



Asia-Pacific
Economic Cooperation

APEC

ENERGY HANDBOOK

2016

ENERGY WORKING GROUP
FEBRUARY 2019

ENERGY STATISTICS AND TRAINING OFFICE
ASIA PACIFIC ENERGY RESEARCH CENTRE

Prepared by

Energy Statistics and Training Office
Asia Pacific Energy Research Centre (APEREC)
Inui bldg., Kachidoki, 1-13-1, Kachidoki,
Chuo-ku, Tokyo, 104-0054, Japan
Phone: (81) 3 5144 8551 Facsimile: (81) 3 5144 8555
E-mail: esto@aperc.iecej.or.jp
Website: <https://www.egeda.ewg.apec.org/>

For

Asia-Pacific Economic Cooperation Secretariat
35 Heng Mui Keng Terrace
Singapore 119616
Phone: (65) 6891 9600 Facsimile: (65) 6891 9690
E-mail: info@apec.org
Website: www.apec.org

Copyright (c) 2019 APEC Secretariat
APEC#219-RE-03.1 ISSN 0219-7634

Preface

The APEC Energy Handbook 2016 is a handy, pocket-sized summary of key energy data and a supplement to APEC Energy Statistics 2016, which was released in February 2019.

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 2035 taken from the APEC Energy Supply and Demand Outlook 2016 published by the Asia Pacific Energy Research Centre in May 2016. 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:

Energy Statistics and Training Office

Asia Pacific Energy Research Centre

Address: 13-1, Kachidoki 1, Chuo-ku, Tokyo 104-0054, Japan

Telephone: +81 3 5144 8551; Facsimile: +81 3 5144 8555

Email: esto@aperc.iecej.or.jp

Website: <https://www.egeda.ewg.apec.org/>

Table of Contents

Primary Energy Supply 2

Transformation 24

Final Energy Consumption 30

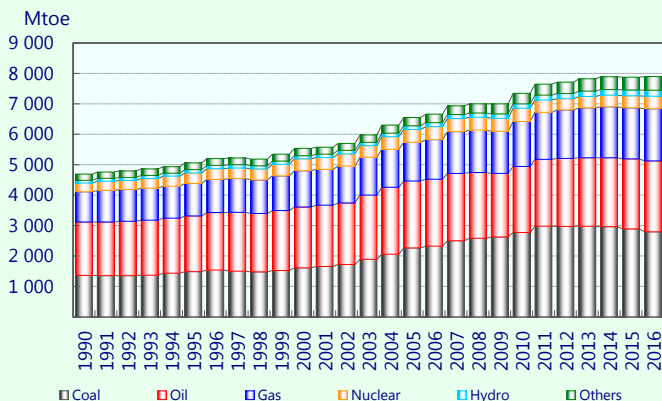
Energy Balances 54

Energy Outlook..... 76

Energy Indicators 78

Glossary 84

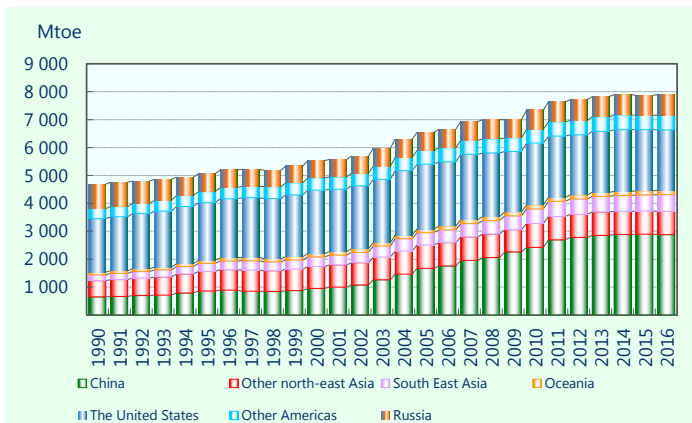
Total primary energy supply by energy APEC



	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	1 361.1	1 484.5	1 609.0	2 266.4	2 771.7	2 796.7
Oil	1 756.6	1 829.6	2 000.8	2 200.4	2 167.4	2 327.6
Gas	994.2	1 070.4	1 190.3	1 269.0	1 475.0	1 714.3
Nuclear	284.2	345.1	389.5	416.1	433.5	409.6
Hydro	92.3	107.3	107.4	125.0	153.4	200.2
Others	203.5	221.9	239.4	274.0	342.3	443.5
Total	4 691.9	5 058.8	5 536.5	6 550.9	7 343.2	7 891.8

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	29.0	29.3	29.1	34.6	37.7	35.4
Oil	37.4	36.2	36.1	33.6	29.5	29.5
Gas	21.2	21.2	21.5	19.4	20.1	21.7
Nuclear	6.1	6.8	7.0	6.4	5.9	5.2
Hydro	2.0	2.1	1.9	1.9	2.1	2.5
Others	4.3	4.4	4.3	4.2	4.7	5.6

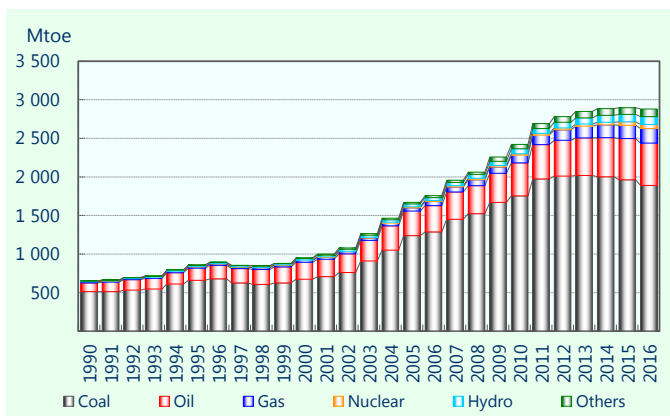
Total primary energy supply by region APEC



	Mtoe					
	1990	1995	2000	2005	2010	2016
Other north-east Asia	580.8	706.6	791.0	837.0	859.5	832.1
South East Asia	204.0	286.5	338.6	444.5	520.5	599.6
Oceania	100.0	108.5	121.3	132.1	147.7	153.9
Other Americas	358.9	395.3	442.0	495.7	490.0	527.0
China	654.0	858.0	951.2	1 670.9	2 419.7	2 880.2
Russia	879.2	636.6	619.3	651.7	689.0	732.4
United States	1 915.1	2 067.3	2 273.3	2 318.9	2 216.9	2 166.6
Total	4 691.9	5 058.8	5 536.5	6 550.9	7 343.2	7 891.8

	Share (%)					
	1990	1995	2000	2005	2010	2016
Other north-east Asia	12.4	14.0	14.3	12.8	11.7	10.5
South East Asia	4.3	5.7	6.1	6.8	7.1	7.6
Oceania	2.1	2.1	2.2	2.0	2.0	2.0
Other Americas	7.6	7.8	8.0	7.6	6.7	6.7
China	13.9	17.0	17.2	25.5	33.0	36.5
Russia	18.7	12.6	11.2	9.9	9.4	9.3
United States	40.8	40.9	41.1	35.4	30.2	27.5

