



Asia-Pacific
Economic Cooperation

APEC

Energy Handbook

2022

Energy Working Group

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Energy Statistics and Training Office
Asia Pacific Energy Research Centre

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Preface

The APEC Energy Handbook 2022 is a handy, pocket-sized summary of key energy data and a supplement to APEC Energy Statistics 2022, which was released in May 2025.

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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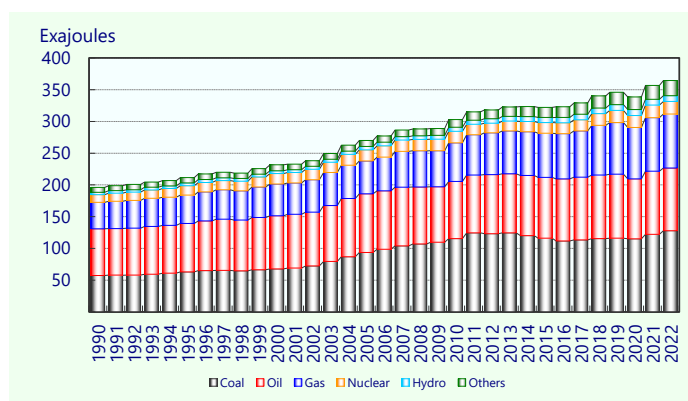
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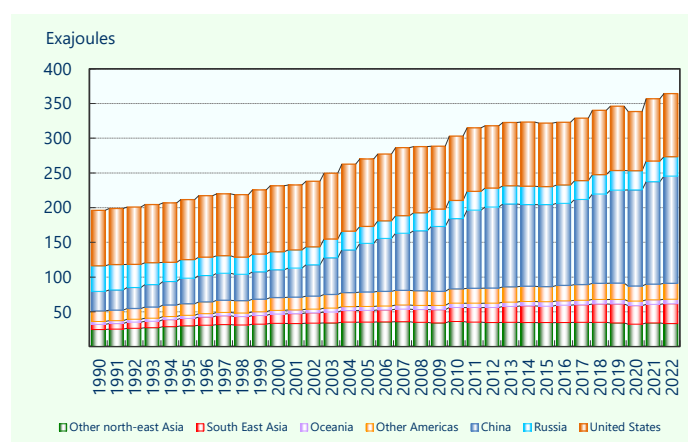
Total primary energy supply by energy APEC



	Exajoules					
	1990	2000	2010	2015	2020	2022
Coal	57.6	67.8	115.5	116.1	115.4	128.0
Oil	73.3	83.7	90.0	96.0	94.1	98.5
Gas	41.8	50.1	60.6	69.4	80.8	85.0
Nuclear	12.0	16.3	18.1	16.6	19.1	19.7
Hydro	3.9	4.5	6.4	8.0	9.2	9.2
Others	7.7	9.2	12.4	15.8	19.9	23.9
Total	196.3	231.6	303.0	321.9	338.5	364.3

	Share (%)					
	1990	2000	2010	2015	2020	2022
Coal	29.4	29.3	38.1	36.1	34.1	35.1
Oil	37.3	36.2	29.7	29.8	27.8	27.0
Gas	21.3	21.6	20.0	21.6	23.9	23.3
Nuclear	6.1	7.1	6.0	5.2	5.6	5.4
Hydro	2.0	1.9	2.1	2.5	2.7	2.5
Others	3.9	4.0	4.1	4.9	5.9	6.6

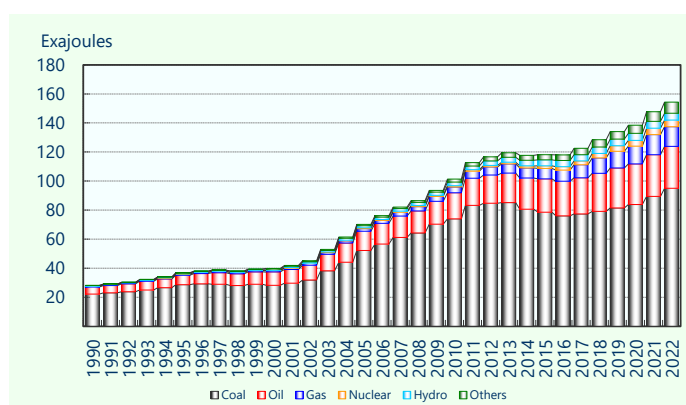
Total primary energy supply by region APEC



	Exajoules					
	1990	2000	2010	2015	2020	2022
Other north-east Asia	24.4	33.4	36.2	34.5	32.3	33.9
South East Asia	7.5	13.4	20.1	23.6	26.5	28.7
Oceania	4.2	5.4	6.2	6.3	6.6	6.3
Other Americas	15.0	18.4	20.4	21.8	21.6	23.0
China	28.2	39.8	101.4	118.1	138.4	154.4
Russia	36.8	25.9	26.0	26.1	27.8	27.9
United States	80.2	95.2	92.8	91.5	85.2	91.0
Total	196.3	231.6	303.0	321.9	338.5	364.3

	Share (%)					
	1990	2000	2010	2015	2020	2022
Other north-east Asia	12.4	14.4	11.9	10.7	9.6	9.3
South East Asia	3.8	5.8	6.6	7.3	7.8	7.9
Oceania	2.1	2.3	2.1	2.0	2.0	1.7
Other Americas	7.7	8.0	6.7	6.8	6.4	6.3
China	14.4	17.2	33.5	36.7	40.9	42.4
Russia	18.8	11.2	8.6	8.1	8.2	7.7
United States	40.8	41.1	30.6	28.4	25.2	25.0

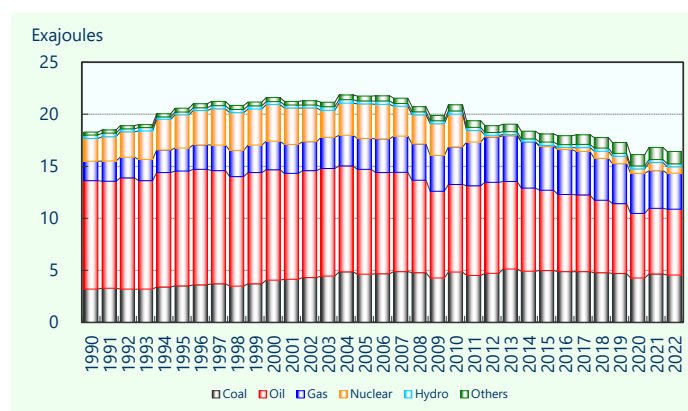
Total primary energy supply by energy China



	Exajoules					
	1990	2000	2010	2015	2020	2022
Coal	22.3	28.3	74.0	78.6	83.9	95.1
Oil	4.8	9.3	17.9	22.9	28.0	28.8
Gas	0.6	0.9	4.0	7.2	12.2	13.6
Nuclear	0.0	0.2	0.8	1.9	4.0	4.6
Hydro	0.5	0.8	2.6	4.0	4.8	4.7
Others	0.1	0.5	2.1	3.5	5.6	7.7
Total	28.2	39.8	101.4	118.1	138.4	154.4

	Share (%)					
	1990	2000	2010	2015	2020	2022
Coal	79.0	70.9	73.0	66.6	60.6	61.6
Oil	17.0	23.2	17.7	19.4	20.2	18.6
Gas	2.0	2.3	4.0	6.1	8.8	8.8
Nuclear	-	0.5	0.8	1.6	2.9	3.0
Hydro	1.6	2.0	2.5	3.4	3.4	3.0
Others	0.4	1.2	2.1	3.0	4.0	5.0

Total primary energy supply by energy Japan

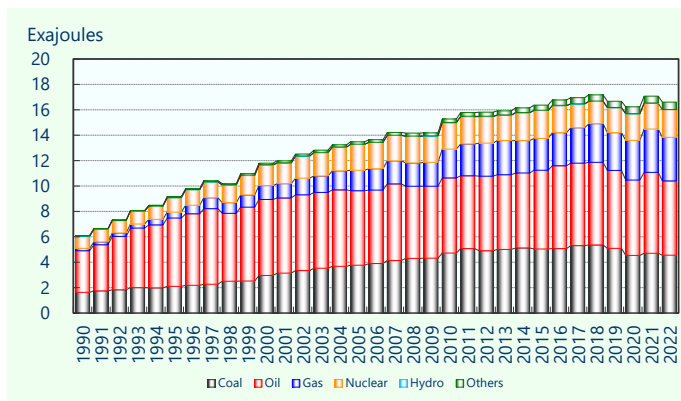


	Exajoules					
	1990	2000	2010	2015	2020	2022
Coal	3.2	4.1	4.8	5.0	4.3	4.6
Oil	10.4	10.6	8.4	7.7	6.2	6.3
Gas	1.8	2.7	3.6	4.2	3.9	3.5
Nuclear	2.2	3.5	3.1	0.1	0.4	0.6
Hydro	0.3	0.3	0.3	0.3	0.3	0.3
Others	0.3	0.4	0.6	0.8	1.1	1.2
Total	18.3	21.6	20.9	18.1	16.1	16.4

	Share (%)					
	1990	2000	2010	2015	2020	2022
Coal	17.6	18.8	23.1	27.5	26.5	27.8
Oil	56.9	49.1	40.3	42.6	38.5	38.4
Gas	10.1	12.7	17.2	23.2	24.0	21.1
Nuclear	12.1	16.3	15.0	0.6	2.6	3.7
Hydro	1.7	1.4	1.4	1.7	1.8	1.7
Others	1.6	1.7	2.9	4.3	6.7	7.3

Primary Energy Supply

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

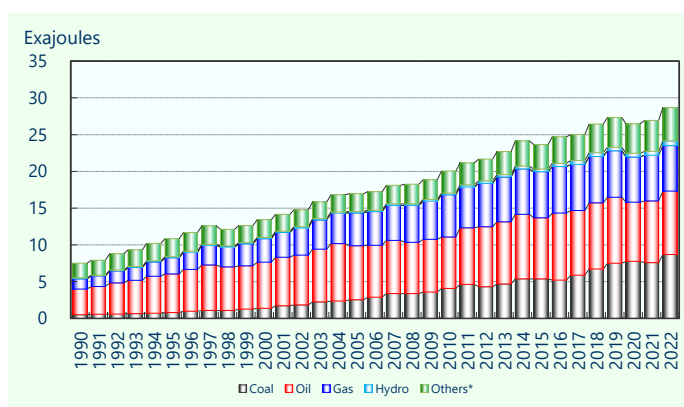


	Exajoules					
	1990	2000	2010	2015	2020	2022
Coal	1.6	3.0	4.7	5.0	4.5	4.6
Oil	3.3	6.0	5.9	6.2	5.9	5.9
Gas	0.2	1.1	2.3	2.5	3.1	3.4
Nuclear	0.9	1.6	2.1	2.2	2.1	2.2
Hydro	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.1	0.3	0.4	0.5	0.6
Total	6.1	11.8	15.3	16.4	16.2	16.6

	Share (%)					
	1990	2000	2010	2015	2020	2022
Coal	26.7	25.1	30.9	30.9	27.9	27.4
Oil	53.9	50.7	38.8	37.8	36.6	35.2
Gas	2.8	9.3	14.8	15.3	19.2	20.6
Nuclear	15.3	13.6	13.6	13.4	12.9	13.1
Hydro	0.8	0.3	0.2	0.1	0.2	0.2
Others	0.4	1.1	1.7	2.4	3.2	3.5

*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

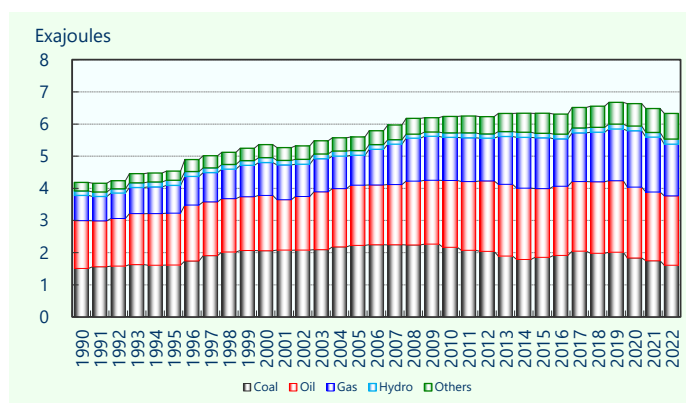


	Exajoules					
	1990	2000	2010	2015	2020	2022
Coal	0.5	1.4	4.1	5.4	7.8	8.7
Oil	3.5	6.3	7.0	8.3	8.0	8.6
Gas	1.4	3.2	5.7	6.3	6.2	6.2
Nuclear	-	-	-	-	-	-
Hydro	0.1	0.2	0.2	0.3	0.5	0.6
Others	2.0	2.4	3.0	3.3	4.0	4.5
Total	7.5	13.4	20.1	23.6	26.5	28.7

	Share (%)					
	1990	2000	2010	2015	2020	2022
Coal	6.7	10.2	20.2	22.8	29.3	30.3
Oil	46.3	46.7	34.9	35.1	30.4	30.1
Gas	18.8	23.9	28.7	26.6	23.2	21.7
Nuclear	-	-	-	-	-	-
Hydro	1.3	1.2	1.2	1.5	1.9	2.2
Others	26.9	18.0	15.0	14.1	15.2	15.8

Primary Energy Supply

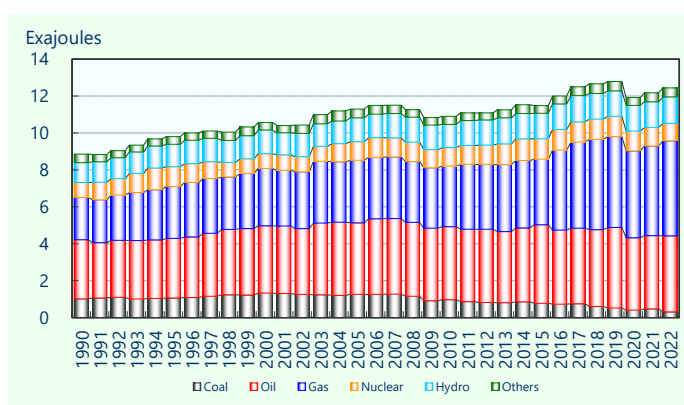
Total primary energy supply by energy Oceania



	1990	2000	2010	2015	2020	2022
Coal	1.5	2.1	2.2	1.9	1.8	1.6
Oil	1.5	1.7	2.1	2.1	2.2	2.2
Gas	0.8	1.0	1.3	1.6	1.8	1.6
Nuclear	-	-	-	-	-	-
Hydro	0.1	0.1	0.1	0.1	0.1	0.2
Others	0.3	0.4	0.5	0.6	0.7	0.8
Total	4.2	5.4	6.2	6.3	6.6	6.3

	1990	2000	2010	2015	2020	2022
Coal	36.1	38.5	34.8	29.3	27.6	25.4
Oil	35.5	32.1	33.3	33.8	33.2	34.1
Gas	18.7	19.1	21.5	24.9	26.5	25.4
Nuclear	-	-	-	-	-	-
Hydro	3.3	2.8	2.3	2.2	2.2	2.5
Others	6.4	7.5	8.2	9.8	10.5	12.6

Total primary energy supply by energy Canada

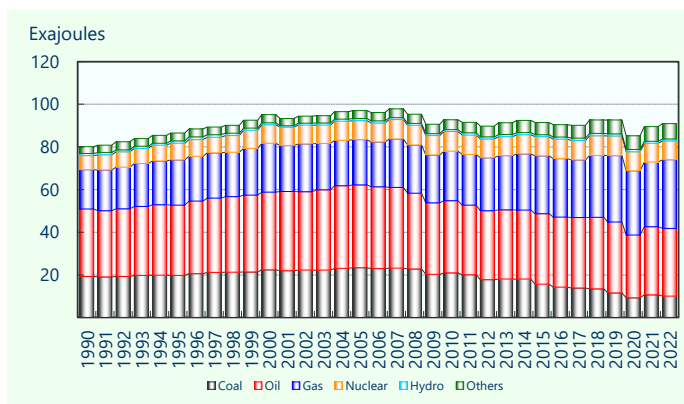


	Exajoules					
	1990	2000	2010	2015	2020	2022
Coal	1.0	1.3	1.0	0.8	0.4	0.3
Oil	3.2	3.6	4.0	4.3	3.9	4.1
Gas	2.3	3.1	3.3	3.5	4.7	5.1
Nuclear	0.8	0.8	1.0	1.1	1.1	1.0
Hydro	1.1	1.3	1.3	1.4	1.4	1.4
Others	0.5	0.4	0.4	0.4	0.4	0.5
Total	8.9	10.6	10.9	11.5	11.9	12.4

	Share (%)					
	1990	2000	2010	2015	2020	2022
Coal	11.5	12.6	8.9	6.7	3.4	2.5
Oil	36.2	34.5	36.3	37.1	32.9	33.1
Gas	25.9	29.4	30.2	30.9	39.5	41.3
Nuclear	9.2	7.5	9.1	9.7	9.0	7.6
Hydro	12.1	12.2	11.6	12.0	11.7	11.5
Others	5.3	3.7	4.0	3.7	3.6	3.9

Primary Energy Supply

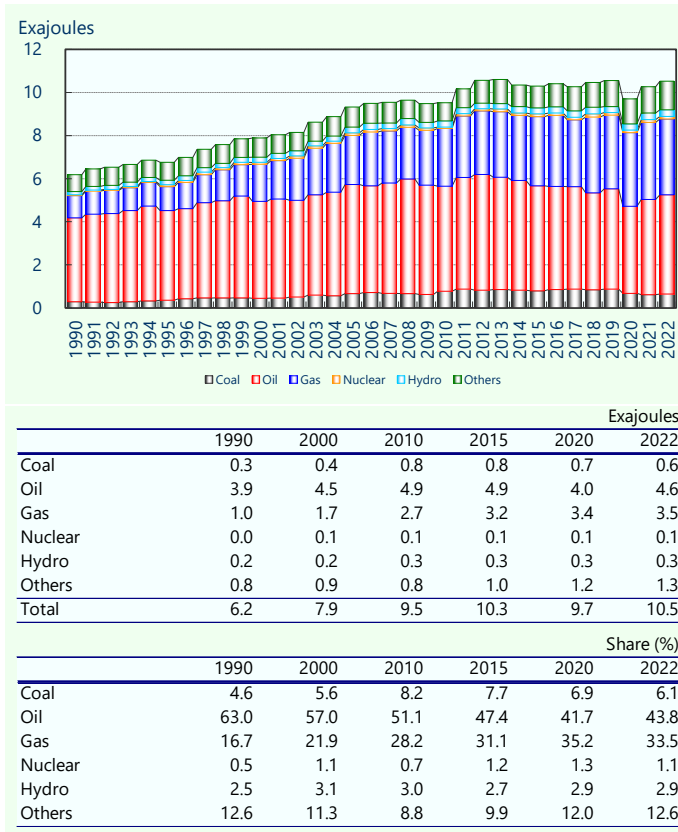
Total primary energy supply by energy United States



