28	
438						555	

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
1 079	117	149	178	387		6 622	679
1 616					14	4 306	
					- 8	- 3 077	
						- 218	
35						- 72	
2 729	117	149	178	387	5	7 562	679
						34	
- 1 175	- 114	- 149	- 121		965	- 1 204	- 234
- 491	- 4		- 46	- 82	243	- 439	- 128
1						- 32	
						- 58	
						- 29	
						1	
- 472			- 46		- 231	- 875	
64					38	259	
658			12	305	1 020	5 217	317
640			12	305	1 020	5 019	317
596			1	56	539	1 563	56
2					4	2 230	
42			11	249	477	1 226	260
42			11	249	319	926	260
					45	186	
					114	114	
17						199	

New Zealand, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	76		55	
2 Import	13		227	119
3 Export	- 37		- 47	- 8
4 International marine and aviation bunkers				- 67
5 Stock change	- 3		2	4
6 Total primary energy supply	49		238	47
7 Transfers			- 8	9
8 Main activity producers	- 9			
9 Autoproducers		- 7		
10 Gas processing				
11 Petroleum refineries			- 239	233
12 Coal transformation	- 16	11		
13 Other transformation				
14 Loss & own-use	- 1	- 2		- 14
15 Discrepancy	- 1		9	6
16 Total final consumption	22	2		281
17 Total final energy consumption	22	2		268
18 Industry sector	20	2		19
19 Transport sector				224
20 Other sector	3			26
20.1 Residential & Commercial	1			10
20.2 Agriculture	2			13
20.3 Other				2
21 Non-energy				13

Papua New Guinea, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production			41	
2 Import			56	56
3 Export			- 41	- 16
4 International marine and aviation bunkers				
5 Stock change			- 2	
6 Total primary energy supply			54	39
7 Transfers				
8 Main activity producers				- 7
9 Autoproducers				- 28
10 Gas processing				
11 Petroleum refineries			- 53	51
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy			- 1	
16 Total final consumption				56
17 Total final energy consumption				56
18 Industry sector				24
19 Transport sector				26
20 Other sector				7
20.1 Residential & Commercial				2
20.2 Agriculture				4
20.3 Other				
21 Non-energy				

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
155	95		216	52		649	361
						359	
						- 92	
						- 67	
6						9	
161	95		216	53		858	361
- 43	- 95		- 205	- 2	155	- 198	- 302
- 2			- 2	- 6	5	- 12	- 7
						- 5	
						- 5	
- 4						- 4	
- 9			- 7		- 18	- 44	
					- 2	12	
104			8	45	140	602	53
62			8	45	140	547	53
49			5	37	50	181	42
						224	
13			4	7	90	142	11
12			3	7	79	112	10
1			1		8	26	1
					2	4	
43						55	

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
112	3		15	69		240	87
						112	
- 96						- 153	
						- 3	
16	3		15	69		196	87
- 2	- 2				5	- 6	- 2
- 4	- 1		- 15		12	- 36	- 16
						- 3	
				- 1		- 1	- 1
- 9					- 1	- 10	
					- 1		
				68	15	140	68
				68	15	140	68
				3	11	38	3
						26	
				66	4	76	66
				66	4	72	66
						4	

Peru, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	6		228	
2 Import	10	2	238	239
3 Export	- 19		- 14	- 199
4 International marine and aviation bunkers				- 50
5 Stock change	29		10	17
6 Total primary energy supply	26	2	462	6
7 Transfers			- 125	170
8 Main activity producers				- 5
9 Autoproducers	- 5			- 9
10 Gas processing				
11 Petroleum refineries			- 338	349
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				- 87
16 Total final consumption	21	2		423
17 Total final energy consumption	21	2		411
18 Industry sector	21	2		43
19 Transport sector				317
20 Other sector				51
20.1 Residential & Commercial				43
20.2 Agriculture				2
20.3 Other				6
21 Non-energy				12

Philippines, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	260		25	
2 Import	581		482	511
3 Export	- 112		- 24	- 69
4 International marine and aviation bunkers				- 71
5 Stock change	- 45			- 17
6 Total primary energy supply	685		483	354
7 Transfers				
8 Main activity producers	- 577			- 30
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 484	457
12 Coal transformation				
13 Other transformation				
14 Loss & own-use			- 3	
15 Discrepancy			4	- 20
16 Total final consumption	108			761
17 Total final energy consumption	101			708
18 Industry sector	101			61
19 Transport sector				492
20 Other sector				154
20.1 Residential & Commercial				146
20.2 Agriculture				2
20.3 Other				7
21 Non-energy	7			53