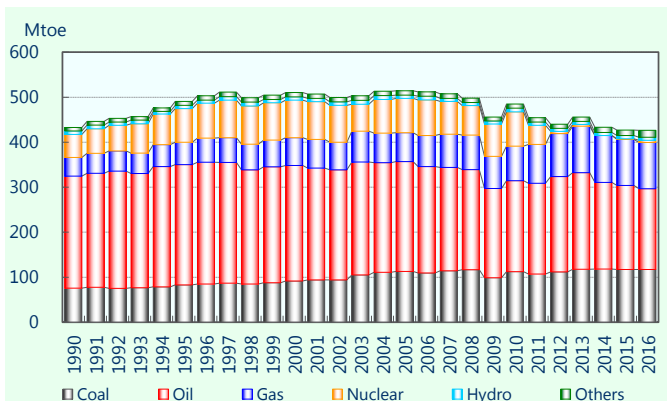
Total primary energy supply by energy China



	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	512.2	659.2	672.7	1 239.7	1 753.1	1 890.2
Oil	114.4	158.5	221.0	317.8	428.4	548.0
Gas	14.2	16.7	22.4	43.2	100.6	186.9
Nuclear	-	3.3	4.4	13.8	19.3	55.0
Hydro	10.9	16.4	19.1	34.1	62.1	100.0
Others	2.3	3.8	11.6	22.3	56.3	100.1
Total	654.0	858.0	951.2	1 670.9	2 419.7	2 880.2

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	78.3	76.8	70.7	74.2	72.5	65.6
Oil	17.5	18.5	23.2	19.0	17.7	19.0
Gas	2.2	1.9	2.4	2.6	4.2	6.5
Nuclear	-	0.4	0.5	0.8	0.8	1.9
Hydro	1.7	1.9	2.0	2.0	2.6	3.5
Others	0.3	0.4	1.2	1.3	2.3	3.5

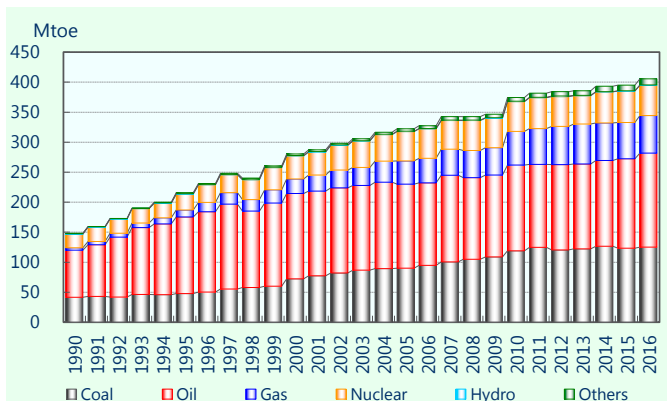
Total primary energy supply by energy Japan



	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	75.7	82.8	91.8	112.9	112.5	117.1
Oil	249.1	267.4	256.5	244.3	201.8	179.8
Gas	41.4	49.5	61.8	64.1	77.1	102.8
Nuclear	51.0	75.0	83.3	76.4	76.2	4.7
Hydro	7.8	7.1	7.5	7.0	7.8	6.9
Others	7.5	8.8	9.6	9.8	9.6	15.3
Total	432.6	490.7	510.5	514.4	485.0	426.4

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	17.5	16.9	18.0	21.9	23.2	27.4
Oil	57.6	54.5	50.2	47.5	41.6	42.2
Gas	9.6	10.1	12.1	12.5	15.9	24.1
Nuclear	11.8	15.3	16.3	14.8	15.7	1.1
Hydro	1.8	1.5	1.5	1.4	1.6	1.6
Others	1.7	1.8	1.9	1.9	2.0	3.6

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

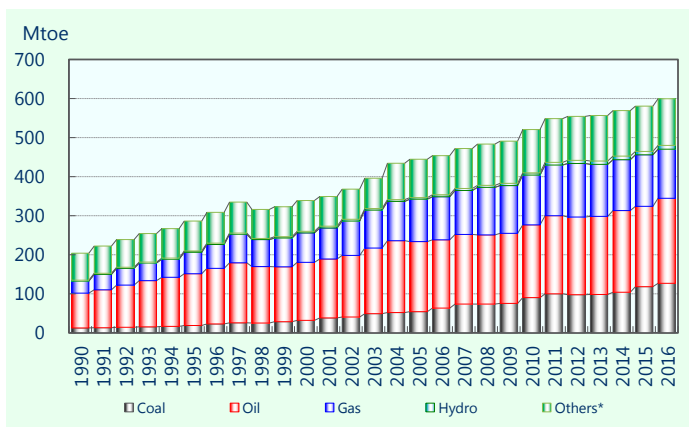


	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	41.8	47.6	72.2	90.1	118.9	125.4
Oil	78.3	127.8	142.3	139.9	143.2	156.7
Gas	4.1	11.5	24.3	38.9	55.9	62.4
Nuclear	22.3	26.7	38.4	48.7	49.6	50.4
Hydro	1.1	0.7	0.7	0.7	0.7	0.8
Others	0.6	1.6	2.5	4.3	6.3	10.1
Total	148.2	215.8	280.5	322.5	374.5	405.7

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	28.2	22.1	25.8	27.9	31.7	30.9
Oil	52.8	59.2	50.7	43.4	38.2	38.6
Gas	2.8	5.3	8.7	12.1	14.9	15.4
Nuclear	15.1	12.4	13.7	15.1	13.2	12.4
Hydro	0.7	0.3	0.3	0.2	0.2	0.2
Others	0.4	0.7	0.9	1.3	1.7	2.5

*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

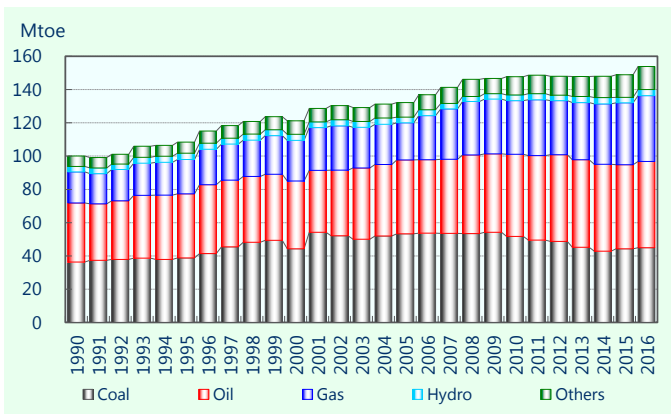


	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	12.8	19.1	32.1	54.2	90.3	127.0
Oil	89.2	132.4	148.6	179.5	186.5	217.3
Gas	30.8	54.7	75.5	108.6	127.2	125.7
Nuclear	-	-	-	-	-	-
Hydro	2.2	3.3	3.9	4.2	5.5	9.8
Others	69.0	77.0	78.4	98.1	110.9	119.8
Total	204.0	286.5	338.6	444.5	520.5	599.6

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	6.3	6.7	9.5	12.2	17.4	21.2
Oil	43.7	46.2	43.9	40.4	35.8	36.2
Gas	15.1	19.1	22.3	24.4	24.4	21.0
Nuclear	-	-	-	-	-	-
Hydro	1.1	1.1	1.1	0.9	1.1	1.6
Others	33.8	26.9	23.2	22.1	21.3	20.0