	Exajoules					
	1990	2000	2010	2015	2020	2022
Coal	19.2	22.3	21.0	15.7	9.3	10.0
Oil	31.7	36.5	33.8	33.1	29.4	31.7
Gas	18.4	22.9	23.3	27.1	30.1	32.3
Nuclear	6.7	8.7	9.2	9.1	9.0	8.8
Hydro	1.0	0.9	0.9	0.9	1.0	0.9
Others	3.2	3.8	4.6	5.7	6.4	7.3
Total	80.2	95.2	92.8	91.5	85.2	91.0

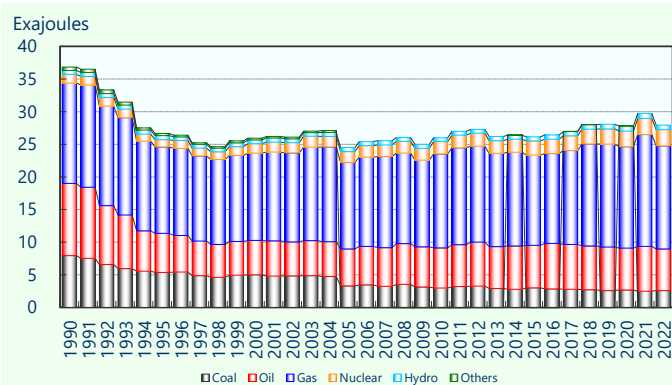
	Share (%)					
	1990	2000	2010	2015	2020	2022
Coal	24.0	23.5	22.6	17.1	10.9	11.0
Oil	39.5	38.3	36.4	36.1	34.5	34.9
Gas	22.9	24.1	25.1	29.6	35.3	35.5
Nuclear	8.3	9.1	9.9	9.9	10.5	9.6
Hydro	1.2	1.0	1.0	1.0	1.2	1.0
Others	4.0	4.0	5.0	6.2	7.5	8.0

Total primary energy supply by energy Other Americas*



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

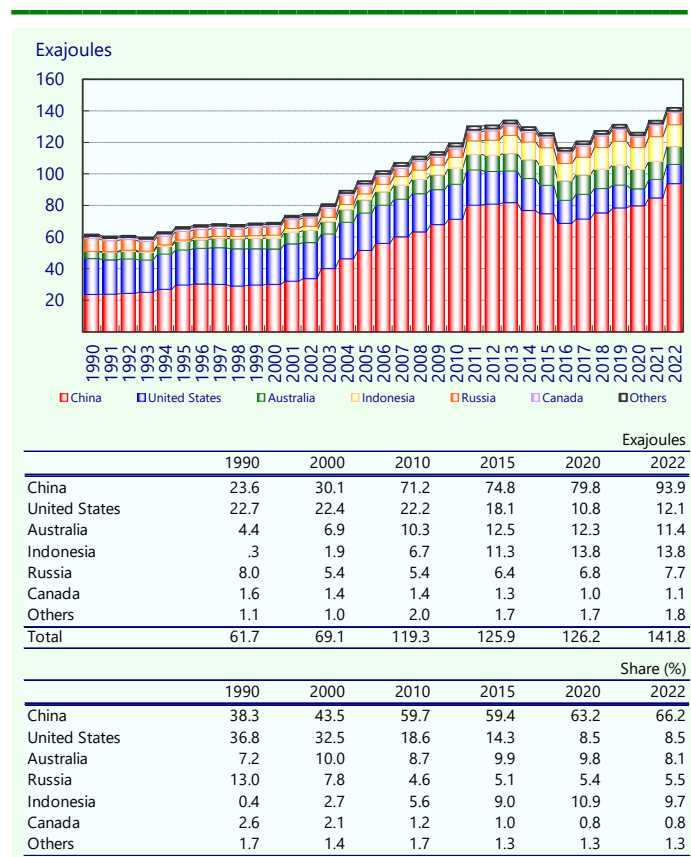
Total primary energy supply by energy Russia



	Exajoules					
	1990	2000	2010	2015	2020	2022
Coal	8.0	5.0	3.0	3.0	2.7	2.6
Oil	11.0	5.3	6.1	6.5	6.4	6.4
Gas	15.4	13.4	14.4	13.8	15.5	15.8
Nuclear	1.3	1.4	1.9	2.2	2.4	2.5
Hydro	0.6	0.6	0.6	0.6	0.8	0.7
Others	0.5	0.3	-0.1	-0.0	0.0	-0.0
Total	36.8	25.9	26.0	26.1	27.8	27.9

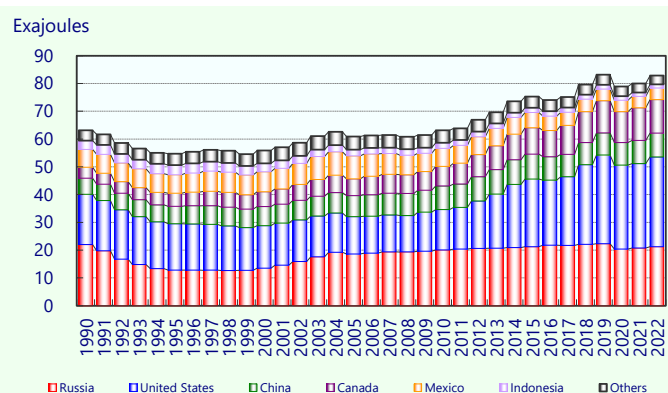
	Share (%)					
	1990	2000	2010	2015	2020	2022
Coal	21.6	19.3	11.5	11.5	9.7	9.3
Oil	30.0	20.4	23.6	24.9	23.0	22.8
Gas	41.8	51.5	55.5	53.0	55.9	56.6
Nuclear	3.6	5.6	7.3	8.3	8.6	8.9
Hydro	1.6	2.3	2.3	2.3	2.8	2.5
Others	1.4	1.0	-0.2	-0.1	0.1	-0.1

Production of coal* APEC



*Coal: hard coal, anthracite and lignite

Production of crude oil* APEC

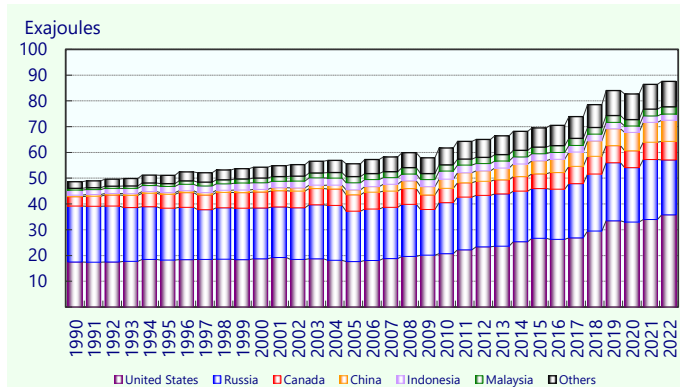


	Exajoules					
	1990	2000	2010	2015	2020	2022
Russia	22.0	13.5	20.1	21.2	20.4	21.2
United States	18.1	15.3	14.6	24.4	30.2	32.3
China	5.8	6.8	8.5	9.0	8.2	8.6
Canada	3.9	5.4	7.0	9.5	11.1	12.1
Mexico	6.4	7.2	6.5	5.5	4.1	4.2
Indonesia	3.2	3.1	2.0	1.7	1.5	1.3
Others	3.7	4.6	4.5	4.1	3.5	3.1
Total	63.1	55.9	63.1	75.3	78.9	82.8

	Share (%)					
	1990	2000	2010	2015	2020	2022
Russia	34.9	24.2	31.8	28.2	25.9	25.6
United States	28.7	27.4	23.1	32.4	38.3	39.0
China	9.2	12.2	13.5	11.9	10.3	10.3
Canada	6.2	9.6	11.1	12.6	14.0	14.6
Mexico	10.2	12.8	10.3	7.3	5.2	5.0
Indonesia	5.0	5.5	3.2	2.2	1.9	1.6
Others	5.8	8.2	7.1	5.4	4.4	3.8

*Crude oil includes NGL and condensates

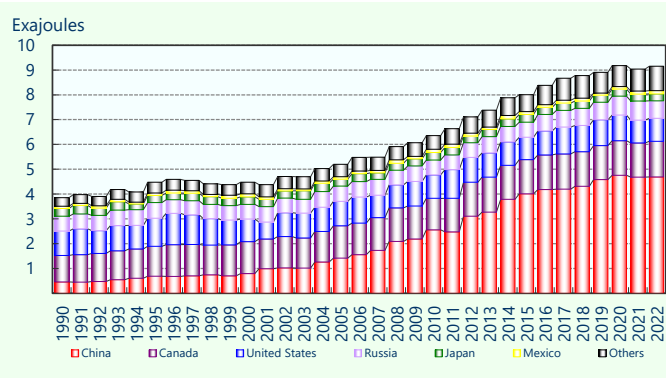
Production of natural gas APEC



	1990	2000	2010	2015	2020	2022
United States	17.5	18.7	20.7	26.7	33.0	35.8
Russia	21.6	19.7	19.8	19.3	21.1	21.3
Canada	3.7	6.2	5.5	5.8	6.5	7.2
China	.6	1.0	3.6	5.0	7.2	8.2
Indonesia	1.9	2.5	3.1	2.7	2.5	2.4
Malaysia	.6	1.9	2.4	2.6	2.5	2.8
Others	2.6	4.2	6.6	7.5	10.0	9.9
Total	48.6	54.3	61.7	69.5	82.7	87.6

	1990	2000	2010	2015	2020	2022
United States	36.0	34.5	33.6	38.3	39.9	40.9
Russia	44.5	36.3	32.1	27.7	25.6	24.3
Canada	7.6	11.4	9.0	8.3	7.8	8.2
China	1.2	1.9	5.8	7.2	8.7	9.4
Indonesia	4.0	4.7	5.0	3.9	3.0	2.8
Malaysia	1.3	3.5	3.8	3.7	3.0	3.2
Others	5.3	7.7	10.7	10.7	12.0	11.3

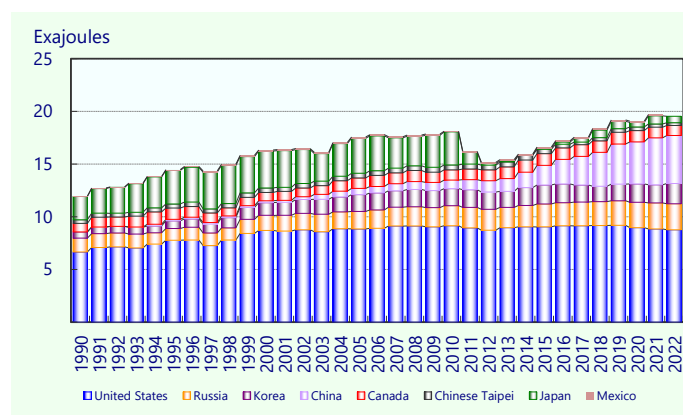
Production of hydro power APEC



	Exajoules					
	1990	2000	2010	2015	2020	2022
China	0.5	0.8	2.6	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	0.7
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	0.5	0.6	0.7	0.8	1.0
Total	3.9	4.5	6.4	8.0	9.2	9.2

	Share (%)					
	1990	2000	2010	2015	2020	2022
China	11.8	17.7	40.3	50.1	51.9	51.3
Canada	27.7	28.8	19.9	17.2	15.2	15.6
United States	25.5	20.4	14.9	11.3	11.3	10.1
Russia	15.5	13.2	9.4	7.6	8.3	7.8
Japan	8.2	6.8	4.7	3.9	3.1	3.0
Mexico	2.2	2.7	2.1	1.4	1.1	1.4
Others	9.0	10.5	8.7	8.5	9.2	10.8

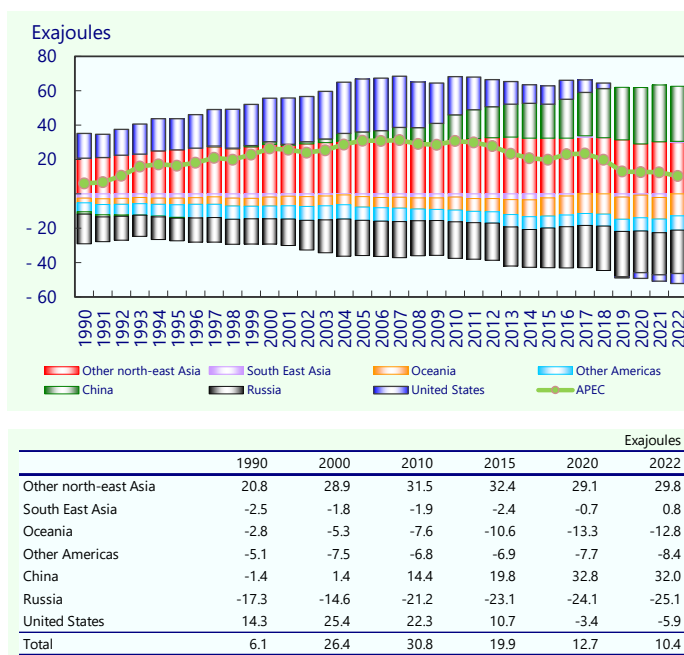
Production of nuclear power APEC



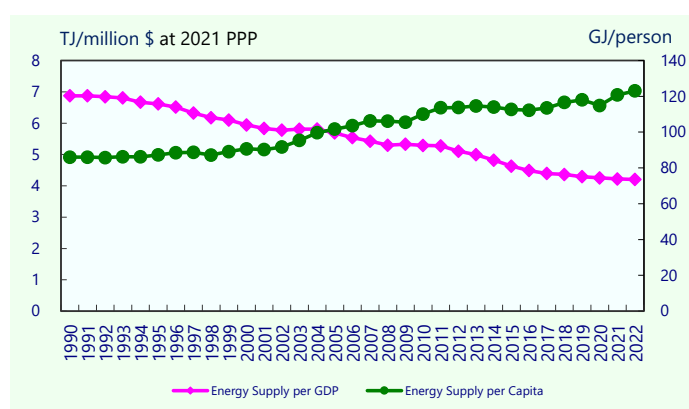
	Exajoules					
	1990	2000	2010	2015	2020	2022
United States	6.7	8.7	9.2	9.1	9.0	8.8
China	0.0	0.2	0.8	1.9	4.0	4.6
Russia	1.3	1.4	1.9	2.2	2.4	2.5
Canada	0.8	0.8	1.0	1.1	1.1	1.0
Japan	2.2	3.5	3.1	0.1	0.4	0.6
Others	1.0	1.7	2.1	2.3	2.2	2.3
Total	12.0	16.3	18.1	16.6	19.1	19.7

	Share (%)					
	1990	2000	2010	2015	2020	2022
United States	55.7	53.3	50.5	54.5	47.1	44.6
China	0.0	1.1	4.4	11.2	20.9	23.2
Russia	10.9	8.8	10.5	13.1	12.6	12.6
Canada	6.8	4.9	5.5	6.7	5.6	4.8
Japan	18.4	21.5	17.3	0.6	2.2	3.1
Others	8.1	10.4	11.8	14.0	11.6	11.7

Net import by region APEC

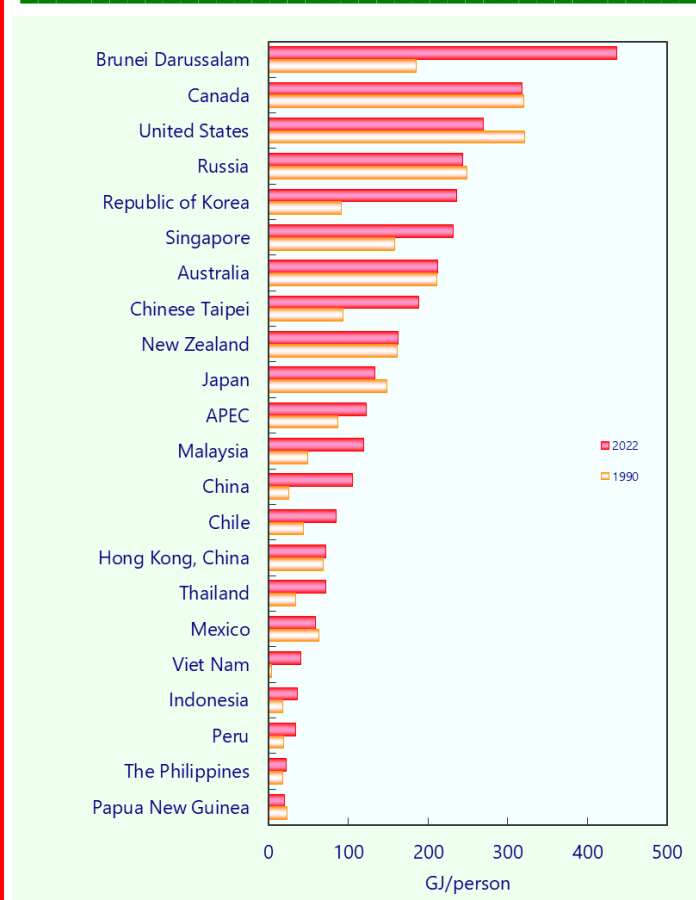


Total primary energy supply per GDP & capita APEC

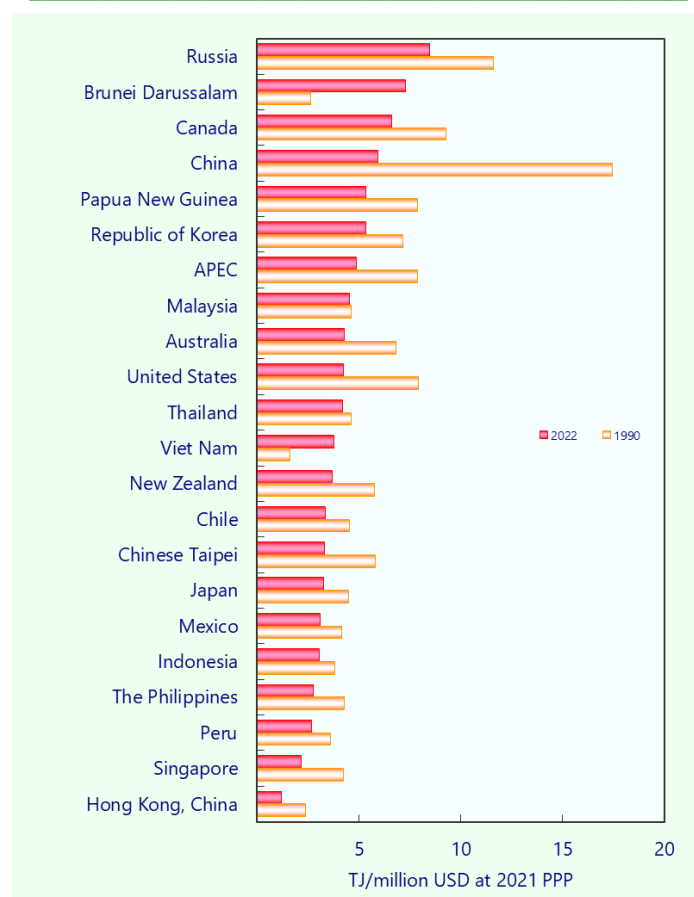


	1990	2000	2010	2015	2020	2022
Population (million)	2 281	2 554	2 753	2 857	2 947	2 961
Primary Energy Supply per Capita (GJ)	86.04	90.65	110.08	112.65	114.87	123.05
GDP (\$ 2021 PPP)	28 544	38 954	57 273	69 545	79 567	86 706
Primary Energy Supply per GDP (TJ/million \$ at 2021 PPP)	6.9	5.9	5.3	4.6	4.3	4.2