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
514	111		10	134		1 003	254
				11		500	11
- 210						- 442	
						- 50	
				1		57	1
304	111		10	146		1 067	266
						45	
- 158	- 108		- 8	- 11	189	- 103	- 128
- 10	- 3			- 7	9	- 24	- 10
						11	
				- 8		- 8	- 8
- 37			- 5		- 25	- 62	
- 2				6		- 83	6
96			1	126	174	844	127
96			1	126	174	832	127
52				21	101	241	21
30				16		363	16
14			1	89	72	228	91
14			1	89	68	216	91
					4	6	
						6	
						12	

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
151	34		384	550		1 403	964
				6		1 580	6
						- 204	
						- 71	
				2		- 60	2
151	34		384	558		2 648	972
- 139	- 34		- 384	- 8	359	- 813	- 422
				- 8		- 8	- 8
						- 26	
				- 215		- 215	- 215
- 9			- 4		- 62	- 74	
						- 16	
2				327	297	1 496	327
2				327	297	1 436	327
2				51	99	315	51
				20		512	20
				257	198	609	257
				257	188	590	257
					10	11	
						7	
						60	

Russia, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	10 065		23 369	
2 Import	704	3	21	46
3 Export	- 5 497	- 79	- 10 963	- 5 440
4 International marine and aviation bunkers				- 731
5 Stock change	- 189		- 98	4
6 Total primary energy supply	5 083	- 76	12 329	- 6 120
7 Transfers				
8 Main activity producers	- 1 958			- 40
9 Autoproducers	- 617	- 135	- 20	- 272
10 Gas processing				
11 Petroleum refineries			- 12 034	11 761
12 Coal transformation	- 1 951	1 174		
13 Other transformation				
14 Loss & own-use	- 28	- 57	- 273	- 174
15 Discrepancy	- 288			60
16 Total final consumption	242	907	1	5 214
17 Total final energy consumption	235	907	1	3 719
18 Industry sector	139	906	1	332
19 Transport sector				2 583
20 Other sector	96			804
20.1 Residential & Commercial	94			654
20.2 Agriculture	2			120
20.3 Other				31
21 Non-energy	7			1 495

Singapore, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production				
2 Import	20		2 394	4 680
3 Export			- 32	- 3 533
4 International marine and aviation bunkers				- 2 374
5 Stock change				22
6 Total primary energy supply	20		2 362	- 1 205
7 Transfers			298	- 298
8 Main activity producers	- 12			- 5
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 2 236	2 155
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				- 83
15 Discrepancy			- 424	26
16 Total final consumption	8			589
17 Total final energy consumption	8			266
18 Industry sector	8			166
19 Transport sector				95
20 Other sector				4
20.1 Residential & Commercial				4
20.2 Agriculture				
20.3 Other				
21 Non-energy				324

							Unit:PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
25 398	688	2 246	8	364		62 138	815
323					19	1 116	
- 8 434				- 2	- 64	- 30 479	- 2
						- 731	
34				- 4		- 253	- 2
17 321	688	2 246	8	359	- 45	31 792	812
- 5 638	- 684	- 2 246	- 8		6 243	- 4 331	- 692
- 2 757	- 4			- 183	3 232	- 756	- 25
						- 273	
						- 777	
- 128				- 4	1	- 131	- 4
- 845			- 1	- 6	- 2 206	- 3 590	
- 168						- 395	
7 785				167	7 224	21 539	91
5 954				167	7 224	18 206	91
1 603				71	2 767	5 818	3
1 351					295	4 229	
3 000				96	4 162	8 159	88
2 943				91	3 975	7 757	85
57				5	185	369	2
					2	32	
1 830						3 332	

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
			1	25		26	13
375				3		7 473	3
						- 3 565	
						- 2 374	
						22	
375			1	28		1 581	16
						1	
- 276			- 1	- 28	166	- 152	- 16
- 43					26	- 23	
						- 81	
					- 10	- 94	
						- 398	
56					182	834	
56					182	511	
49					72	295	
					11	106	
6					99	110	
6					98	108	
					1	1	
						324	

Chinese Taipei, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production			3	
2 Import	1 640	9	1 938	757
3 Export		- 1	- 18	- 755
4 International marine and aviation bunkers				- 171
5 Stock change	- 21		- 32	11
6 Total primary energy supply	1 661	8	1 954	- 180
7 Transfers				- 12
8 Main activity producers	- 857			- 68
9 Autoproducers	- 338	- 45		- 19
10 Gas processing				
11 Petroleum refineries			- 1 961	2 046
12 Coal transformation	- 309	248		
13 Other transformation				
14 Loss & own-use		- 52		- 124
15 Discrepancy	- 10	- 81	9	3
16 Total final consumption	147	78	2	1 646
17 Total final energy consumption	145	64		670
18 Industry sector	145	64		76
19 Transport sector				496
20 Other sector				97
20.1 Residential & Commercial				77
20.2 Agriculture				3
20.3 Other				17
21 Non-energy	2	14	2	976

