



Asia-Pacific
Economic Cooperation

APEC

Energy Handbook 2021



APEC Energy Working Group
April 2024

ENERGY STATISTICS AND TRAINING OFFICE
ASIA PACIFIC ENERGY RESEARCH CENTRE



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Preface

The APEC Energy Handbook 2021 is a handy, pocket-sized summary of key energy data and a supplement to APEC Energy Statistics 2021, which was released in April 2024.

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 8th Edition published by the Asia Pacific Energy Research Centre in September 2022. 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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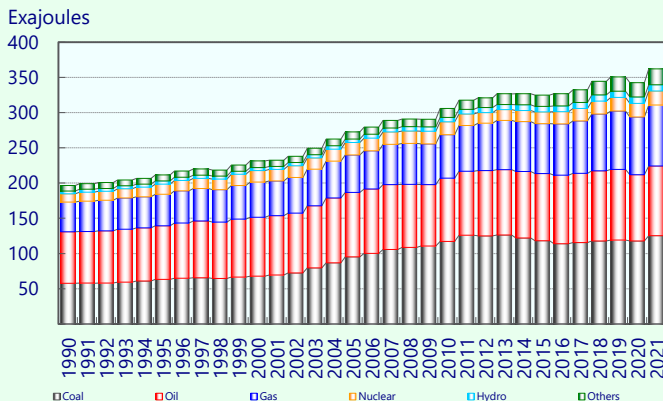
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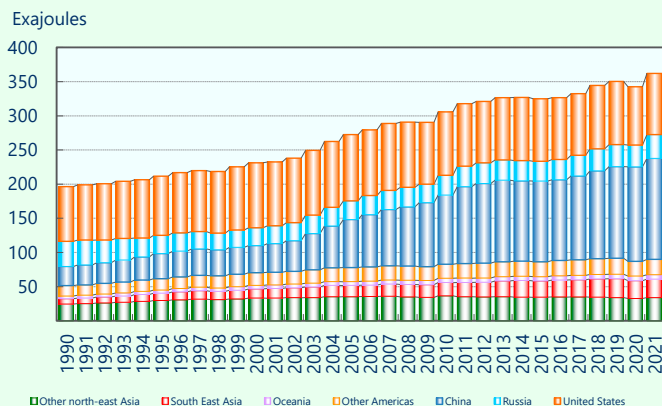
Total primary energy supply by energy APEC



	Exajoules					
	1990	2000	2010	2015	2020	2021
Coal	57.7	67.8	117.1	118.1	117.6	125.2
Oil	73.2	83.6	90.0	95.4	94.1	99.0
Gas	41.9	49.9	61.6	70.8	82.2	86.7
Nuclear	12.0	16.3	18.1	16.6	19.1	19.7
Hydro	3.9	4.5	6.3	8.0	9.2	9.0
Others	7.8	9.1	12.6	16.1	20.3	22.4
Total	196.5	231.3	305.8	324.9	342.5	362.1

	Share (%)					
	1990	2000	2010	2015	2020	2021
Coal	29.4	29.3	38.3	36.4	34.3	34.6
Oil	37.3	36.2	29.4	29.3	27.5	27.4
Gas	21.3	21.6	20.2	21.8	24.0	23.9
Nuclear	6.1	7.1	5.9	5.1	5.6	5.4
Hydro	2.0	1.9	2.1	2.5	2.7	2.5
Others	4.0	4.0	4.1	4.9	5.9	6.2

Total primary energy supply by region APEC

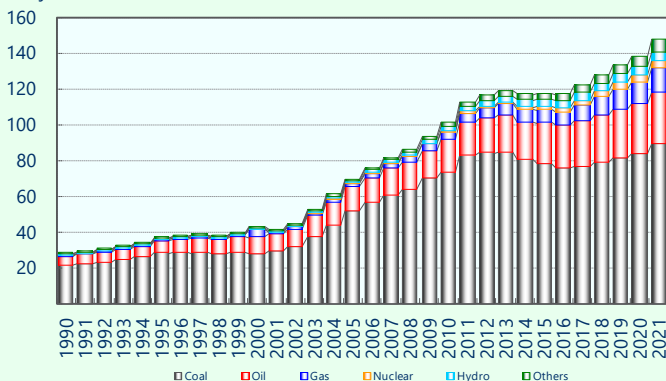


	Exajoules					
	1990	2000	2010	2015	2020	2021
Other north-east Asia	24.5	33.3	36.4	34.6	32.5	33.9
South East Asia	7.7	13.2	19.7	23.7	26.3	27.0
Oceania	4.2	5.4	6.2	6.3	6.6	6.5
Other Americas	15.0	18.4	20.3	21.8	21.6	22.4
China	28.2	39.8	101.4	118.1	138.4	147.8
Russia	36.8	25.9	29.0	29.0	31.9	34.9
United States	80.2	95.2	92.8	91.5	85.2	89.6
Total	196.5	231.3	272.5	305.8	324.9	342.5

	Share (%)					
	1990	2000	2010	2015	2020	2021
Other north-east Asia	12.4	14.4	13.4	11.3	10.0	9.9
South East Asia	3.9	5.7	7.2	7.7	8.1	7.9
Oceania	2.1	2.3	2.3	2.1	2.0	1.9
Other Americas	7.7	8.0	7.4	7.1	6.6	6.5
China	14.3	17.2	37.2	38.6	42.6	43.1
Russia	18.7	11.2	10.7	9.5	9.8	10.2
United States	40.8	41.1	34.0	29.9	26.2	26.1

Total primary energy supply by energy China

Exajoules



Exajoules

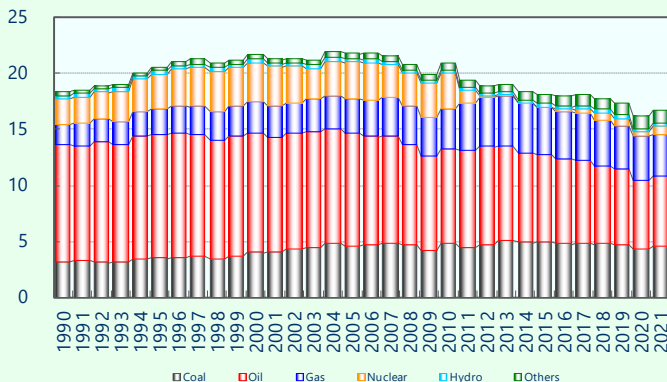
	1990	2000	2010	2015	2020	2021
Coal	22.3	28.3	74.0	78.6	83.9	89.5
Oil	4.8	9.3	17.9	22.9	28.0	28.7
Gas	0.6	4.5	4.0	7.2	12.2	13.8
Nuclear	0.0	0.2	0.8	1.9	4.0	4.4
Hydro	0.5	0.8	2.5	4.0	4.8	4.7
Others	0.1	0.5	2.1	3.5	5.6	6.7
Total	28.2	43.4	101.4	118.1	138.4	147.8

Share (%)

	1990	2000	2010	2015	2020	2021
Coal	79.0	65.1	73.0	66.6	60.6	60.6
Oil	17.0	21.3	17.7	19.4	20.2	19.4
Gas	2.0	10.3	4.0	6.1	8.8	9.3
Nuclear	-	0.4	0.8	1.6	2.9	3.0
Hydro	1.6	1.8	2.5	3.4	3.4	3.2
Others	0.4	1.1	2.1	3.0	4.0	4.5

Total primary energy supply by energy Japan

Exajoules



Exajoules

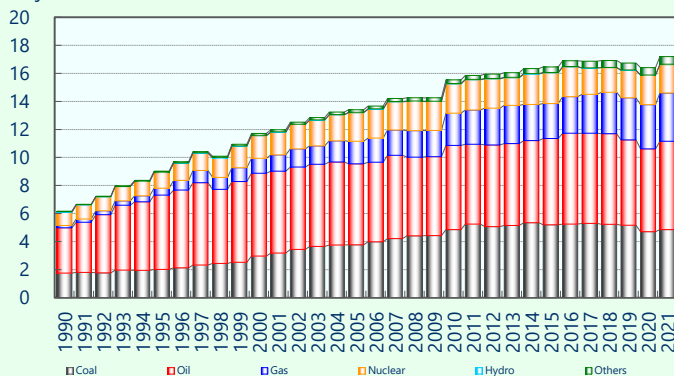
	1990	2000	2010	2015	2020	2021
Coal	3.2	4.1	4.8	5.0	4.3	4.6
Oil	10.4	10.6	8.4	7.7	6.2	6.3
Gas	1.8	2.7	3.6	4.2	3.9	3.6
Nuclear	2.2	3.5	3.1	0.1	0.4	0.8
Hydro	0.3	0.3	0.3	0.3	0.3	0.3
Others	0.3	0.4	0.6	0.8	1.1	1.2
Total	18.3	21.6	20.9	18.1	16.1	16.7

Share (%)

	1990	2000	2010	2015	2020	2021
Coal	17.6	18.8	23.1	27.5	26.5	27.3
Oil	56.9	49.1	40.3	42.6	38.5	37.7
Gas	10.1	12.7	17.2	23.2	23.9	21.7
Nuclear	12.1	16.3	15.0	0.6	2.6	4.6
Hydro	1.7	1.4	1.4	1.7	1.8	1.7
Others	1.6	1.7	2.9	4.3	6.7	7.0

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

Exajoules



Exajoules

	1990	2000	2010	2015	2020	2021
Coal	1.7	3.0	4.9	5.2	4.7	4.8
Oil	3.2	5.9	6.0	6.1	5.9	6.3
Gas	0.2	1.1	2.3	2.5	3.2	3.4
Nuclear	0.9	1.6	2.1	2.2	2.1	2.0
Hydro	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.1	0.3	0.4	0.5	0.5
Total	6.2	11.7	15.5	16.5	16.4	17.2

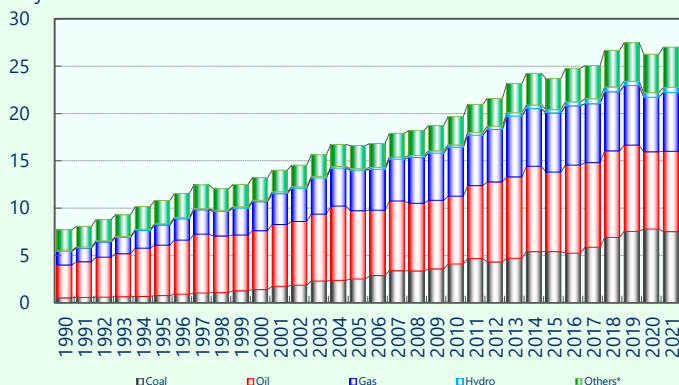
Share (%)

	1990	2000	2010	2015	2020	2021
Coal	28.3	25.3	31.2	31.6	28.6	28.2
Oil	52.5	50.4	38.7	37.3	36.1	36.7
Gas	2.8	9.1	14.8	15.2	19.2	20.0
Nuclear	15.2	13.7	13.4	13.3	12.7	11.8
Hydro	0.7	0.3	0.2	0.1	0.2	0.1
Others	0.4	1.1	1.7	2.4	3.2	3.2

*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

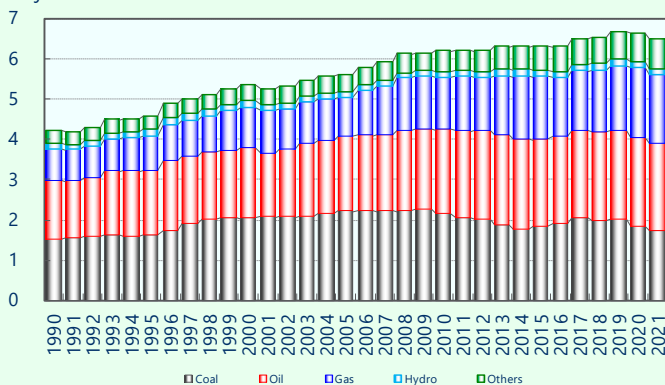
	1990	2000	2010	2015	2020	2021
Coal	0.5	1.4	4.1	5.4	7.8	7.5
Oil	3.5	6.2	7.2	8.4	8.2	8.5
Gas	1.5	3.1	5.2	6.2	5.8	6.3
Nuclear	-	-	-	-	-	-
Hydro	0.1	0.2	0.2	0.3	0.5	0.5
Others	2.2	2.4	3.0	3.3	4.0	4.3
Total	7.7	13.2	19.7	23.7	26.3	27.0

Share (%)

	1990	2000	2010	2015	2020	2021
Coal	6.6	10.3	20.7	22.8	29.6	27.8
Oil	44.9	47.1	36.5	35.6	31.1	31.4
Gas	19.0	23.1	26.4	26.3	22.0	23.1
Nuclear	-	-	-	-	-	-
Hydro	1.3	1.2	1.2	1.5	1.8	2.0
Others	28.2	18.2	15.2	13.9	15.4	15.7

Total primary energy supply by energy Oceania

Exajoules



Exajoules

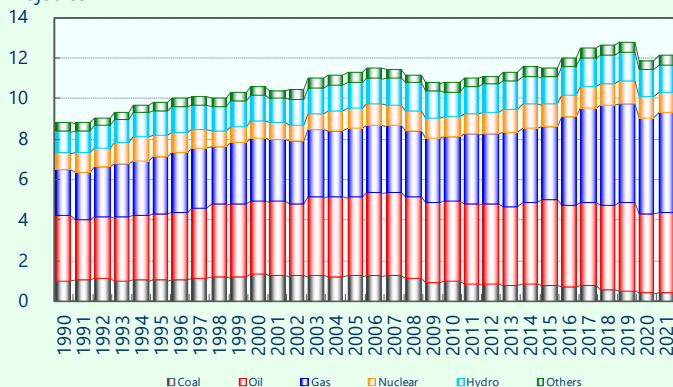
	1990	2000	2010	2015	2020	2021
Coal	1.5	2.1	2.2	1.9	1.8	1.7
Oil	1.5	1.7	2.1	2.1	2.2	2.1
Gas	0.8	1.0	1.3	1.6	1.8	1.7
Nuclear	-	-	-	-	-	-
Hydro	0.1	0.1	0.1	0.1	0.1	0.1
Others	0.3	0.4	0.5	0.6	0.7	0.7
Total	4.2	5.4	6.2	6.3	6.6	6.5

Share (%)

	1990	2000	2010	2015	2020	2021
Coal	35.7	38.5	35.0	29.3	27.8	27.0
Oil	35.1	32.1	33.5	33.9	33.1	33.0
Gas	18.6	19.1	21.1	24.9	26.5	26.3
Nuclear	-	-	-	-	-	-
Hydro	3.2	2.8	2.3	2.2	2.2	2.2
Others	7.3	7.4	8.2	9.7	10.4	11.5

Total primary energy supply by energy Canada

Exajoules



Primary Energy Supply

Exajoules

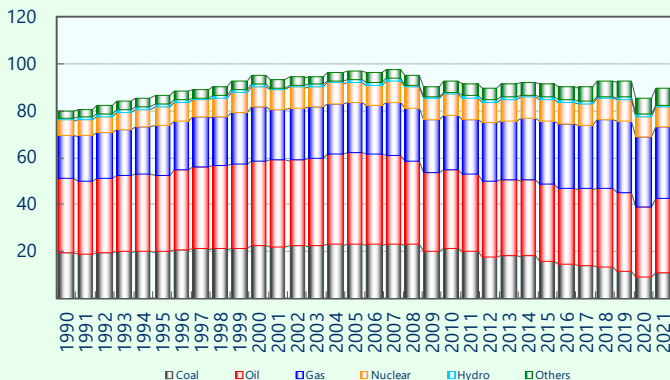
	1990	2000	2010	2015	2020	2021
Coal	1.0	1.3	1.0	0.8	0.4	0.4
Oil	3.2	3.6	4.0	4.3	3.9	4.0
Gas	2.3	3.1	3.2	3.6	4.7	4.9
Nuclear	0.8	0.8	1.0	1.1	1.1	1.0
Hydro	1.1	1.3	1.3	1.4	1.4	1.4
Others	0.5	0.4	0.4	0.4	0.4	0.5
Total	8.9	10.6	10.8	11.5	11.9	12.2

Share (%)

	1990	2000	2010	2015	2020	2021
Coal	11.5	12.6	9.0	6.7	3.5	3.5
Oil	36.2	34.5	36.7	37.0	32.7	32.7
Gas	25.9	29.4	29.4	31.1	39.5	40.2
Nuclear	9.2	7.5	9.2	9.6	9.0	8.3
Hydro	12.1	12.2	11.7	11.9	11.7	11.3
Others	5.3	3.7	4.0	3.7	3.6	3.9

Total primary energy supply by energy United States

Exajoules



Exajoules

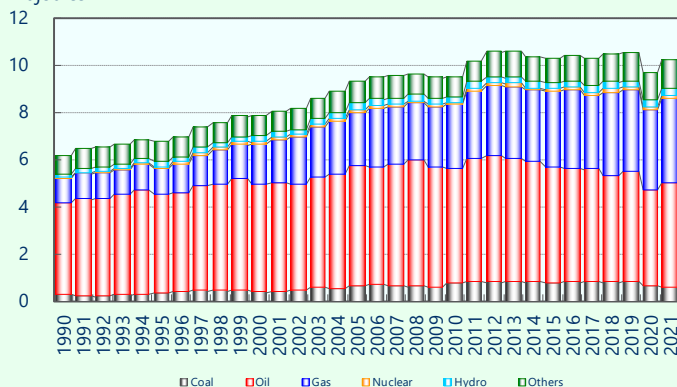
	1990	2000	2010	2015	2020	2021
Coal	19.2	22.3	21.0	15.7	9.3	10.6
Oil	31.7	36.5	33.8	33.1	29.4	32.0
Gas	18.4	22.9	23.3	27.1	30.1	30.3
Nuclear	6.7	8.7	9.2	9.1	9.0	8.9
Hydro	1.0	0.9	0.9	0.9	1.0	0.9
Others	3.2	3.8	4.6	5.7	6.4	6.9
Total	80.2	95.2	92.8	91.5	85.2	89.6

Share (%)