Total primary energy supply per capita 1990 vs 2022 by economy

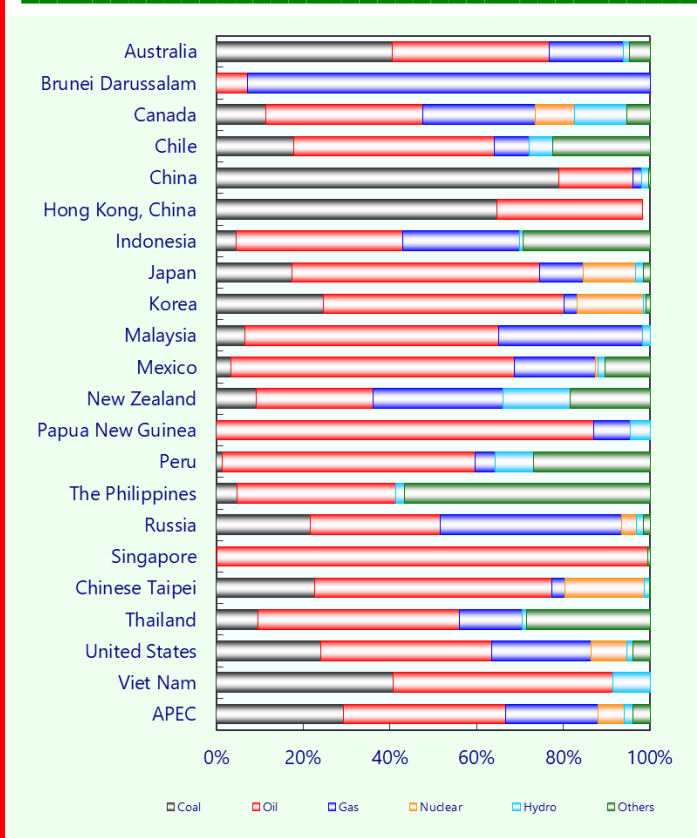


Total primary energy supply per GDP 1990 vs 2022 by economy

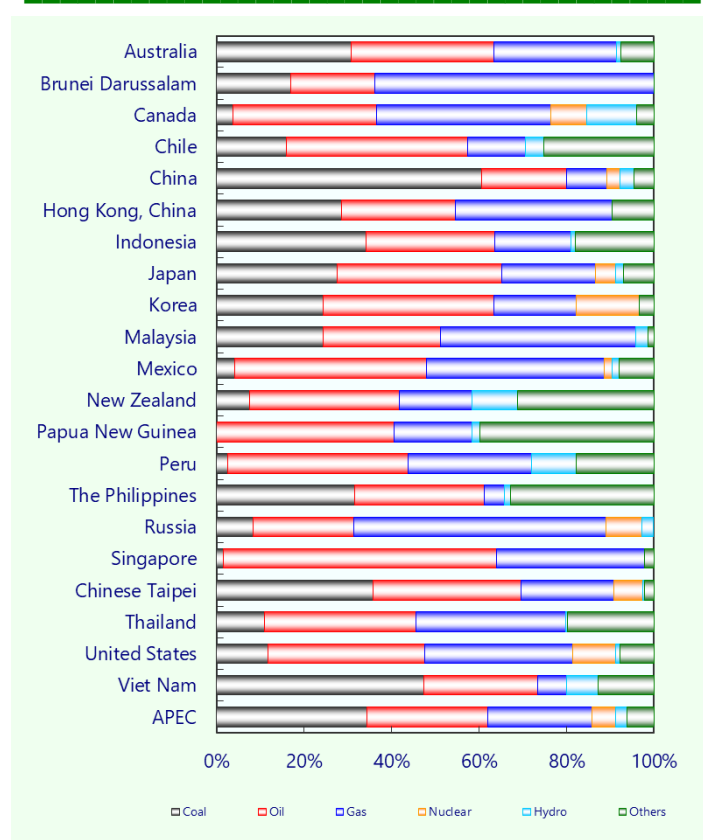


Primary Energy Supply

Primary energy mix by economy 1990

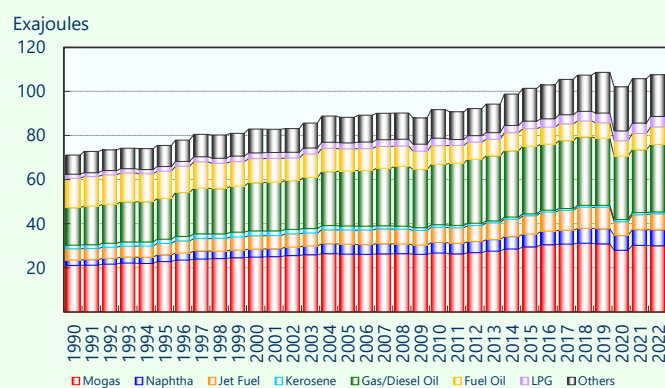


Primary energy mix by economy 2022



Primary Energy Supply

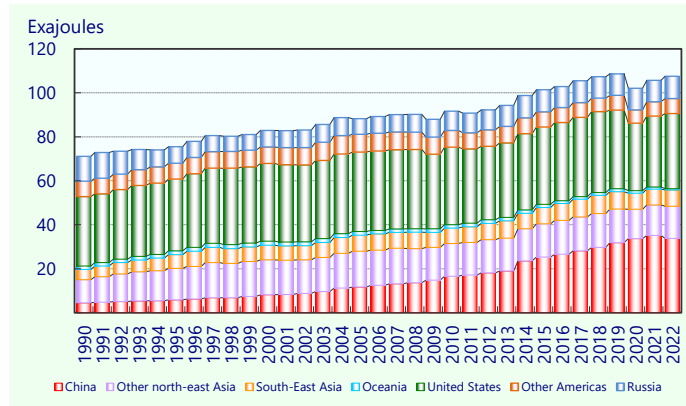
Petroleum refining by product APEC



	Exajoules					
	1990	2000	2010	2015	2020	2022
Mogas	21.1	24.8	26.7	29.4	27.9	30.0
Naphtha	2.3	3.5	4.8	5.8	6.7	7.2
Jet Fuel	5.2	6.1	6.9	8.3	6.3	7.3
Gas/Diesel Oil	16.9	21.8	27.3	30.6	28.8	30.7
Fuel Oil	13.4	11.0	8.6	8.0	7.0	7.9
LPG	1.8	2.6	3.4	3.4	4.4	4.7
Others	10.4	13.1	14.1	15.8	20.9	19.8
Total	71.1	82.9	91.7	101.4	102.1	107.5

	Share (%)					
	1990	2000	2010	2015	2020	2022
Mogas	29.6	29.9	29.1	29.1	27.3	27.9
Naphtha	3.3	4.3	5.2	5.7	6.6	6.7
Jet Fuel	7.3	7.4	7.5	8.2	6.1	6.7
Gas/Diesel Oil	23.8	26.3	29.8	30.2	28.3	28.5
Fuel Oil	18.8	13.3	9.4	7.9	6.9	7.4
LPG	2.5	3.1	3.7	3.4	4.3	4.4
Others	14.7	15.8	15.4	15.5	20.5	18.4

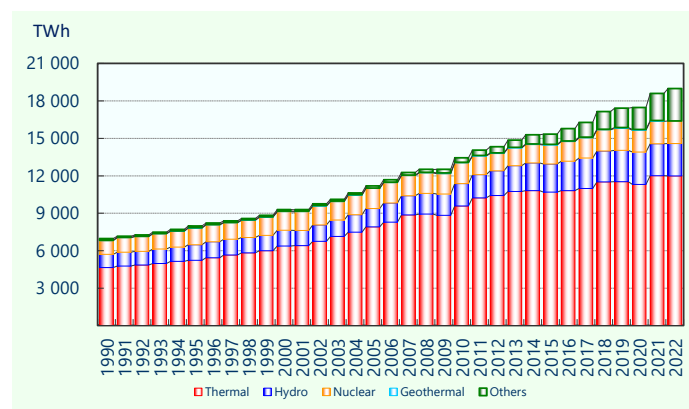
Petroleum refining by region APEC



	Exajoules					
	1990	2000	2010	2015	2020	2022
China	4.5	8.2	16.6	25.3	33.7	33.8
Other north-east Asia	10.5	15.9	14.9	15.1	13.3	14.6
South-East Asia	4.7	6.6	6.9	7.5	7.4	7.4
Oceania	1.6	1.8	1.6	1.4	1.2	.6
United States	31.6	35.3	35.2	35.1	30.7	34.1
Other Americas	7.1	7.5	7.7	7.0	6.0	6.9
Russia	11.3	7.5	8.8	10.0	9.8	10.1
Total	71.1	82.9	91.7	101.4	102.1	107.5

	Share (%)					
	1990	2000	2010	2015	2020	2022
China	6.3	9.9	18.1	25.0	33.0	31.4
Other north-east Asia	14.7	19.1	16.3	14.9	13.1	13.6
South-East Asia	6.6	8.0	7.6	7.4	7.2	6.9
Oceania	2.2	2.2	1.8	1.4	1.2	0.6
United States	44.4	42.6	38.4	34.7	30.1	31.7
Other Americas	9.9	9.1	8.3	6.9	5.9	6.4
Russia	15.9	9.1	9.6	9.8	9.6	9.4

Electricity generation by type APEC

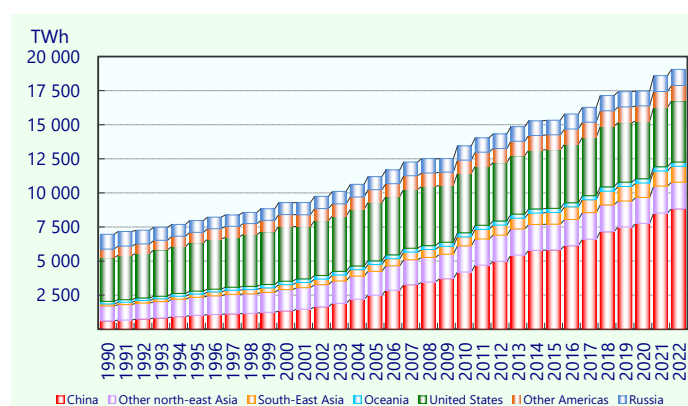


	TWh					
	1990	2000	2010	2015	2020	2022
Thermal	4 644	6 382	9 592	10 697	11 317	11 996
Hydro	1 073	1 250	1 783	2 245	2 589	2 598
Nuclear	1 094	1 496	1 658	1 520	1 745	1 799
Geothermal	32	41	52	57	63	63
Others	126	129	365	817	1 764	2 602
Total	6 968	9 298	13 450	15 337	17 477	19 058

	Share (%)					
	1990	2000	2010	2015	2020	2022
Thermal	66.6	68.6	71.3	69.7	64.8	62.9
Hydro	15.4	13.4	13.3	14.6	14.8	13.6
Nuclear	15.7	16.1	12.3	9.9	10.0	9.4
Geothermal	0.5	0.4	0.4	0.4	0.4	0.3
Others	1.8	1.4	2.7	5.3	10.1	13.7

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

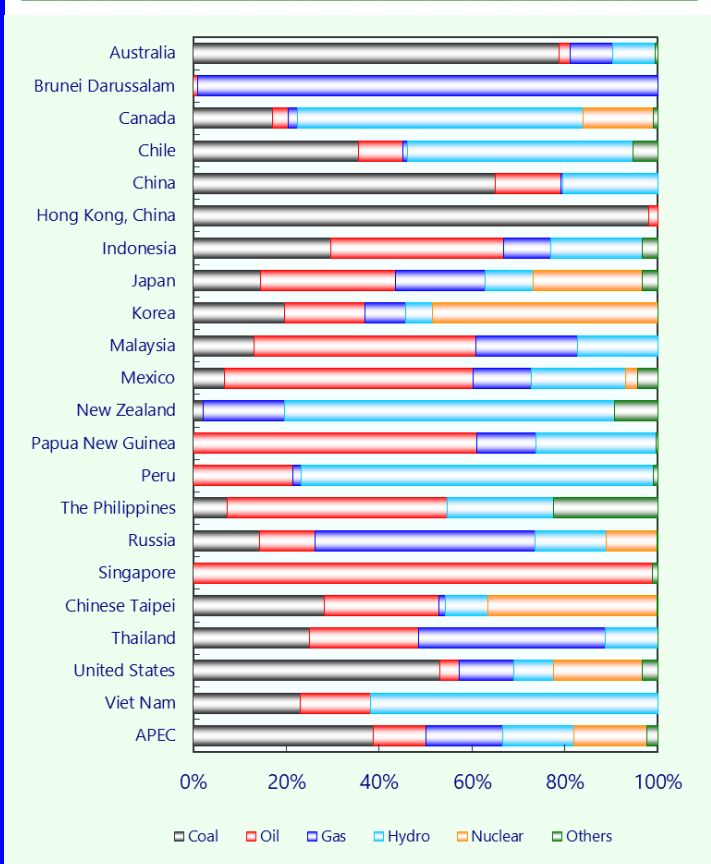
Electricity generation by region APEC



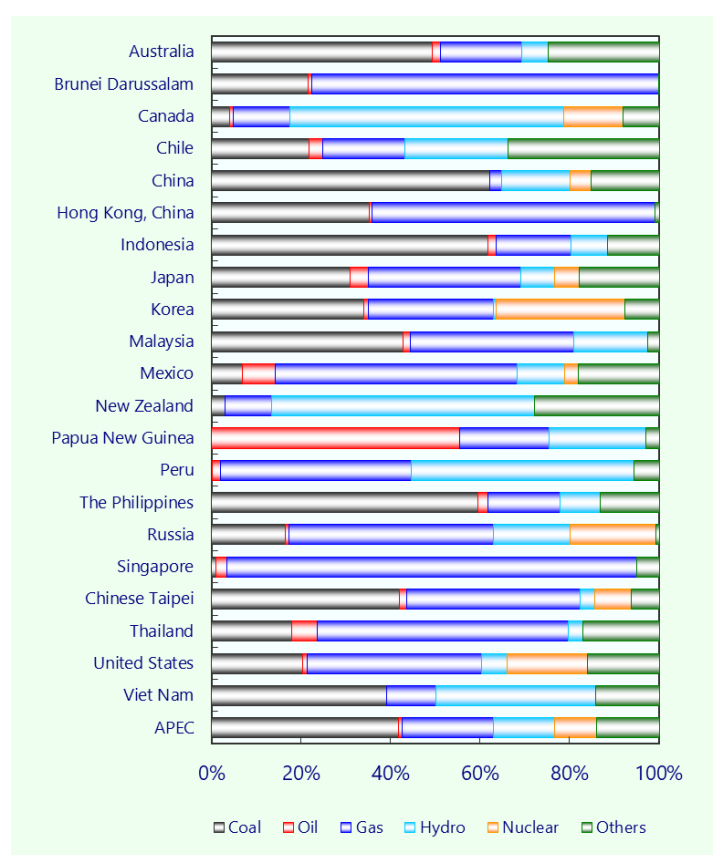
	1990	2000	2010	2015	2020	2022
China	621	1 356	4 207	5 815	7 779	8 849
Other north-east Asia	1 090	1 559	1 922	1 897	1 894	1 944
South-East Asia	152	358	652	868	1 055	1 158
Oceania	189	252	302	300	314	320
United States	3 203	4 026	4 354	4 297	4 239	4 473
Other Americas	630	872	975	1 092	1 106	1 143
Russia	1 082	876	1 038	1 068	1 091	1 171
Total	6 968	9 298	13 450	15 337	17 477	19 058

	1990	2000	2010	2015	2020	2022
China	8.9	14.6	31.3	37.9	44.5	46.4
Other north-east Asia	15.6	16.8	14.3	12.4	10.8	10.2
South-East Asia	2.2	3.9	4.8	5.7	6.0	6.1
Oceania	2.7	2.7	2.2	2.0	1.8	1.7
United States	46.0	43.3	32.4	28.0	24.3	23.5
Other Americas	9.0	9.4	7.2	7.1	6.3	6.0
Russia	15.5	9.4	7.7	7.0	6.2	6.1

Electricity generation by economy 1990

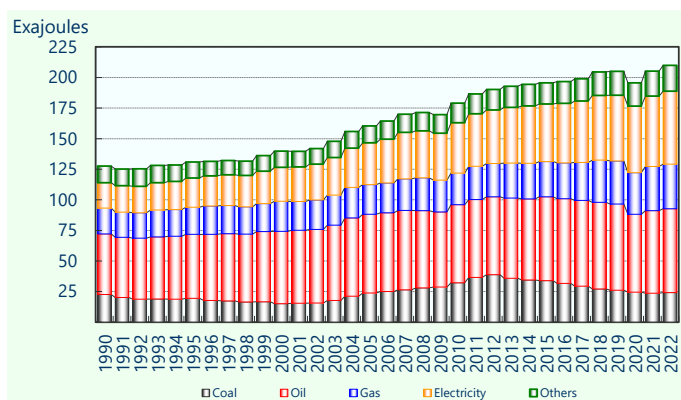


Electricity generation by economy 2022



Transformation

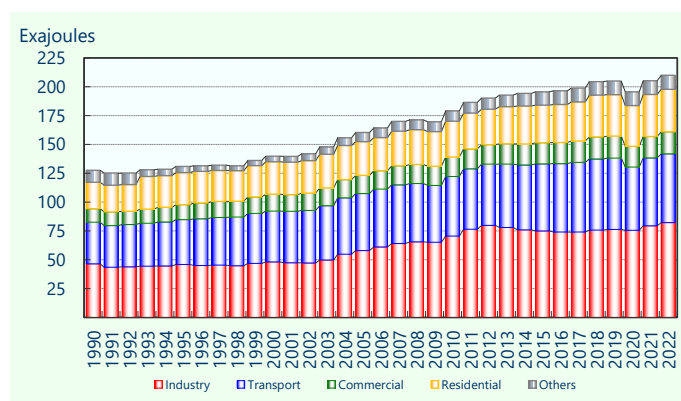
Total final energy consumption by energy APEC