Thailand, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	155		793	
2 Import	215	441	2 066	109
3 Export	- 2		- 66	- 461
4 International marine and aviation bunkers				- 245
5 Stock change			172	- 129
6 Total primary energy supply	368	441	2 965	- 727
7 Transfers			- 278	278
8 Main activity producers	- 289	- 27		- 2
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 2 407	2 219
12 Coal transformation				
13 Other transformation				21
14 Loss & own-use				- 96
15 Discrepancy	- 38	- 168		- 15
16 Total final consumption	41	246	281	1 679
17 Total final energy consumption	41	246		1 517
18 Industry sector	41	246		200
19 Transport sector				1 090
20 Other sector				227
20.1 Residential & Commercial				107
20.2 Agriculture				120
20.3 Other				
21 Non-energy			281	162

Unit: PJ							Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	
7	16	302	20	63		411	80
845						5 189	
						- 773	
						- 171	
12						- 30	
840	16	302	20	64		4 686	80
7						- 5	
- 665	- 16	- 302	- 6	- 1	842	- 1 075	- 24
- 4			- 9	- 46	251	- 209	- 36
3						88	
						- 62	
- 14			- 6		- 124	- 315	
- 5					1	- 83	
163			4	16	969	3 025	20
163			4	16	969	2 031	20
116				16	615	1 032	16
					5	502	
47			4		349	497	4
47			4		338	466	4
					7	10	
					4	21	
						994	

Unit: PJ							Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	
1 082	28		22	1 080		3 160	1 122
804				4	96	3 735	4
				- 1	- 4	- 534	- 1
						- 245	
2				1		47	1
1 888	28		22	1 084	92	6 162	1 126
- 1 083	- 28		- 22	- 321	675	- 1 098	- 369
				- 25		- 25	- 25
						- 188	
				- 79		- 58	- 79
- 318			- 6		- 61	- 475	
- 150				- 24		- 395	- 24
337				635	706	3 924	630
244				635	706	3 388	630
162				334	289	1 272	329
82				81	1	1 253	81
				220	415	863	220
				220	414	741	220
					1	122	
93						536	

United States, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	15 449		28 687	
2 Import	128	3	18 083	3 194
3 Export	- 2 841	- 30	- 5 242	- 9 196
4 International marine and aviation bunkers				- 1 964
5 Stock change	712	5	- 43	47
6 Total primary energy supply	13 447	- 22	41 485	- 7 919
7 Transfers			- 4 246	4 532
8 Main activity producers	- 12 266	- 9		- 324
9 Autoproducers	- 52	- 14		- 74
10 Gas processing	- 82			
11 Petroleum refineries			- 37 637	36 806
12 Coal transformation	- 566	287		
13 Other transformation			212	
14 Loss & own-use	- 1	- 49		- 1 341
15 Discrepancy	33		426	118
16 Total final consumption	512	192	238	31 798
17 Total final energy consumption	512	192		26 794
18 Industry sector	495	192		884
19 Transport sector				24 206
20 Other sector	18			1 704
20.1 Residential & Commercial	18			1 103
20.2 Agriculture				601
20.3 Other				
21 Non-energy			238	5 004

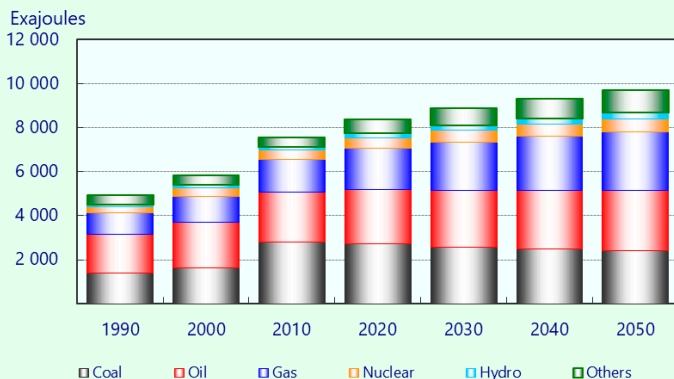
Viet Nam, 2018

	Coal and peat	Coal and peat products	Crude oil, NGL	Petroleum products
1 Indigenous production	970		517	
2 Import	533		232	553
3 Export	- 56		- 166	- 130
4 International marine and aviation bunkers				
5 Stock change	153		- 94	- 15
6 Total primary energy supply	1 600		489	408
7 Transfers			- 17	17
8 Main activity producers	- 1 060			- 6
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 472	460
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				- 9
16 Total final consumption	541			870
17 Total final energy consumption	517			837
18 Industry sector	494			92
19 Transport sector				552
20 Other sector	23			192
20.1 Residential & Commercial	23			75
20.2 Agriculture				117
20.3 Other				
21 Non-energy	24			33