	1990	2000	2010	2015	2020	2021
Coal	24.0	23.5	22.6	17.1	10.9	11.9
Oil	39.5	38.3	36.4	36.1	34.5	35.7
Gas	22.9	24.1	25.1	29.6	35.3	33.8
Nuclear	8.3	9.1	9.9	9.9	10.5	9.9
Hydro	1.2	1.0	1.0	1.0	1.2	1.0
Others	4.0	4.0	5.0	6.2	7.5	7.7

Total primary energy supply by energy Other Americas*

Exajoules



Exajoules

	1990	2000	2010	2015	2020	2021
Coal	0.3	0.4	0.8	0.8	0.7	0.6
Oil	3.9	4.5	4.9	4.9	4.0	4.4
Gas	1.0	1.7	2.7	3.2	3.4	3.6
Nuclear	0.0	0.1	0.1	0.1	0.1	0.1
Hydro	0.2	0.2	0.3	0.3	0.3	0.3
Others	0.8	0.9	0.8	1.0	1.2	1.2
Total	6.2	7.9	9.5	10.3	9.7	10.3

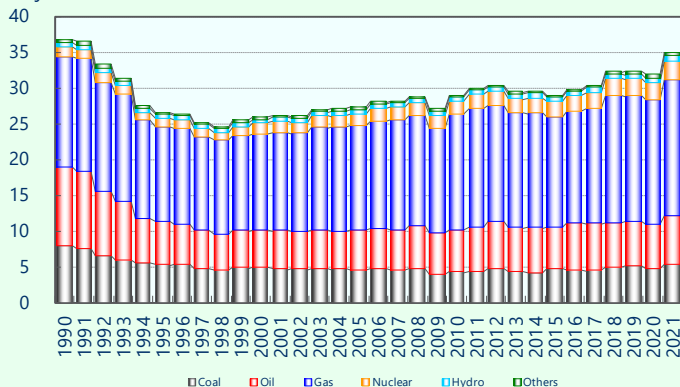
Share (%)

	1990	2000	2010	2015	2020	2021
Coal	4.6	5.6	8.2	7.7	6.9	6.0
Oil	63.0	57.0	51.1	47.4	41.7	43.2
Gas	16.7	21.9	28.2	31.1	35.2	34.8
Nuclear	0.5	1.1	0.7	1.2	1.3	1.3
Hydro	2.5	3.1	3.0	2.7	2.9	3.0
Others	12.6	11.3	8.8	9.9	12.0	11.8

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

Total primary energy supply by energy Russia

Exajoules



Exajoules

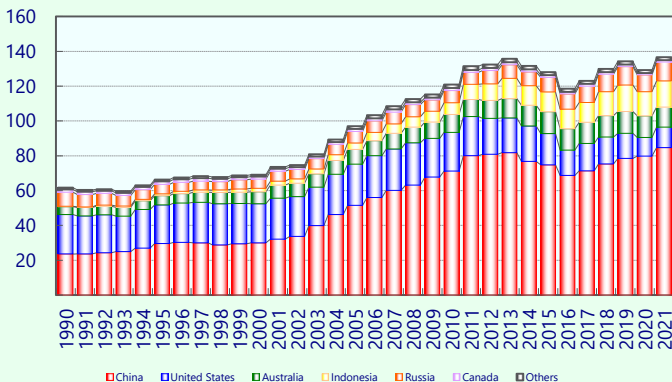
	1990	2000	2010	2015	2020	2021
Coal	8.0	5.0	4.4	4.8	4.8	5.4
Oil	11.0	5.3	5.8	5.8	6.3	6.7
Gas	15.4	13.4	16.1	15.3	17.3	19.1
Nuclear	1.3	1.4	1.9	2.1	2.4	2.5
Hydro	0.6	0.6	0.6	0.6	0.8	0.8
Others	0.5	0.3	0.3	0.3	0.4	0.4
Total	36.8	25.9	29.0	29.0	31.9	34.9

Share (%)

	1990	2000	2010	2015	2020	2021
Coal	21.6	19.3	15.2	16.7	15.0	15.3
Oil	30.0	20.4	20.1	20.1	19.7	19.3
Gas	41.8	51.5	55.3	52.6	54.2	54.9
Nuclear	3.6	5.6	6.5	7.4	7.4	7.0
Hydro	1.6	2.3	2.1	2.1	2.4	2.2
Others	1.4	1.0	0.9	1.0	1.3	1.2

Production of coal* APEC

Exajoules



Primary Energy Supply

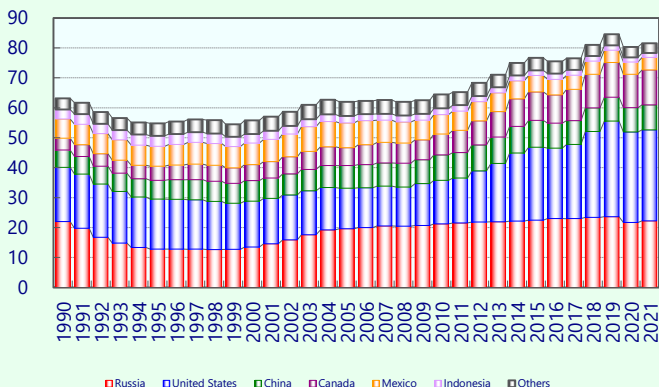
	Exajoules					
	1990	2000	2010	2015	2020	2021
China	23.6	30.1	71.2	74.8	79.8	84.8
United States	22.7	22.4	22.2	18.1	10.8	11.7
Australia	4.4	6.9	10.3	12.5	12.3	11.5
Indonesia	.3	1.9	6.8	11.4	13.9	15.1
Russia	8.0	5.4	7.0	8.4	9.7	10.7
Canada	1.6	1.4	1.4	1.3	1.0	1.1
Others	1.1	1.1	2.0	1.7	1.7	1.8
Total	61.7	69.2	120.9	128.0	129.2	136.7

	Share (%)					
	1990	2000	2010	2015	2020	2021
China	38.3	43.5	58.9	58.4	61.8	62.0
United States	36.8	32.4	18.4	14.1	8.3	8.6
Australia	7.2	10.0	8.5	9.8	9.5	8.4
Russia	13.0	7.8	5.8	6.5	7.5	7.9
Indonesia	0.4	2.7	5.6	8.9	10.7	11.1
Canada	2.6	2.1	1.2	1.0	0.8	0.8
Others	1.8	1.6	1.7	1.3	1.3	1.3

*Coal: hard coal, anthracite and lignite

Production of crude oil* APEC

Exajoules

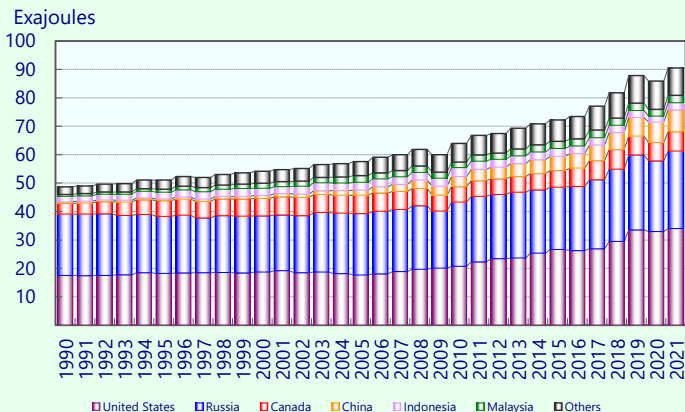


	Exajoules					
	1990	2000	2010	2015	2020	2021
Russia	22.0	13.5	21.2	22.5	21.7	22.3
United States	18.1	15.3	14.6	24.4	30.2	30.4
China	5.8	6.8	8.5	9.0	8.2	8.3
Canada	3.9	5.4	7.0	9.5	11.1	11.7
Mexico	6.4	7.2	6.5	5.5	4.1	4.1
Indonesia	3.2	3.1	2.1	1.7	1.5	1.5
Others	3.7	4.6	4.6	4.1	3.5	3.2
Total	63.1	55.8	64.4	76.7	80.3	81.5

	Share (%)					
	1990	2000	2010	2015	2020	2021
Russia	34.9	24.2	32.9	29.3	27.0	27.3
United States	28.7	27.4	22.6	31.8	37.6	37.3
China	9.2	12.2	13.2	11.7	10.2	10.2
Canada	6.2	9.6	10.9	12.4	13.8	14.4
Mexico	10.2	12.8	10.1	7.2	5.1	5.1
Indonesia	5.0	5.5	3.2	2.3	1.9	1.8
Others	5.8	8.2	7.2	5.4	4.4	3.9

*Crude oil includes NGL and condensates

Production of natural gas APEC

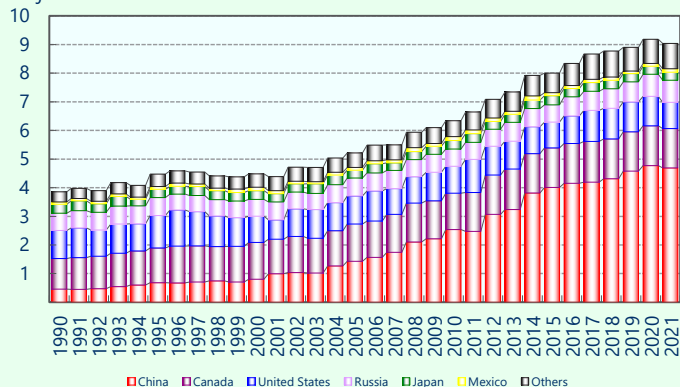


	Exajoules					
	1990	2000	2010	2015	2020	2021
United States	17.5	18.7	20.7	26.7	33.0	34.0
Russia	21.6	19.7	22.6	22.0	24.8	27.3
Canada	3.7	6.2	5.4	5.8	6.5	6.7
China	.6	1.0	3.6	5.0	7.2	7.7
Indonesia	1.9	2.5	3.1	2.7	2.1	2.5
Malaysia	.6	1.8	2.0	2.5	2.3	2.6
Others	2.6	4.2	6.6	7.5	10.0	9.6
Total	48.7	54.1	64.0	72.2	85.9	90.5

	Share (%)					
	1990	2000	2010	2015	2020	2021
United States	36.0	34.6	32.4	36.9	38.4	37.6
Russia	44.5	36.4	35.3	30.4	28.9	30.2
Canada	7.6	11.5	8.5	8.1	7.5	7.4
China	1.2	1.9	5.6	6.9	8.3	8.5
Indonesia	4.0	4.7	4.9	3.8	2.5	2.7
Malaysia	1.3	3.3	3.1	3.5	2.7	2.9
Others	5.4	7.7	10.3	10.4	11.6	10.6

Production of hydro power APEC

Exajoules



	Exajoules					
	1990	2000	2010	2015	2020	2021
China	0.5	0.8	2.5	4.0	4.8	4.7
Canada	1.1	1.3	1.3	1.4	1.4	1.4
United States	1.0	0.9	0.9	0.9	1.0	0.9
Russia	0.6	0.6	0.6	0.6	0.8	0.8
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	0.5	0.6	0.7	0.8	0.9
Total	3.9	4.5	6.3	8.0	9.2	9.0

	Share (%)					
	1990	2000	2010	2015	2020	2021
China	11.8	17.9	40.1	50.1	51.9	51.9
Canada	27.7	28.8	20.0	17.2	15.2	15.2
United States	25.5	20.3	14.9	11.3	11.3	10.1
Russia	15.5	13.2	9.5	7.6	8.3	8.5
Japan	8.2	6.7	4.8	3.9	3.1	3.1
Mexico	2.2	2.7	2.1	1.4	1.1	1.3
Others	9.0	10.5	8.7	8.5	9.2	9.8

Production of nuclear power APEC

Exajoules

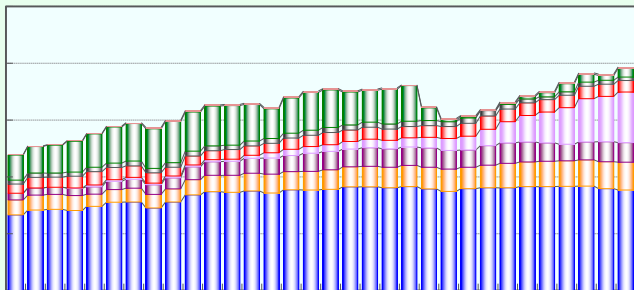
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5



United States Russia Korea China Canada Chinese Taipei Japan Mexico

Exajoules

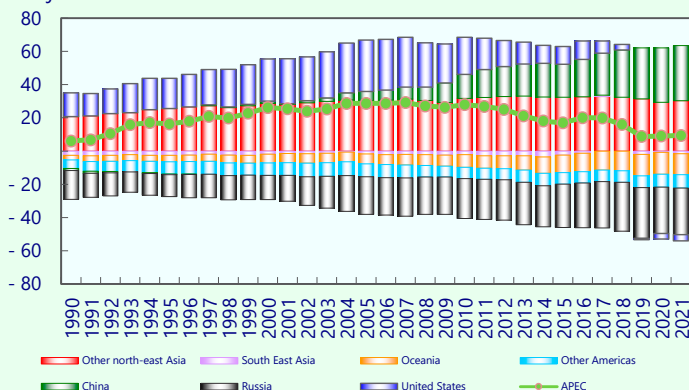
	1990	2000	2010	2015	2020	2021
United States	6.7	8.7	9.2	9.1	9.0	8.9
China	0.0	0.2	0.8	1.9	4.0	4.4
Russia	1.3	1.4	1.9	2.1	2.4	2.5
Canada	0.8	0.8	1.0	1.1	1.1	1.0
Japan	2.2	3.5	3.1	0.1	0.4	0.8
Others	1.0	1.7	2.1	2.3	2.2	2.2
Total	12.0	16.3	18.1	16.6	19.1	19.7

Share (%)

	1990	2000	2010	2015	2020	2021
United States	55.7	53.3	50.6	54.6	47.1	45.0
China	0.0	1.1	4.5	11.2	21.0	22.6
Russia	10.9	8.8	10.3	12.9	12.4	12.4
Canada	6.8	4.9	5.5	6.7	5.6	5.1
Japan	18.4	21.5	17.4	0.6	2.2	3.9
Others	8.1	10.4	11.8	14.0	11.6	11.0

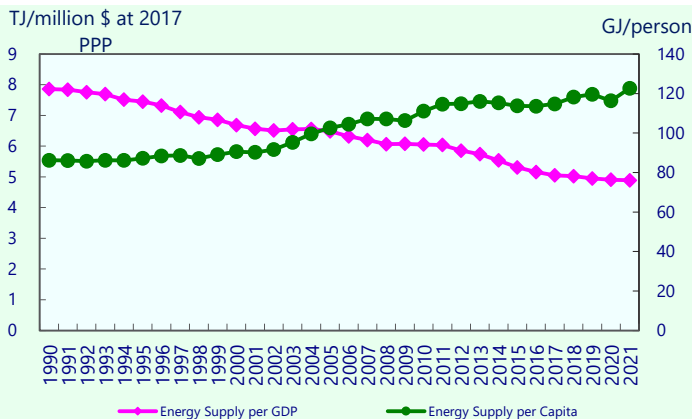
Net import by region APEC

Exajoules



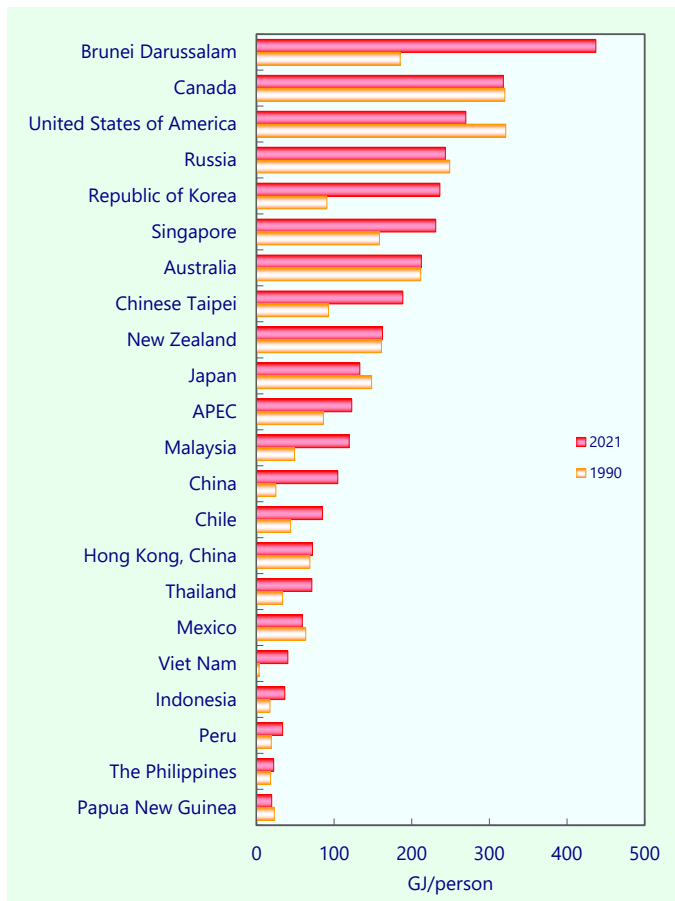
	Exajoules					
	1990	2000	2010	2015	2020	2021
Other north-east Asia	20.8	28.7	31.8	32.5	29.3	30.4
South East Asia	-2.5	-1.8	-2.1	-2.4	-0.7	-1.7
Oceania	-2.8	-5.3	-7.7	-10.6	-13.3	-12.6
Other Americas	-5.1	-7.5	-6.8	-6.9	-7.7	-8.0
China	-1.4	1.4	14.4	19.8	32.8	33.0
Russia	-17.3	-14.6	-24.1	-26.0	-27.9	-28.0
United States	14.3	25.4	22.3	10.7	-3.4	-3.8
Total	6.1	26.2	27.9	17.0	9.1	9.4