	Exajoules					
	1990	2000	2010	2015	2020	2022
Coal	22.5	15.1	32.3	34.0	24.6	24.1
Oil	49.5	59.1	63.7	68.5	63.6	68.5
Gas	21.2	24.6	25.9	28.7	33.9	36.5
Electricity	20.7	27.8	41.1	47.1	54.4	59.6
Others	13.5	13.2	16.0	17.3	19.0	21.2
Total	127.5	139.8	179.1	195.6	195.5	210.0

	Share (%)					
	1990	2000	2010	2015	2020	2022
Coal	17.7	10.8	18.0	17.4	12.6	11.5
Oil	38.8	42.3	35.6	35.0	32.5	32.6
Gas	16.7	17.6	14.5	14.7	17.4	17.4
Electricity	16.2	19.9	23.0	24.1	27.8	28.4
Others	10.6	9.4	9.0	8.8	9.7	10.1

Total final energy consumption by sector APEC

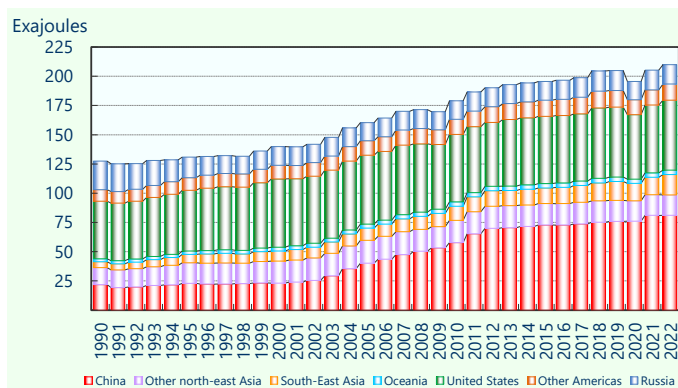


	Exajoules					
	1990	2000	2010	2015	2020	2022
Industry	46.4	48.1	70.6	75.0	75.5	82.2
Transport	36.1	44.1	51.6	58.2	54.8	59.7
Commercial	11.7	14.6	16.9	18.2	18.0	19.0
Residential	23.1	28.3	31.0	32.7	35.5	37.0
Others	10.2	4.8	8.9	11.4	11.7	12.1
Total	127.5	139.8	179.1	195.6	195.5	210.0

	Share (%)					
	1990	2000	2010	2015	2020	2022
Industry	36.4	34.4	39.4	38.4	38.6	39.1
Transport	28.3	31.5	28.8	29.8	28.0	28.4
Commercial	9.2	10.4	9.4	9.3	9.2	9.1
Residential	18.1	20.2	17.3	16.7	18.2	17.6
Others	8.0	3.4	5.0	5.8	6.0	5.8

Final Energy Consumption

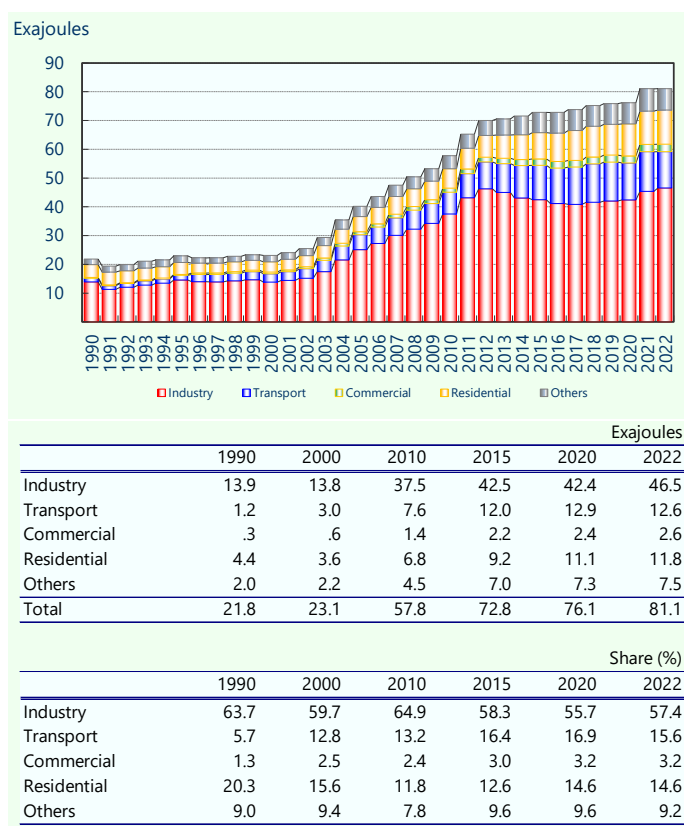
Total final energy consumption by region APEC



	Exajoules					
	1990	2000	2010	2015	2020	2022
China	21.8	23.1	57.8	72.8	76.1	81.1
Other north-east Asia	14.5	18.9	19.0	18.3	17.4	17.4
South-East Asia	5.0	8.6	12.1	13.4	14.8	17.4
Oceania	2.6	3.3	3.6	3.8	3.7	3.8
United States	49.2	58.3	57.7	57.5	55.1	59.9
Other Americas	9.9	11.6	13.0	13.7	12.8	13.8
Russia	24.5	16.0	15.9	16.0	15.6	16.6
Total	127.5	139.8	179.1	195.6	195.5	210.0

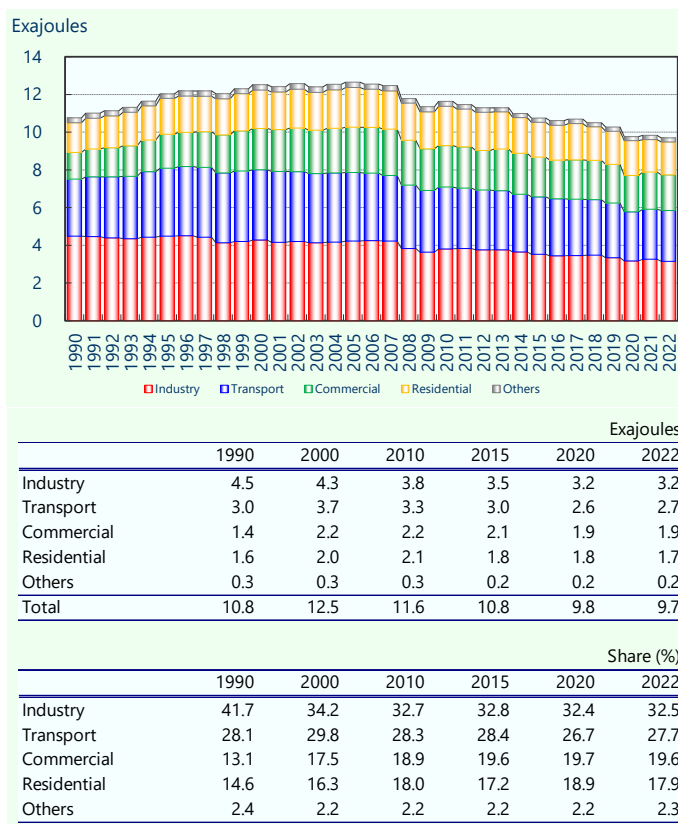
	Share (%)					
	1990	2000	2010	2015	2020	2022
China	17.1	16.5	32.3	37.2	38.9	38.6
Other north-east Asia	11.4	13.5	10.6	9.4	8.9	8.3
South-East Asia	4.0	6.2	6.8	6.8	7.6	8.3
Oceania	2.0	2.3	2.0	1.9	1.9	1.8
United States	38.6	41.7	32.2	29.4	28.2	28.5
Other Americas	7.8	8.3	7.2	7.0	6.5	6.6
Russia	19.2	11.4	8.9	8.2	8.0	7.9

Total final energy consumption by sector China

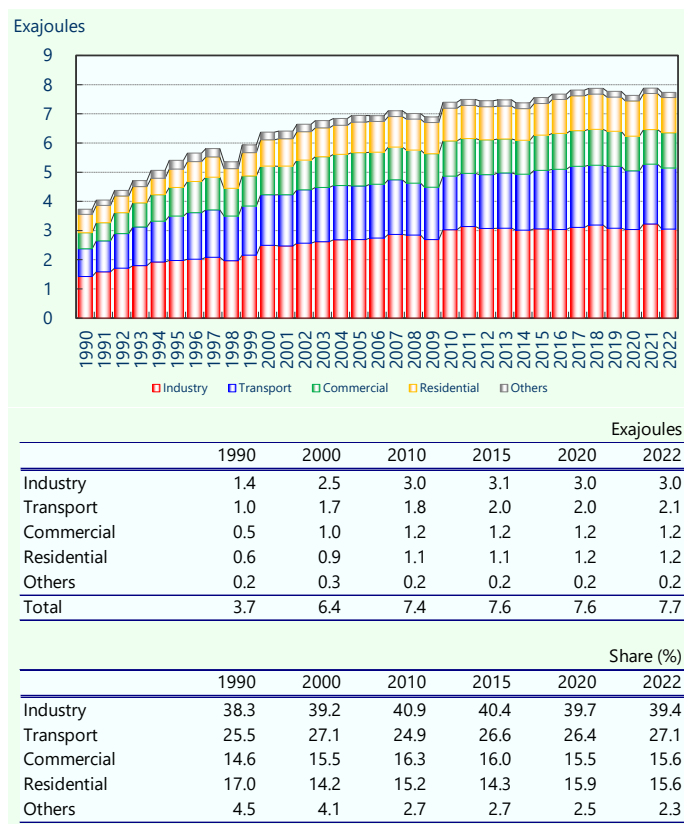


Final Energy Consumption

Total final energy consumption by sector Japan

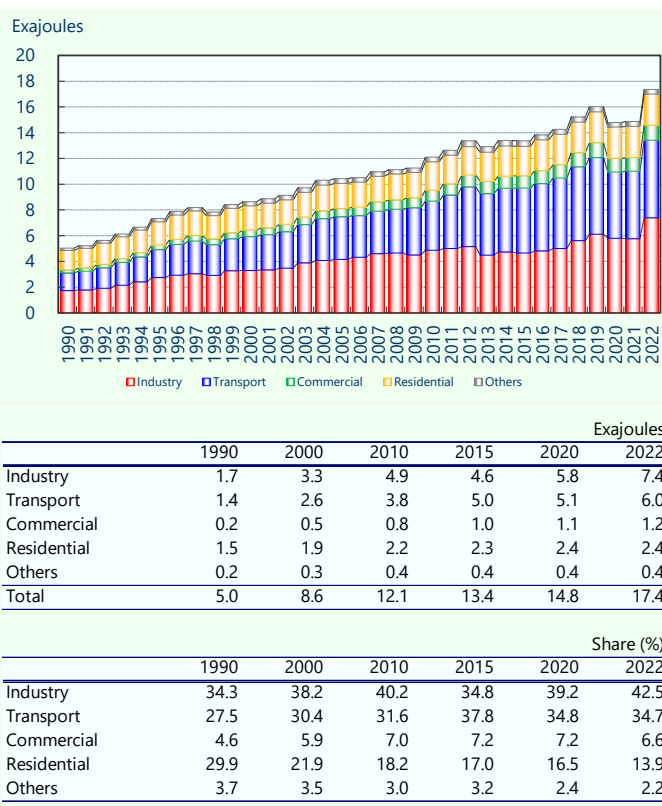


Total final energy consumption by sector Other north-east Asia*

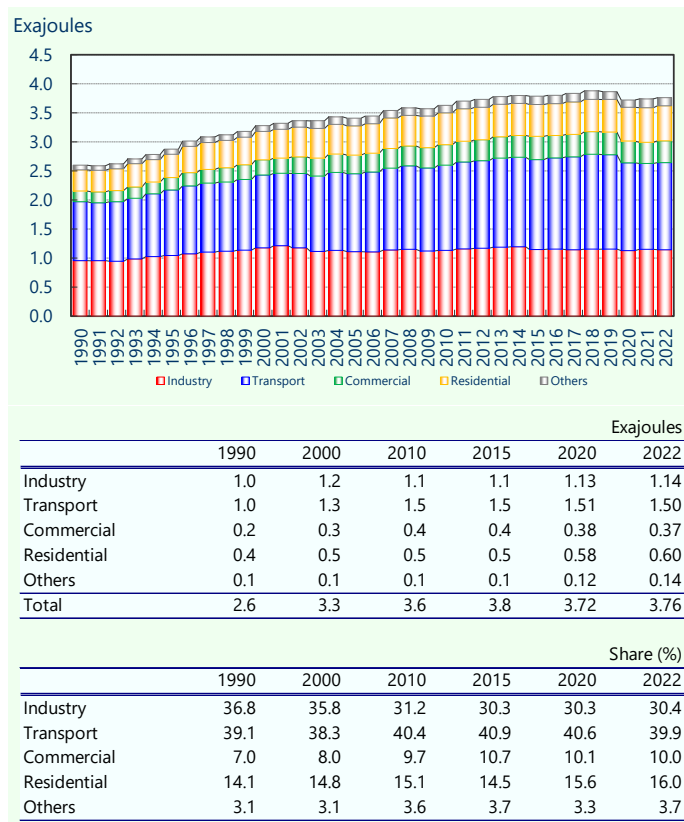


*In this page, Other north-east Asia includes Hong Kong, China; Republic of Korea and Chinese Taipei