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

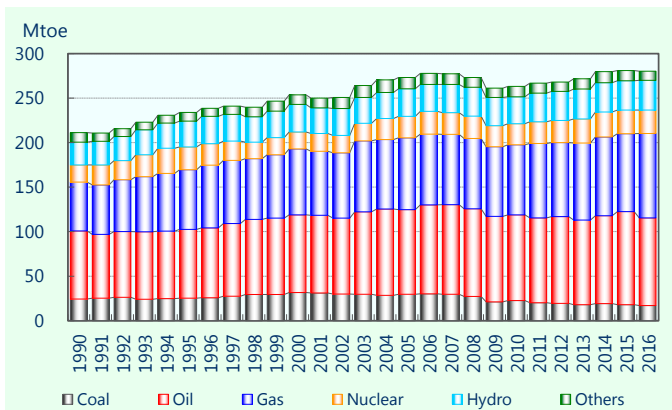
Total primary energy supply by energy Oceania



	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	36.3	38.8	44.2	53.2	51.8	44.9
Oil	35.5	38.4	40.8	44.5	49.3	51.9
Gas	18.7	20.6	24.4	22.3	32.3	39.5
Nuclear	-	-	-	-	-	-
Hydro	3.3	3.8	3.6	3.4	3.3	3.6
Others	6.3	6.7	8.2	8.7	11.0	13.9
Total	100.0	108.5	121.3	132.1	147.7	153.9

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	36.3	35.8	36.5	40.3	35.1	29.2
Oil	35.5	35.4	33.6	33.7	33.4	33.7
Gas	18.7	19.0	20.2	16.9	21.9	25.7
Nuclear	-	-	-	-	-	-
Hydro	3.3	3.5	3.0	2.6	2.3	2.3
Others	6.3	6.2	6.8	6.6	7.4	9.1

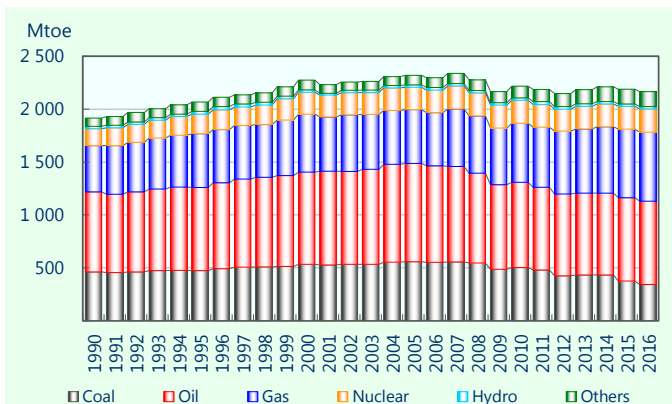
Total primary energy supply by energy Canada



	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	24.3	25.3	31.7	29.7	22.5	17.0
Oil	76.5	77.2	87.1	95.0	96.3	98.5
Gas	54.7	67.1	74.2	80.7	78.7	94.8
Nuclear	19.4	25.6	19.0	24.0	23.6	26.4
Hydro	25.5	28.9	30.8	31.1	30.2	33.3
Others	10.8	9.8	10.8	12.5	11.8	10.2
Total	211.3	233.8	253.6	273.0	263.1	280.1

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	11.5	10.8	12.5	10.9	8.5	6.1
Oil	36.2	33.0	34.3	34.8	36.6	35.2
Gas	25.9	28.7	29.3	29.6	29.9	33.8
Nuclear	9.2	10.9	7.5	8.8	9.0	9.4
Hydro	12.1	12.4	12.2	11.4	11.5	11.9
Others	5.1	4.2	4.3	4.6	4.5	3.6

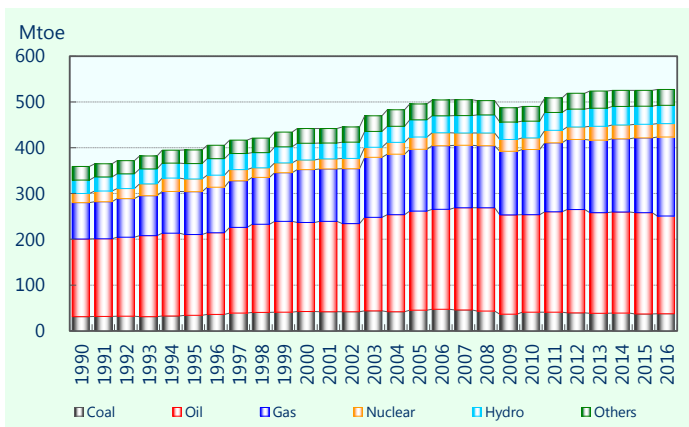
Total primary energy supply by energy United States



	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	460.3	474.1	533.6	558.4	502.6	341.6
Oil	756.8	785.6	871.1	929.2	806.5	787.3
Gas	438.2	507.3	547.6	507.2	556.1	652.9
Nuclear	159.4	186.0	207.9	211.2	218.6	218.8
Hydro	23.5	27.0	21.8	23.4	22.6	23.2
Others	76.8	87.4	91.3	89.5	110.5	142.8
Total	1,915.1	2,067.3	2,273.3	2,318.9	2,216.9	2,166.6

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	24.0	22.9	23.5	24.1	22.7	15.8
Oil	39.5	38.0	38.3	40.1	36.4	36.3
Gas	22.9	24.5	24.1	21.9	25.1	30.1
Nuclear	8.3	9.0	9.1	9.1	9.9	10.1
Hydro	1.2	1.3	1.0	1.0	1.0	1.1
Others	4.0	4.2	4.0	3.9	5.0	6.6

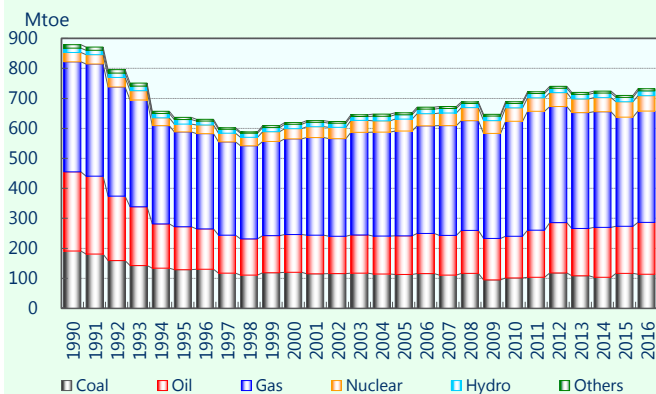
Total primary energy supply by energy Other Americas



	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	31.0	33.8	42.3	45.4	41.0	37.3
Oil	169.6	176.6	194.5	216.0	212.6	213.4
Gas	79.4	93.5	115.4	135.1	142.4	172.8
Nuclear	20.2	27.8	21.1	26.8	25.2	29.1
Hydro	29.2	33.9	36.7	37.3	37.0	40.0
Others	29.5	29.7	32.1	35.0	31.8	34.4
Total	358.9	395.3	442.0	495.7	490.0	527.0

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	8.6	8.5	9.6	9.2	8.4	7.1
Oil	47.3	44.7	44.0	43.6	43.4	40.5
Gas	22.1	23.6	26.1	27.2	29.1	32.8
Nuclear	5.6	7.0	4.8	5.4	5.1	5.5
Hydro	8.1	8.6	8.3	7.5	7.6	7.6
Others	8.2	7.5	7.3	7.1	6.5	6.5