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
30 103	1 064	9 178	1 842	4 637		90 959	7 356
2 792				53	210	24 462	53
- 3 549				- 177	- 50	- 21 085	- 177
						- 1 970	- 6
319				- 9		1 031	- 9
29 665	1 064	9 178	1 842	4 498	160	93 398	7 217
						285	
- 10 424	- 1 059	- 9 178	- 1 617	- 632	15 744	- 19 764	- 3 176
- 626	- 5		- 77	- 243	696	- 396	- 297
55						- 28	
						- 831	
						- 278	
- 192						20	
- 2 562			- 993	- 5	- 2 296	- 6 254	- 5
19				- 2		593	- 2
15 935			148	3 616	14 303	66 743	3 737
14 921			148	3 616	14 303	60 487	3 737
5 587				1 434	2 988	11 580	1 416
898				1 567	44	26 716	1 567
8 436			148	614	11 271	22 191	754
8 373			148	555	10 258	20 454	694
63				60	162	886	60
					852	852	
1 014						6 256	

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, wind,	Others	Electricity and Heat	Total	Total Renewables
348	299		2	488		2 624	789
					11	1 330	
				- 4	- 5	- 361	- 4
						44	
348	299		2	484	6	3 636	785
- 288	- 299		- 2	- 61	782	- 934	- 362
						- 11	
				- 90		- 90	- 90
			- 2		- 98	- 98	
						- 9	
60				333	690	2 494	333
18				333	690	2 395	333
15				286	381	1 268	286
3				5		561	5
				42	309	566	42
				28	289	415	28
				14	20	151	14
42						99	

Primary energy supply outlook by energy

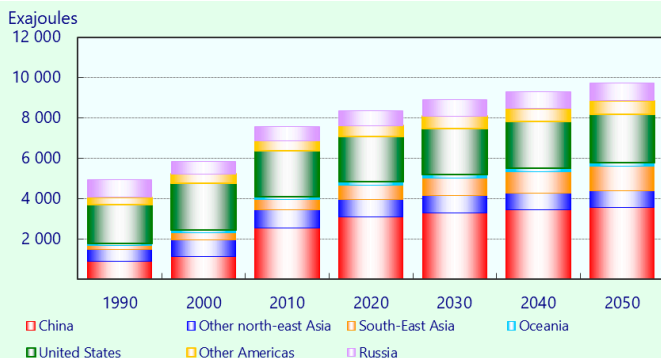


	Exajoules						
	1990	2000	2010	2020	2030	2040	2050
Coal	577	675	1 175	1 148	1 075	1 049	1 011
Oil	737	879	953	1 022	1 079	1 112	1 146
Gas	416	494	609	791	919	1 019	1 115
Nuclear	120	163	181	193	224	237	249
Hydro	39	45	64	90	100	107	112
Others	176	191	187	260	323	376	434
Total	2 064	2 447	3 169	3 504	3 721	3 900	4 067

	Share (%)						
	1990	2000	2010	2020	2030	2040	2050
Coal	27.9	27.6	37.1	32.8	28.9	26.9	24.9
Oil	35.7	35.9	30.1	29.2	29.0	28.5	28.2
Gas	20.2	20.2	19.2	22.6	24.7	26.1	27.4
Nuclear	5.8	6.7	5.7	5.5	6.0	6.1	6.1
Hydro	1.9	1.8	2.0	2.6	2.7	2.7	2.8
Others	8.5	7.8	5.9	7.4	8.7	9.6	10.7

Source: Asia Pacific Energy Research Centre, May 2019.