Total final energy consumption by sector South-East Asia

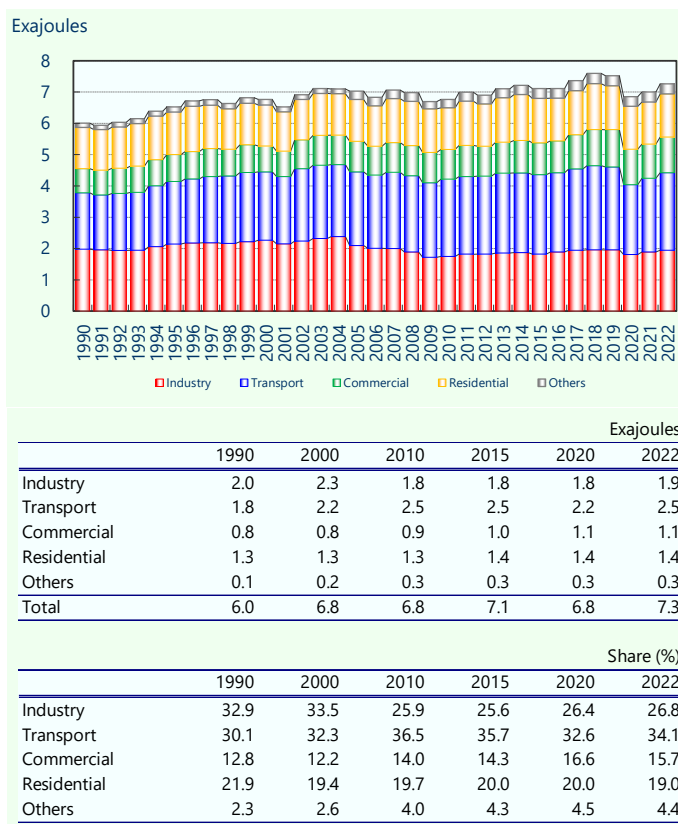


Total final energy consumption by sector Oceania

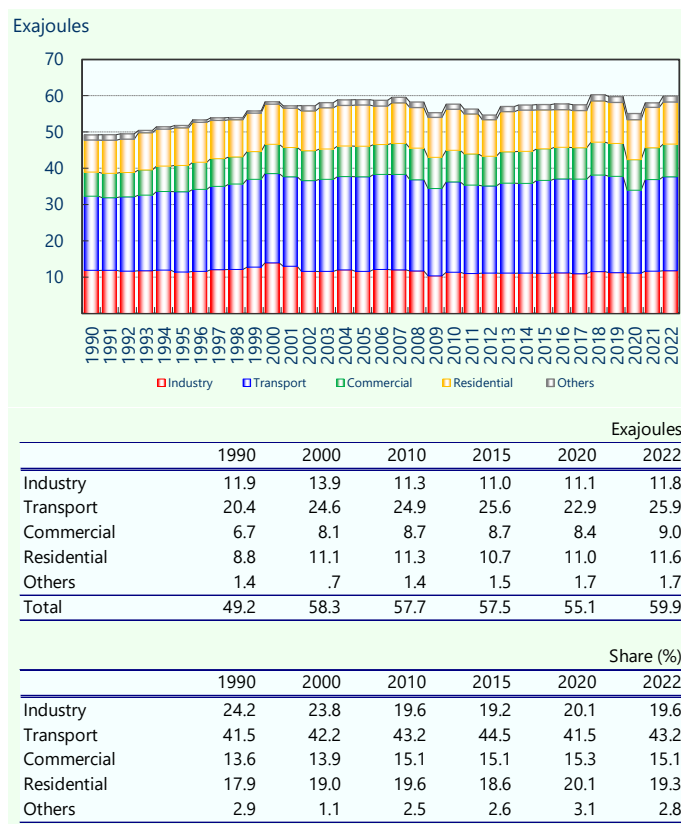


Final Energy Consumption

Total final energy consumption by sector Canada

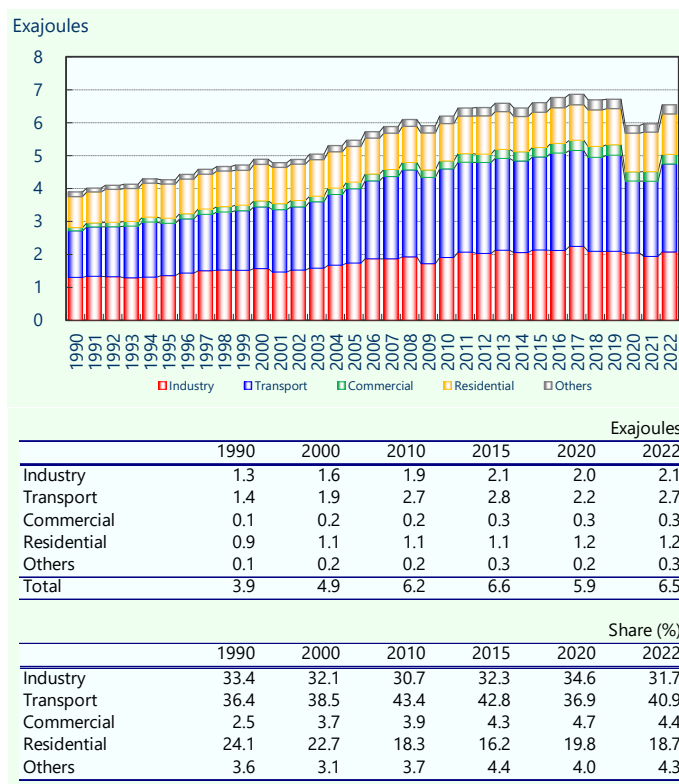


Total final energy consumption by sector United States



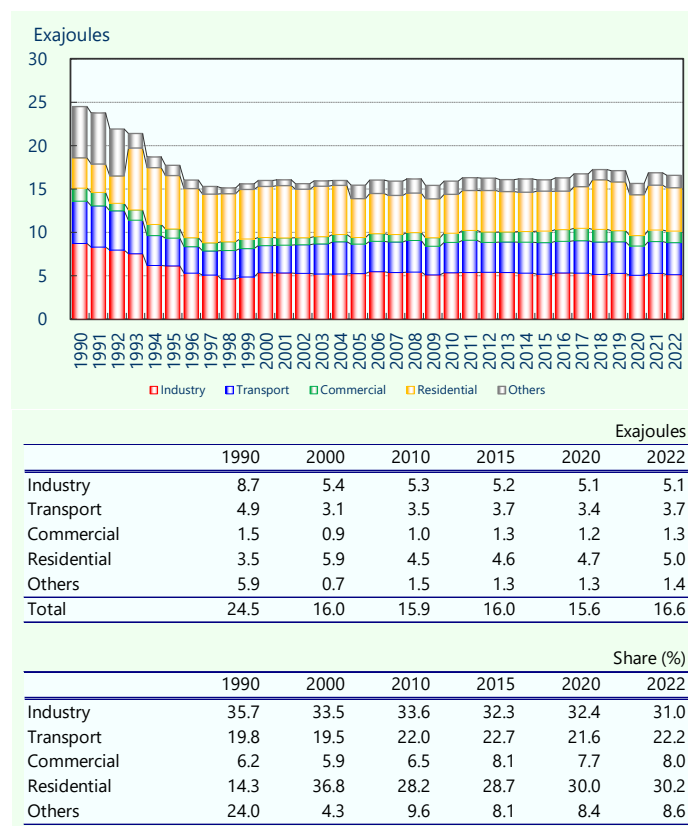
Final Energy Consumption

Total final energy consumption by sector Other Americas*



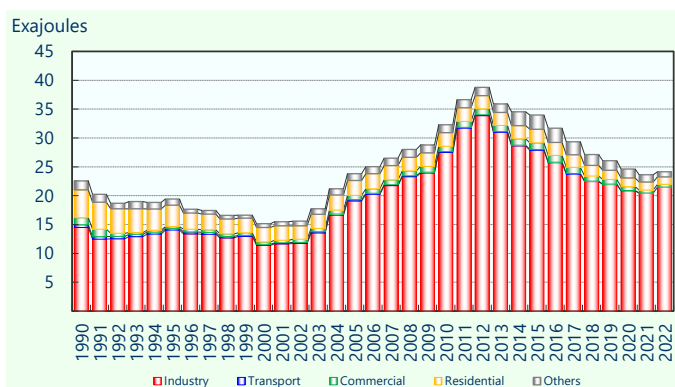
*Other Americas include Chile, Mexico and Peru.

Total final energy consumption by sector Russia



Final Energy Consumption

Coal* demand by sector APEC



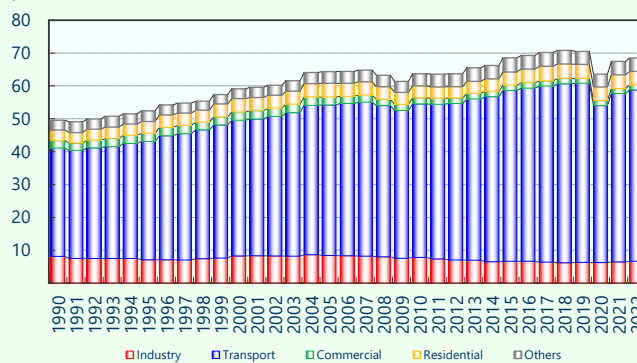
	Exajoules					
	1990	2000	2010	2015	2020	2022
Industry	14.5	11.4	27.5	27.9	20.8	21.5
Transport	0.5	0.2	0.1	0.1	0.1	0.0
Commercial	1.2	0.4	0.9	1.2	0.7	0.5
Residential	4.8	2.5	2.4	2.3	1.5	1.3
Others	1.5	0.6	1.3	2.5	1.6	0.9
Total	22.5	15.1	32.3	34.0	24.6	24.1

	Share (%)					
	1990	2000	2010	2015	2020	2022
Industry	64.2	75.2	85.2	82.1	84.6	88.9
Transport	2.1	1.3	0.4	0.3	0.2	0.1
Commercial	5.5	2.7	2.9	3.5	2.7	2.0
Residential	21.5	16.6	7.3	6.9	6.1	5.4
Others	6.8	4.2	4.1	7.3	6.4	3.6

*Coal and Coal Products

Oil demand by sector APEC

Exajoules

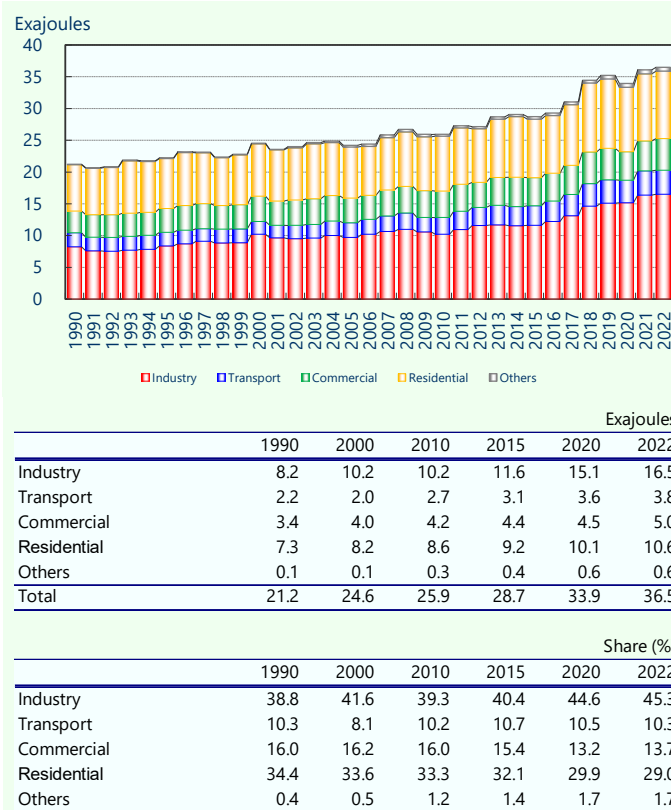


	Exajoules					
	1990	2000	2010	2015	2020	2022
Industry	8.2	8.3	7.8	6.7	6.3	6.6
Transport	32.9	41.3	46.7	52.0	47.7	52.2
Commercial	2.3	2.5	1.9	1.6	1.5	1.5
Residential	3.2	4.1	3.6	4.0	4.2	4.1
Others	3.0	3.0	3.6	4.3	3.8	4.1
Total	49.5	59.1	63.7	68.5	63.6	68.5

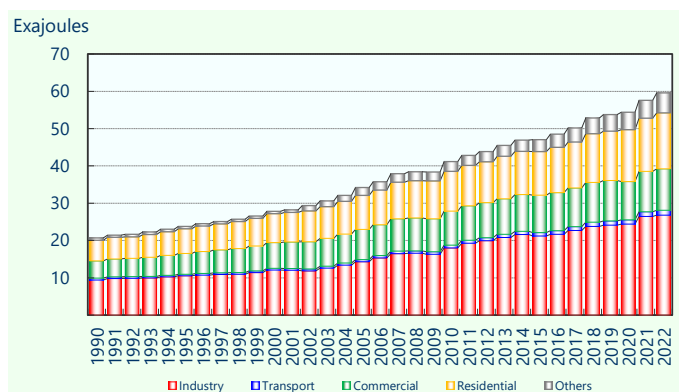
	Share (%)					
	1990	2000	2010	2015	2020	2022
Industry	16.5	14.0	12.3	9.7	9.9	9.7
Transport	66.5	69.8	73.3	75.8	75.1	76.2
Commercial	4.6	4.2	3.0	2.4	2.4	2.2
Residential	6.5	6.9	5.7	5.8	6.6	6.0
Others	6.0	5.0	5.7	6.3	6.0	5.9

Final Energy Consumption

Gas demand by sector APEC



Electricity demand by sector APEC

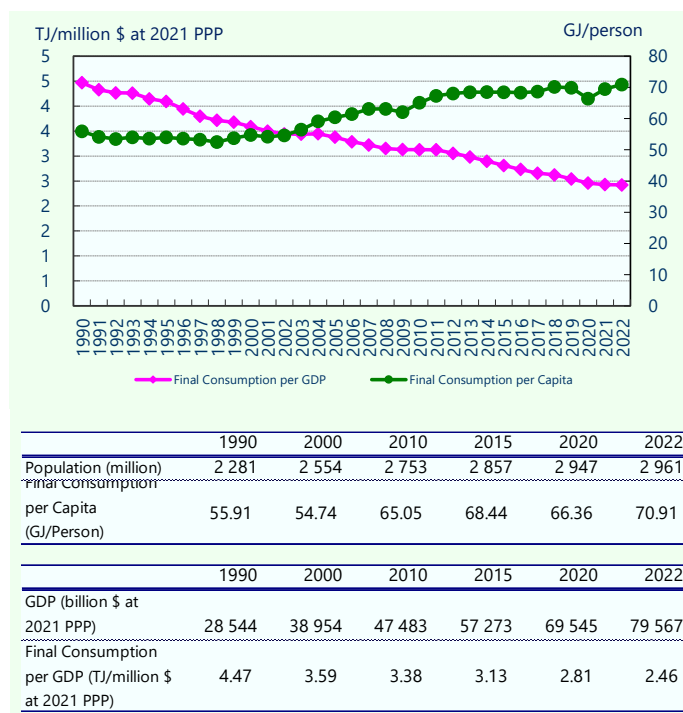


	Exajoules					
	1990	2000	2010	2015	2020	2022
Industry	9.4	12.1	18.0	21.2	24.4	26.8
Transport	0.5	0.4	0.7	0.9	1.1	1.3
Commercial	4.6	6.9	9.1	10.0	10.3	11.1
Residential	5.5	7.7	10.7	11.7	13.9	15.0
Others	0.6	0.7	2.6	3.2	4.7	5.4
Total	20.7	27.8	41.1	47.1	54.4	59.6

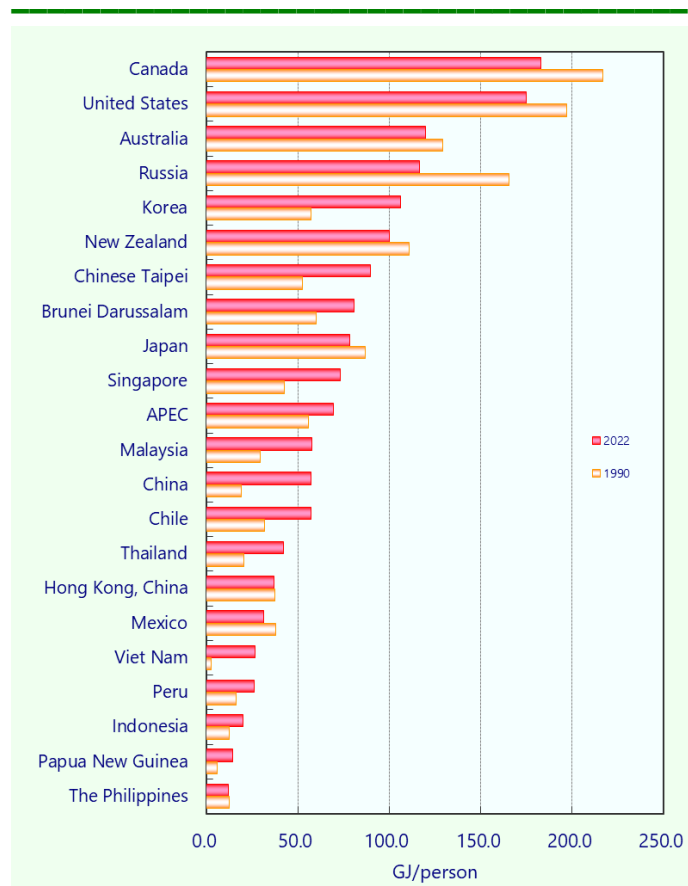
	Share (%)					
	1990	2000	2010	2015	2020	2022
Industry	45.5	43.4	43.8	45.1	44.9	45.0
Transport	2.5	1.6	1.8	1.9	2.1	2.2
Commercial	22.4	24.8	22.1	21.3	18.9	18.6
Residential	26.7	27.8	26.0	24.8	25.5	25.2
Others	2.9	2.4	6.3	6.8	8.6	9.0