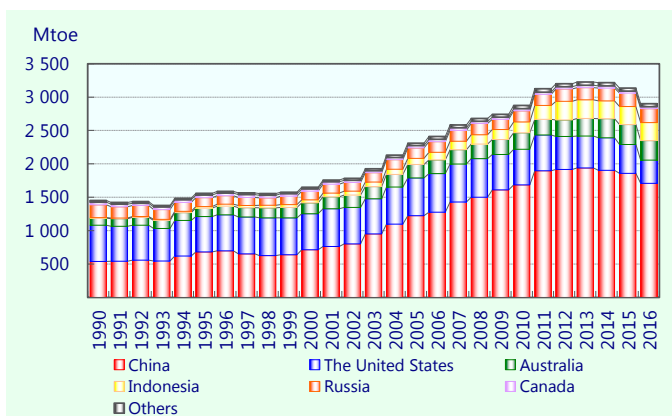
Total primary energy supply by energy Russia



	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	191.1	129.2	120.0	112.6	101.4	113.3
Oil	263.8	142.7	126.1	129.2	139.1	173.3
Gas	367.3	316.5	318.9	349.7	383.5	371.3
Nuclear	31.3	26.2	34.4	39.2	44.8	51.6
Hydro	14.3	15.1	14.1	14.8	14.3	15.9
Others	11.5	6.9	5.7	6.2	5.9	7.0
Total	879.2	636.6	619.3	651.7	689.0	732.4

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	21.7	20.3	19.4	17.3	14.7	15.5
Oil	30.0	22.4	20.4	19.8	20.2	23.7
Gas	41.8	49.7	51.5	53.7	55.7	50.7
Nuclear	3.6	4.1	5.6	6.0	6.5	7.0
Hydro	1.6	2.4	2.3	2.3	2.1	2.2
Others	1.3	1.1	0.9	1.0	0.9	1.0

Indigenous production of coal* APEC

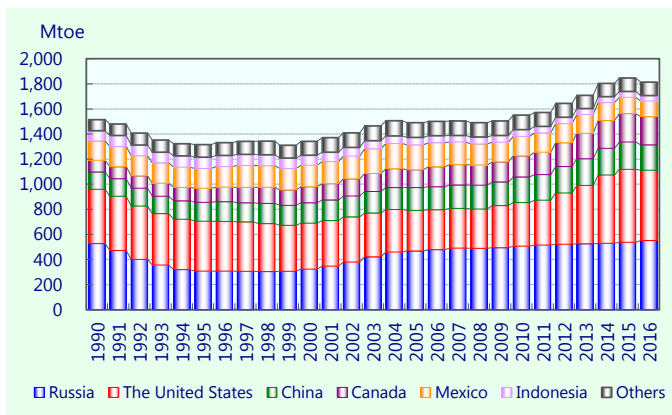


	Mtoe					
	1990	1995	2000	2005	2010	2016
China	540.0	680.4	715.8	1 224.3	1 686.5	1 708.4
United States	542.3	529.8	536.9	565.3	531.8	348.5
Australia	106.1	127.8	164.6	201.6	246.6	292.0
Indonesia	6.3	24.6	45.3	89.8	161.8	268.2
Russia	192.4	130.7	128.5	157.4	166.4	209.2
Canada	37.9	40.8	34.4	34.6	33.9	30.0
Others	27.4	24.7	26.2	38.0	47.5	44.6
Total	1 452.4	1 558.8	1 651.6	2 311.0	2 874.5	2 901.0

	Share (%)					
	1990	1995	2000	2005	2010	2016
China	37.2	43.6	43.3	53.0	58.7	58.9
United States	37.3	34.0	32.5	24.5	18.5	12.0
Australia	7.3	8.2	10.0	8.7	8.6	10.1
Russia	13.2	8.4	7.8	6.8	5.8	7.2
Indonesia	0.4	1.6	2.7	3.9	5.6	9.2
Canada	2.6	2.6	2.1	1.5	1.2	1.0
Others	1.9	1.6	1.6	1.6	1.7	1.5

*Coal: hard coal, anthracite and lignite

Indigenous production of crude oil* APEC

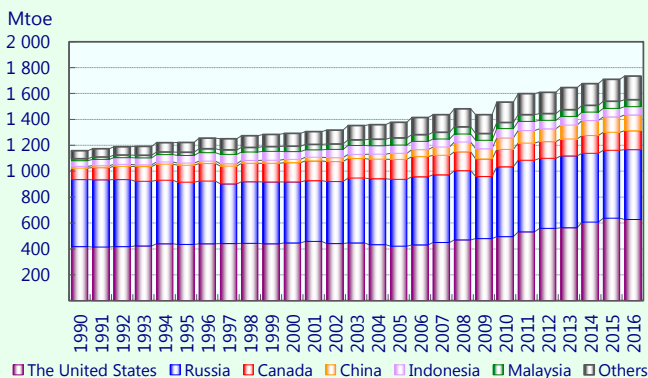


	Mtoe					
	1990	1995	2000	2005	2010	2016
Russia	526.3	306.6	323.3	468.7	506.5	550.4
United States	432.5	397.9	365.6	322.5	347.6	560.1
China	138.4	150.0	163.0	181.4	203.8	203.7
Canada	94.1	113.5	128.4	142.9	167.2	224.0
Mexico	153.3	157.6	171.2	197.5	155.3	124.7
Indonesia	80.9	89.1	79.0	58.8	54.1	44.0
Others	88.4	100.7	111.8	118.7	117.0	107.1
Total	1 513.9	1 315.4	1 342.3	1 490.6	1 551.4	1 814.0

	Share (%)					
	1990	1995	2000	2005	2010	2016
Russia	34.8	23.3	24.1	31.4	32.7	30.3
United States	28.6	30.2	27.2	21.6	22.4	30.9
China	9.1	11.4	12.1	12.2	13.1	11.2
Canada	6.2	8.6	9.6	9.6	10.8	12.3
Mexico	10.1	12.0	12.8	13.3	10.0	6.9
Indonesia	5.3	6.8	5.9	3.9	3.5	2.4
Others	5.8	7.7	8.3	8.0	7.5	5.9

*Crude oil includes NGL and condensates

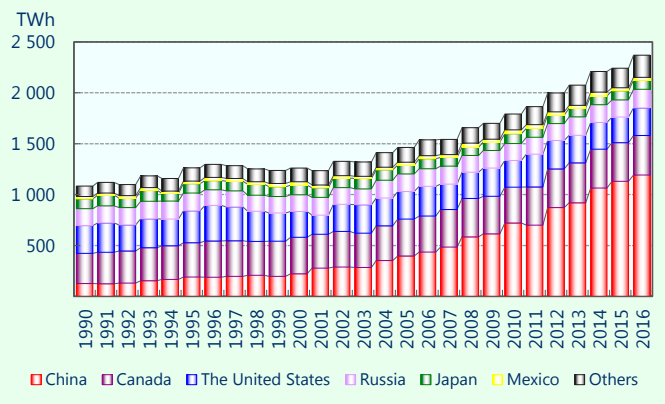
Indigenous production of natural gas APEC