Primary energy supply outlook by region



	Exajoules						
	1990	2000	2010	2020	2030	2040	2050
China	365	476	1 065	1 296	1 370	1 434	1 489
Other north-east Asia	246	342	372	364	363	353	343
South-East Asia	93	150	216	290	361	438	512
Oceania	42	54	63	70	76	77	79
United States	802	976	955	938	963	975	995
Other Americas	149	190	209	234	252	270	289
Russia	368	259	289	312	337	354	361
APEC 21	2 064	2 447	3 169	3 504	3 721	3 900	4 067

	Share (%)						
	1990	2000	2010	2020	2030	2040	2050
China	17.7	19.4	33.6	37.0	36.8	36.8	36.6
Other north-east Asia	11.9	14.0	11.7	10.4	9.8	9.0	8.4
South-East Asia	4.5	6.1	6.8	8.3	9.7	11.2	12.6
Oceania	2.0	2.2	2.0	2.0	2.0	2.0	1.9
United States	38.8	39.9	30.1	26.8	25.9	25.0	24.5
Other Americas	7.2	7.8	6.6	6.7	6.8	6.9	7.1
Russia	17.8	10.6	9.1	8.9	9.1	9.1	8.9

Other north-east Asia includes Hong Kong, China; Japan; Republic of Korea and Chinese Taipei.
Other Americas includes Canada; Chile; Mexico and Peru.

Selected energy indicators

APEC region

	Population			Real GDP			Real GDP		
	Millions			Billion (constant 2010 USD)			Billion, PPP at constant 2017 USD		
	1990	2005	2018	1990	2005	2018	1990	2005	2018
APEC	2 286	2 654	2 905	15 530	26 534	41 629	24 759	41 723	68 442
Other north-east Asia	192	206	209	1 229	2 455	3 690	4 904	7 106	9 117
Hong Kong, China	6	7	7	104	189	288	164	298	455
Japan	124	128	127	613	996	1 420	3 962	4 778	5 197
Korea	43	48	52	364	926	1 450	543	1 380	2 165
Chinese Taipei	20	23	24	147	344	532	235	651	1 300
South-East Asia	389	492	577	739	1 495	2 846	1 917	3 888	7 433
Brunei Darussalam				10	13	13	18	25	26
Indonesia	181	226	268	310	571	1 147	822	1 516	3 044
Malaysia	18	26	32	82	205	382	186	465	868
Philippines	62	86	107	98	163	340	260	460	963
Singapore	3	4	6	69	173	333	114	286	551
Thailand	57	65	69	142	284	442	402	806	1 256
Viet Nam	68	84	96	29	85	188	114	330	725
Oceania	25	31	38	703	1 144	1 627	638	1 038	1 481
Australia	17	20	25	613	996	1 420	534	868	1 239
New Zealand	3	4	5	84	138	186	92	152	206
Papua New Guinea	5	6	9	6	11	21	11	19	36
Other americas	147	182	214	1 614	2 265	2 940	2 386	3 752	5 199
Canada	28	32	37	933	1 434	1 908	887	1 363	1 813
Chile	13	16	19	79	182	283	126	292	454
Mexico	84	106	126	543	543	543	1 257	1 889	2 523
Peru	22	28	32	58	106	206	116	210	409
China	1 135	1 304	1 393	828	3 562	10 873	1 616	6 955	21 230
Russia	148	144	147	1 416	1 282	1 739	3 189	2 886	3 926
United States	250	296	327	9 001	14 332	17 913	10 110	16 098	20 056

Energy Indigenous Production			Net Import			Total Primary Energy Supply			
Petajoules			Petajoules			Petajoules			
1990	2005	2018	1990	2005	2018	1990	2005	2018	
197 859	251 309	340 285	6 444	29 014	16 585	197 433	274 716	345 532	
4 513	6 616	4 417	20 924	30 449	32 556	24 605	35 436	34 939	
	3	5	474	982	1 353	392	590	600	HKC
3 119	4 278	2 107	15 817	18 249	16 215	18 366	21 866	17 836	JPN
947	1 799	1 894	2 937	7 350	10 572	3 890	8 804	11 818	ROK
447	536	411	1 696	3 868	4 416	1 957	4 176	4 686	CT
11 939	21 547	31 624	-2 408	-1 598	353	8 583	18 335	27 174	
691	969	692	- 634	- 832	- 489	53	130	191	BD
7 196	11 222	19 514	-2 928	-3 672	-8 521	4 028	7 472	8 948	INA
1 948	4 012	4 205	-1 083	-1 189	- 90	836	2 764	4 007	MAS
776	951	1 403	468	718	1 376	1 200	1 655	2 648	RP
3	17	26	1 027	2 079	3 907	483	880	1 581	SIN
1 083	2 351	3 160	750	2 041	3 200	1 757	4 221	6 162	THA
243	2 025	2 624	- 7	- 742	968	227	1 212	3 636	VN
7 079	11 821	18 120	-2 613	-6 060	-11 475	4 145	5 603	6 414	
6 595	11 102	17 231	-2 701	-6 228	-11 700	3 606	4 751	5 360	AUS
483	540	649	89	206	267	538	711	858	NZ
N.A.	179	240	N.A.	- 38	- 41	N.A.	141	196	PNG
20 539	28 706	30 355	-5 142	-7 771	-7 136	15 029	20 800	22 724	
11 575	16 829	22 160	-2 484	-5 421	-9 530	8 846	11 471	12 459	CDA
332	391	571	294	858	1 107	587	1 188	1 636	CHL
8 187	11 032	6 622	-2 927	-3 333	1 229	5 179	7 561	7 562	MEX
446	454	1 003	- 25	125	58	418	580	1 067	PE
30 453	63 943	102 672	-1 358	5 754	28 271	28 077	70 166	129 092	PRC
54 145	50 383	62 138	-17 274	-22 580	-29 363	36 816	27 287	31 792	RUS
69 191	68 292	90 959	14 315	30 819	3 378	80 178	97 089	93 398	USA