Total primary energy supply per GDP & capita APEC

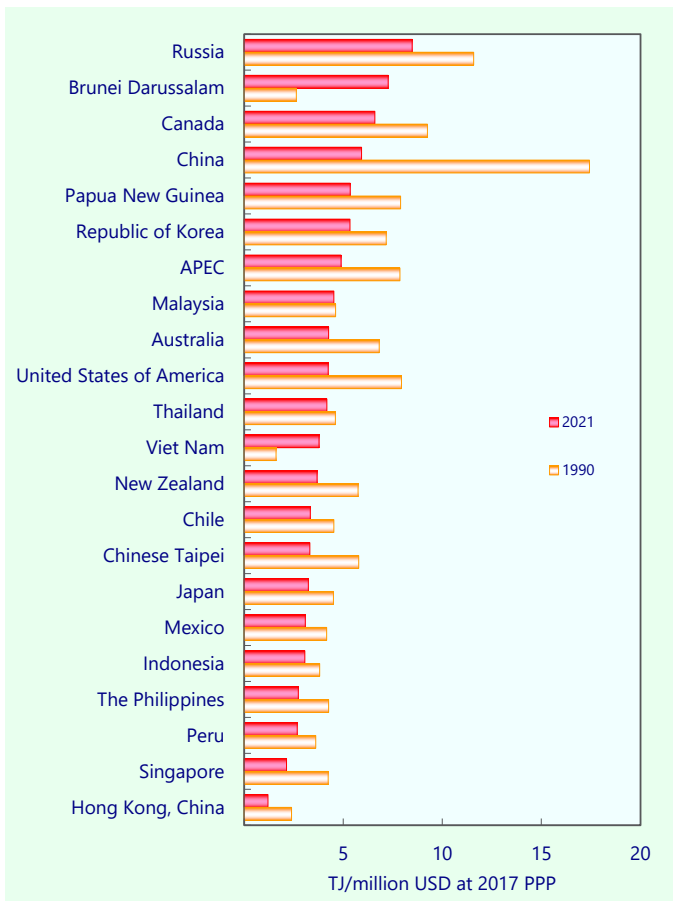


	1990	2000	2010	2015	2020	2021
Population (million)	2 281	2 554	2 753	2 857	2 944	2 951
Primary Energy Supply per Capita (GJ)	86.16	90.54	111.08	113.73	116.32	122.68
	1990	2000	2010	2015	2020	2021
GDP (\$ 2017 PPP)	25 004	34 585	50 519	61 200	69 775	70 826
Primary Energy Supply per GDP (TJ/million \$ at 2017 PPP)	7.9	6.7	6.1	5.3	4.9	4.9

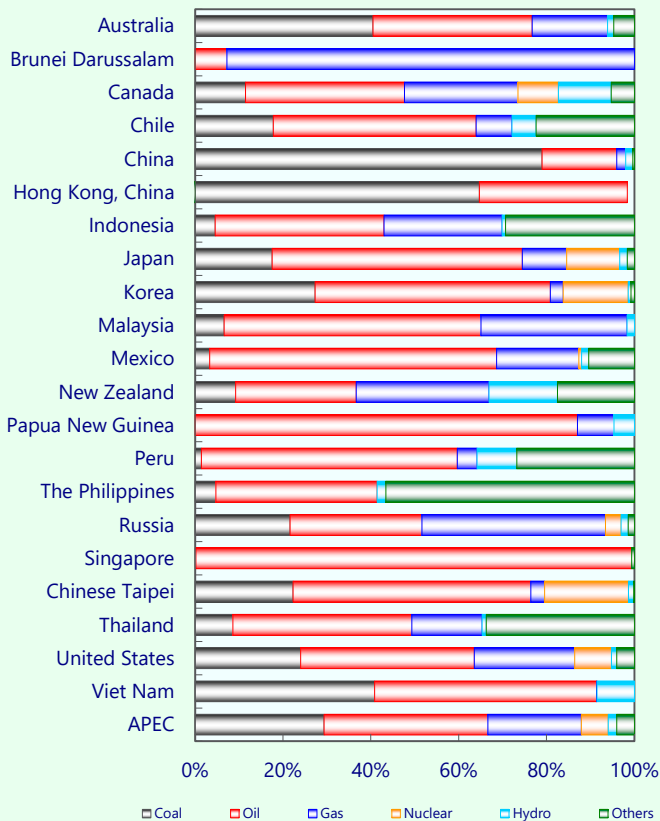
Total primary energy supply per capita 1990 vs 2021 by economy



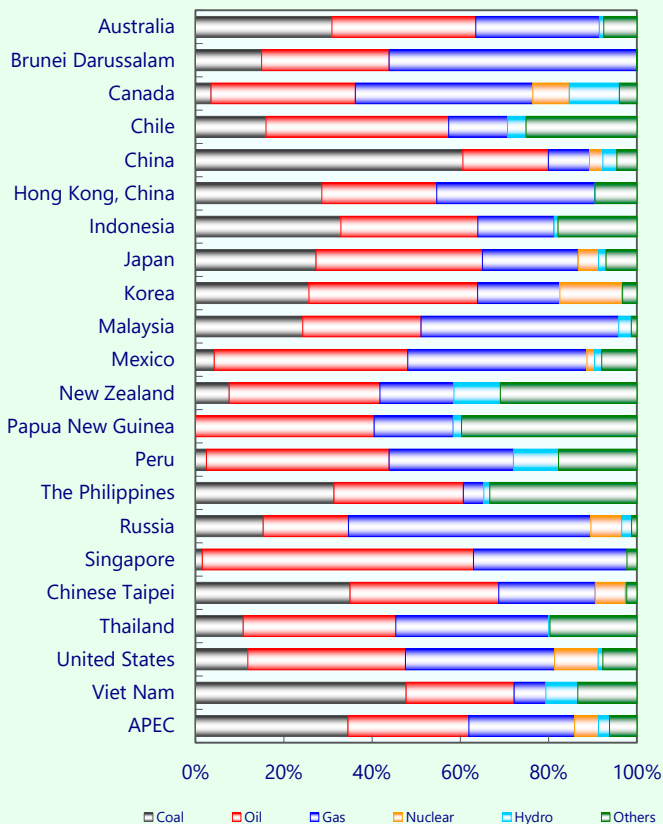
Total primary energy supply per GDP 1990 vs 2021 by economy



Primary energy mix by economy 1990

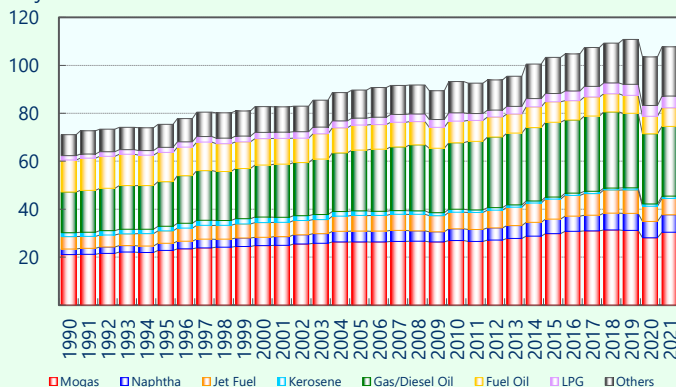


Primary energy mix by economy 2021



Petroleum refining by product APEC

Exajoules

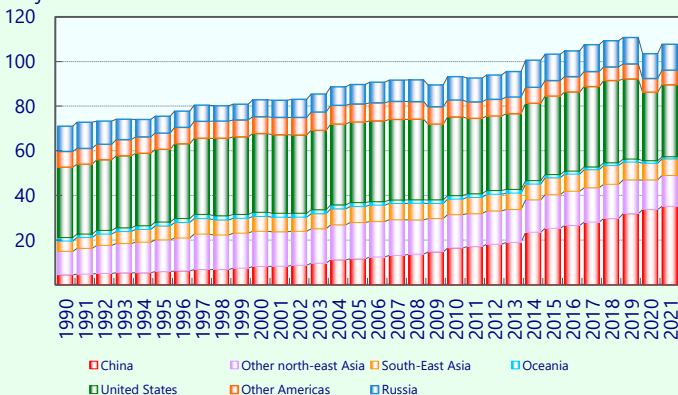


	Exajoules					
	1990	2000	2010	2015	2020	2021
Mogas	21.1	24.8	26.9	29.9	28.1	30.4
Naphtha	2.3	3.5	4.9	6.0	6.8	7.3
Jet Fuel	5.2	6.1	6.9	8.4	6.3	6.9
Gas/Diesel Oil	16.9	21.8	27.7	31.2	29.3	29.1
Fuel Oil	13.4	11.0	9.0	8.5	7.3	7.8
LPG	1.8	2.6	3.5	3.5	4.6	4.9
Others	10.4	13.1	14.2	15.9	21.2	21.4
Total	71.1	82.8	93.3	103.3	103.5	107.7

	Share (%)					
	1990	2000	2010	2015	2020	2021
Mogas	29.6	30.0	28.9	28.9	27.2	28.2
Naphtha	3.3	4.2	5.2	5.8	6.6	6.8
Jet Fuel	7.3	7.4	7.4	8.1	6.1	6.4
Gas/Diesel Oil	23.8	26.3	29.7	30.2	28.3	27.0
Fuel Oil	18.8	13.2	9.7	8.2	7.0	7.2
LPG	2.5	3.1	3.7	3.4	4.4	4.5
Others	14.7	15.8	15.3	15.4	20.4	19.9

Petroleum refining by region APEC

Exajoules



Exajoules

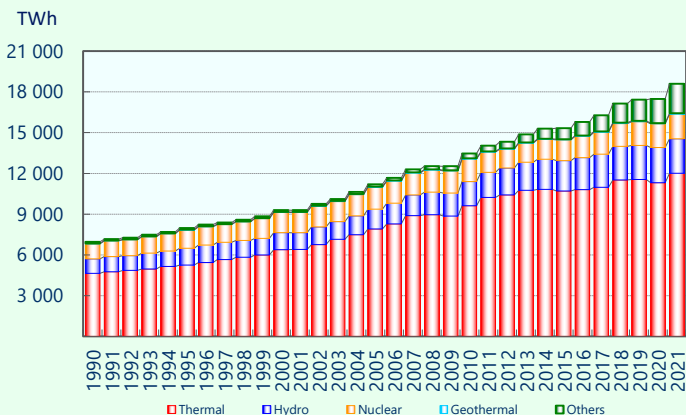
	1990	2000	2010	2015	2020	2021
China	4.5	8.2	16.6	25.3	33.7	35.2
Other north-east Asia	10.4	15.8	14.8	15.0	13.2	13.7
South-East Asia	4.7	6.6	6.9	7.6	7.5	7.5
Oceania	1.6	1.8	1.6	1.4	1.2	1.0
United States	31.6	35.3	35.2	35.1	30.7	32.2
Other Americas	7.1	7.5	7.6	7.0	6.0	6.5
Russia	11.3	7.5	10.5	11.9	11.2	11.6
Total	71.1	82.8	93.3	103.3	103.5	107.7

Share (%)

	1990	2000	2010	2015	2020	2021
China	6.3	9.9	17.7	24.5	32.5	32.7
Other north-east Asia	14.7	19.1	15.9	14.5	12.8	12.7
South-East Asia	6.6	8.0	7.4	7.4	7.2	6.9
Oceania	2.2	2.2	1.7	1.3	1.1	0.9
United States	44.4	42.7	37.7	34.0	29.6	29.9
Other Americas	9.9	9.1	8.2	6.8	5.8	6.0
Russia	15.9	9.1	11.2	11.5	10.8	10.7

Electricity generation by type

APEC

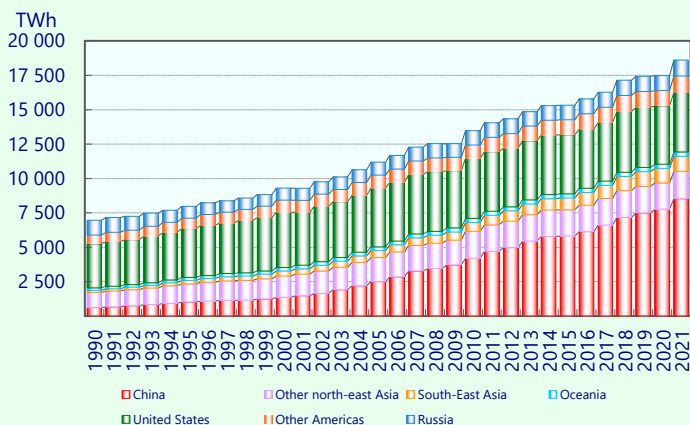


	TWh					
	1990	2000	2010	2015	2020	2021
Thermal	4 640	6 384	9 613	10 697	11 317	12 007
Hydro	1 073	1 250	1 780	2 242	2 584	2 551
Nuclear	1 094	1 496	1 658	1 521	1 745	1 804
Geothermal	32	41	53	58	63	62
Others	126	129	368	821	1 768	2 181
Total	6 964	9 299	13 472	15 337	17 478	18 604

	Share (%)					
	1990	2000	2010	2015	2020	2021
Thermal	66.6	68.6	71.4	69.7	64.8	64.5
Hydro	15.4	13.4	13.2	14.6	14.8	13.7
Nuclear	15.7	16.1	12.3	9.9	10.0	9.7
Geothermal	0.5	0.4	0.4	0.4	0.4	0.3
Others	1.8	1.4	2.7	5.4	10.1	11.7

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

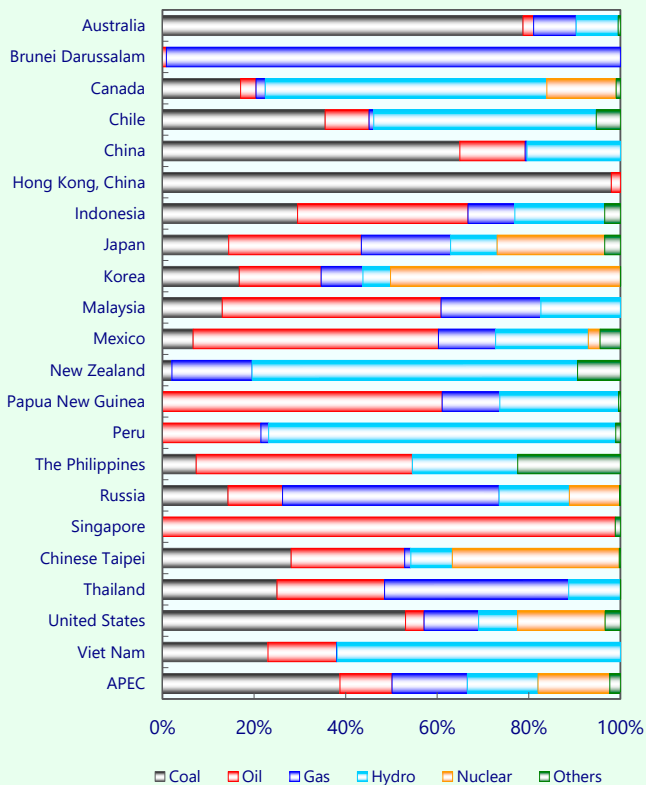
Electricity generation by region APEC



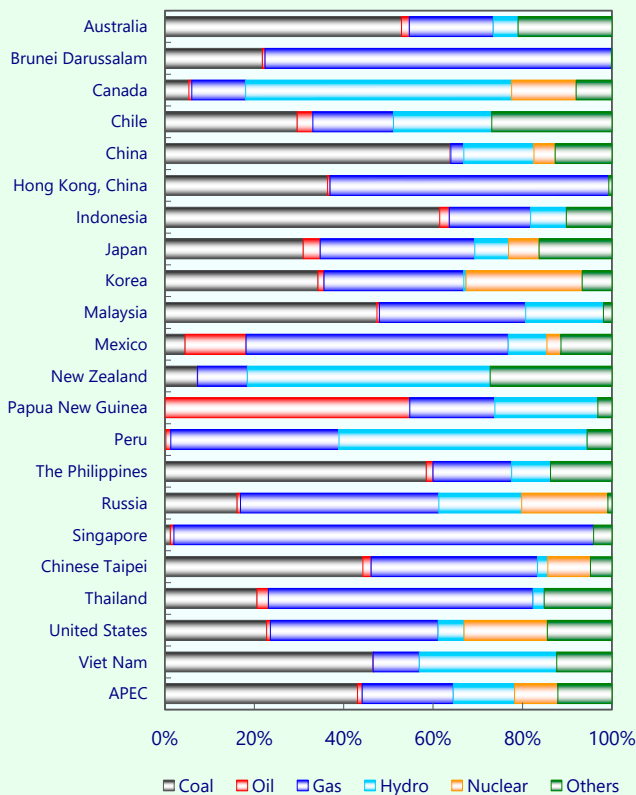
	TWh					
	1990	2000	2010	2015	2020	2021
China	621	1 356	4 207	5 815	7 779	8 534
Other north-east Asia	1 086	1 560	1 946	1 900	1 899	1 976
South-East Asia	152	358	652	868	1 054	1 100
Oceania	189	252	302	300	314	314
United States	3 203	4 026	4 354	4 297	4 239	4 354
Other Americas	630	872	975	1 092	1 106	1 168
Russia	1 082	876	1 036	1 066	1 088	1 158
Total	6 964	9 299	13 472	15 337	17 478	18 604

	Share (%)					
	1990	2000	2010	2015	2020	2021
China	8.9	14.6	31.2	37.9	44.5	45.9
Other north-east Asia	15.6	16.8	14.4	12.4	10.9	10.6
South-East Asia	2.2	3.9	4.8	5.7	6.0	5.9
Oceania	2.7	2.7	2.2	2.0	1.8	1.7
United States	46.0	43.3	32.3	28.0	24.3	23.4
Other Americas	9.1	9.4	7.2	7.1	6.3	6.3
Russia	15.5	9.4	7.7	6.9	6.2	6.2