	Mtoe					
	1990	1995	2000	2005	2010	2016
United States	418.1	434.5	446.8	421.6	494.8	627.3
Russia	516.7	480.4	470.6	515.8	540.2	538.4
Canada	88.6	130.2	148.3	154.1	132.4	146.0
China	14.2	16.7	25.3	45.9	89.2	123.5
Indonesia	43.6	60.2	59.7	64.9	73.2	63.4
Malaysia	15.4	24.5	42.3	55.0	46.6	52.4
Others	61.6	76.1	99.2	120.3	157.2	182.7
Total	1 158.1	1 222.5	1 292.3	1 377.7	1 533.6	1 733.8

	Share (%)					
	1990	1995	2000	2005	2010	2016
United States	36.1	35.5	34.6	30.6	32.3	36.2
Russia	44.6	39.3	36.4	37.4	35.2	31.1
Canada	7.6	10.7	11.5	11.2	8.6	8.4
China	1.2	1.4	2.0	3.3	5.8	7.1
Indonesia	3.8	4.9	4.6	4.7	4.8	3.7
Malaysia	1.3	2.0	3.3	4.0	3.0	3.0
Others	5.3	6.2	7.7	8.7	10.2	10.5

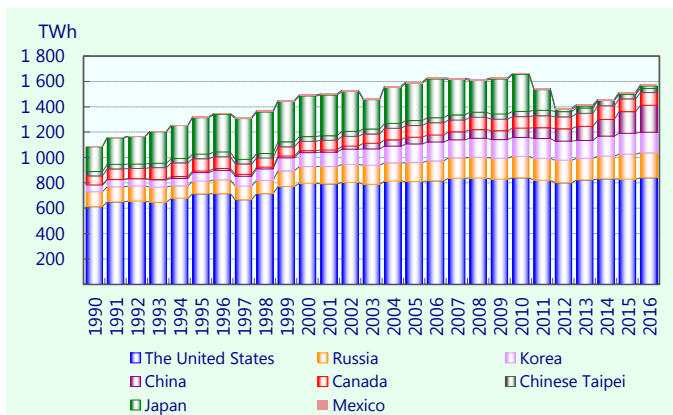
Indigenous production of hydro power APEC



	TWh					
	1990	1995	2000	2005	2010	2016
China	126.7	190.6	222.4	397.0	722.2	1 193.4
Canada	296.8	336.0	358.6	362.0	351.5	387.1
United States	273.2	314.1	253.2	272.4	262.3	269.7
Russia	165.9	175.4	164.1	172.7	166.5	184.6
Japan	95.6	90.0	94.2	87.1	95.3	86.5
Mexico	23.5	27.5	33.1	27.7	37.1	30.7
Others	98.5	125.6	135.0	144.0	156.4	216.3
Total	1 080.3	1 259.3	1 260.7	1 463.0	1 791.2	2 368.3

	Share (%)					
	1990	1995	2000	2005	2010	2016
China	11.7	15.1	17.6	27.1	40.3	50.4
Canada	27.5	26.7	28.4	24.7	19.6	16.3
United States	25.3	24.9	20.1	18.6	14.6	11.4
Russia	15.4	13.9	13.0	11.8	9.3	7.8
Japan	8.9	7.2	7.5	6.0	5.3	3.7
Mexico	2.2	2.2	2.6	1.9	2.1	1.3
Others	9.1	10.0	10.7	9.8	8.7	9.1

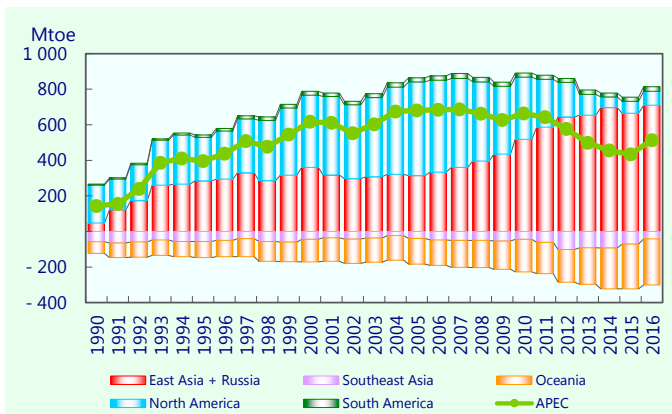
Indigenous production of nuclear power APEC



	TWh					
	1990	1995	2000	2005	2010	2016
United States	611.6	713.8	797.7	810.7	838.9	839.9
China	.0	12.8	16.7	53.1	73.9	213.3
Russia	118.3	99.5	130.7	149.4	170.4	196.6
Korea	52.9	67.0	109.0	146.8	148.6	162.0
Canada	73.0	97.8	72.8	92.0	90.7	101.1
Chinese Taipei	32.9	35.3	38.5	40.0	41.6	31.7
Japan	195.8	287.9	319.8	293.0	292.4	18.2
Mexico	2.9	8.4	8.2	10.8	5.9	10.6
Total	1 087.3	1 322.7	1 493.4	1 595.9	1 662.3	1 573.4

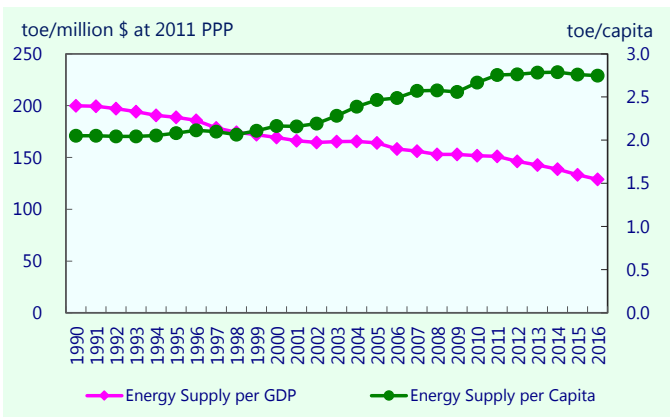
	Share (%)					
	1990	1995	2000	2005	2010	2016
United States	56.2	54.0	53.4	50.8	50.5	53.4
China	-	1.0	1.1	3.3	4.4	13.6
Russia	10.9	7.5	8.8	9.4	10.3	12.5
Korea	4.9	5.1	7.3	9.2	8.9	10.3
Canada	6.7	7.4	4.9	5.8	5.5	6.4
Chinese Taipei	3.0	2.7	2.6	2.5	2.5	2.0
Japan	18.0	21.8	21.4	18.4	17.6	1.2
Mexico	0.3	0.6	0.6	0.7	0.4	0.7