Final Energy Consumption

Final energy consumption per capita and GDP APEC

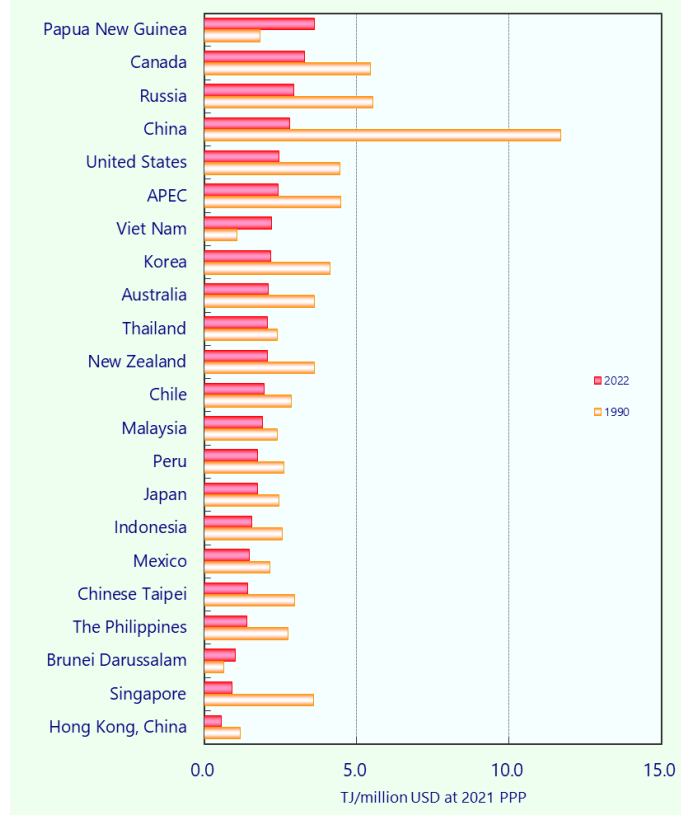


Final energy consumption per capita

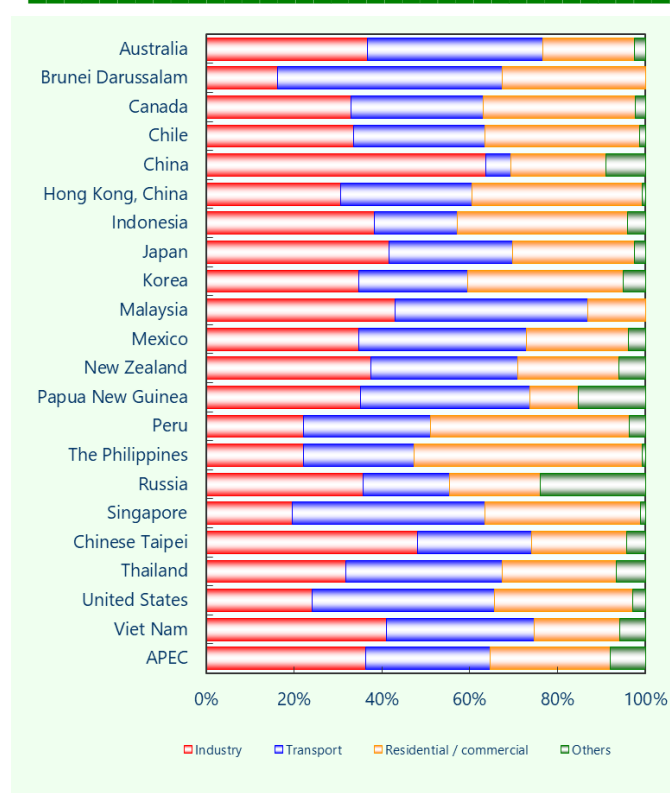


Final Energy Consumption

Final energy intensity

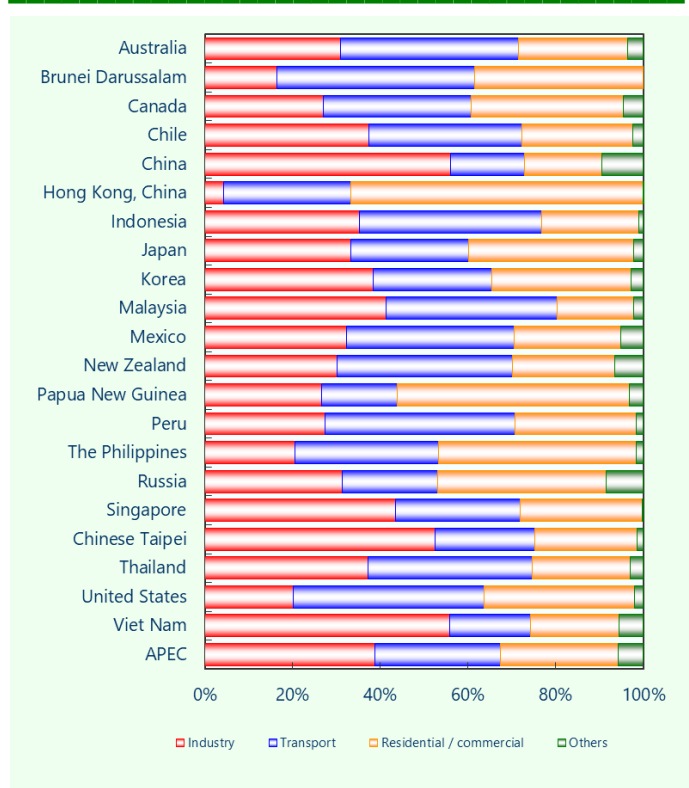


Final energy consumption by sector 1990

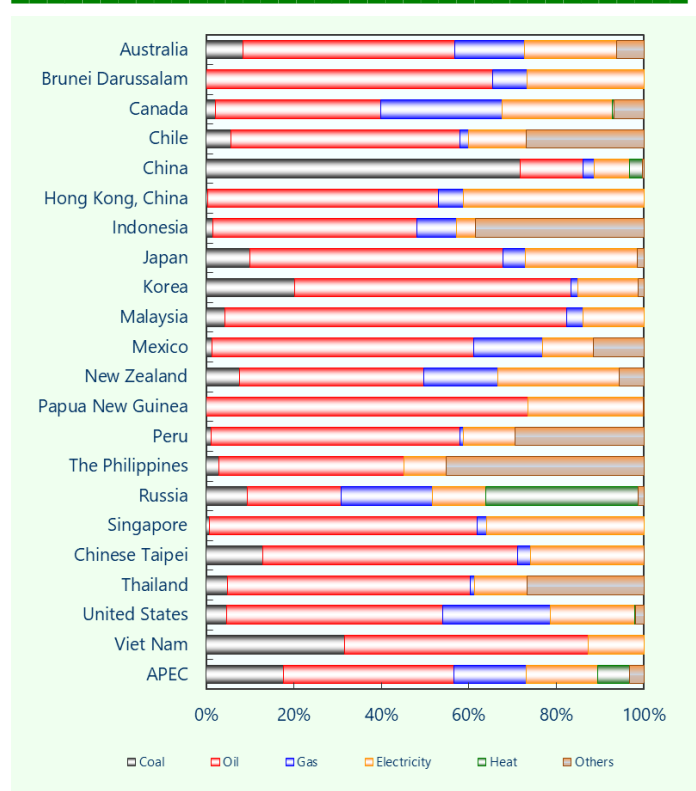


Final Energy Consumption

Final energy consumption by sector 2022

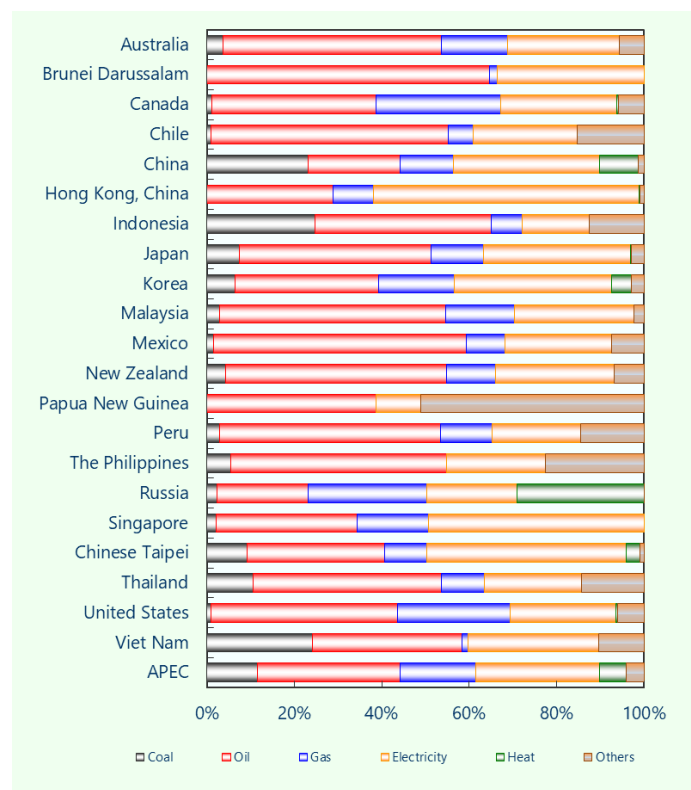


Final energy consumption by energy 1990



Final Energy Consumption

Final energy consumption by energy 2022



APEC, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	141 802		82 836	
2 Import	18 334	135	57 762	22 500
3 Export	- 27 034	- 867	- 31 049	- 26 715
4 International marine and aviation bunkers				- 6 867
5 Stock change	- 4 147	- 183	929	- 866
6 Total energy supply	128 956	- 915	110 477	- 11 949
7 Transfers			- 6 170	1 630
8 Main activity producers	- 79 067	- 2 222	- 7	- 1 460
9 Autoproducers	- 589	- 388	- 29	- 610
10 Gas processing	- 1 132	- 148		- 47
11 Petroleum refineries			- 105 286	107 535
12 Coal transformation	- 23 501	13 941		- 16
13 Other transformation	- 21		1 377	- 728
14 Loss & own-use	- 498	- 423	- 448	- 6 351
15 Discrepancy	- 4 474	- 308	1 419	643
16 Total final consumption	19 674	9 537	1 332	88 646
17 Total final energy consumption	16 131	8 019	30	68 476
18 Industry sector	13 583	7 897	29	6 604
19 Transport sector	24			52 186
20 Other sector	2 524	122	1	9 687
20.1 Residential & Commercial	1 666	119		5 607
20.2 Agriculture	392	1		2 281
20.3 Other	466	2		1 798
21 Non-energy	3 543	1 519	1 303	20 170

Australia, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	11 416		807	
2 Import	3	12	359	1 493
3 Export	- 9 671	- 17	- 593	- 159
4 International marine and aviation bunkers				- 99
5 Stock change	- 176		- 4	3
6 Total energy supply	1 572	- 5	570	1 237
7 Transfers			- 121	234
8 Main activity producers	- 1 395			- 11
9 Autoproducers				- 32
10 Gas processing				
11 Petroleum refineries			- 552	551
12 Coal transformation	- 117	59		
13 Other transformation				
14 Loss & own-use		- 34	- 1	- 180
15 Discrepancy	32		105	- 97
16 Total final consumption	93	20		1 702
17 Total final energy consumption	93	20		1 552
18 Industry sector	93	20		190
19 Transport sector				1 225
20 Other sector				137
20.1 Residential & Commercial				39
20.2 Agriculture				97
20.3 Other				1
21 Non-energy				150

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
87 566	9 157	19 667	9 965	13 870	2	364 864	31 754
19 983				293	486	119 491	292
- 22 710				- 257	- 484	- 109 116	- 257
202				6		- 6 873	- 6
85 041	9 157	19 667	9 965	13 903	4	364 305	31 787
						- 4 541	
- 31 546	- 9 053	- 19 637	- 9 080	- 4 203	78 917	- 77 358	- 21 572
- 1 710	- 104		- 664	- 903	5 311	314	- 1 419
- 370						- 1 698	
						2 249	
				- 5		- 9 581	
- 1 772				- 216	1	- 1 360	- 216
- 7 950				- 39	- 10 624	- 26 333	- 39
- 1 569		- 30		- 82	- 1 491	- 5 891	- 89
40 123			221	8 456	72 117	240 107	8 452
36 500			221	8 456	72 117	209 950	8 452
16 518			6	3 361	34 183	82 180	3 207
3 758				2 434	1 299	59 701	2 434
16 225			215	2 661	36 635	68 069	2 812
15 599			211	2 306	30 481	55 990	31 754
176			3	293	1 325	4 469	295
451			2	62	4 830	7 610	41
3 623						30 157	

Unit: PJ							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
5 453	59		251	201		18 186	507
137						2 004	
- 4 173						- 14 613	
						- 99	
25						- 152	
1 442	59		251	201		5 326	507
						113	
- 270	- 59		- 147	- 17	800	- 1 098	- 222
- 198			- 83	- 26	175	- 164	- 109
						- 1	
						- 57	
- 398					- 180	- 792	
- 56						- 16	
521			21	157	795	3 310	175
469			21	157	795	3 108	175
239				104	283	950	101
18				4	24	1 271	4
192			21	49	488	887	70
191			21	49	481	782	507
1					6	104	
						1	
52						202	

Brunei Darussalam, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production			203	
2 Import	28		307	25
3 Export			- 133	- 357
4 International marine and aviation bunkers				- 2
5 Stock change			- 1	
6 Total energy supply	28		376	- 333
7 Transfers			24	- 23
8 Main activity producers				
9 Autoproducers	- 7			
10 Gas processing				1
11 Petroleum refineries			- 412	378
12 Coal transformation				
13 Other transformation			11	
14 Loss & own-use	- 22			
15 Discrepancy			1	2
16 Total final consumption				23
17 Total final energy consumption				23
18 Industry sector				5
19 Transport sector				17
20 Other sector				1
20.1 Residential & Commercial				1
20.2 Agriculture				
20.3 Other				
21 Non-energy				

Canada, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	1 075		12 115	
2 Import	143	32	1 420	465
3 Export	- 917	- 7	- 8 768	- 960
4 International marine and aviation bunkers				- 167
5 Stock change	- 8	- 3	10	- 1
6 Total energy supply	293	23	4 777	- 663
7 Transfers			- 124	195
8 Main activity producers	- 246			- 51
9 Autoproducers		- 1		- 19
10 Gas processing				
11 Petroleum refineries			- 4 688	4 453
12 Coal transformation	- 75	34		- 14
13 Other transformation			153	
14 Loss & own-use				- 587
15 Discrepancy	56	2	- 118	297
16 Total final consumption	28	58		3 611
17 Total final energy consumption	25	57		2 725
18 Industry sector	25	57		213
19 Transport sector				2 164
20 Other sector	1			347
20.1 Residential & Commercial				115
20.2 Agriculture	1			233
20.3 Other				
21 Non-energy	3	1		886

Unit: PJ							Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	
360						563	
- 231						361	
						- 721	
						- 2	
						- 1	
130						201	
						1	
- 47					14	- 33	
- 5					6	- 6	
6						7	
						- 34	
- 19						- 8	
- 35					- 8	- 65	
- 29						- 26	
1					12	36	
1					12	36	
					1	6	
						17	
1					11	13	
1					11	13	

Unit: PJ							Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	
7 201	1 431	952	155	534		23 464	2 109
901				69	51	3 080	69
- 3 021				- 83	- 235	- 13 991	- 83
						- 167	
59				- 1		56	- 1
5 140	1 431	952	155	519	- 185	12 442	2 094
						71	
- 507	- 1 354	- 952	- 145	- 37	2 170	- 1 122	- 1 532
- 253	- 77		- 9	- 62	198	- 223	- 148
						- 235	
						- 40	
- 137						2	
- 1 813					- 258	- 2 658	
- 235				6	30	38	6
2 195			1	427	1 955	8 274	421
2 071			1	427	1 955	7 261	421
691				251	707	1 944	244
181				103	30	2 479	103
1 199			1	73	1 217	2 838	74
1 154				73	1 178	2 519	2 109
45					38	316	
			1		1	2	1
124						1 013	

Chile, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production			5	
2 Import	222		302	484
3 Export		- 1	- 18	- 43
4 International marine and aviation bunkers				- 30
5 Stock change	6	- 1	2	- 11
6 Total energy supply	228	- 2	291	399
7 Transfers			6	6
8 Main activity producers	- 208			- 18
9 Autoproducers				- 5
10 Gas processing				
11 Petroleum refineries			- 316	319
12 Coal transformation	- 14	8		
13 Other transformation			19	
14 Loss & own-use		- 4		- 27
15 Discrepancy	3		- 1	- 6
16 Total final consumption	9	2		668
17 Total final energy consumption	9	2		663
18 Industry sector	8	2		163
19 Transport sector				408
20 Other sector	1			91
20.1 Residential & Commercial				78
20.2 Agriculture				6
20.3 Other	1			7
21 Non-energy				6

China, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	93 886		8 571	
2 Import	5 237	15	21 279	2 991
3 Export	- 99	- 254	- 86	- 2 426
4 International marine and aviation bunkers				- 319
5 Stock change	- 3 542	- 175	- 434	- 806
6 Total energy supply	95 482	- 414	29 330	- 561
7 Transfers				- 5 228
8 Main activity producers	- 55 604	- 2 046	- 1	- 367
9 Autoproducers				
10 Gas processing	- 1 060	- 148		- 26
11 Petroleum refineries			- 29 178	33 805
12 Coal transformation	- 19 153	11 385		
13 Other transformation				
14 Loss & own-use	- 452	- 58	- 137	- 3 334
15 Discrepancy	- 4 088	- 153	11	75
16 Total final consumption	15 125	8 565	26	24 365
17 Total final energy consumption	11 611	7 109	26	17 137
18 Industry sector	9 248	7 023	26	2 909
19 Transport sector	21			10 423
20 Other sector	2 341	86		3 806
20.1 Residential & Commercial	1 503	84		1 414
20.2 Agriculture	388			866
20.3 Other	451	2		1 526
21 Non-energy	3 514	1 457		7 227

Unit: PJ							Total
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
46	73		105	347		577	526
193						1 202	
						- 62	
- 4				1		- 30	1
235	73		105	348		1 679	527
						13	
- 126	- 73		- 105	- 23	294	- 259	- 200
- 5	- 1		- 1	- 139	23	- 126	- 140
						4	
						- 6	
- 27						- 8	
- 16					- 26	- 74	
10					- 1	5	
71				186	290	1 226	186
71				186	290	1 220	186
39				83	169	464	83
					5	414	
31				104	115	342	104
30				103	103	314	526
1					11	18	
					1	10	
						6	

Unit: PJ							Total
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables
8 201	4 694	4 558	4 284	3 462		127 656	11 929
5 618					26	35 165	
- 217					- 72	- 3 156	
						- 319	
- 18						- 4 974	
13 584	4 694	4 558	4 284	3 462	- 47	154 373	11 929
						- 5 228	
- 2 634	- 4 694	- 4 558	- 4 284	- 2 283	41 699	- 34 772	- 10 742
						- 1 189	
45						4 627	
						- 7 768	
- 890				- 37	- 5 796	- 10 704	- 37
125				7	- 1 562	- 5 585	
10 230				1 149	34 294	93 753	1 149
9 766				1 149	34 294	81 091	1 149
5 742				362	21 218	46 527	362
1 248				215	735	12 641	215
2 777				573	12 341	21 923	573
2 537				354	8 559	14 451	11 929
8				193	634	2 090	193
231				25	3 147	5 382	25
464						12 662	

Hong Kong, China, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production				
2 Import	164			466
3 Export				- 3
4 International marine and aviation bunkers				- 354
5 Stock change	- 14			- 5
6 Total energy supply	150			103
7 Transfers				
8 Main activity producers	- 150			- 4
9 Autoproducers				
10 Gas processing				- 12
11 Petroleum refineries				
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				- 10
16 Total final consumption				76
17 Total final energy consumption				76
18 Industry sector				3
19 Transport sector				70
20 Other sector				3
20.1 Residential & Commercial				3
20.2 Agriculture				
20.3 Other				
21 Non-energy				

Indonesia, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	13 815		1 310	
2 Import	251		614	1 287
3 Export	- 9 351		- 91	- 178
4 International marine and aviation bunkers				
5 Stock change	- 377		95	- 8
6 Total energy supply	4 337		1 928	1 102
7 Transfers				
8 Main activity producers	- 2 597			
9 Autoproducers				
10 Gas processing				51
11 Petroleum refineries			- 1 891	1 678
12 Coal transformation				
13 Other transformation				- 8
14 Loss & own-use			- 38	
15 Discrepancy				11
16 Total final consumption	1 740			2 833
17 Total final energy consumption	1 740			2 833
18 Industry sector	1 740			166
19 Transport sector				2 195
20 Other sector				472
20.1 Residential & Commercial				421
20.2 Agriculture				
20.3 Other				51
21 Non-energy				

Unit: PJ							Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	
187			1	6	44	61	6
						862	
						- 3	
						- 354	
						- 19	
187			1	6	44	491	6
- 175				- 1	129	- 201	- 1
12			- 1	- 2	2	- 1	- 3
				- 1		- 1	- 1
					- 13	- 13	
					- 1	- 11	
24				2	161	265	2
24				2	161	265	2
1					7	12	
					3	73	
23				2	151	180	2
23				2	151	179	6

Unit: PJ							Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	
2 418	98		603	1 342		19 586	2 043
					3	2 155	
- 669				- 14		- 10 303	- 14
						- 290	
1 749	98		603	1 327	3	11 148	2 029
- 768	- 98		- 603	- 392	1 199	- 3 260	- 1 094
147						198	
						- 213	
						- 8	
- 349					- 137	- 524	
- 18				- 54	12	- 49	- 54
761				880	1 077	7 292	880
496				880	1 077	7 027	880
492				388	409	3 194	388
				338	1	2 534	338
4				155	667	1 298	155
4				141	667	1 234	2 043
				13		64	13
265						265	

Japan, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	16		14	
2 Import	4 547	25	5 618	1 733
3 Export		- 23		- 712
4 International marine and aviation bunkers				- 404
5 Stock change		- 4	86	- 20
6 Total energy supply	4 562	- 2	5 719	597
7 Transfers				- 2
8 Main activity producers	- 2 434	- 99	- 7	- 263
9 Autoproducers	- 140	- 84		- 147
10 Gas processing				- 97
11 Petroleum refineries			- 5 766	5 892
12 Coal transformation	- 1 478	794		- 16
13 Other transformation			166	- 174
14 Loss & own-use	- 16	- 100	- 1	- 257
15 Discrepancy	- 157	- 101	- 110	- 188
16 Total final consumption	337	409	2	5 346
17 Total final energy consumption	337	380		4 262
18 Industry sector	337	373		690
19 Transport sector				2 613
20 Other sector		6		959
20.1 Residential & Commercial		6		772
20.2 Agriculture				116
20.3 Other				71
21 Non-energy		29	2	1 084

Korea, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	15		52	
2 Import	2 847	8	5 866	1 768
3 Export			- 11	- 2 754
4 International marine and aviation bunkers				- 624
5 Stock change	- 11	- 2	- 48	21
6 Total energy supply	2 851	6	5 859	- 1 589
7 Transfers			380	- 335
8 Main activity producers	- 1 614	- 70		- 58
9 Autoproducers	- 140	- 108		- 55
10 Gas processing				- 18
11 Petroleum refineries			- 7 030	6 819
12 Coal transformation	- 789	466		- 733
13 Other transformation	- 21		788	- 733
14 Loss & own-use		- 123		- 226
15 Discrepancy	- 44	- 47	3	99
16 Total final consumption	243	124		3 904
17 Total final energy consumption	243	105		1 777
18 Industry sector	243	97		86
19 Transport sector				1 450
20 Other sector		7		241
20.1 Residential & Commercial		7		159
20.2 Agriculture				17
20.3 Other				64
21 Non-energy		20		2 126

Unit: PJ							Total	Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat			
75	278	612	485	594			2 074	1 099
3 474				116			15 513	116
							- 736	
							- 404	
- 82							- 19	
3 467	278	612	485	710			16 428	1 215
							- 2	
- 2 208	- 267	- 612	- 185	- 300	3 035		- 3 339	- 622
- 139	- 11		- 290	- 132	622		- 319	- 396
92							- 5	
							127	
				- 5			- 704	
					3		- 5	
- 28					- 363		- 765	
- 22				- 5	- 5		- 587	- 5
1 162			11	268	3 292		10 827	191
1 152			11	268	3 292		9 702	191
445				161	1 143		3 151	113
1				19	60		2 692	19
705			11	89	2 089		3 860	60
705			11	66	2 076		3 636	1 099
			1		9		126	
				23	3		98	
10							1 125	