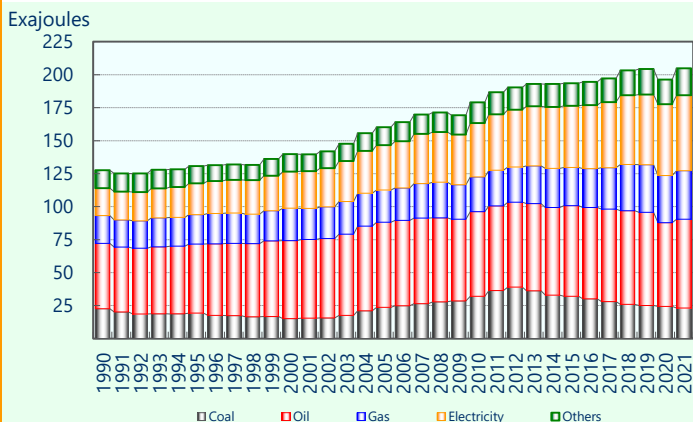
Electricity generation by economy 1990



Electricity generation by economy 2021



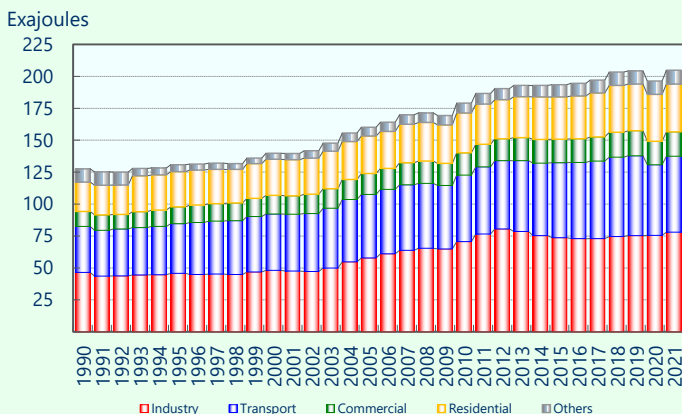
Total final energy consumption by energy APEC



	Exajoules					
	1990	2000	2010	2015	2020	2021
Coal	22.5	15.1	32.0	32.0	24.4	23.1
Oil	49.5	59.1	64.3	68.7	63.5	67.4
Gas	21.2	24.5	26.2	29.0	35.7	36.8
Electricity	20.7	27.8	40.8	46.7	53.9	57.2
Others	13.6	13.2	15.8	17.1	18.8	20.4
Total	127.6	139.8	179.0	193.5	196.4	204.9

	Share (%)					
	1990	2000	2010	2015	2020	2021
Coal	17.7	10.8	17.9	16.6	12.4	11.3
Oil	38.8	42.3	35.9	35.5	32.3	32.9
Gas	16.6	17.5	14.6	15.0	18.2	18.0
Electricity	16.2	19.9	22.8	24.1	27.5	27.9
Others	10.7	9.4	8.8	8.8	9.6	10.0

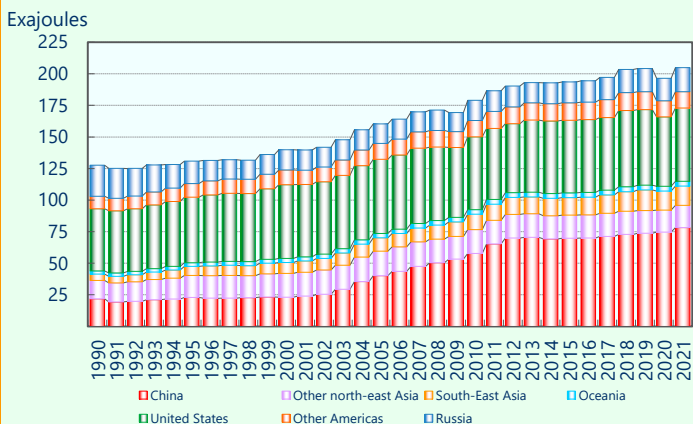
Total final energy consumption by sector APEC



	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	46.4	48.2	70.6	73.7	75.4	78.1
Transport	36.1	44.1	52.1	58.6	55.3	59.4
Commercial	11.7	14.6	17.4	18.5	18.5	19.2
Residential	23.2	28.3	31.2	33.1	36.6	37.4
Others	10.2	4.8	7.7	9.6	10.5	10.8
Total	127.6	139.8	179.0	193.5	196.4	204.9

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	36.4	34.4	39.4	38.1	38.4	38.1
Transport	28.3	31.5	29.1	30.3	28.2	29.0
Commercial	9.2	10.4	9.7	9.5	9.4	9.4
Residential	18.2	20.2	17.4	17.1	18.7	18.3
Others	8.0	3.4	4.3	4.9	5.4	5.3

Total final energy consumption by region APEC

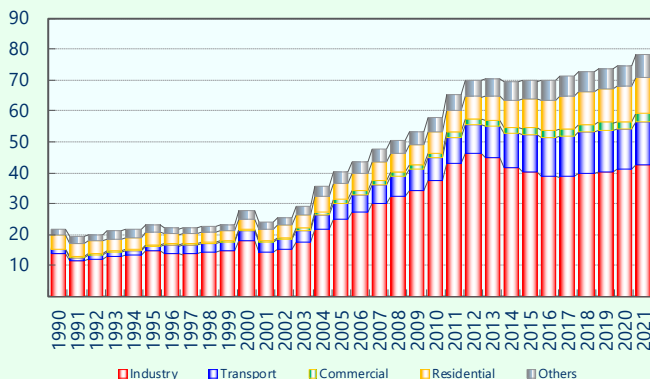


	Exajoules					
	1990	2000	2010	2015	2020	2021
China	21.8	23.1	57.8	69.8	74.7	78.2
Other north-east Asia	14.5	18.9	18.9	18.3	17.3	17.6
South-East Asia	5.1	8.6	12.2	13.9	15.1	15.3
Oceania	2.6	3.3	3.6	3.8	3.7	3.7
United States	49.2	58.3	57.7	57.5	55.1	58.0
Other Americas	9.9	11.6	13.0	13.7	12.8	13.0
Russia	24.5	16.0	15.9	16.5	17.7	19.0
Total	127.6	139.8	179.0	193.5	196.4	204.9

	Share (%)					
	1990	2000	2010	2015	2020	2021
China	17.1	16.5	32.3	36.1	38.1	38.2
Other north-east Asia	11.3	13.5	10.5	9.4	8.8	8.6
South-East Asia	4.0	6.2	6.8	7.2	7.7	7.5
Oceania	2.0	2.3	2.0	2.0	1.9	1.8
United States	38.5	41.7	32.2	29.7	28.0	28.3
Other Americas	7.8	8.3	7.2	7.1	6.5	6.3
Russia	19.2	11.4	8.9	8.5	9.0	9.3

Total final energy consumption by sector China

Exajoules

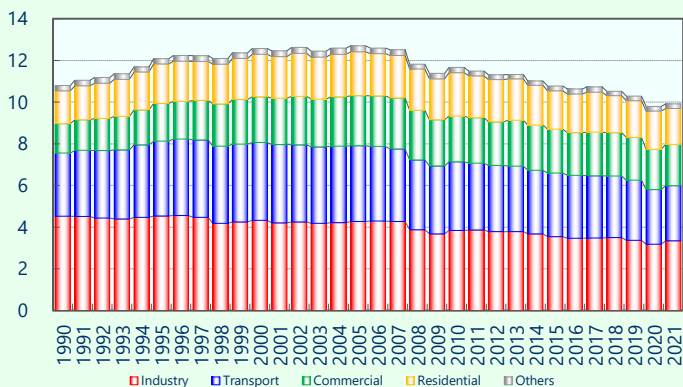


	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	13.9	18.1	37.5	40.2	41.3	42.8
Transport	1.2	3.0	7.6	12.0	12.9	13.8
Commercial	.3	.6	1.4	2.2	2.5	2.6
Residential	4.4	3.5	6.8	9.3	11.2	11.7
Others	2.0	2.7	4.5	6.2	6.9	7.4
Total	21.8	27.8	57.8	69.8	74.7	78.2

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	63.7	65.0	64.9	57.6	55.2	54.6
Transport	5.7	10.7	13.2	17.1	17.2	17.6
Commercial	1.3	2.0	2.4	3.2	3.3	3.3
Residential	20.3	12.5	11.8	13.3	15.0	14.9
Others	9.0	9.8	7.8	8.8	9.2	9.5

Total final energy consumption by sector Japan

Exajoules

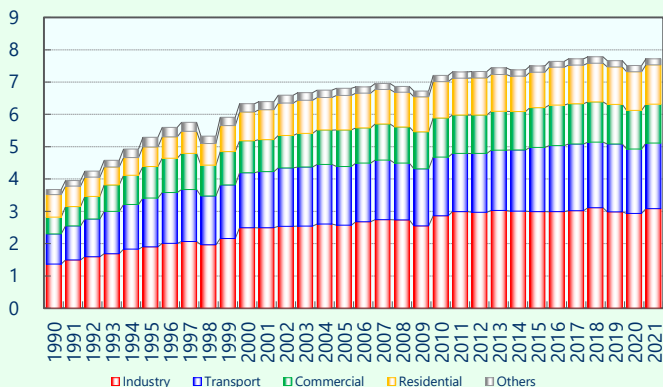


	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	4.5	4.3	3.8	3.5	3.2	3.3
Transport	3.0	3.7	3.3	3.0	2.6	2.6
Commercial	1.4	2.2	2.2	2.1	1.9	2.0
Residential	1.6	2.0	2.1	1.8	1.8	1.7
Others	0.3	0.3	0.3	0.2	0.2	0.2
Total	10.8	12.6	11.7	10.8	9.8	9.9

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	41.9	34.5	32.9	32.9	32.5	33.7
Transport	28.0	29.7	28.2	28.3	26.8	26.7
Commercial	13.1	17.4	18.8	19.5	19.7	20.0
Residential	14.6	16.3	17.9	17.1	18.8	17.4
Others	2.4	2.2	2.2	2.2	2.2	2.2

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

Exajoules



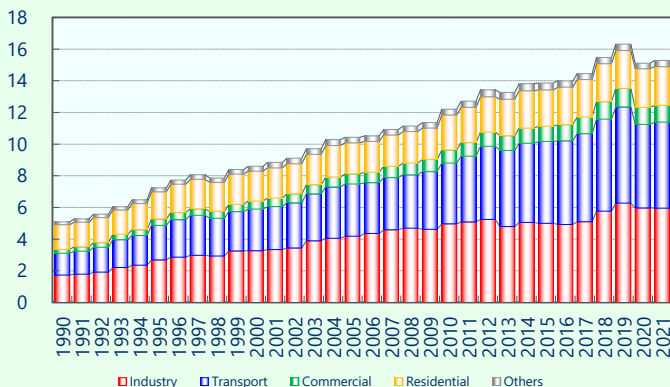
	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	1.4	2.5	2.9	3.0	2.9	3.1
Transport	0.9	1.7	1.8	2.0	2.0	2.0
Commercial	0.5	1.0	1.2	1.2	1.2	1.2
Residential	0.7	0.9	1.1	1.1	1.2	1.2
Others	0.2	0.3	0.2	0.2	0.2	0.2
Total	3.7	6.3	7.2	7.5	7.5	7.7

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	37.2	39.4	39.7	39.9	39.0	39.9
Transport	25.5	26.9	25.2	26.5	26.5	26.3
Commercial	14.1	15.6	16.8	16.4	16.0	15.6
Residential	18.9	14.0	15.6	14.6	15.9	15.8
Others	4.3	4.0	2.7	2.6	2.6	2.4

*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

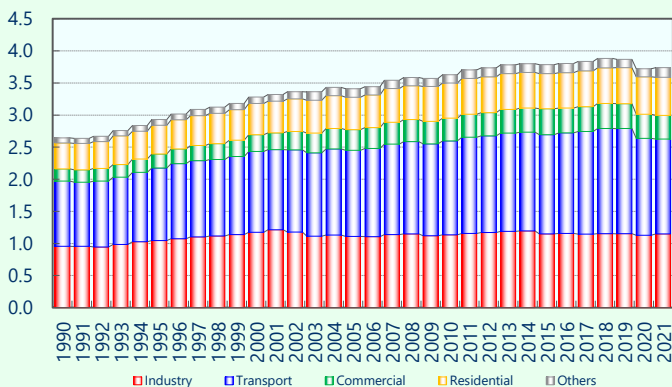


	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	1.7	3.3	5.0	5.0	6.0	6.0
Transport	1.4	2.6	3.8	5.2	5.3	5.4
Commercial	0.2	0.5	0.8	1.0	1.1	1.1
Residential	1.6	1.9	2.2	2.3	2.4	2.4
Others	0.2	0.3	0.4	0.4	0.4	0.4
Total	5.1	8.6	12.2	13.9	15.1	15.3

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	34.1	38.1	40.7	36.1	39.5	39.0
Transport	27.1	30.4	31.4	37.4	34.9	35.6
Commercial	4.7	5.9	6.9	6.9	7.0	7.0
Residential	30.5	22.1	18.0	16.5	16.2	16.0
Others	3.7	3.5	3.0	3.1	2.3	2.5

Total final energy consumption by sector Oceania

Exajoules



Exajoules

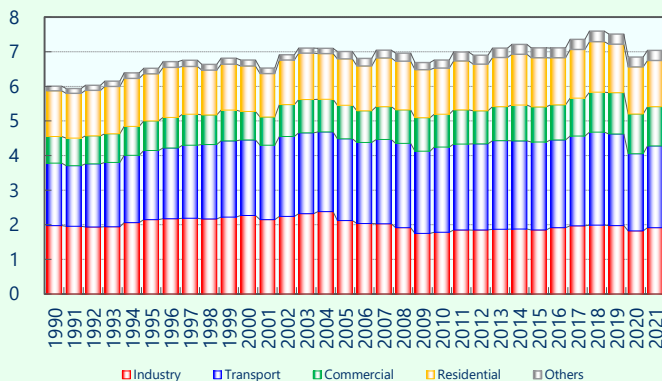
	1990	2000	2010	2015	2020	2021
Industry	1.0	1.2	1.1	1.1	1.13	1.15
Transport	1.0	1.3	1.5	1.5	1.51	1.48
Commercial	0.2	0.3	0.4	0.4	0.38	0.37
Residential	0.4	0.5	0.5	0.5	0.58	0.60
Others	0.1	0.1	0.1	0.1	0.12	0.15
Total	2.6	3.3	3.6	3.8	3.72	3.74

Share (%)

	1990	2000	2010	2015	2020	2021
Industry	36.1	35.8	31.2	30.3	30.3	30.7
Transport	38.4	38.3	40.4	40.8	40.6	39.5
Commercial	7.1	8.0	9.7	10.6	10.1	9.8
Residential	15.3	14.9	15.1	14.5	15.7	15.9
Others	3.0	3.1	3.6	3.7	3.3	4.0

Total final energy consumption by sector Canada

Exajoules

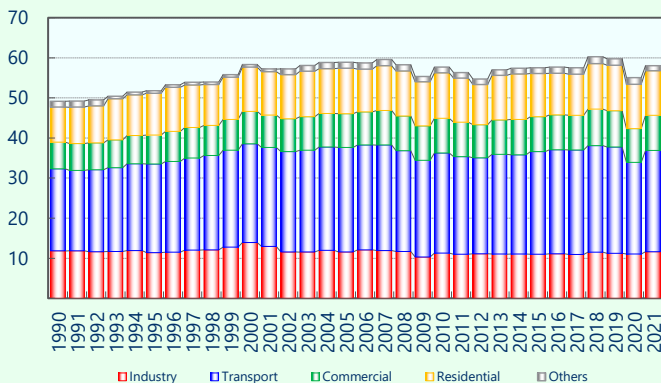


	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	2.0	2.3	1.8	1.9	1.8	1.9
Transport	1.8	2.2	2.5	2.5	2.2	2.4
Commercial	0.8	0.8	0.9	1.0	1.1	1.1
Residential	1.3	1.3	1.3	1.4	1.4	1.3
Others	0.1	0.2	0.2	0.3	0.3	0.3
Total	6.0	6.8	6.8	7.1	6.8	7.0

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	32.9	33.5	26.3	26.0	26.6	27.2
Transport	30.1	32.3	36.5	35.7	32.6	33.5
Commercial	12.8	12.2	14.0	14.3	16.8	16.1
Residential	21.9	19.4	19.7	20.0	19.9	19.0
Others	2.3	2.6	3.5	4.0	4.2	4.1

Total final energy consumption by sector United States

Exajoules

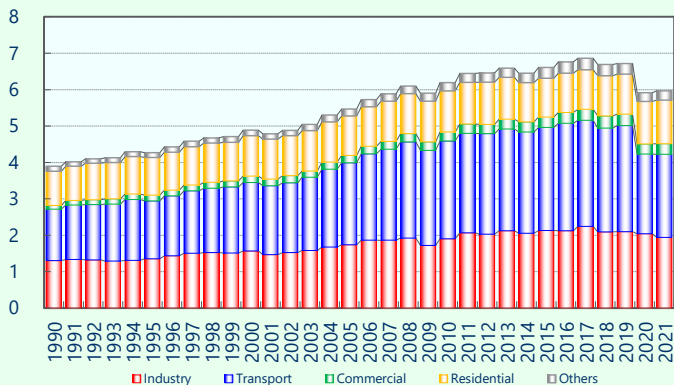


	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	11.9	13.9	11.3	11.0	11.1	11.6
Transport	20.4	24.6	24.9	25.6	22.9	25.3
Commercial	6.7	8.1	8.7	8.7	8.4	8.7
Residential	8.8	11.1	11.3	10.7	11.0	11.1
Others	1.4	.7	1.4	1.5	1.7	1.2
Total	49.2	58.3	57.7	57.5	55.1	58.0

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	24.2	23.8	19.6	19.2	20.1	20.0
Transport	41.5	42.2	43.2	44.5	41.5	43.6
Commercial	13.6	13.9	15.1	15.1	15.3	15.0
Residential	17.9	19.0	19.6	18.6	20.1	19.2
Others	2.9	1.1	2.5	2.6	3.1	2.1

Total final energy consumption by sector Other Americas*

Exajoules



Exajoules

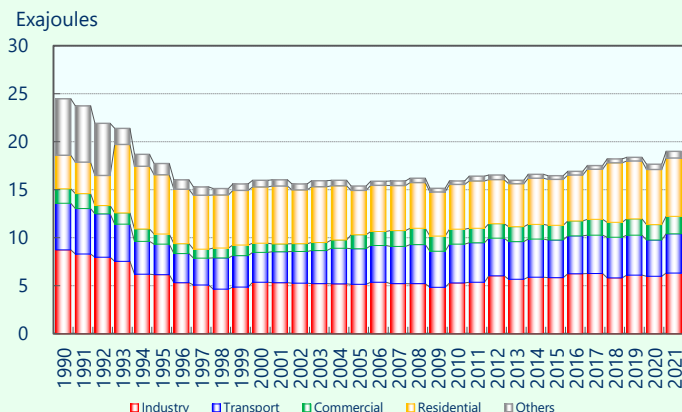
	1990	2000	2010	2015	2020	2021
Industry	1.3	1.6	1.9	2.1	2.0	1.9
Transport	1.4	1.9	2.7	2.8	2.2	2.3
Commercial	0.1	0.2	0.2	0.3	0.3	0.3
Residential	0.9	1.1	1.1	1.1	1.2	1.2
Others	0.1	0.2	0.2	0.3	0.2	0.2
Total	3.9	4.9	6.2	6.6	5.9	6.0

Share (%)

	1990	2000	2010	2015	2020	2021
Industry	33.4	32.1	30.8	32.3	34.6	32.5
Transport	36.4	38.5	43.4	42.8	36.9	38.3
Commercial	2.5	3.7	3.9	4.3	4.7	4.9
Residential	24.1	22.7	18.3	16.2	19.8	20.1
Others	3.6	3.1	3.7	4.4	4.0	4.2

*Other Americas include Chile, Mexico and Peru.