Net import by region APEC



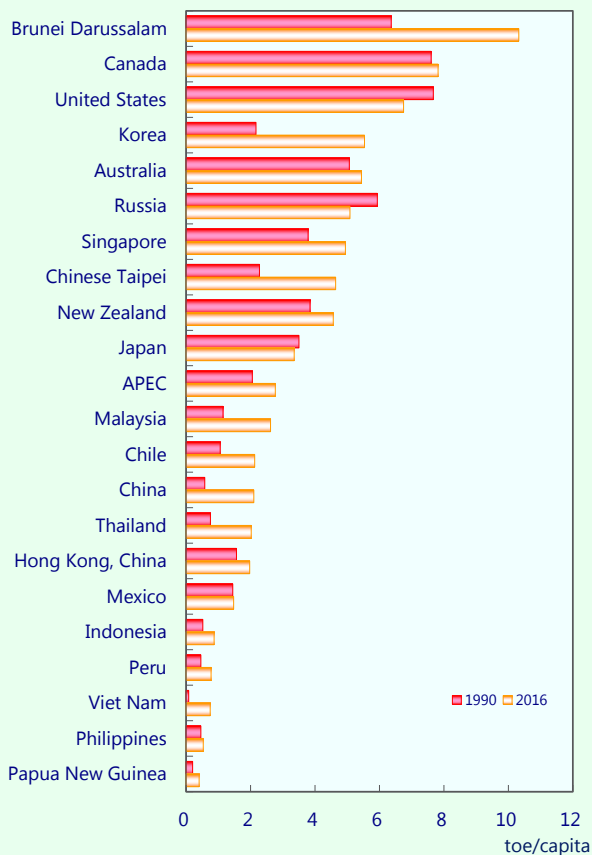
	Mtoe					
	1990	1995	2000	2005	2010	2016
Australia	-64.5	-89.2	-127.1	-148.8	-185.9	-259.7
Brunei Darussalam	-15.2	-15.9	-16.7	-19.9	-17.2	-13.3
Canada	-59.3	-119.7	-127.7	-129.9	-143.9	-196.2
Chile	7.0	10.8	17.7	20.5	22.3	26.1
China	-30.5	-8.9	33.3	137.3	344.8	552.2
Hong Kong, China	10.8	14.3	18.2	23.4	31.4	31.0
Indonesia	-70.8	-91.1	-86.5	-89.1	-146.0	-200.8
Japan	369.3	403.2	417.2	426.3	398.4	402.4
Korea	70.1	134.7	165.7	175.6	221.1	246.5
Malaysia	-25.6	-27.9	-26.8	-27.4	-13.2	-10.1
Mexico	-69.9	-69.3	-72.3	-79.6	-40.4	9.5
New Zealand	2.1	3.1	3.4	4.9	2.9	5.8
Papua New Guinea	-3.7	-4.0	-2.7	-1.0	0.7	-5.2
Peru	-0.6	1.8	3.3	3.0	0.4	0.5
Philippines	11.9	17.7	20.0	17.0	17.7	26.6
Russia	-412.5	-314.9	-349.5	-539.3	-579.1	-624.4
Singapore	24.5	32.4	40.8	50.2	69.4	81.2
Chinese Taipei	40.2	56.5	75.2	90.4	101.8	101.6
Thailand	18.1	32.8	34.4	48.3	52.8	64.2
United States	341.9	433.4	606.4	736.1	533.7	265.0
Viet Nam	-0.2	-4.7	-9.8	-17.7	-7.9	10.6
Total	143.3	395.2	616.5	680.4	663.6	513.6

Total primary energy supply per GDP & capita APEC

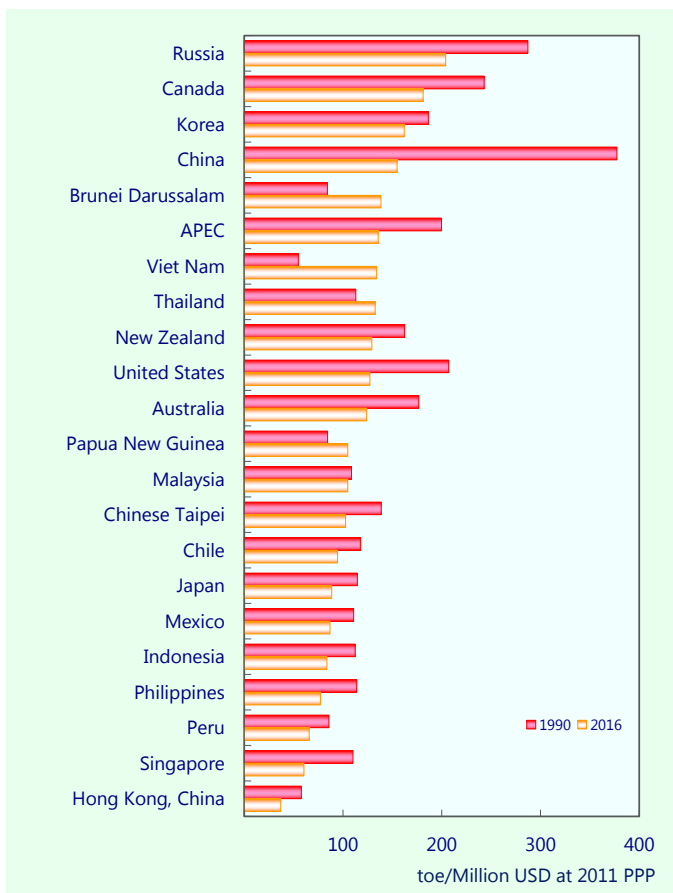


	1990	1995	2000	2005	2010	2016
Population (million)	2 288	2 432	2 557	2 657	2 754	2 871
Primary Energy Supply per Capita (toe)	2.05	2.08	2.17	2.47	2.67	2.75
	1990	1995	2000	2005	2010	2016
GDP (\$ 2011 PPP)	23 489	26 798	32 709	39 946	48 413	61 201
Primary Energy Supply per GDP (toe/million \$ at 2011 PPP)	199.8	188.8	169.2	164.0	151.7	128.9

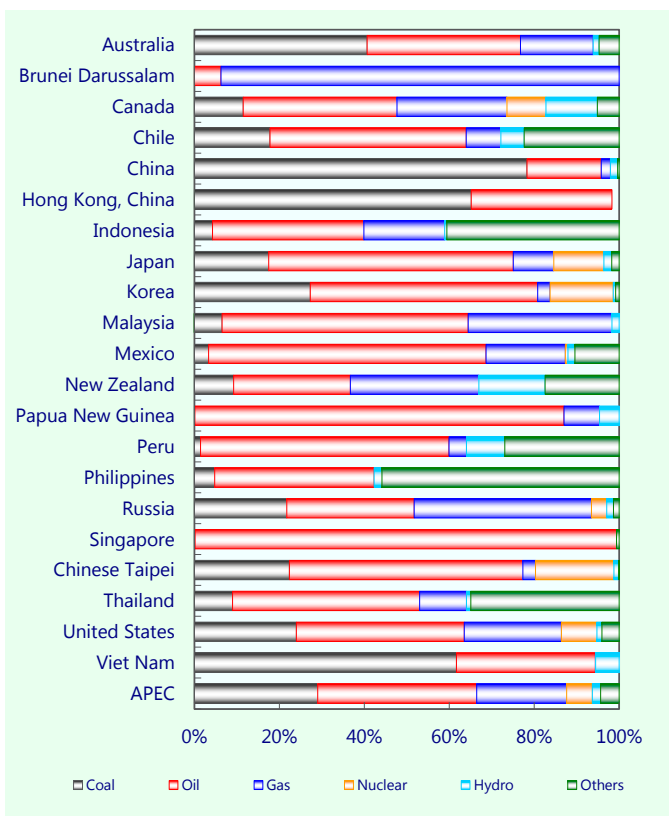
Total primary energy supply per capita 1990 vs 2016 by economy