	Total Final Energy Consumption			Final Consumption of Electricity			Primary Energy Supply per capita	
	Petajoules			TWh			GJ / Person	
	1990	2005	2018	1990	2005	2018	1990	2005
APEC	128 618	161 287	206 835	5 746	9 413	14 550	86	104
Other north-east Asia	14 523	19 573	18 235	960	1 621	1 769	128	172
Hong Kong, China	215	285	283	24	40	44	69	87
Japan	10 808	12 707	10 420	765	1 025	946	149	171
Korea	2 436	4 609	5 501	94	358	531	91	183
Chinese Taipei	1 064	1 972	2 031	77	199	247	96	184
South-East Asia	5 782	11 978	15 889	132	438	933	22	37
Brunei Darussalam	16	28	40	1	3	3	207	356
Indonesia	2 954	5 573	6 074	28	107	256	22	33
Malaysia	519	1 444	2 046	24	81	153	46	108
Philippines	780	941	1 436	21	45	83	19	19
Singapore	130	299	511	13	35	50	158	206
Thailand	1 208	2 671	3 388	38	121	196	31	65
Viet Nam	175	1 022	2 395	6	46	192	3	14
Oceania	2 589	3 428	3 947	158	230	256	166	181
Australia	2 207	2 815	3 260	129	189	213	211	233
New Zealand	383	501	547	29	38	39	162	172
Papua New Guinea	N.A.	111	140	N.A.	3	4	N.A.	22
Other americas	9 904	12 644	14 695	546	749	929	102	114
Canada	6 005	7 177	7 699	418	488	524	319	356
Chile	426	813	1 146	15	48	73	44	73
Mexico	3 108	4 190	5 019	100	190	283	62	71
Peru	364	464	832	12	23	48	19	21
China	22 159	39 378	75 375	491	1 993	6 002	25	54
Russia	24 487	15 395	18 206	827	650	760	249	190
United States	49 174	58 891	60 487	2 634	3 732	3 901	321	329

	Primary Energy Intensity			Final Energy Intensity			Final Energy Consumption per Capita			
	PJ / Million USD at 2017 PPP			PJ / Million USD at 2017 PPP			GJ / Person			
2018	1990	2005	2018	1990	2005	2018	1990	2005	2018	
119	8.0	6.6	5.0	5.2	3.9	3.0	56	61	71	
167	5.0	5.0	3.8	3.0	2.8	2.0	75	95	87	
81	2.4	2.0	1.3	1.3	1.0	0.6	38	42	38	HKC
141	4.6	4.6	3.4	2.7	2.7	2.0	87	99	82	JPN
229	7.2	6.4	5.5	4.5	3.3	2.5	57	96	107	ROK
199	8.3	6.4	3.6	4.5	3.0	1.6	52	87	86	CT
47	4.5	4.7	3.7	3.0	3.1	2.1	15	24	28	
446	2.9	5.1	7.4	0.9	1.1	1.5	62	76	93	BD
33	4.9	4.9	2.9	3.6	3.7	2.0	16	25	23	INA
127	4.5	5.9	4.6	2.8	3.1	2.4	29	56	65	MAS
25	4.6	3.6	2.7	3.0	2.0	1.5	13	11	13	RP
280	4.2	3.1	2.9	1.1	1.0	0.9	43	70	91	SIN
89	4.4	5.2	4.9	3.0	3.3	2.7	21	41	49	THA
38	2.0	3.7	5.0	1.5	3.1	3.3	3	12	25	VN
167	6.5	5.4	4.3	4.1	3.3	2.7	104	110	103	
215	6.7	5.5	4.3	4.1	3.2	2.6	129	138	130	AUS
177	5.9	4.7	4.2	4.2	3.3	2.7	115	121	113	NZ
23	N.A.	7.5	5.4	N.A.	5.9	3.8	N.A.	17	16	PNG
106	6.3	5.5	4.4	4.2	3.4	2.8	67	69	69	
336	10.0	8.4	6.9	6.8	5.3	4.2	217	223	208	CDA
87	4.6	4.1	3.6	3.4	2.8	2.5	32	50	61	CHL
60	4.1	4.0	3.0	2.5	2.2	2.0	37	40	40	MEX
33	3.6	2.8	2.6	3.1	2.2	2.0	17	17	26	PE
93	17.4	10.1	6.1	13.7	5.7	3.6	20	30	54	PRC
217	11.5	9.5	8.1	7.7	5.3	4.6	165	107	124	RUS
286	7.9	6.0	4.7	4.9	3.7	3.0	197	199	185	USA