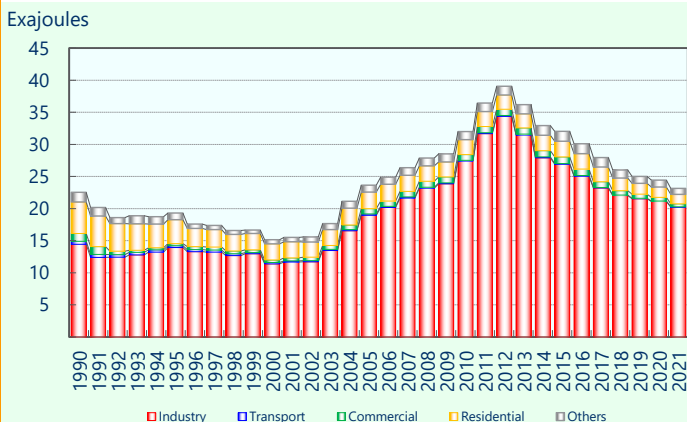
Total final energy consumption by sector Russia



	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	8.7	5.4	5.3	5.8	6.0	6.3
Transport	4.9	3.1	4.0	3.9	3.8	4.1
Commercial	1.5	0.9	1.6	1.5	1.6	1.8
Residential	3.5	5.9	4.7	4.8	5.8	6.1
Others	5.9	0.7	0.4	0.4	0.5	0.7
Total	24.5	16.0	15.9	16.5	17.7	19.0

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	35.7	33.5	33.2	35.4	33.9	33.2
Transport	19.8	19.5	25.4	23.9	21.4	21.5
Commercial	6.2	5.9	9.7	9.3	9.0	9.6
Residential	14.3	36.8	29.3	29.2	32.6	32.0
Others	24.0	4.3	2.4	2.3	3.1	3.6

Coal* demand by sector APEC



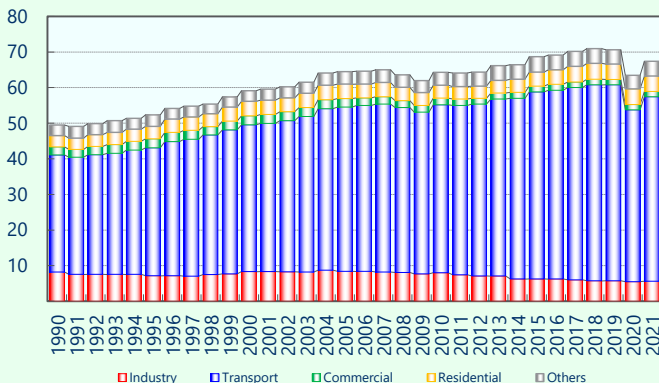
	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	14.4	11.4	27.4	26.9	21.1	20.3
Transport	0.5	0.2	0.1	0.1	0.1	0.0
Commercial	1.2	0.4	0.9	1.0	0.6	0.4
Residential	4.9	2.5	2.3	2.5	1.6	1.5
Others	1.5	0.6	1.2	1.6	1.1	0.9
Total	22.5	15.1	32.0	32.0	24.4	23.1

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	64.0	75.2	85.7	84.0	86.4	87.6
Transport	2.1	1.3	0.4	0.3	0.2	0.1
Commercial	5.4	2.7	2.8	3.2	2.4	1.9
Residential	21.7	16.6	7.2	7.7	6.5	6.4
Others	6.7	4.2	3.9	4.8	4.5	3.9

*Coal and Coal Products

Oil demand by sector APEC

Exajoules

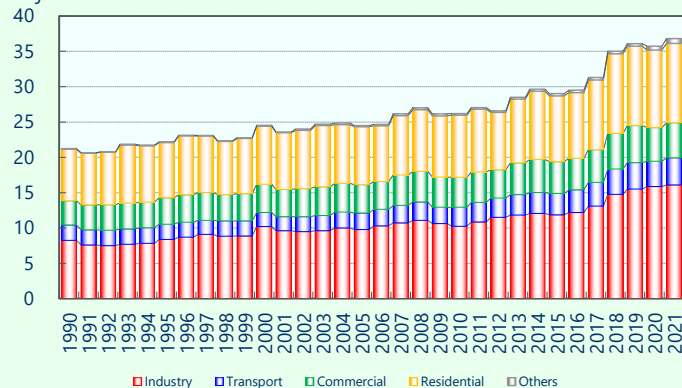


	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	8.2	8.3	8.0	6.3	5.5	5.6
Transport	32.9	41.2	47.2	52.5	48.2	51.8
Commercial	2.3	2.5	1.9	1.6	1.5	1.5
Residential	3.2	4.1	3.6	3.9	4.3	4.3
Others	3.0	3.0	3.6	4.3	3.8	4.1
Total	49.5	59.1	64.3	68.7	63.5	67.4

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	16.6	14.1	12.4	9.2	8.7	8.3
Transport	66.5	69.8	73.4	76.5	76.0	76.9
Commercial	4.5	4.2	2.9	2.4	2.4	2.3
Residential	6.4	6.9	5.6	5.7	6.9	6.4
Others	6.0	5.0	5.7	6.3	6.0	6.1

Gas demand by sector APEC

Exajoules

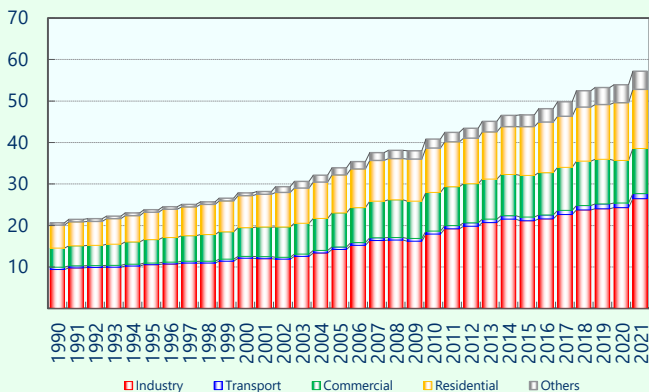


	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	8.2	10.2	10.2	11.8	15.9	16.1
Transport	2.2	2.0	2.7	3.0	3.6	3.8
Commercial	3.4	4.0	4.2	4.5	4.7	5.0
Residential	7.3	8.2	8.8	9.3	11.0	11.2
Others	0.1	0.1	0.2	0.3	0.5	0.7
Total	21.2	24.5	26.2	29.0	35.7	36.8

	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	38.8	41.6	39.1	40.8	44.4	43.7
Transport	10.3	8.1	10.3	10.5	10.1	10.4
Commercial	16.0	16.3	16.2	15.5	13.3	13.5
Residential	34.4	33.6	33.6	32.1	30.7	30.5
Others	0.4	0.5	0.8	1.1	1.5	1.9

Electricity demand by sector APEC

Exajoules

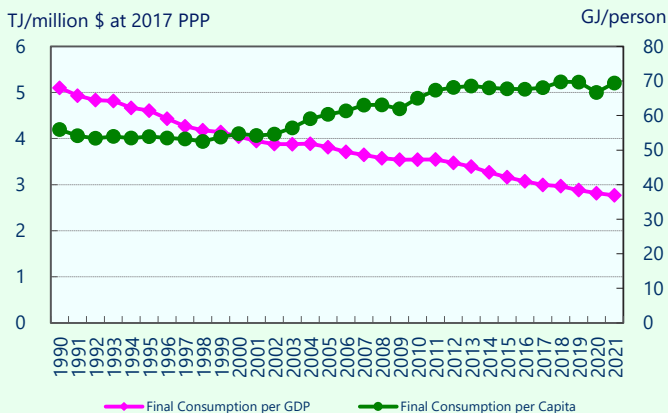


Final Energy Consumption

	Exajoules					
	1990	2000	2010	2015	2020	2021
Industry	9.4	12.1	17.9	21.2	24.3	26.5
Transport	0.5	0.4	0.7	0.9	1.1	1.2
Commercial	4.6	6.9	9.3	10.1	10.3	10.8
Residential	5.5	7.7	10.7	11.7	13.9	14.2
Others	0.6	0.7	2.1	2.9	4.3	4.4
Total	20.7	27.8	40.8	46.7	53.9	57.2

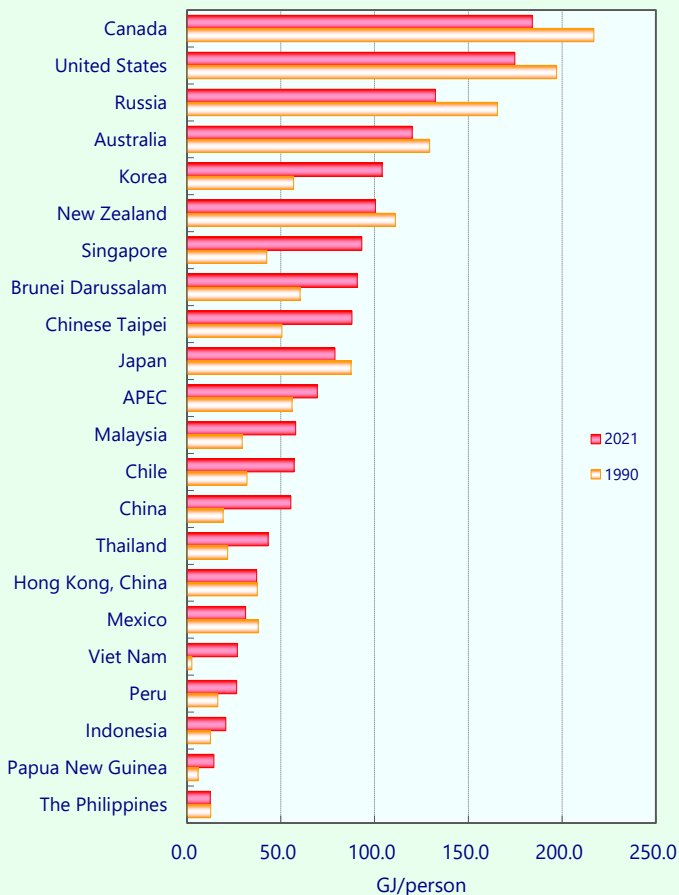
	Share (%)					
	1990	2000	2010	2015	2020	2021
Industry	45.5	43.4	43.9	45.4	45.1	46.3
Transport	2.5	1.6	1.8	1.9	2.0	2.1
Commercial	22.4	24.8	22.8	21.5	19.0	18.9
Residential	26.7	27.8	26.3	25.1	25.7	24.9
Others	2.9	2.4	5.3	6.2	8.1	7.7

Final energy consumption per capita and GDP APEC

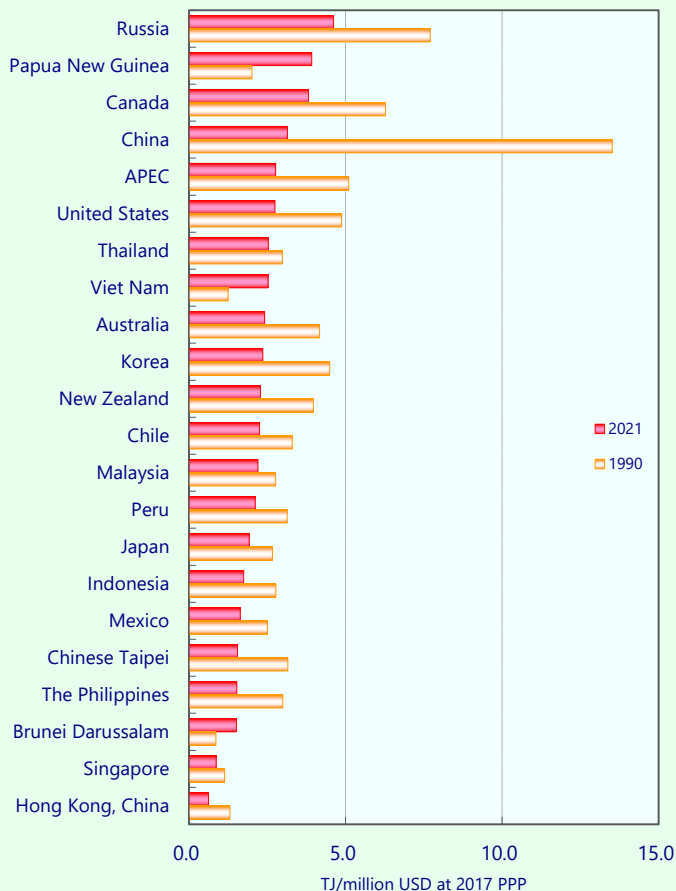


	1990	2000	2010	2015	2020	2021
Population (million)	2 281	2 554	2 753	2 857	2 944	2 951
Final Consumption per Capita (GJ/Person)	55.93	54.73	65.03	67.73	66.69	69.43
	1990	2000	2010	2015	2020	2021
GDP (billion \$ at 2017 PPP)	25 004	34 585	42 021	50 519	61 200	69 775
Final Consumption per GDP (TJ/million \$ at 2017 PPP)	5.10	4.04	3.81	3.54	3.16	2.81