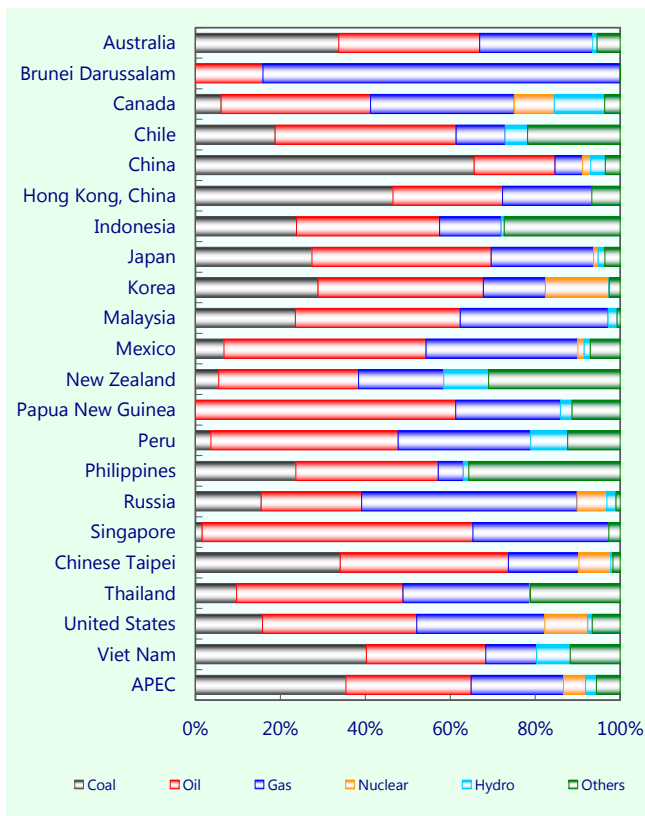
Total primary energy supply per GDP 1990 vs 2016 by economy



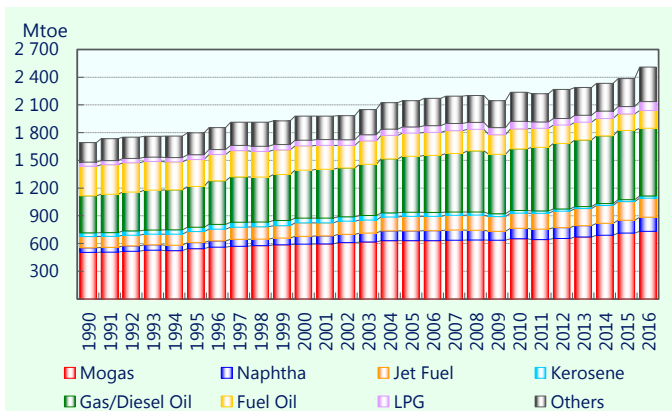
Primary energy mix by economy 1990



Primary energy mix by economy 2016



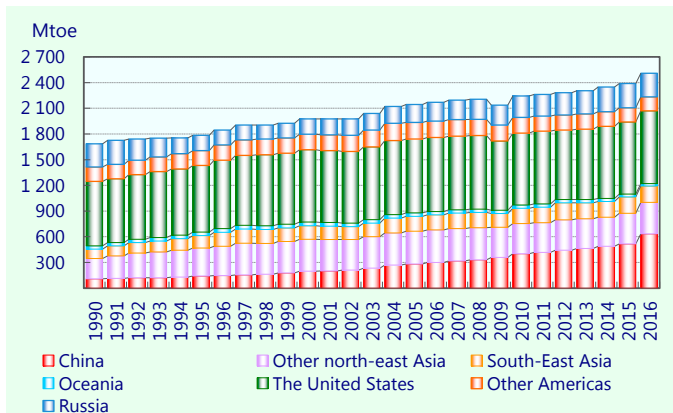
Petroleum refining by product APEC



	Mtoe					
	1990	1995	2000	2005	2010	2016
Mogas	503.7	544.6	593.1	631.2	651.3	732.1
Naphtha	49.7	64.4	83.8	106.6	112.9	151.9
Jet Fuel	121.7	120.6	145.5	156.0	165.6	208.2
Kerosene	40.8	46.8	53.5	44.4	28.5	22.3
Gas/Diesel Oil	400.9	441.8	519.0	606.7	666.1	732.8
Fuel Oil	319.7	291.9	262.3	250.0	216.0	193.1
LPG	43.9	51.8	61.8	67.5	82.5	95.5
Others	212.6	235.2	259.7	282.4	314.5	372.7
Total	1 693.0	1 797.1	1 978.8	2 144.7	2 237.4	2 508.5

	Share (%)					
	1990	1995	2000	2005	2010	2016
Mogas	29.8	30.3	30.0	29.4	29.1	29.2
Naphtha	2.9	3.6	4.2	5.0	5.0	6.1
Jet Fuel	7.2	6.7	7.4	7.3	7.4	8.3
Kerosene	2.4	2.6	2.7	2.1	1.3	0.9
Gas/Diesel Oil	23.7	24.6	26.2	28.3	29.8	29.2
Fuel Oil	18.9	16.2	13.3	11.7	9.7	7.7
LPG	2.6	2.9	3.1	3.1	3.7	3.8
Others	12.6	13.1	13.1	13.2	14.1	14.9

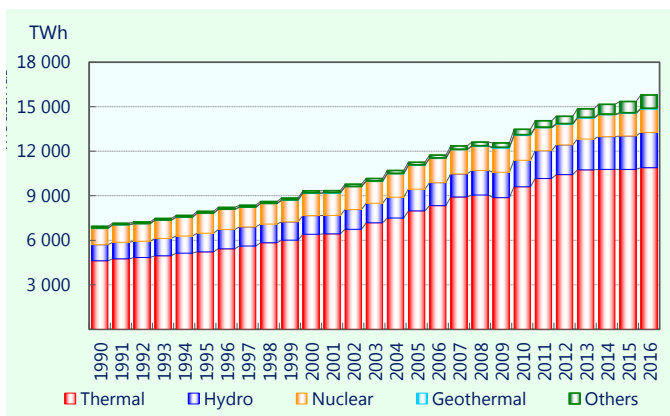
Petroleum refining by region APEC



	Mtoe					
	1990	1995	2000	2005	2010	2016
China	107.4	140.6	197.9	281.1	402.0	634.3
Other north-east Asia	241.9	333.8	373.4	384.1	351.7	366.1
South-East Asia	114.4	150.2	160.2	174.7	171.6	192.1
Oceania	37.0	41.2	43.5	40.8	38.5	29.5
United States	753.8	778.9	843.8	861.4	840.7	848.9
Other Americas	168.7	173.4	180.0	193.8	182.8	161.6
Russia	269.7	178.9	179.9	208.9	250.0	276.0
Total	1 693.0	1 797.1	1 978.8	2 144.7	2 237.4	2 508.5

	Share (%)					
	1990	1995	2000	2005	2010	2016
China	6.3	7.8	10.0	13.1	18.0	25.3
Other north-east Asia	14.3	18.6	18.9	17.9	15.7	14.6
South-East Asia	6.8	8.4	8.1	8.1	7.7	7.7
Oceania	2.2	2.3	2.2	1.9	1.7	1.2
United States	44.5	43.3	42.6	40.2	37.6	33.8
Other Americas	10.0	9.7	9.1	9.0	8.2	6.4
Russia	15.9	10.0	9.1	9.7	11.2	11.0