Unit: PJ							Total	Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat			
	13	1 921	131	288	2		2 420	289
2 287							12 776	
							- 2 765	
							- 625	
- 57				2			- 95	2
2 230	13	1 921	131	289	2		11 711	290
							45	
- 1 145	- 13	- 1 921	- 111	- 84	2 180		- 2 835	- 195
- 43			- 7	- 53	274		- 131	- 23
							- 18	
							- 211	
- 23					- 1		- 323	
- 72							10	
					- 252		- 674	
16				2	14		12	- 2
962			13	149	2 190		7 585	70
934			13	149	2 190		5 410	70
329				93	1 143		1 991	13
39				29	13		1 531	29
566			13	28	1 033		1 888	28
566			12	27	967		1 739	289
			1		55		74	2
					11		76	
28							2 174	

Malaysia, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	90		1 044	
2 Import	894		498	671
3 Export			- 415	- 497
4 International marine and aviation bunkers				- 35
5 Stock change	6		12	6
6 Total energy supply	990		1 139	144
7 Transfers				
8 Main activity producers	- 925			- 17
9 Autoproducers				- 23
10 Gas processing				72
11 Petroleum refineries			- 1 133	1 036
12 Coal transformation				
13 Other transformation				
14 Loss & own-use			- 2	- 18
15 Discrepancy			- 4	25
16 Total final consumption	65			1 220
17 Total final energy consumption	65			1 142
18 Industry sector	65			81
19 Transport sector				956
20 Other sector				105
20.1 Residential & Commercial				56
20.2 Agriculture				15
20.3 Other				34
21 Non-energy				78

Mexico, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	129		4 157	
2 Import	222	32	31	2 058
3 Export			- 2 180	- 446
4 International marine and aviation bunkers				- 204
5 Stock change			- 2	3
6 Total energy supply	351	32	2 006	1 411
7 Transfers			- 124	145
8 Main activity producers	- 260	- 1		- 198
9 Autoproducers				- 50
10 Gas processing				- 25
11 Petroleum refineries			- 1 942	1 861
12 Coal transformation	- 36	11		- 2
13 Other transformation			3	- 2
14 Loss & own-use		- 13		- 176
15 Discrepancy	- 12	- 4	58	- 275
16 Total final consumption	43	26		2 691
17 Total final energy consumption	43	24		2 548
18 Industry sector	43	24		224
19 Transport sector				1 855
20 Other sector				469
20.1 Residential & Commercial				340
20.2 Agriculture				128
20.3 Other				
21 Non-energy			2	143

Unit: PJ						
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total
2 785	115		12	63		4 111
437						2 499
- 1 303				- 7	- 3	- 2 226
						- 35
				9		33
1 919	115		12	65	- 3	4 382
- 511	- 115		- 12	- 7	659	- 928
- 50				- 8	32	- 50
- 717						- 645
						- 97
- 68					- 55	- 143
					- 28	- 6
572				50	606	2 513
350				50	606	2 212
347					304	797
2				50	2	1 009
2					300	407
2					298	356
					2	17
						34
223						301

Unit: PJ						
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total
1 391	129	118	264	411		6 600
1 528					8	3 880
					- 9	- 2 635
						- 204
4						5
2 923	129	118	264	411	- 1	7 645
						21
- 1 160	- 126	- 118	- 162	- 25	977	- 1 074
- 292	- 3		- 84	- 80	261	- 247
10						- 15
						- 82
						- 24
- 569					- 204	- 961
- 524					48	- 709
389			18	307	1 080	4 554
381			18	307	1 080	4 401
347			1	62	637	1 339
1					6	1 862
33			17	244	437	1 200
33			17	244	324	959
					49	1 777
					64	64
8						153

New Zealand, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	63		39	
2 Import	15		35	258
3 Export	- 36		- 29	- 12
4 International marine and aviation bunkers				- 29
5 Stock change			5	
6 Total energy supply	42		51	217
7 Transfers			4	- 3
8 Main activity producers	- 7			
9 Autoproducers		- 7		
10 Gas processing				
11 Petroleum refineries			- 49	48
12 Coal transformation	- 16	11		
13 Other transformation				
14 Loss & own-use		- 2		- 2
15 Discrepancy	2		- 5	11
16 Total final consumption	20	2		271
17 Total final energy consumption	20	2		258
18 Industry sector	18	2		20
19 Transport sector				204
20 Other sector	2			34
20.1 Residential & Commercial	1			17
20.2 Agriculture	1			15
20.3 Other				2
21 Non-energy				13

Papua New Guinea, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production			50	
2 Import			41	66
3 Export			- 51	- 23
4 International marine and aviation bunkers				
5 Stock change				
6 Total energy supply			41	43
7 Transfers				- 1
8 Main activity producers				- 2
9 Autoproducers				- 26
10 Gas processing				7
11 Petroleum refineries			- 41	35
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							Total	Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat			
130	95		217	49			592	359
							308	
							- 77	
							- 29	
- 1							5	
130	95		217	49			799	359
							1	
- 36	- 95		- 207	- 2	155		- 191	- 303
- 2			- 2	- 20	7		- 24	- 21
							- 1	
							- 5	
					- 1		- 1	
- 4					- 18		- 27	
1					- 4		4	
88			8	27	139		554	35
57			8	27	139		510	35
43			4	21	47		155	25
					1		205	
14			3	6	91		150	10
13			3	6	80		120	359
1					9		27	
					2		4	
32							44	

Unit: PJ							Total	Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat			
483	3		3	76			616	83
							108	
- 446							- 520	
36	3		3	76			204	83
							- 1	
- 5	- 2				5		- 5	- 3
- 6	- 1		- 3		11		- 25	- 5
- 13							- 7	
							- 6	
				- 1			- 1	- 1
- 13					- 1		- 14	
				74	15		145	74
				74	15		145	74
				4	10		39	4
							25	
				70	4		82	70
				70	4		77	83
							5	

Peru, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	5		219	
2 Import	13	2	142	298
3 Export	- 2		- 35	- 96
4 International marine and aviation bunkers				- 30
5 Stock change	12	- 1	- 2	8
6 Total energy supply	29	2	324	179
7 Transfers			- 62	54
8 Main activity producers	- 1			- 7
9 Autoproducers	- 3			- 1
10 Gas processing				
11 Petroleum refineries			- 263	236
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				- 5
15 Discrepancy			1	18
16 Total final consumption	24	2		475
17 Total final energy consumption	24	2		467
18 Industry sector	24	2		61
19 Transport sector				352
20 Other sector				53
20.1 Residential & Commercial				49
20.2 Agriculture				2
20.3 Other				2
21 Non-energy				8

The Philippines, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	319		3	
2 Import	723		244	646
3 Export	- 157		- 3	- 16
4 International marine and aviation bunkers				- 55
5 Stock change	- 87		21	- 10
6 Total energy supply	799		266	565
7 Transfers				
8 Main activity producers	- 717			- 34
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 247	233
12 Coal transformation				
13 Other transformation				
14 Loss & own-use			- 13	
15 Discrepancy			- 6	2
16 Total final consumption	81			765
17 Total final energy consumption	78			715
18 Industry sector	78			76
19 Transport sector				494
20 Other sector				145
20.1 Residential & Commercial				139
20.2 Agriculture				3
20.3 Other				4
21 Non-energy	4			50

Unit: PJ							Total	Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat			
555	107		12	163			1 061	282
				18			473	18
- 192							- 326	
							- 30	
- 1				1			18	1
362	107		12	181			1 195	300
							- 9	
- 198	- 105		- 10	- 34	209		- 147	- 149
- 11	- 2			- 6	7		- 16	- 8
							- 27	
				- 8			- 8	- 8
- 45				- 1	- 27		- 77	- 1
109			2	132	188		931	134
109			2	132	188		923	134
58				15	110		271	15
31				15			399	15
19			2	101	77		253	103
19			2	101	71		242	282
					5		8	
					1		3	
							8	

Unit: PJ							Total	Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat			
109	36		386	449			1 303	871
				6			1 619	6
							- 176	
				3			- 55	3
109	36		386	458			2 618	880
- 106	- 36		- 386	- 22	401		- 900	- 444
							- 14	
				- 110			- 110	- 110
- 4					- 73		- 89	
				326	329		1 502	326
				326	329		1 448	326
				40	104		298	40
				22			516	22
				265	225		634	265
				265	215		618	871
					5		7	
					5		9	
							54	

Russia, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	7 734		21 226	
2 Import				38
3 Export	- 4 640	- 502	- 10 032	- 4 403
4 International marine and aviation bunkers				- 424
5 Stock change				- 43
6 Total energy supply	3 094	- 502	11 194	- 4 832
7 Transfers				
8 Main activity producers	- 1 770			- 23
9 Autoproducers		- 141	- 29	- 180
10 Gas processing				
11 Petroleum refineries			- 9 829	10 125
12 Coal transformation	- 1 065	770		
13 Other transformation				
14 Loss & own-use	- 7	- 1	- 248	- 150
15 Discrepancy		- 5		41
16 Total final consumption	252	120	1 088	4 982
17 Total final energy consumption	246	118	4	3 463
18 Industry sector	85	96	3	374
19 Transport sector	3			2 402
20 Other sector	159	22	1	688
20.1 Residential & Commercial	143	22		565
20.2 Agriculture	2			101
20.3 Other	14			22
21 Non-energy	6	1	1 084	1 519

Singapore, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production				
2 Import	17		2 081	3 539
3 Export			- 41	- 3 001
4 International marine and aviation bunkers				- 2 237
5 Stock change			- 14	- 23
6 Total energy supply	17		2 026	- 1 722
7 Transfers				
8 Main activity producers	- 9			- 10
9 Autoproducers				- 3
10 Gas processing				
11 Petroleum refineries			- 1 800	1 747
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				- 125
15 Discrepancy			- 226	526
16 Total final consumption	8			413
17 Total final energy consumption	8			130
18 Industry sector	8			29
19 Transport sector				96
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
21 304	711	2 481	36	37		53 528
228					10	276
- 5 738					- 97	- 25 411
						- 424
						- 43
15 794	711	2 481	36	37	- 87	27 926
- 7 534	- 706	- 2 451	- 36	- 3	6 410	- 6 114
	- 4			- 38	2 768	2 376
						- 6
						296
						- 295
- 1 159						- 1 159
- 598					- 895	- 1 899
- 286		- 30		4	40	- 236
6 217				1	8 236	20 896
4 509				1	8 236	16 577
1 369					3 219	5 146
935					339	3 678
2 205				1	4 678	7 754
1 929				1	3 670	6 329
57					209	371
219					799	1 054
1 708						4 318

Unit: PJ						
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total
			4	25		29
441				4		6 082
						- 3 042
						- 2 237
- 1						- 37
441			4	29		794
- 321			- 4	- 29	190	- 183
- 45					16	- 32
						- 53
					- 9	- 134
8					1	292
66					198	685
66					198	401
59					82	179
					10	106
7					105	116
7					105	116
					1	1
						284

Chinese Taipei, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production				
2 Import	1 562	6	1 791	514
3 Export		- 1	- 29	- 669
4 International marine and aviation bunkers				- 134
5 Stock change	- 19	1	7	3
6 Total energy supply	1 543	5	1 769	- 287
7 Transfers			26	- 12
8 Main activity producers	- 833			- 37
9 Autoproducers	- 266	- 33		- 10
10 Gas processing				
11 Petroleum refineries			- 1 799	1 886
12 Coal transformation	- 272	155		
13 Other transformation				
14 Loss & own-use		- 48		- 82
15 Discrepancy	- 52	- 1	6	- 5
16 Total final consumption	121	78	2	1 454
17 Total final energy consumption	119	69		651
18 Industry sector	119	69		65
19 Transport sector				489
20 Other sector				97
20.1 Residential & Commercial				79
20.2 Agriculture				3
20.3 Other				15
21 Non-energy	2	9	2	803

Thailand, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	143		290	
2 Import	566	1	1 996	134
3 Export	- 5		- 28	- 339
4 International marine and aviation bunkers				- 83
5 Stock change				
6 Total energy supply	704	1	2 257	- 288
7 Transfers				
8 Main activity producers	- 298			- 13
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 2 195	1 722
12 Coal transformation				
13 Other transformation			26	203
14 Loss & own-use			- 8	- 3
15 Discrepancy	- 52	1	135	18
16 Total final consumption	354	2	215	1 640
17 Total final energy consumption	354	2		1 454
18 Industry sector	354	2		164
19 Transport sector				1 097
20 Other sector				193
20.1 Residential & Commercial				103
20.2 Agriculture				90
20.3 Other				
21 Non-energy			215	185

Unit: PJ							Total	Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat			
3	21	259	52	64			400	108
1 007							4 881	
							- 700	
							- 134	
- 2							- 12	
1 008	21	259	52	64			4 435	108
							13	
- 787	- 21	- 259	- 22	- 2	979		- 982	- 43
- 7			- 30	- 44	148		- 242	- 54
							87	
							- 117	
- 2							- 2	
- 22					- 124		- 275	
9					3		- 40	
199				18	1 006		2 877	11
199				18	1 006		2 062	11
149				18	624		1 044	11
					6		495	
49					376		523	
49					365		493	108
					8		11	
					4		19	
							815	

Unit: PJ							Total	Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat			
979	24		30	967			2 433	1 021
601					128		3 425	
					- 7		- 380	
							- 83	
- 4							- 4	
1 576	24		30	967	120		5 391	1 021
- 913	- 24		- 30	- 429	689		- 1 018	- 483
							- 473	
							- 60	- 53
- 236				- 53			- 208	
- 137					60		- 148	- 1
46				1	1		3 780	485
336				484	749		3 379	485
336				484	749		1 371	265
291				265	295		1 224	81
45				81	1		785	139
				138	453		694	1 021
				138	452		91	
					1		401	

United States, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	12 072		32 330	
2 Import	137	2	14 699	3 051
3 Export	- 2 127	- 61	- 8 395	- 9 525
4 International marine and aviation bunkers				- 1 636
5 Stock change	- 9	1	1 200	- 2
6 Total energy supply	10 074	- 58	39 834	- 8 113
7 Transfers			- 6 161	6 584
8 Main activity producers	- 8 896	- 6		- 344
9 Autoproducers	- 34	- 14		- 62
10 Gas processing	- 72			
11 Petroleum refineries			- 35 453	34 101
12 Coal transformation	- 486	246		
13 Other transformation			211	
14 Loss & own-use		- 39		- 1 179
15 Discrepancy	- 161		1 569	97
16 Total final consumption	424	129		31 085
17 Total final energy consumption	424	129		25 567
18 Industry sector	410	129		905
19 Transport sector				23 029
20 Other sector	14			1 633
20.1 Residential & Commercial	14			1 150
20.2 Agriculture				483
20.3 Other				
21 Non-energy				5 518

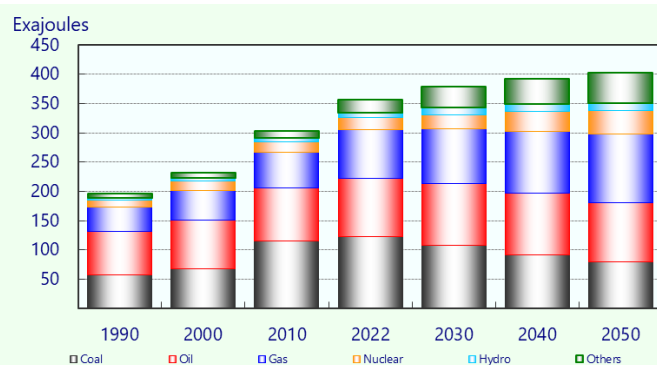
Viet Nam, 2022

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Production	1 023		400	
2 Import	743		437	515
3 Export	- 28		- 111	- 93
4 International marine and aviation bunkers				
5 Stock change	70		- 7	20
6 Total energy supply	1 808		720	442
7 Transfers			- 16	16
8 Main activity producers	- 1 101			- 1
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 703	610
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				
16 Total final consumption	707			1 067
17 Total final energy consumption	693			977
18 Industry sector	687			152
19 Transport sector				624
20 Other sector	6			202
20.1 Residential & Commercial	6			101
20.2 Agriculture				101
20.3 Other				
21 Non-energy	14			89

Unit: PJ							Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	
35 785	924	8 767	2 799	4 394		97 071	7 941
2 944				79	205	21 116	79
- 6 720				- 147	- 57	- 27 031	- 147
				- 6		- 1 641	- 6
283				- 10		1 463	- 10
32 292	924	8 767	2 799	4 311	148	90 979	7 857
						423	
- 11 886	- 919	- 8 767	- 2 499	- 458	15 759	- 18 016	- 3 798
- 655	- 4		- 154	- 293	762	- 454	- 380
47						- 25	
						- 1 352	
						- 240	
- 168						43	
- 2 891				- 1	- 2 018	- 6 129	- 1
- 597				- 36		872	- 36
16 142			146	3 522	14 651	66 100	3 642
15 469			146	3 522	14 651	59 909	3 642
5 815				1 281	3 222	11 762	1 266
1 257				1 558	60	25 903	1 558
8 398			146	683	11 369	22 243	818
8 336			146	604	10 326	20 577	7 941
62				79	263	887	79
					780	780	
673						6 191	

Unit: PJ							Total Renewables
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	
287	345		135	398		2 589	878
					12	1 708	
				- 5	- 3	- 241	- 5
						84	
287	345		135	393	8	4 139	873
- 209	- 345		- 135	- 54	964	- 882	- 535
						- 94	
				- 43		- 43	- 43
					- 105	- 105	
					- 12	- 12	
78				296	856	3 003	296
41				296	856	2 863	296
41				214	448	1 542	214
1				1	2	627	1
				81	406	694	81
				61	376	543	878
				19	19	140	19
					11	11	
37						141	

PES* outlook by energy (Reference)



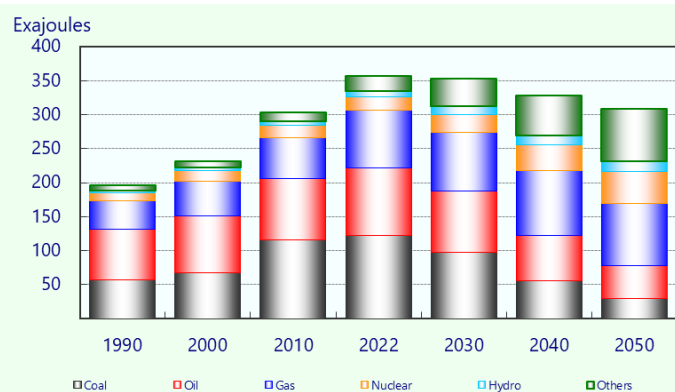
	Exajoules						
	1990	2000	2010	2022	2030	2040	2050
Coal	57.6	67.8	115.5	122.4	108.0	91.5	80.1
Oil	73.3	83.7	90.0	99.1	105.9	106.1	100.9
Gas	41.8	50.1	60.6	84.6	92.4	105.1	116.4
Nuclear	12.0	16.3	18.1	19.7	24.5	34.4	41.1
Hydro	3.9	4.5	6.4	9.0	12.0	12.4	12.5
Others	7.7	9.2	12.4	22.0	36.7	42.9	52.2
Total	196.3	231.6	303.0	356.8	379.5	392.4	403.2

	Share (%)						
	1990	2000	2010	2022	2030	2040	2050
Coal	29.4	29.3	38.1	34.3	28.5	23.3	19.9
Oil	37.3	36.2	29.7	27.8	27.9	27.0	25.0
Gas	21.3	21.6	20.0	23.7	24.3	26.8	28.9
Nuclear	6.1	7.1	6.0	5.5	6.5	8.8	10.2
Hydro	2.0	1.9	2.1	2.5	3.2	3.2	3.1
Others	3.9	4.0	4.1	6.2	9.7	10.9	12.9

Source: Asia Pacific Energy Research Centre, Sep 2022.