	Energy Related CO ₂ Emission			CO ₂ Emission per Capita		
	Mt-CO ₂			t-CO ₂ / Person		
	1990	2005	2018	1990	2005	2018
APEC	12,419	16,613	21,237	5.43	6.26	7.31
Other north-east Asia	1,453	1,962	1,991	7.55	9.55	9.52
Hong Kong, China	33	37	35	5.70	5.49	4.75
Japan	1,079	1,218	1,077	8.73	9.53	8.52
Korea	232	458	607	5.41	9.50	11.77
Chinese Taipei	109	249	270	5.40	10.94	11.46
South-East Asia	352	855	1,465	0.90	1.74	2.54
Brunei Darussalam	4	7	8	14.60	20.31	17.80
Indonesia	126	325	593	0.69	1.44	2.22
Malaysia	55	138	219	3.07	5.38	6.93
Philippines	38	69	127	0.61	0.79	1.19
Singapore	29	37	47	9.50	8.65	8.40
Thailand	82	202	238	1.45	3.08	3.43
Viet Nam	17	77	233	0.26	0.92	2.44
Oceania	274	392	414	10.94	12.65	10.76
Australia	252	355	376	14.75	17.41	15.06
New Zealand	22	32	30	6.62	7.80	6.16
Papua New Guinea	N.A.	5	8	N.A.	0.77	0.89
Other americas	722	1,013	1,115	4.91	5.56	5.21
Canada	415	517	527	15.00	16.04	14.22
Chile	30	55	86	2.23	3.38	4.59
Mexico	257	412	448	3.06	3.89	3.55
Peru	20	29	53	0.89	1.03	1.67
China	2,488	5,157	9,611	2.19	3.96	6.90
Russia	2,264	1,341	1,465	15.30	9.34	10.0
United States	4,867	5,893	5,178	19.50	19.94	15.85

CO ₂ Emission per Real GDP			CO ₂ Emission per Real GDP			CO ₂ Emission per Total Primary Energy Supply			
t-CO ₂ / Million USD (constant 2010)			t-CO ₂ / Million USD at 2017 PPP			t-CO ₂ / GJ			
1990	2005	2018	1990	2005	2018	1990	2005	2018	
800	626	510	502	398	310	62.9	60.5	61.5	
1 182	799	539	296	276	218	59.0	55.4	57.0	
312	198	123	198	126	78	82.9	63.4	59.0	HKC
1 760	1 223	759	272	255	207	58.7	55.7	60.4	JPN
636	494	419	427	332	281	59.6	52.0	51.4	ROK
742	722	507	466	382	208	55.9	59.6	57.7	CT
476	572	515	183	220	197	41.0	46.6	53.9	
394	559	566	205	291	295	70.7	57.0	39.9	BD
406	569	517	153	214	195	31.3	43.5	66.3	INA
677	675	572	298	297	252	66.2	50.0	54.6	MAS
387	420	374	146	149	132	31.7	41.4	48.0	RP
421	214	142	254	129	86	60.0	41.9	30.0	SIN
580	710	538	204	250	190	46.8	47.8	38.6	THA
591	905	1 242	153	234	321	76.9	63.7	64.1	VN
389	343	254	429	378	279	66.0	70.0	64.5	
411	357	265	471	409	304	69.8	74.7	70.2	AUS
264	234	160	240	213	144	41.0	45.4	34.7	NZ
N.A.	466	369	N.A.	266	209	N.A.	35.4	38.8	PNG
447	447	379	302	270	214	48.0	48.7	49.1	
445	361	276	468	380	291	47.0	45.1	42.3	CDA
376	301	304	234	187	189	50.5	46.0	52.6	CHL
473	759	825	204	218	178	49.6	54.5	59.3	MEX
335	272	258	169	137	130	46.8	49.6	49.9	PE
3 005	1 448	884	1 539	742	453	88.6	73.5	74.5	PRC
1 599	1 046	842	710	465	373	61.5	49.1	46.1	RUS
541	411	289	481	366	258	60.7	60.7	55.4	USA

Glossary

General note

The definitions for some items are different from the APEC Energy Statistics publication in order to match with the aggregated product categories. In the energy balance, the definitions of all items are the same as those in the APEC Energy Statistics publication.