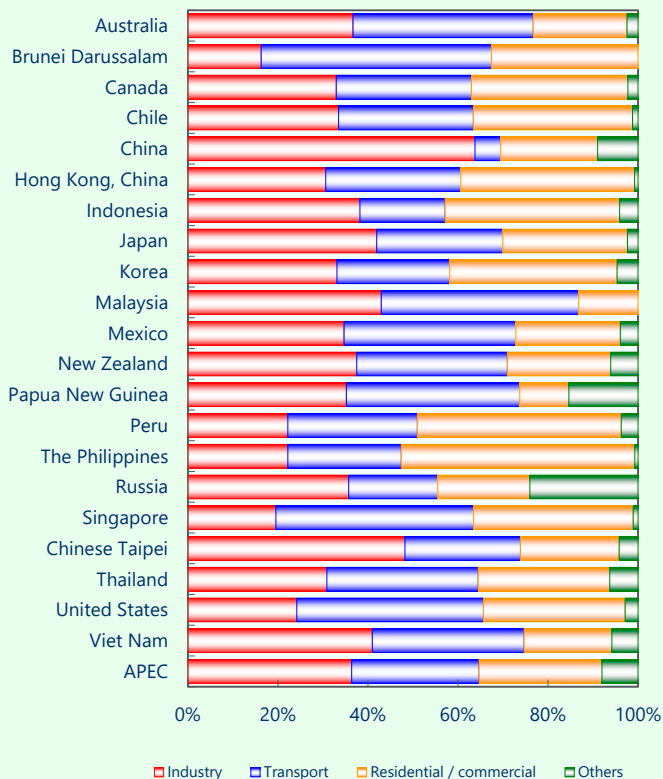
Final energy consumption per capita



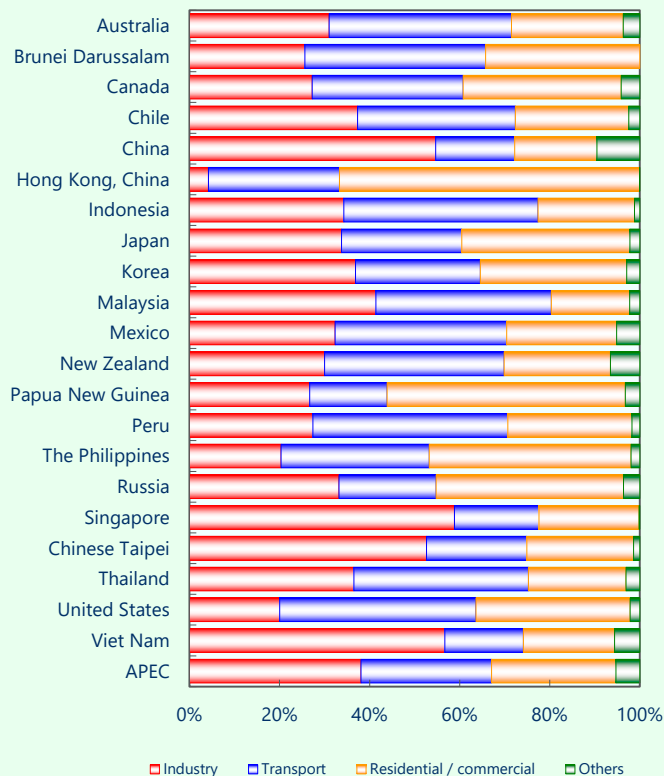
Final energy intensity



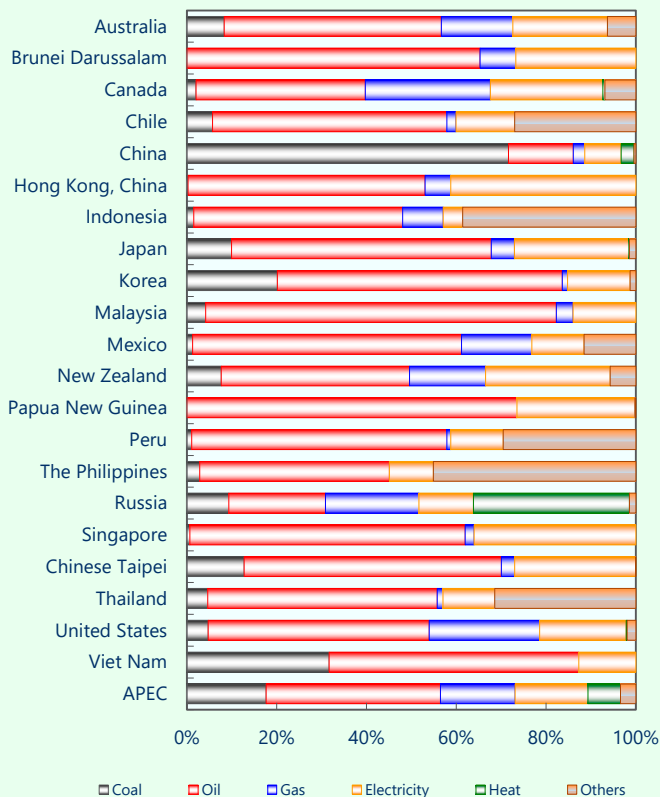
Final energy consumption by sector 1990



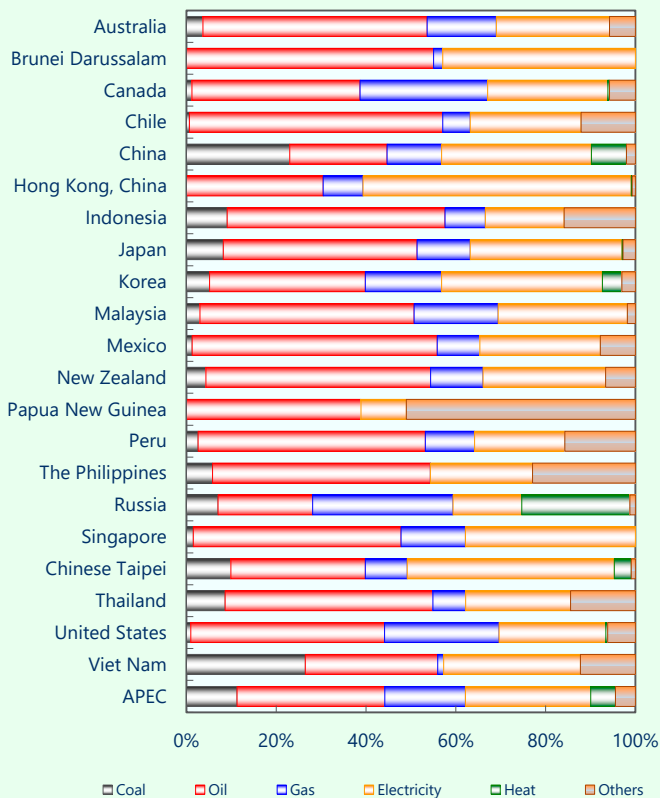
Final energy consumption by sector 2021



Final energy consumption by energy 1990



Final energy consumption by energy 2021



APEC, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	136 673		81 577	
2 Import	19 550	602	56 823	22 767
3 Export	- 29 335	- 427	- 29 879	- 26 706
4 International marine and aviation bunkers				- 6 234
5 Stock change	- 1 838	- 40	1 621	- 888
6 Total energy supply	125 050	136	110 142	- 11 061
7 Transfers			- 5 629	399
8 Main activity producers	- 78 166	- 2 350	- 13	- 1 640
9 Autoproducers	- 1 304	- 395	- 24	- 647
10 Gas processing	- 899	- 145		- 80
11 Petroleum refineries			- 105 040	107 704
12 Coal transformation	- 23 580	13 577		- 15
13 Other transformation			1 238	- 575
14 Loss & own-use	- 1 204	- 829	- 475	- 5 036
15 Discrepancy	- 2 689	- 2	262	- 1 069
16 Total final consumption	17 208	9 990	461	87 981
17 Total final energy consumption	14 097	9 030	2	67 373
18 Industry sector	11 325	8 930	1	5 613
19 Transport sector	27			51 794
20 Other sector	2 745	100	1	9 967
20.1 Residential & Commercial	1 839	92		5 838
20.2 Agriculture	405	6		2 206
20.3 Other	499	2		1 923
21 Non-energy	3 111	960	459	20 607

Australia, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	11 468		785	
2 Import	4	9	492	1 275
3 Export	- 9 847	- 19	- 564	- 149
4 International marine and aviation bunkers				- 70
5 Stock change	70		17	- 8
6 Total energy supply	1 694	- 10	730	1 047
7 Transfers			- 91	220
8 Main activity producers	- 1 467			- 8
9 Autoproducers				- 36
10 Gas processing				
11 Petroleum refineries			- 775	757
12 Coal transformation	- 117	65		
13 Other transformation				
14 Loss & own-use		- 35	- 1	- 181
15 Discrepancy	- 17		137	- 88
16 Total final consumption	94	20		1 710
17 Total final energy consumption	94	20		1 541
18 Industry sector	93	20		188
19 Transport sector				1 205
20 Other sector				148
20.1 Residential & Commercial				43
20.2 Agriculture				103
20.3 Other				1
21 Non-energy				169

Unit: PJ

Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
90 441	9 040	19 690	8 650	13 722	2	359 796	29 927
20 646				271	442	121 102	271
- 24 548				- 237	445	- 111 577	- 235
				- 5		- 6 239	- 5
154				23		- 969	23
86 693	9 040	19 690	8 650	13 775	- 1	362 113	29 981
						- 5 231	
- 29 160	- 8 920	- 19 690	- 7 860	- 3 514	76 136	- 75 179	- 19 491
- 4 795	- 119		- 574	- 1 033	4 405	- 4 486	- 1 398
745						- 379	
						2 664	
				- 5		- 10 023	
- 1 049				- 205	2	- 589	- 205
- 8 544				- 38	- 11 868	- 27 994	- 32
- 3 274				- 55	- 219	- 7 045	- 64
40 615			216	8 924	68 455	233 850	8 791
36 814			216	8 924	68 455	204 910	8 791
16 092			6	3 414	32 703	78 084	3 130
3 844				2 482	1 220	59 366	2 482
16 878			210	3 028	34 533	67 460	3 179
16 195			202	2 665	29 786	56 618	29 927
184			2	296	1 213	4 313	296
499			5	67	3 533	6 529	56
3 802						28 939	

Unit: PJ

Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
5 140	53		208	201		17 855	458
187						1 966	
- 3 817						- 14 395	
						- 70	
19						98	
1 530	53		208	201		5 453	458
						129	
- 279	- 53		- 121	- 19	797	- 1 152	- 194
- 192			- 67	- 24	158	- 161	- 91
						- 18	
						- 52	
- 389					- 175	- 781	
- 143						- 111	
527			20	157	779	3 307	173
474			20	157	779	3 084	173
266				106	283	956	102
18				4	23	1 250	4
191			20	48	473	878	67
189			20	48	465	765	458
1					7	112	
						1	
53						222	

Brunei Darussalam, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production			236	
2 Import	29		332	23
3 Export			- 186	- 348
4 International marine and aviation bunkers				- 1
5 Stock change			- 1	
6 Total energy supply	29		381	- 325
7 Transfers				22
8 Main activity producers				
9 Autoproducers	- 7			
10 Gas processing				1
11 Petroleum refineries			- 395	365
12 Coal transformation				
13 Other transformation			11	
14 Loss & own-use	- 22			
15 Discrepancy			21	- 40
16 Total final consumption				22
17 Total final energy consumption				22
18 Industry sector				5
19 Transport sector				16
20 Other sector				1
20.1 Residential & Commercial				1
20.2 Agriculture				
20.3 Other				
21 Non-energy				

Canada, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	1 051		11 712	
2 Import	164	34	1 500	419
3 Export	- 796	- 3	- 8 587	- 994
4 International marine and aviation bunkers				- 101
5 Stock change	- 24	- 1	20	7
6 Total energy supply	395	31	4 645	- 668
7 Transfers			- 267	347
8 Main activity producers	- 315			- 38
9 Autoproducers		- 1		- 16
10 Gas processing				
11 Petroleum refineries			- 4 416	4 201
12 Coal transformation	- 73	36		
13 Other transformation			159	- 15
14 Loss & own-use				- 533
15 Discrepancy	27	- 9	- 120	186
16 Total final consumption	33	56		3 464
17 Total final energy consumption	29	55		2 635
18 Industry sector	29	55		236
19 Transport sector				2 085
20 Other sector	1			315
20.1 Residential & Commercial				106
20.2 Agriculture	1			208
20.3 Other				
21 Non-energy	3	1		829

Chile, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	1		16	
2 Import	273		348	380
3 Export		- 2		- 37
4 International marine and aviation bunkers				- 22
5 Stock change	- 8		- 1	2
6 Total energy supply	266	- 1	363	322
7 Transfers			50	- 49
8 Main activity producers	- 253			- 21
9 Autoproducers				- 6
10 Gas processing				
11 Petroleum refineries			- 416	406
12 Coal transformation	- 15	9		
13 Other transformation		- 7		- 14
14 Loss & own-use			3	6
15 Discrepancy	9			
16 Total final consumption	7			643
17 Total final energy consumption	7			629
18 Industry sector	7			153
19 Transport sector				386
20 Other sector				90
20.1 Residential & Commercial				76
20.2 Agriculture				5
20.3 Other				9
21 Non-energy				14

China, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	84 784		8 327	
2 Import	5 764	38	21 475	2 853
3 Export	- 65	- 184	- 109	- 2 727
4 International marine and aviation bunkers				- 381
5 Stock change	- 908	63	582	- 1 345
6 Total energy supply	89 575	- 83	30 275	- 1 600
7 Transfers				- 5 974
8 Main activity producers	- 53 608	- 2 107	- 5	- 378
9 Autoproducers				
10 Gas processing	- 826	- 145		- 24
11 Petroleum refineries			- 30 066	35 176
12 Coal transformation	- 17 743	10 372		
13 Other transformation				
14 Loss & own-use	- 1 134	- 388	- 189	- 2 210
15 Discrepancy	- 2 005	64	- 13	- 978
16 Total final consumption	14 259	7 712	1	24 012
17 Total final energy consumption	11 192	6 816	1	16 939
18 Industry sector	8 553	6 733	1	1 700
19 Transport sector				11 316
20 Other sector	2 612	83		3 923
20.1 Residential & Commercial	1 710	75		1 439
20.2 Agriculture	403	6		848
20.3 Other	499	2		1 636
21 Non-energy	3 067	897		7 073

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
42	70		81	333		543	484
178						1 180	
						- 39	
						- 22	
1				1		- 5	1
221	70		81	334		1 656	485
						1	
- 116	- 69		- 78	- 25	293	- 270	- 172
- 4	- 1			- 186	24	- 173	- 187
						- 10	
						- 7	
- 14					- 24	- 60	
5				9	- 18	14	9
92			3	132	275	1 152	135
68			3	132	275	1 114	135
39				55	162	415	55
					4	390	
29			3	77	109	308	80
28				77	100	280	484
1				1	8	15	1
			3		1	13	3
24						38	

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
7 735	4 689	4 446	3 535	3 214		116 729	10 945
6 242					21	36 393	
- 206					- 73	- 3 363	
						- 381	
						- 1 607	
13 771	4 689	4 446	3 535	3 214	- 51	147 771	10 945
						- 5 974	
- 2 536	- 4 689	- 4 446	- 3 535	- 1 620	39 247	- 33 677	- 9 342
					- 1 365	- 1 365	
764						- 231	
						5 110	
						- 7 371	
- 1 298				- 29	- 5 544	- 10 793	- 29
- 970				9	- 69	- 3 962	
9 730				1 574	32 219	89 507	1 574
9 493				1 574	32 219	78 234	1 574
5 317				312	20 137	42 753	312
1 336				358	717	13 754	358
2 840				904	11 364	21 726	904
2 606				658	7 797	14 285	10 945
6				208	581	2 052	208
227				38	2 987	5 389	38
237						11 273	

Hong Kong, China, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production				
2 Import	172			552
3 Export				- 3
4 International marine and aviation bunkers				- 398
5 Stock change	- 20			- 12
6 Total energy supply	153			139
7 Transfers				
8 Main activity producers	- 153			- 4
9 Autoproducers				
10 Gas processing				- 12
11 Petroleum refineries				
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				- 39
16 Total final consumption				84
17 Total final energy consumption				84
18 Industry sector				3
19 Transport sector				77
20 Other sector				4
20.1 Residential & Commercial				4
20.2 Agriculture				
20.3 Other				
21 Non-energy				

Indonesia, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	15 115		1 491	
2 Import	356		612	1 178
3 Export	- 10 714		- 257	- 69
4 International marine and aviation bunkers				
5 Stock change	- 1 482		34	95
6 Total energy supply	3 275		1 880	1 205
7 Transfers				
8 Main activity producers	- 2 761			- 106
9 Autoproducers				
10 Gas processing				49
11 Petroleum refineries			- 1 842	1 786
12 Coal transformation				
13 Other transformation				- 1
14 Loss & own-use			- 38	- 5
15 Discrepancy				11
16 Total final consumption	515			2 938
17 Total final energy consumption	515			2 754
18 Industry sector	515			183
19 Transport sector				2 093
20 Other sector				478
20.1 Residential & Commercial				422
20.2 Agriculture				
20.3 Other				56
21 Non-energy				184

Japan, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	15		16	
2 Import	4 558	63	5 347	1 861
3 Export		- 66		- 549
4 International marine and aviation bunkers				- 371
5 Stock change		- 2	- 10	14
6 Total energy supply	4 574	- 5	5 353	955
7 Transfers			- 56	61
8 Main activity producers	- 2 368	- 125	- 8	- 271
9 Autoproducers	- 167	- 96		- 143
10 Gas processing				- 83
11 Petroleum refineries			- 5 472	5 603
12 Coal transformation	- 1 579	854		- 15
13 Other transformation			190	- 198
14 Loss & own-use	- 22	- 105		- 240
15 Discrepancy	- 58	- 60	- 3	- 159
16 Total final consumption	380	463	4	5 510
17 Total final energy consumption	380	433		4 284
18 Industry sector	380	424		700
19 Transport sector				2 567
20 Other sector			9	1 017
20.1 Residential & Commercial			9	830
20.2 Agriculture				116
20.3 Other				70
21 Non-energy		30	4	1 227

Korea, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	17		48	
2 Import	3 088	9	5 548	1 933
3 Export			- 11	- 2 453
4 International marine and aviation bunkers				- 552
5 Stock change	25		147	11
6 Total energy supply	3 130	9	5 732	- 1 061
7 Transfers			413	- 368
8 Main activity producers	- 1 685	- 81		- 25
9 Autoproducers	- 126	- 96		- 65
10 Gas processing				- 11
11 Petroleum refineries			- 6 595	6 381
12 Coal transformation	- 965	459		
13 Other transformation			674	- 627
14 Loss & own-use		- 131		- 230
15 Discrepancy	- 217	- 1	- 225	82
16 Total final consumption	137	159		4 074
17 Total final energy consumption	137	139		1 870
18 Industry sector	137	130		184
19 Transport sector				1 409
20 Other sector			9	277
20.1 Residential & Commercial			9	186
20.2 Agriculture				18
20.3 Other				72
21 Non-energy		21		2 204

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
80	284	772	464	604		2 236	1 106
3 520				100		15 449	100
						- 615	
						- 371	
31						33	
3 631	284	772	464	703		16 731	1 206
						6	
- 2 343	- 273	- 772	- 177	- 303	3 134	- 3 508	- 625
- 143	- 10		- 275	- 130	624	- 341	- 383
79						- 4	
						132	
				- 5		- 744	
					3	- 5	
- 35					- 388	- 789	
- 7				- 3	3	- 288	- 3
1 182			12	261	3 376	11 189	194
1 172			12	261	3 376	9 918	194
459				153	1 230	3 346	105
1				19	62	2 649	19
713			12	85	2 083	3 922	70
712			11	72	2 070	3 705	1 106
			1		10	127	
				17	3	91	1
10						1 271	

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
2	11	1 724	110	281	2	2 195	254
2 292						12 870	
						- 2 464	
						- 552	
- 16						167	
2 278	11	1 724	110	281	2	12 216	254
						45	
- 1 271	- 11	- 1 724	- 92	- 77	2 174	- 2 792	- 164
- 53			- 6	- 53	250	- 150	- 22
10						- 2	
						- 213	
						- 505	
					- 1	46	
- 8					- 251	- 620	
- 42					- 13	- 417	
913			13	150	2 161	7 607	68
913			13	150	2 161	5 382	68
310				93	1 128	1 983	14
43				27	13	1 493	27
559			12	29	1 020	1 906	27
559			11	29	954	1 748	254
			1		54	75	2
					11	84	
						2 225	

Malaysia, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	82		1 114	
2 Import	860		278	767
3 Export			- 374	- 806
4 International marine and aviation bunkers				- 27
5 Stock change	13		33	124
6 Total energy supply	955		1 051	58
7 Transfers			- 51	51
8 Main activity producers	- 897			- 10
9 Autoproducers				- 2
10 Gas processing				24
11 Petroleum refineries			- 1 002	899
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				- 7
15 Discrepancy			21	- 13
16 Total final consumption	58			1 001
17 Total final energy consumption	58			927
18 Industry sector	58			105
19 Transport sector				720
20 Other sector				102
20.1 Residential & Commercial				61
20.2 Agriculture				16
20.3 Other				26
21 Non-energy				74

Mexico, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	129		4 139	
2 Import	153	38	22	1 992
3 Export			- 2 352	- 384
4 International marine and aviation bunkers				- 143
5 Stock change	- 1		- 13	12
6 Total energy supply	281	38	1 795	1 478
7 Transfers			- 137	161
8 Main activity producers	- 185			- 388
9 Autoproducers		- 2		- 55
10 Gas processing				- 25
11 Petroleum refineries			- 1 696	1 616
12 Coal transformation	- 37	11		
13 Other transformation			3	- 2
14 Loss & own-use		- 13		- 160
15 Discrepancy	- 35	- 8	35	- 302
16 Total final consumption	24	28		2 321
17 Total final energy consumption	24	25		2 161
18 Industry sector	24	25		226
19 Transport sector				1 502
20 Other sector				433
20.1 Residential & Commercial				353
20.2 Agriculture				80
20.3 Other				
21 Non-energy		2		160

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
2 530	112		7	53		3 898	172
337						2 243	
- 1 085				- 10	- 4	- 2 280	- 10
						- 27	
				3		173	3
1 781	112		7	45	- 3	4 006	165
- 400	- 112		- 7	- 6	625	- 806	- 125
- 34				- 5	22	- 18	- 5
- 456						- 431	
						- 103	
- 49					- 67	- 123	
- 98					- 18	- 126	
746				35	559	2 399	35
365				35	559	1 944	35
363					279	804	
1				35	1	758	35
1					280	382	
1					277	338	172
					2	18	
						26	
381						455	