*PES: Primary energy supply

PES* outlook by energy (CN Scenario**)



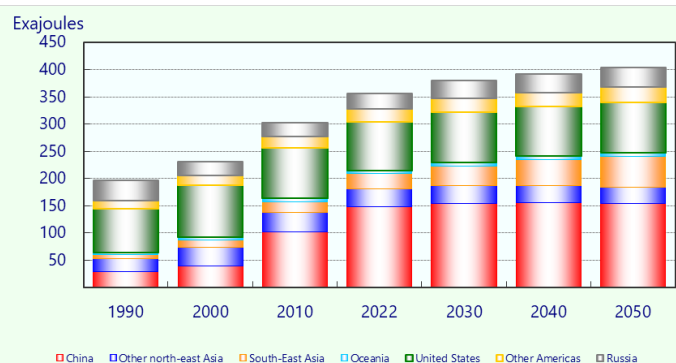
Exajoules							
	1990	2000	2010	2022	2030	2040	2050
Coal	57.6	67.8	115.5	122.4	97.1	56.2	30.0
Oil	73.3	83.7	90.0	99.1	90.3	65.7	47.6
Gas	41.8	50.1	60.6	84.6	86.3	96.4	91.5
Nuclear	12.0	16.3	18.1	19.7	26.6	37.3	47.2
Hydro	3.9	4.5	6.4	9.0	12.1	13.7	14.7
Others	7.7	9.2	12.4	22.0	40.8	58.8	77.8
Total	196.3	231.6	303.0	356.8	353.3	328.1	308.8

Share (%)							
	1990	2000	2010	2022	2030	2040	2050
Coal	29.4	29.3	38.1	34.3	27.5	17.1	9.7
Oil	37.3	36.2	29.7	27.8	25.6	20.0	15.4
Gas	21.3	21.6	20.0	23.7	24.4	29.4	29.6
Nuclear	6.1	7.1	6.0	5.5	7.5	11.4	15.3
Hydro	2.0	1.9	2.1	2.5	3.4	4.2	4.8
Others	3.9	4.0	4.1	6.2	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)



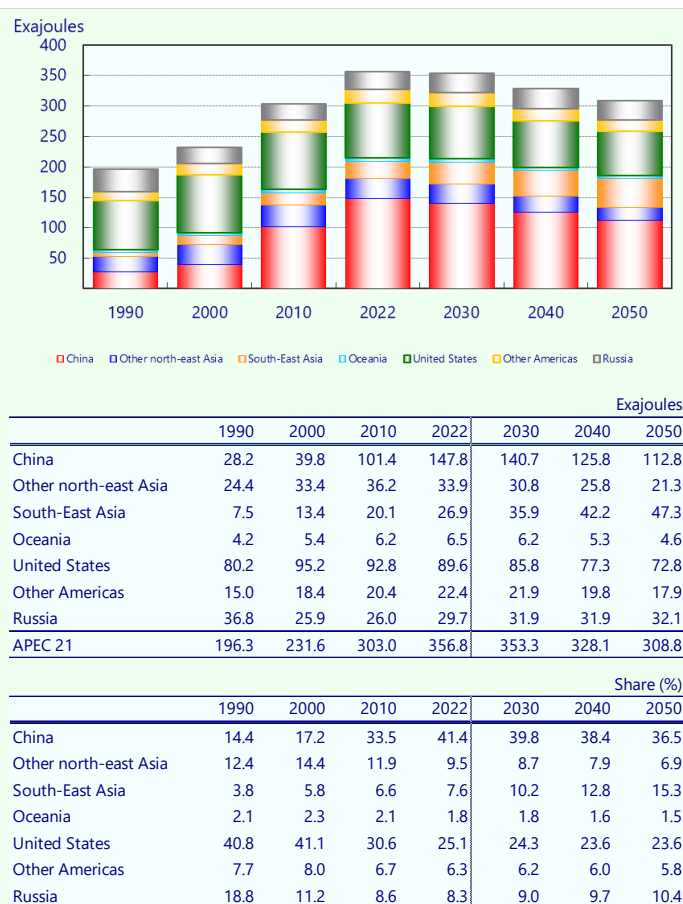
	Exajoules						
	1990	2000	2010	2022	2030	2040	2050
China	28.2	39.8	101.4	147.8	153.5	155.6	154.3
Other north-east Asia	24.4	33.4	36.2	33.9	33.1	31.2	29.2
South-East Asia	7.5	13.4	20.1	26.9	36.8	47.4	56.9
Oceania	4.2	5.4	6.2	6.5	6.7	6.5	6.5
United States	80.2	95.2	92.8	89.6	92.1	91.4	93.2
Other Americas	15.0	18.4	20.4	22.4	24.3	25.7	27.1
Russia	36.8	25.9	26.0	29.7	33.1	34.6	35.9
APEC 21	196.3	231.6	303.0	356.8	379.5	392.4	403.2

	Share (%)						
	1990	2000	2010	2022	2030	2040	2050
China	14.4	17.2	33.5	41.4	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	3.8	5.8	6.6	7.6	9.7	12.1	14.1
Oceania	2.1	2.3	2.1	1.8	1.8	1.7	1.6
United States	40.8	41.1	30.6	25.1	24.3	23.3	23.1
Other Americas	7.7	8.0	6.7	6.3	6.4	6.5	6.7
Russia	18.8	11.2	8.6	8.3	8.7	8.8	8.9

Source: Asia Pacific Energy Research Centre, Sep 2022.

*PES: Primary energy supply

PES* outlook by region (CN Scenario**)



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	2022	1990	2005	2022	1990	2005	2022
APEC	2 281	2 656	2 961	19 292	32 142	54 808	28 646	47 703	86 954
Other north-east Asia	192	206	207	4 197	5 854	7 277	5 513	7 955	10 213
Hong Kong, China	5.7	6.8	7.3	122	221	318	180	327	470
Japan	123	128	125	3 510	4 229	4 530	4 379	5 277	5 652
Korea	43	48	52	402	1 021	1 741	595	1 514	2 580
Chinese Taipei	20	23	23	164	383	688	359	837	1 509
South-East Asia	387	495	602	721	1 474	3 122	2 193	4 464	9 465
Brunei Darussalam	0.3	0.4	0.4	9.1	12.6	13.0	24.3	33.6	34.8
Indonesia	182	229	276	270	498	1 122	895	1 649	3 718
Malaysia	18	26	34	75	187	387	214	537	1 111
The Philippines	62	86	116	107	179	408	283	474	1 078
Singapore	3.0	4.3	5.6	71	178	383	138	348	747
Thailand	55	66	72	144	289	450	476	954	1 488
Viet Nam	67	83	99	45	131	359	162	468	1 289
Oceania	24	31	41	725	1 183	1 828	725	1 185	1 832
Australia	17	20	26	629	1 026	1 586	610	995	1 537
New Zealand	3.3	4.1	5.1	88	145	217	103	170	253
Papua New Guinea	3.9	6.5	10.1	7.4	12.3	25.0	12.3	20.5	41.8
Other Americas	145	182	220	1 675	2 599	3 548	2 833	4 431	6 096
Canada	28	32	39	878	1 322	1 761	1 104	1 663	2 215
Chile	13	16	20	72	165	279	149	342	578
Mexico	82	105	128	666	1 004	1 285	1 442	2 175	2 783
Peru	22	28	34	60	108	223	139	252	521
China	1 135	1 304	1 412	1 027	4 421	16 325	1 868	8 038	29 683
Russia	148	144	144	1 161	1 051	1 472	4 431	4 010	5 614
United States	250	296	333	9 785	15 559	21 236	11 082	17 621	24 051

Energy Indigenous Production			Net Import			Total Primary Energy Supply			
Petajoules			Petajoules			Petajoules			
1990	2005	2022	1990	2005	2022	1990	2005	2022	
196 972	244 235	364 864	6 081	30 941	10 375	196 258	270 090	364 305	
4 475	6 591	4 900	20 795	30 279	29 827	24 388	35 235	33 065	
3 106	3.4	6.3	474	981	858	392	590	491	HKC
922	4 258	2 074	15 754	18 157	14 777	18 293	21 754	16 428	JPN
447	1 796	2 420	2 872	7 279	10 011	3 748	8 724	11 711	ROK
	533	400	1 695	3 861	4 181	1 955	4 167	4 435	CT
10 810	19 685	30 613	-2 486	-1 594	760	7 502	16 962	28 673	
655	921	563	- 604	- 794	- 360	48	120	201	BD
6 317	9 844	19 586	-3 042	-3 779	-8 148	3 138	6 212	11 148	INA
1 948	3 953	4 111	-1 084	-1 190	274	857	2 772	4 382	MAS
685	860	1 303	468	742	1 443	1 110	1 589	2 618	PHL
2.9	16.5	29.1	1 027	2 129	3 040	483	1 014	794	SGP
958	2 227	2 433	757	2 040	3 045	1 640	4 204	5 391	THA
243	1 864	2 589	- 7	- 742	1 467	227	1 051	4 139	VN
7 276	11 814	19 394	-2 768	-6 060	-12 790	4 185	5 595	6 329	
6 595	11 102	18 186	-2 701	-6 228	-12 609	3 606	4 751	5 326	AUS
488	534	592	89	206	231	543	704	799	NZ
193	178	616	- 156	- 38	- 412	36	140	204	PNG
20 550	28 633	31 701	-5 142	-7 771	-8 381	15 040	20 622	22 961	
11 586	16 755	23 464	-2 484	-5 421	-10 911	8 857	11 293	12 442	CDA
332	391	577	294	858	1 139	587	1 188	1 679	CHL
8 187	11 032	6 600	-2 927	-3 333	1 244	5 179	7 561	7 645	MEX
446	454	1 061	- 25	125	147	418	580	1 195	PE
30 548	63 932	127 656	-1 358	5 754	32 010	28 172	70 155	154 373	PRC
54 145	45 332	53 528	-17 274	-20 487	-25 135	36 816	24 477	27 926	RUS
69 169	68 248	97 071	14 315	30 820	-5 915	80 155	97 044	90 979	USA

	Total Final Energy Consumption			Final Consumption of Electricity			Primary Energy Supply per capita	
	Petajoules			TWh			GJ / Person	
	1990	2005	2022	1990	2005	2022	1990	2005
APEC	127 529	160 398	209 950	5 744	9 503	16 554	86	102
Other north-east Asia	14 486	19 606	17 439	960	1 621	1 754	127	171
Hong Kong, China	214	282	265	24.5	40.1	44.7	69	87
Japan	10 758	12 659	9 702	765	1 025	907	148	170
Korea	2 451	4 687	5 410	94	358	542	87	181
Chinese Taipei	1 063	1 978	2 062	77	199	260	96	183
South-East Asia	5 039	10 426	17 366	128	440	1 063	19	34
Brunei Darussalam	15.8	27.5	35.9	1.2	2.6	3.3	185	326
Indonesia	2 282	4 262	7 027	28	107	299	17	27
Malaysia	514	1 512	2 212	20	81	168	49	107
The Philippines	780	941	1 448	21.2	45.2	91.3	18	18
Singapore	130	299	401	13.0	35.5	54.9	158	238
Thailand	1 143	2 523	3 379	38	122	208	30	64
Viet Nam	175	861	2 863	6.2	46	238	3	13
Oceania	2 599	3 410	3 763	159	230	263	173	182
Australia	2 207	2 815	3 108	129	189	221	211	235
New Zealand	370	482	510	29	38	39	163	170
Papua New Guinea	23	112	145	1.7	3.2	4.1	9	22
Other Americas	9 902	12 496	13 805	545	749	969	104	113
Canada	6 005	7 029	7 261	418	489	536	320	350
Chile	426	813	1 220	15.5	48.3	80.5	44	73
Mexico	3 108	4 190	4 401	100	190	300	63	72
Peru	363	464	923	11.8	22.7	52.1	19	21
China	21 842	40 135	81 091	491	1 992	7 552	25	54
Russia	24 487	15 436	16 577	827	739	947	249	171
United States	49 173	58 890	59 909	2 634	3 732	4 006	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			
		2005	2022	1990	2005	2022	1990	2005	2022	
123	6.9	5.7	4.2	4.5	3.4	2.4	56	60	71	
159	4.4	4.4	3.2	2.6	2.5	1.7	75	95	84	
67	2.2	1.8	1.0	1.2	0.9	0.6	37	41	36	HKC
131	4.2	4.1	2.9	2.5	2.4	1.7	87	99	78	JPN
227	6.3	5.8	4.5	4.1	3.1	2.1	57	97	105	ROK
191	5.5	5.0	2.9	3.0	2.4	1.4	52	87	89	CT
48	3.4	3.8	3.0	2.3	2.3	1.8	13	21	29	
447	2.0	3.6	5.8	0.6	0.8	1.0	60	75	80	BD
40	3.5	3.8	3.0	2.5	2.6	1.9	13	19	26	INA
129	4.0	5.2	3.9	2.4	2.8	2.0	29	58	65	MAS
23	3.9	3.4	2.4	2.8	2.0	1.3	13	11	13	PHL
141	3.5	2.9	1.1	0.9	0.9	0.5	43	70	71	SGP
75	3.4	4.4	3.6	2.4	2.6	2.3	21	38	47	THA
42	1.4	2.2	3.2	1.1	1.8	2.2	3	10	29	VN
153	5.8	4.7	3.5	3.6	2.9	2.1	107	111	91	
205	5.9	4.8	3.5	3.6	2.8	2.0	129	140	119	AUS
156	5.3	4.1	3.2	3.6	2.8	2.0	111	117	100	NZ
20	2.9	6.8	4.9	1.8	5.5	3.5	6	17	14	PNG
104	5.3	4.7	3.8	3.5	2.8	2.3	68	69	63	
320	8.0	6.8	5.6	5.4	4.2	3.3	217	218	186	CDA
86	3.9	3.5	2.9	2.9	2.4	2.1	32	50	62	CHL
60	3.6	3.5	2.7	2.2	1.9	1.6	38	40	35	MEX
35	3.0	2.3	2.3	2.6	1.8	1.8	16	16	27	PE
109	15.1	8.7	5.2	11.7	5.0	2.7	19	31	57	PRC
194	8.3	6.1	5.0	5.5	3.8	3.0	165	108	115	RUS
273	7.2	5.5	3.8	4.4	3.3	2.5	197	199	180	USA

	Energy Combustion Related CO ₂ Emission			CO ₂ Emission per Capita		
	Mt-CO ₂			t-CO ₂ / Person		
	1990	2005	2022	1990	2005	2022
APEC	12,556	16,718	20,989	5.50	6.30	7.09
Other north-east Asia	1,453	1,961	1,810	7.56	9.54	8.73
Hong Kong, China	33	38	29	5.79	5.50	3.93
Japan	1,079	1,218	973	8.74	9.54	7.78
Korea	232	457	549	5.41	9.49	10.63
Chinese Taipei	110	248	259	5.41	10.92	11.13
South-East Asia	362	860	1,637	0.94	1.74	2.72
Brunei Darussalam	3.47	6.81	11.59	13.26	18.58	25.80
Indonesia	130	328	703	0.71	1.43	2.55
Malaysia	57	143	230	3.23	5.51	6.78
The Philippines	38	68	136	0.61	0.79	1.17
Singapore	29	37	46	9.50	8.65	8.22
Thailand	88	201	250	1.59	3.05	3.49
Viet Nam	17	77	260	0.26	0.93	2.61
Oceania	276	392	380	11.38	12.72	9.21
Australia	252	355	344	14.75	17.60	13.23
New Zealand	22	32	29	6.62	7.77	5.61
Papua New Guinea	2.48	4.75	7.54	0.64	0.73	0.74
Other Americas	717	1,010	1,015	4.95	5.55	4.61
Canada	411	514	491	14.85	15.94	12.62
Chile	29	54	87	2.21	3.36	4.42
Mexico	257	412	380	3.14	3.91	2.98
Peru	20	29	57	0.89	1.03	1.68
China	2,630	5,265	10,298	2.32	4.04	7.29
Russia	2,264	1,341	1,241	15.30	9.34	8.6
United States	4,854	5,889	4,607	19.44	19.93	13.82

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			
	5	2022	1990	2005	2022	1990	2005	2022	
651	520	383	438	350	241	64	62	58	
346	335	249	264	247	177	60	56	55	
271	170	91	183	115	61	84	64	59	HKC
307	288	215	246	231	172	59	56	59	JPN
577	448	315	389	302	213	62	52	47	ROK
669	648	376	306	296	171	56	60	58	CT
502	584	524	165	193	173	48	51	57	
382	542	891	143	203	333	72	57	58	BD
481	659	627	145	199	189	41	53	63	INA
759	764	594	264	266	207	66	52	52	MAS
352	380	333	133	144	126	34	43	52	PHL
408	207	121	209	106	62	60	36	58	SGP
611	695	556	185	210	168	54	48	46	THA
387	592	724	108	165	202	77	74	63	VN
381	331	208	381	331	208	66	70	60	
400	346	217	412	357	224	70	75	65	AUS
251	221	132	214	189	113	41	46	36	NZ
337	388	302	201	232	180	69	34	37	PNG
428	388	286	253	228	166	48	49	44	
468	389	279	372	309	222	46	46	39	CDA
410	329	310	198	159	150	50	46	52	CHL
386	411	295	178	190	136	50	55	50	MEX
330	270	256	141	116	110	47	50	48	PE
2 560	1 191	631	1 408	655	347	93	75	67	PRC
1 949	1 276	843	511	334	221	61	55	44	RUS
496	379	217	438	334	192	61	61	51	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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