Energy products

Coal

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

Oil

Liquid hydrocarbons of fossil origins comprising (i) crude oil; (ii) liquids extracted from natural gas (NGL); (iii) fully or partly processed products from the refining of crude oil, and (iv) functionally similar liquid hydrocarbons and organic chemicals from vegetal or animal origins.

Petroleum products

Products obtained from crude oil, non-conventional oils or gases from oil and gas fields. They may be produced through refining of conventional crude and non-conventional oils or during the separation of natural gas from gases extracted from oil or gas fields.

Mogas (Motor gasoline)

A mixture of some aromatics (e.g., benzene and toluene) and aliphatic hydrocarbons in the C₅ to C₁₂ range. The distillation range is 25 °C to 220 °C.

Naphtha

Light or medium oils distilling between 30 °C and 210 °C which do not meet the specification for motor gasoline.

Jet fuel

Jet fuel comprises both gasoline and kerosene type jet fuels meeting specifications for use in aviation turbine power units.

Gasoline type: Light hydrocarbon 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 per cent in volume, and the vapour pressure is between 13.7 kPa and 20.6 kPa.

Kerosene type: A blend of kerosenes suited to flight conditions with particular specifications, such as freezing points.

Kerosene

Mixtures of hydrocarbons in the range C_9 to C_{16} and distilling over the temperature interval 145 °C to 300 °C, but not usually above 250 °C and with a flash point above 38 °C.

Diesel oil

Diesel oil includes heavy gas oils. Gas oils are obtained from the lowest fraction from atmospheric distillation of crude oil, while heavy gas oils obtained by vacuum re-distillation of the residual from atmospheric distillation.

Fuel oil

Comprises residual fuel oil and heavy fuel oil. Residual fuel oils 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. Heavy fuel oil is a general term describing a blended product based on the residues from various refinery processes.

LPG

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.

Others

The category, "Other oil products", groups together white spirit and SBP, lubricants, bitumen, paraffin waxes, refining gas and others (tar, sulfur and grease).

Gas

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

The separation process produces natural gas by removing or reducing the hydrocarbons other than methane to levels which are acceptable in the marketable gas.

Natural gas also includes methane recovered from coal mines (colliery gas) or from coal seams and shale formation. When distributed it may contain methane from anaerobic fermentation or the methanation of biomass.

Natural gas may be liquefied (LNG) 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.

Hydro

The primary equivalent of electricity generated from hydroelectric power plants.

Nuclear

The primary equivalent of electricity and heat generated from nuclear fuels.

Others

Others is the sum of geothermal power, wind, tide, photovoltaic power, biomass, etc.

Total renewables

Total renewables is the sum of hydro and others minus non-renewable parts of industrial wastes and municipal solid wastes.

Sectors

Indigenous production

Quantities of fuels extracted within the economy.

Net imports

Defined as imports minus exports.

Total primary energy supply (TPES)

Calculated from indigenous production plus imports minus exports minus international marine and aviation bunkers plus or minus stock change.

Refining

The transformation of crude oil, NGL and condensate to petroleum products.

Power generation

Production of electricity from thermal, hydro, nuclear, geothermal and other power plants of public utilities and auto-producers. An auto-producer 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 final consumption

This is the sum of total final energy consumption and non-energy use.

Total final energy consumption (TFEC)

Total energy consumption of industry, transport, residential, commercial and other sectors. This excludes non-energy use.

Industry

These sectors include the following branches:

- Iron and steel industry
- Chemical industry

- Non-ferrous metals basic industries
- Non-metallic mineral products such as glass, ceramic, cement, etc.
- Transport equipment
- Machinery. Fabricated metal products, machinery and equipment other than transport equipment
- Mining (excluding fuels) and quarrying
- Food processing, beverages and tobacco
- Pulp, paper and printing
- Wood and wood products (other than pulp and paper)
- Construction
- Textiles and leather
- Collection, purification and distribution of water
- Non-specified (any manufacturing industry not included above)

Transport

The transportation sector is disaggregated into the following sub-sectors:

- Domestic air transport
- Road transport
- Railways
- Internal navigation
- Pipeline transport
- Other transport

Residential and commercial

Residential shows all consumption by households

Commercial shows consumption of the commercial and public sectors.

Others

Agriculture, fishing and others.

Non-energy

Non-energy use in industry, transport and other sectors. Examples of these are the feedstocks in the production of chemicals, lubricants used in equipment, bitumen used for paving of roads, etc.