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
1 327	118	130	231	368		6 442	700
1 695					6	3 906	
					- 10	- 2 745	
						- 143	
13						11	
3 034	118	130	231	368	- 3	7 470	700
						23	
- 1 353	- 116	- 130	- 167	- 28	1 151	- 1 217	- 305
- 434	- 3		- 47	- 47	216	- 371	- 85
9						- 17	
						- 80	
						- 25	
- 528					- 191	- 892	
- 345					- 111	- 765	
383			17	293	1 062	4 127	310
376			17	293	1 062	3 958	310
339			1	47	617	1 279	48
2					6	1 510	
36			16	246	439	1 170	261
36			16	246	315	965	700
					49	129	
					76	76	
7						169	

New Zealand, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	67		43	
2 Import	37		145	131
3 Export	- 35		- 25	- 9
4 International marine and aviation bunkers				- 17
5 Stock change	- 5		9	8
6 Total energy supply	63		171	112
7 Transfers			25	- 23
8 Main activity producers	- 24			
9 Autoproducers		- 8		
10 Gas processing				
11 Petroleum refineries			- 189	185
12 Coal transformation	- 18	12		
13 Other transformation				
14 Loss & own-use		- 3		- 6
15 Discrepancy	- 1		- 7	2
16 Total final consumption	20	2		270
17 Total final energy consumption	20	2		257
18 Industry sector	18	2		19
19 Transport sector				204
20 Other sector	2			33
20.1 Residential & Commercial	1			14
20.2 Agriculture	1			16
20.3 Other				3
21 Non-energy				13

Papua New Guinea, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production			50	
2 Import			52	52
3 Export			- 49	- 25
4 International marine and aviation bunkers				
5 Stock change				
6 Total energy supply			53	27
7 Transfers				- 1
8 Main activity producers				- 2
9 Autoproducers				- 25
10 Gas processing				2
11 Petroleum refineries			- 53	56
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				
16 Total final consumption				56
17 Total final energy consumption				56
18 Industry sector				24
19 Transport sector				25
20 Other sector				7
20.1 Residential & Commercial				3
20.2 Agriculture				4
20.3 Other				
21 Non-energy				

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
143	87		214	39		593	339
				3		315	3
						- 69	
						- 17	
- 4						8	
139	87		214	42		829	342
						2	
- 37	- 87		- 205	- 2	155	- 200	- 294
- 1			- 2	- 19	7	- 24	- 20
						- 4	
						- 6	
					- 1	- 1	
- 7					- 18	- 33	
1				6	- 3	- 3	6
94			8	26	140	560	34
60			8	26	140	513	34
46			4	17	47	154	21
						205	
15			3	9	93	155	12
13			3	9	81	121	339
1					9	29	
					2	5	
34						47	

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
465	4		3	74		597	81
						103	
- 430						- 505	
35	4		3	74		196	81
						- 1	
- 5	- 3				5	- 5	- 3
- 6	- 1		- 3		10	- 25	- 5
- 13						- 11	
						3	
				- 1		- 1	- 1
- 12					- 1	- 13	
				73	14	143	73
				73	14	143	73
				4	10	38	4
						25	
				69	4	80	69
				69	4	76	81
						5	

Peru, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	4		222	
2 Import	9	2	144	266
3 Export	- 24		- 25	- 117
4 International marine and aviation bunkers				- 24
5 Stock change	38		2	
6 Total energy supply	27	2	343	124
7 Transfers			- 47	62
8 Main activity producers				- 4
9 Autoproducers	- 4			- 1
10 Gas processing				
11 Petroleum refineries			- 293	279
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				- 2
15 Discrepancy			- 3	
16 Total final consumption	22	2		458
17 Total final energy consumption	22	2		451
18 Industry sector	22	2		46
19 Transport sector				346
20 Other sector				59
20.1 Residential & Commercial				50
20.2 Agriculture				3
20.3 Other				6
21 Non-energy				7

The Philippines, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	310		16	
2 Import	690		167	615
3 Export	- 205		- 16	- 23
4 International marine and aviation bunkers				- 25
5 Stock change	- 3		4	2
6 Total energy supply	792		171	568
7 Transfers				
8 Main activity producers	- 701			- 17
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 162	153
12 Coal transformation				
13 Other transformation				
14 Loss & own-use			- 2	
15 Discrepancy			- 8	37
16 Total final consumption	91			741
17 Total final energy consumption	82			682
18 Industry sector	82			65
19 Transport sector				442
20 Other sector				175
20.1 Residential & Commercial				164
20.2 Agriculture				5
20.3 Other				5
21 Non-energy	9			60

Unit: PJ

Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
460	115		11	171		983	297
				17		438	17
- 143				- 1		- 309	- 1
						- 24	
1				2		42	2
318	115		11	189		1 130	316
						14	
- 169	- 113		- 9	- 36	201	- 131	- 158
- 9	- 2			- 5	6	- 15	- 8
						- 14	
				- 8		- 8	- 8
- 41					- 28	- 72	
- 1				- 1		- 5	- 1
98			2	138	179	898	140
98			2	138	179	891	140
56				15	104	244	15
24				15		385	15
17			2	109	75	261	110
17			2	108	69	246	297
					5	9	
					1	7	
						7	

Unit: PJ

Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
118	33		394	439		1 312	867
				5		1 477	5
						- 245	
						- 25	
				2		5	2
118	33		394	447		2 523	874
- 113	- 33		- 394	- 19	382	- 896	- 447
						- 9	
				- 106		- 106	- 106
- 5					- 63	- 70	
						30	
				322	319	1 473	322
				322	319	1 404	322
				39	99	286	39
				20		462	20
				263	219	657	263
				263	202	629	867
					15	20	
					2	7	
						69	

Russia, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	10 746		22 262	
2 Import	590	4		43
3 Export	- 5 506	- 96	- 9 855	- 5 051
4 International marine and aviation bunkers				- 492
5 Stock change	- 413	27	- 109	- 51
6 Total energy supply	5 417	- 64	12 298	- 5 551
7 Transfers				
8 Main activity producers	- 1 937			- 27
9 Autoproducers	- 654	- 133	- 24	- 205
10 Gas processing				
11 Petroleum refineries			- 12 037	11 574
12 Coal transformation	- 2 212	1 331		
13 Other transformation				
14 Loss & own-use	- 26	- 50	- 237	- 170
15 Discrepancy	- 334	11		172
16 Total final consumption	253	1 095	1	5 792
17 Total final energy consumption	243	1 095	1	3 996
18 Industry sector	136	1 095		426
19 Transport sector				2 742
20 Other sector	107		1	829
20.1 Residential & Commercial	106			688
20.2 Agriculture	1			116
20.3 Other				25
21 Non-energy	10			1 795

Singapore, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production				
2 Import	19		2 014	3 775
3 Export			- 52	- 3 120
4 International marine and aviation bunkers				- 1 880
5 Stock change			18	20
6 Total energy supply	19		1 980	- 1 206
7 Transfers				
8 Main activity producers	- 12			- 3
9 Autoproducers				- 5
10 Gas processing				
11 Petroleum refineries			- 1 831	1 796
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				- 67
15 Discrepancy			- 149	4
16 Total final consumption	8			519
17 Total final energy consumption	8			235
18 Industry sector	8			146
19 Transport sector				85
20 Other sector				4
20.1 Residential & Commercial				4
20.2 Agriculture				
20.3 Other				
21 Non-energy				284

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
27 310	772	2 451	24	472		64 037	925
281				1	6	924	
- 8 342				- 3	- 82	- 28 934	- 2
						- 492	
- 102						- 649	
19 146	772	2 451	24	469	- 77	34 886	924
- 6 010	- 767	- 2 451	- 24	- 6	6 429	- 4 794	- 792
- 2 957	- 5			- 220	3 344	- 854	- 31
						- 463	
						- 881	
- 500				- 3		- 502	- 3
- 1 026				- 6	- 2 212	- 3 728	
- 712						- 863	
7 941				235	7 484	22 800	99
5 937				235	7 484	18 991	99
1 612				137	2 903	6 309	9
1 053					295	4 090	
3 272				97	4 286	8 592	90
2 930				94	4 086	7 904	925
72				3	198	390	1
271					2	297	
2 004						3 809	

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
			3	22		25	14
445				3		6 256	3
						- 3 173	
						- 1 880	
- 7						31	
438			3	25		1 259	17
- 327			- 3	- 25	184	- 185	- 17
- 46					17	- 35	
						- 34	
					- 10	- 78	
8					2	- 135	
73					193	792	
73					193	508	
65					80	299	
					10	95	
7					102	114	
7					101	113	14
					1	1	
						284	

Chinese Taipei, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production				
2 Import	1 581	6	1 593	588
3 Export		- 1	- 27	- 536
4 International marine and aviation bunkers				- 132
5 Stock change	- 31	3	21	- 7
6 Total energy supply	1 549	7	1 586	- 87
7 Transfers			44	- 12
8 Main activity producers	- 791			- 40
9 Autoproducers	- 309	- 45		- 13
10 Gas processing				
11 Petroleum refineries			- 1 610	1 747
12 Coal transformation	- 284	162		
13 Other transformation				
14 Loss & own-use		- 53		- 71
15 Discrepancy	- 22		- 16	- 1
16 Total final consumption	143	72	4	1 523
17 Total final energy consumption	141	63		619
18 Industry sector	141	63		73
19 Transport sector				454
20 Other sector				92
20.1 Residential & Commercial				75
20.2 Agriculture				3
20.3 Other				14
21 Non-energy	2	9	4	904

Thailand, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	149		361	
2 Import	235	397	1 877	60
3 Export	- 2	- 3	- 34	- 433
4 International marine and aviation bunkers				- 29
5 Stock change	- 73	- 134	100	- 87
6 Total energy supply	309	260	2 303	- 488
7 Transfers				
8 Main activity producers	- 273	- 29		- 6
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 2 096	1 874
12 Coal transformation				
13 Other transformation				269
14 Loss & own-use			- 8	- 5
15 Discrepancy			- 199	- 2
16 Total final consumption	36	231		1 642
17 Total final energy consumption	36	231		1 432
18 Industry sector	36	231		170
19 Transport sector				1 067
20 Other sector				195
20.1 Residential & Commercial				102
20.2 Agriculture				93
20.3 Other				
21 Non-energy				211

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
4	12	303	40	62		422	83
979						4 746	
						- 565	
						- 132	
- 10						- 25	
973	12	303	40	62		4 446	83
						32	
- 761	- 12	- 303	- 14	- 2	982	- 942	- 27
- 3			- 23	- 45	166	- 272	- 44
10						10	
						137	
						- 123	
- 24					- 121	- 268	
- 2					3	- 38	
192			3	16	1 030	2 982	12
192			3	16	1 030	2 063	12
144				16	649	1 086	9
					6	459	
48			3		375	518	3
48			3		363	489	83
					8	11	
					4	18	
						919	

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
1 195	17		31	888		2 641	936
626				2	120	3 316	2
				- 1	- 7	- 479	- 1
						- 29	
- 2				1		- 195	1
1 820	17		31	890	113	5 255	938
- 1 045	- 17		- 31	- 394	672	- 1 124	- 442
						- 222	
- 226				- 50		- 7	- 50
- 291					- 61	- 366	
						- 201	
257				446	724	3 336	446
225				446	724	3 094	446
183				220	289	1 129	220
42				90	1	1 200	90
				136	434	765	136
				136	433	670	936
					1	94	
31						242	

United States, 2021

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	11 743		30 383	
2 Import	116	3	14 450	3 593
3 Export	- 2 097	- 55	- 7 243	- 8 762
4 International marine and aviation bunkers				- 1 567
5 Stock change	922	3	762	352
6 Total energy supply	10 683	- 48	38 352	- 6 384
7 Transfers			- 5 513	5 888
8 Main activity producers	- 9 584	- 7		- 288
9 Autoproducers	- 35	- 15		- 75
10 Gas processing	- 74			
11 Petroleum refineries			- 33 415	32 247
12 Coal transformation	- 536	265		
13 Other transformation			201	
14 Loss & own-use		- 44		- 1 133
15 Discrepancy	- 36	1	828	85
16 Total final consumption	418	150	453	30 341
17 Total final energy consumption	418	150		25 031
18 Industry sector	403	150		843
19 Transport sector				22 598
20 Other sector	14			1 589
20.1 Residential & Commercial	14			1 117
20.2 Agriculture				472
20.3 Other				
21 Non-energy			453	5 310

Viet Nam, 2021

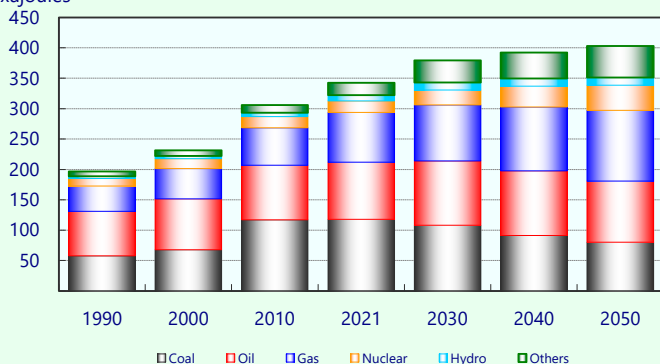
	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	991		403	
2 Import	853		429	410
3 Export	- 42		- 141	- 112
4 International marine and aviation bunkers				
5 Stock change	62		6	- 25
6 Total energy supply	1 864		697	274
7 Transfers			- 16	16
8 Main activity producers	- 1 152			- 2
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 681	602
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				- 29
16 Total final consumption	712			861
17 Total final energy consumption	692			771
18 Industry sector	684			117
19 Transport sector				455
20 Other sector	8			198
20.1 Residential & Commercial	8			99
20.2 Agriculture				99
20.3 Other				
21 Non-energy	20			90

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
34 005	913	8 853	2 456	4 357		92 710	7 541
2 818				91	191	21 262	91
- 6 677				- 133	- 50	- 25 018	- 133
				- 5		- 1 572	- 5
129				4		2 173	4
30 275	913	8 853	2 456	4 313	142	89 555	7 497
						374	
- 11 073	- 908	- 8 853	- 2 178	- 559	15 381	- 18 071	- 3 518
- 641	- 4		- 141	- 227	724	- 413	- 340
48						- 26	
						- 1 168	
						- 272	
- 161						40	
- 2 859				- 3	- 2 194	- 6 233	- 3
- 114				- 85		679	- 85
15 476			137	3 439	14 053	64 465	3 552
14 799			137	3 439	14 053	58 025	3 552
5 678				1 354	3 205	11 634	1 336
1 166				1 470	46	25 280	1 470
7 954			137	615	10 802	21 111	746
7 892			137	550	10 162	19 872	7 541
62				65	206	805	65
					434	434	
677						6 440	

							Unit: PJ
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
281	283		112	412		2 482	806
					5	1 697	
				- 5	- 2	- 302	- 5
						43	
281	283		112	407	3	3 920	802
- 188	- 283		- 112	- 49	919	- 867	- 444
						- 79	
				- 38		- 38	- 38
- 17					- 121	- 138	
					- 5	- 34	
77				320	796	2 765	320
35				320	796	2 614	320
35				227	419	1 482	227
						456	
				92	377	676	92
				74	348	529	806
				19	19	136	19
					10	10	
42						151	

PES* outlook by energy (Reference)

Exajoules



Exajoules

	1990	2000	2010	2021	2030	2040	2050
Coal	57.7	67.8	117.1	117.6	108.0	91.5	80.1
Oil	73.2	83.6	90.0	94.1	105.9	106.1	100.9
Gas	41.9	49.9	61.6	82.2	92.4	105.1	116.4
Nuclear	12.0	16.3	18.1	19.1	24.5	34.4	41.1
Hydro	3.9	4.5	6.3	9.2	12.0	12.4	12.5
Others	7.8	9.1	12.6	20.3	36.7	42.9	52.2
Total	196.5	231.3	305.8	342.5	379.5	392.4	403.2

Share (%)

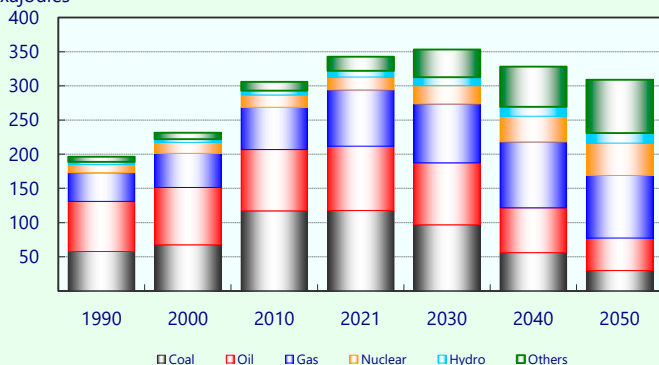
	1990	2000	2010	2021	2030	2040	2050
Coal	29.4	29.3	38.3	34.3	28.5	23.3	19.9
Oil	37.3	36.2	29.4	27.5	27.9	27.0	25.0
Gas	21.3	21.6	20.2	24.0	24.3	26.8	28.9
Nuclear	6.1	7.1	5.9	5.6	6.5	8.8	10.2
Hydro	2.0	1.9	2.1	2.7	3.2	3.2	3.1
Others	4.0	4.0	4.1	5.9	9.7	10.9	12.9

Source: Asia Pacific Energy Research Centre, Sep 2022.

*PES: Primary energy supply

PES* outlook by energy (CN Scenario**)

Exajoules



Exajoules

	1990	2000	2010	2021	2030	2040	2050
Coal	57.7	67.8	117.1	117.6	97.1	56.2	30.0
Oil	73.2	83.6	90.0	94.1	90.3	65.7	47.6
Gas	41.9	49.9	61.6	82.2	86.3	96.4	91.5
Nuclear	12.0	16.3	18.1	19.1	26.6	37.3	47.2
Hydro	3.9	4.5	6.3	9.2	12.1	13.7	14.7
Others	7.8	9.1	12.6	20.3	40.8	58.8	77.8
Total	196.5	231.3	305.8	342.5	353.3	328.1	308.8

Share (%)

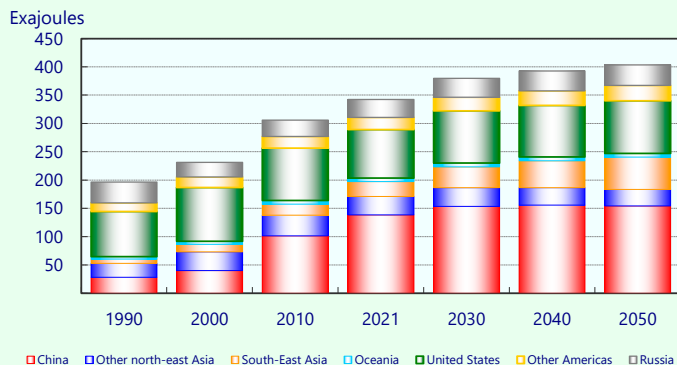
	1990	2000	2010	2021	2030	2040	2050
Coal	29.4	29.3	38.3	34.3	27.5	17.1	9.7
Oil	37.3	36.2	29.4	27.5	25.6	20.0	15.4
Gas	21.3	21.6	20.2	24.0	24.4	29.4	29.6
Nuclear	6.1	7.1	5.9	5.6	7.5	11.4	15.3
Hydro	2.0	1.9	2.1	2.7	3.4	4.2	4.8
Others	4.0	4.0	4.1	5.9	11.6	17.9	25.2

Other north-east Asia includes Hong Kong, China; Japan; Republic of Korea and Chinese Taipei.

Other Americas includes Canada; Chile; Mexico and Peru.

*PES: Primary energy supply **CN Scenario: Carbon Neutrality Scenario

PES* outlook by region (Reference)



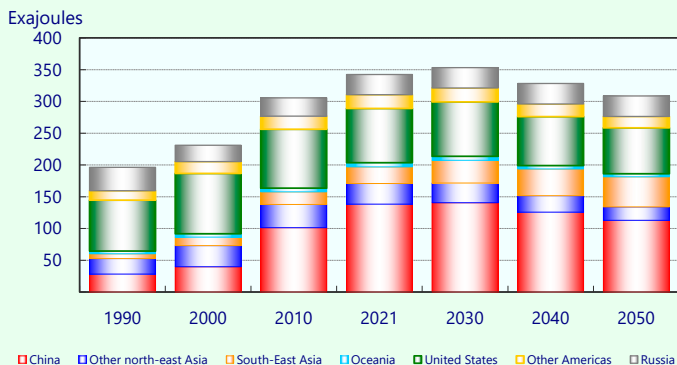
	Exajoules						
	1990	2000	2010	2021	2030	2040	2050
China	28.2	39.8	101.4	138.4	153.5	155.6	154.3
Other north-east Asia	24.5	33.3	36.4	32.5	33.1	31.2	29.2
South-East Asia	7.7	13.2	19.7	26.3	36.8	47.4	56.9
Oceania	4.2	5.4	6.2	6.6	6.7	6.5	6.5
United States	80.2	95.2	92.8	85.2	92.1	91.4	93.2
Other Americas	15.0	18.4	20.3	21.6	24.3	25.7	27.1
Russia	36.8	25.9	29.0	31.9	33.1	34.6	35.9
APEC 21	196.5	231.3	305.8	342.5	379.5	392.4	403.2

	Share (%)						
	1990	2000	2010	2021	2030	2040	2050
China	14.3	17.2	33.2	40.4	40.4	39.6	38.3
Other north-east Asia	12.4	14.4	11.9	9.5	8.7	7.9	7.2
South-East Asia	3.9	5.7	6.4	7.7	9.7	12.1	14.1
Oceania	2.1	2.3	2.0	1.9	1.8	1.7	1.6
United States	40.8	41.1	30.3	24.9	24.3	23.3	23.1
Other Americas	7.7	8.0	6.6	6.3	6.4	6.5	6.7
Russia	18.7	11.2	9.5	9.3	8.7	8.8	8.9

Source: Asia Pacific Energy Research Centre, Sep 2022.

*PES: Primary energy supply

PES* outlook by region (CN Scenario**)



	Exajoules						
	1990	2000	2010	2021	2030	2040	2050
China	28.2	39.8	101.4	138.4	140.7	125.8	112.8
Other north-east Asia	24.5	33.3	36.4	32.5	30.8	25.8	21.3
South-East Asia	7.7	13.2	19.7	26.3	35.9	42.2	47.3
Oceania	4.2	5.4	6.2	6.6	6.2	5.3	4.6
United States	80.2	95.2	92.8	85.2	85.8	77.3	72.8
Other Americas	15.0	18.4	20.3	21.6	21.9	19.8	17.9
Russia	36.8	25.9	29.0	31.9	31.9	31.9	32.1
APEC 21	196.5	231.3	305.8	342.5	353.3	328.1	308.8

	Share (%)						
	1990	2000	2010	2021	2030	2040	2050
China	14.3	17.2	33.2	40.4	39.8	38.4	36.5
Other north-east Asia	12.4	14.4	11.9	9.5	8.7	7.9	6.9
South-East Asia	3.9	5.7	6.4	7.7	10.2	12.8	15.3
Oceania	2.1	2.3	2.0	1.9	1.8	1.6	1.5
United States	40.8	41.1	30.3	24.9	24.3	23.6	23.6
Other Americas	7.7	8.0	6.6	6.3	6.2	6.0	5.8
Russia	18.7	11.2	9.5	9.3	9.0	9.7	10.4

Source: Asia Pacific Energy Research Centre, Sep 2022.

*PES: Primary energy supply **CN Scenario: Carbon Neutrality Scenario

Selected energy indicators

APEC region

	Population			Real GDP			Real GDP		
	Millions			Billion (constant 2015 USD)			Billion, PPP at constant 2017 USD		
	1990	2005	2021	1990	2005	2021	1990	2005	2021
APEC	2 282	2 656	2 951	19 271	32 112	53 125	25 004	42 021	74 048
Other north-east Asia	192	206	208	4 193	5 846	7 145	5 088	7 325	9 225
Hong Kong, China	5.7	6.8	7.4	122	221	330	164	298	445
Japan	123	128	126	3 510	4 229	4 463	4 056	4 887	5 157
Korea	43	48	52	401	1 021	1 694	543	1 380	2 289
Chinese Taipei	20	23	23	161	375	658	325	760	1 334
South-East Asia	388	495	596	721	1 474	2 950	1 944	3 941	7 926
Brunei Darussalam	0.3	0.4	0.4	9.1	12.6	13.2	18.4	25.5	26.8
Indonesia	182	229	274	270	498	1 066	823	1 516	3 247
Malaysia	18	26	34	75	187	355	186	465	884
The Philippines	62	86	114	107	179	379	261	436	922
Singapore	3.0	4.3	5.5	71	178	366	114	286	588
Thailand	55	66	72	144	289	439	402	805	1 223
Viet Nam	68	84	97	45	131	332	140	407	1 036
Oceania	24	31	41	726	1 184	1 757	634	1 034	1 537
Australia	17	20	26	631	1 027	1 524	529	862	1 279
New Zealand	3.3	4.1	5.1	88	145	209	93	154	222
Papua New Guinea	3.9	6.5	9.9	7.4	12.3	24.0	11.2	18.7	36.5
Other Americas	145	182	218	1 630	2 536	3 390	2 446	3 834	5 179
Canada	28	32	38	878	1 322	1 691	957	1 441	1 843
Chile	13	16	19	72	165	275	129	298	495
Mexico	82	105	127	621	941	1 207	1 244	1 886	2 418
Peru	22	28	34	60	108	217	116	210	423
China	1 135	1 304	1 412	1 027	4 421	15 851	1 616	6 955	24 939
Russia	148	144	143	1 161	1 051	1 503	3 179	2 877	4 112
United States	250	296	332	9 811	15 600	20 529	10 098	16 056	21 129

Energy Indigenous Production			Net Import			Total Primary Energy Supply			
Petajoules			Petajoules			Petajoules			
1990	2005	2021	1990	2005	2021	1990	2005	2021	
197 210	249 206	359 796	6 056	28 670	9 525	196 528	272 480	362 113	
4 499	6 594	4 858	20 778	30 181	30 380	24 455	35 157	33 927	
	3.4	5.3	474	981	959	392	590	534	HKC
3 106	4 258	2 236	15 754	18 157	14 834	18 293	21 754	16 731	JPN
947	1 799	2 195	2 937	7 350	10 406	3 890	8 804	12 216	ROK
446	533	422	1 613	3 692	4 181	1 880	4 009	4 446	CT
11 030	19 584	31 876	-2 494	-1 675	-1 542	7 712	16 601	27 085	
655	921	598	- 604	- 794	- 403	48	120	195	BD
6 317	9 844	20 951	-3 042	-3 779	-9 663	3 138	6 212	9 943	INA
1 948	3 926	3 898	-1 084	-1 190	- 37	857	2 745	4 006	MAS
685	860	1 299	468	742	1 245	1 110	1 589	2 523	PHL
2.9	16.5	24.6	1 027	2 079	3 084	483	880	1 259	SGP
1 178	2 153	2 641	749	2 009	2 837	1 850	4 005	5 255	THA
243	1 864	2 465	- 7	- 742	1 395	227	1 051	3 904	VN
7 270	11 807	19 045	-2 768	-6 059	-12 586	4 179	5 589	6 478	
6 595	11 102	17 855	-2 701	-6 228	-12 430	3 606	4 751	5 453	AUS
481	527	593	89	207	245	536	698	829	NZ
193	178	597	- 156	- 38	- 402	36	140	196	PNG
20 550	28 646	30 541	-5 142	-7 771	-7 990	15 040	20 636	22 412	
11 586	16 769	22 572	-2 484	-5 421	-10 419	8 857	11 307	12 156	CDA
332	391	543	294	858	1 140	587	1 188	1 656	CHL
8 187	11 032	6 442	-2 927	-3 333	1 160	5 179	7 561	7 470	MEX
446	454	983	- 25	125	129	418	580	1 130	PE
30 548	63 943	116 729	-1 358	5 754	33 030	28 172	70 165	147 771	PRC
54 145	50 383	64 037	-17 274	-22 580	-28 011	36 816	27 287	34 886	RUS
69 169	68 248	92 710	14 315	30 820	-3 755	80 155	97 044	89 555	USA

	Total Final Energy Consumption			Final Consumption of Electricity			Primary Energy Supply per capita	
	Petajoules			TWh			GJ / Person	
	1990	2005	2021	1990	2005	2021	1990	2005
APEC	127 572	160 254	204 910	5 744	9 413	15 885	86	103
Other north-east Asia	14 475	19 509	17 638	960	1 621	1 778	127	171
Hong Kong, China	214	282	275	24.5	40.1	45.7	69	87
Japan	10 800	12 703	9 918	765	1 025	932	148	170
Korea	2 436	4 609	5 382	94	358	536	91	183
Chinese Taipei	1 026	1 914	2 063	77	199	265	93	176
South-East Asia	5 092	10 440	15 280	128	438	1 002	20	34
Brunei Darussalam	15.8	27.5	40.4	1.2	2.6	4.8	185	326
Indonesia	2 282	4 262	5 676	28	107	277	17	27
Malaysia	514	1 512	1 944	20	81	155	49	106
The Philippines	780	942	1 404	21.2	45.2	88.6	18	18
Singapore	130	299	508	13.0	35.5	53.5	158	206
Thailand	1 196	2 536	3 094	38	121	201	33	61
Viet Nam	175	861	2 614	6.2	46	221	3	13
Oceania	2 599	3 411	3 741	159	230	259	172	181
Australia	2 207	2 815	3 084	129	189	216	211	235
New Zealand	370	483	513	29	38	39	161	169
Papua New Guinea	23	112	143	1.7	3.2	4.0	9	22
Other Americas	9 902	12 475	13 001	546	749	946	104	113
Canada	6 005	7 009	7 038	418	489	525	320	351
Chile	426	813	1 114	15.5	48.3	76.3	44	73
Mexico	3 108	4 190	3 958	100	190	295	63	72
Peru	363	464	891	11.8	22.7	49.8	19	21
China	21 842	40 135	78 234	491	1 992	7 254	25	54
Russia	24 487	15 395	18 991	827	650	808	249	190
United States	49 173	58 890	58 025	2 634	3 732	3 838	321	328

	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			
	1990	2005	2021	1990	2005	2021	1990	2005	2021	
123	7.9	6.5	4.9	5.1	3.8	2.8	56	60	69	
163	4.8	4.8	3.7	2.8	2.7	1.9	75	95	85	
72	2.4	2.0	1.2	1.3	0.9	0.6	37	41	37	HKC
133	4.5	4.5	3.2	2.7	2.6	1.9	87	99	79	JPN
236	7.2	6.4	5.3	4.5	3.3	2.4	57	96	104	ROK
189	5.8	5.3	3.3	3.2	2.5	1.5	51	84	88	CT
45	4.0	4.2	3.4	2.6	2.6	1.9	13	21	26	
437	2.6	4.7	7.3	0.9	1.1	1.5	60	75	91	BD
36	3.8	4.1	3.1	2.8	2.8	1.7	13	19	21	INA
119	4.6	5.9	4.5	2.8	3.2	2.2	29	58	58	MAS
22	4.3	3.6	2.7	3.0	2.2	1.5	13	11	12	PHL
231	4.2	3.1	2.1	1.1	1.0	0.9	43	70	93	SGP
73	4.6	5.0	4.3	3.0	3.2	2.5	22	39	43	THA
40	1.6	2.6	3.8	1.2	2.1	2.5	3	10	27	VN
159	6.6	5.4	4.2	4.1	3.3	2.4	107	111	92	
212	6.8	5.5	4.3	4.2	3.3	2.4	129	140	120	AUS
162	5.7	4.5	3.7	4.0	3.1	2.3	111	117	100	NZ
20	3.2	7.5	5.4	2.0	6.0	3.9	6	17	14	PNG
103	6.1	5.4	4.3	4.0	3.3	2.5	68	69	60	
318	9.3	7.8	6.6	6.3	4.9	3.8	217	217	184	CDA
85	4.5	4.0	3.3	3.3	2.7	2.2	32	50	57	CHL
59	4.2	4.0	3.1	2.5	2.2	1.6	38	40	31	MEX
34	3.6	2.8	2.7	3.1	2.2	2.1	16	16	26	PE
105	17.4	10.1	5.9	13.5	5.8	3.1	19	31	55	PRC
243	11.6	9.5	8.5	7.7	5.4	4.6	165	107	132	RUS
270	7.9	6.0	4.2	4.9	3.7	2.7	197	199	175	USA

	Energy Combustion Related CO ₂ Emission			CO ₂ Emission per Capita		
	Mt-CO ₂			t-CO ₂ / Person		
	1990	2005	2021	1990	2005	2021
APEC	12,556	16,723	21,015	5.50	6.30	7.12
Other north-east Asia	1,453	1,962	1,861	7.55	9.55	8.93
Hong Kong, China	33	38	30	5.79	5.50	4.00
Japan	1,079	1,218	1,007	8.74	9.54	8.01
Korea	232	457	558	5.41	9.49	10.79
Chinese Taipei	109	248	266	5.39	10.93	11.32
South-East Asia	362	861	1,470	0.93	1.74	2.47
Brunei Darussalam	3.47	6.81	12.25	13.26	18.58	27.50
Indonesia	130	328	578	0.71	1.43	2.11
Malaysia	57	143	205	3.23	5.51	6.11
The Philippines	38	69	132	0.62	0.80	1.16
Singapore	29	37	46	9.50	8.65	8.35
Thailand	88	201	247	1.59	3.05	3.45
Viet Nam	17	77	249	0.26	0.92	2.56
Oceania	276	392	388	11.38	12.72	9.52
Australia	252	355	351	14.75	17.60	13.65
New Zealand	22	32	30	6.62	7.77	5.81
Papua New Guinea	2.48	4.75	7.40	0.64	0.73	0.74
Other Americas	718	1,011	992	4.95	5.56	4.55
Canada	412	516	478	14.86	15.99	12.51
Chile	29	54	85	2.20	3.36	4.36
Mexico	257	412	375	3.14	3.91	2.96
Peru	20	29	53	0.89	1.03	1.57
China	2,630	5,267	10,072	2.32	4.04	7.13
Russia	2,264	1,341	1,441	15.30	9.34	10.0
United States	4,854	5,889	4,792	19.44	19.93	14.43

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 2015)			t-CO ₂ / Million USD at 2017 PPP			t-CO ₂ / GJ			
1990	2005	2021	1990	2005	2021	1990	2005	2021	
652	521	396	502	398	284	64	61	58	
346	336	260	286	268	202	59	56	55	
271	170	90	201	126	67	84	64	56	HKC
307	288	226	266	249	195	59	56	60	JPN
577	448	330	427	331	244	60	52	46	ROK
681	663	404	336	327	199	58	62	60	CT
503	584	498	186	218	185	47	52	54	
382	542	927	189	267	457	72	57	63	BD
481	659	543	158	216	178	41	53	58	INA
759	764	577	305	307	232	66	52	51	MAS
355	383	348	146	157	143	34	43	52	PHL
408	207	124	255	129	78	60	42	36	SGP
611	695	563	219	249	202	48	50	47	THA
387	592	751	124	190	241	77	74	64	VN
380	331	221	436	379	252	66	70	60	
399	346	230	476	412	274	70	75	64	AUS
251	222	142	236	209	134	41	46	36	NZ
337	388	309	221	254	203	69	34	38	PNG
440	399	292	293	264	191	48	49	44	
469	390	283	430	358	259	46	46	39	CDA
410	329	309	227	183	171	50	46	51	CHL
414	438	311	207	219	155	50	55	50	MEX
330	270	243	170	139	125	47	50	47	PE
2 560	1 191	635	1 627	757	404	93	75	68	PRC
1 949	1 276	959	712	466	350	61	49	41	RUS
495	378	233	481	367	227	61	61	54	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 peat, peat products, oil shale and tar sands, geothermal, wind, tide, solar, biomass, biogas, liquid biofuels, industrial wastes and municipal solid wastes and others.

Total renewables

Total renewables is the sum of hydro, geothermal, wind, tide, solar, biomass, biogas, liquid biofuels and the renewable parts of industrial wastes and municipal solid wastes.

Sectors

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.

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