Electricity generation by type APEC

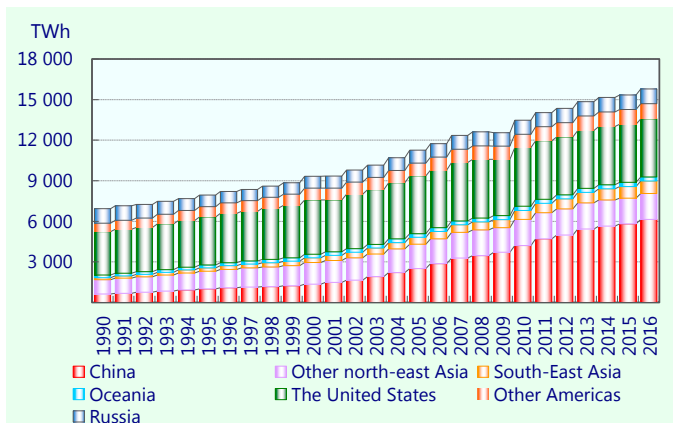


	TWh					
	1990	1995	2000	2005	2010	2016
Thermal	4 623	5 222	6 406	7 975	9 602	10 893
Hydro	1 080	1 259	1 261	1 463	1 791	2 368
Nuclear	1 087	1 323	1 493	1 596	1 662	1 573
Geothermal	32	34	41	48	53	57
Others	118	107	130	176	367	899
Total	6 940	7 946	9 332	11 257	13 476	15 791

	Share (%)					
	1990	1995	2000	2005	2010	2016
Thermal	66.6	65.7	68.6	70.8	71.3	69.0
Hydro	15.6	15.8	13.5	13.0	13.3	15.0
Nuclear	15.7	16.6	16.0	14.2	12.3	10.0
Geothermal	0.5	0.4	0.4	0.4	0.4	0.4
Others	1.7	1.4	1.4	1.6	2.7	5.7

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

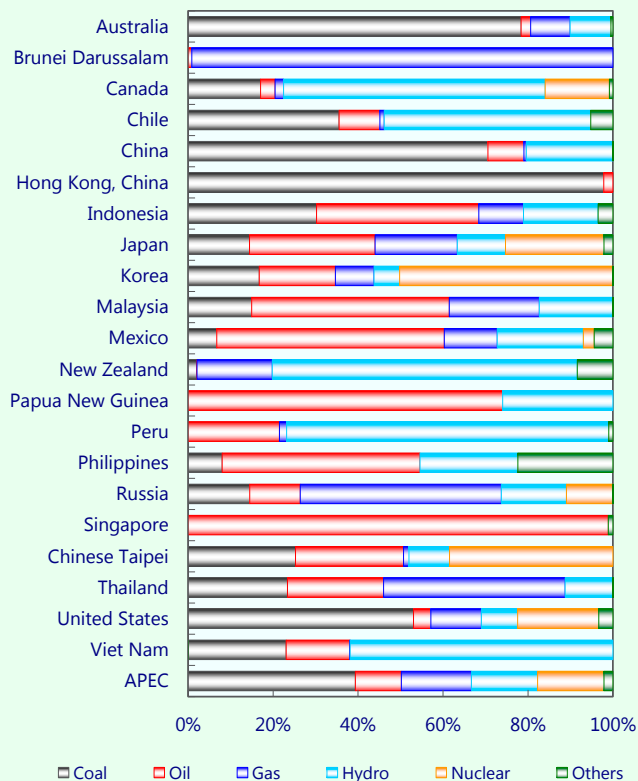
Electricity generation by region APEC



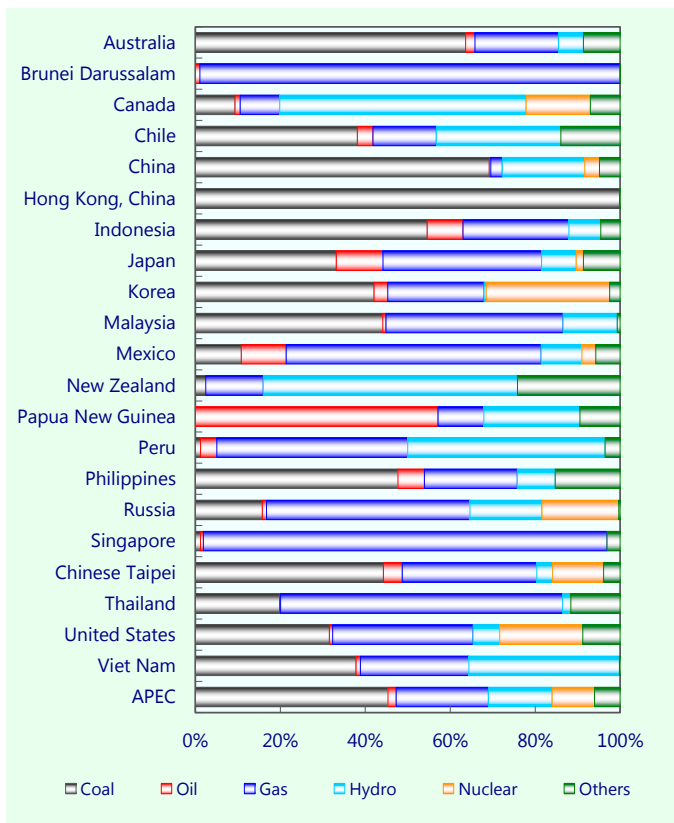
	TWh					
	1990	1995	2000	2005	2010	2016
China	621	1 008	1 356	2 500	4 207	6 142
Other north-east Asia	1 064	1 308	1 593	1 808	1 942	1 923
South-East Asia	151	245	358	505	660	920
Oceania	189	211	252	275	301	304
United States	3 203	3 558	4 026	4 269	4 354	4 294
Other Americas	630	757	871	949	976	1 119
Russia	1 082	859	876	951	1 036	1 089
Total	6 940	7 946	9 332	11 257	13 476	15 791

	Share (%)					
	1990	1995	2000	2005	2010	2016
China	9.0	12.7	14.5	22.2	31.2	38.9
Other north-east Asia	15.3	16.5	17.1	16.1	14.4	12.2
South-East Asia	2.2	3.1	3.8	4.5	4.9	5.8
Oceania	2.7	2.7	2.7	2.4	2.2	1.9
United States	46.1	44.8	43.1	37.9	32.3	27.2
Other Americas	9.1	9.5	9.3	8.4	7.2	7.1
Russia	15.6	10.8	9.4	8.4	7.7	6.9

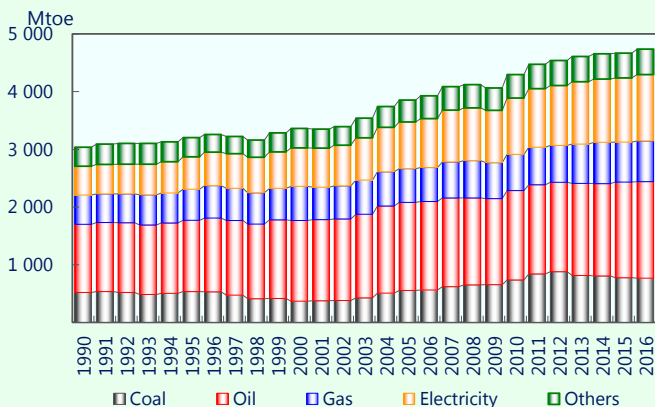
Electricity generation by economy 1990



Electricity generation by economy 2016



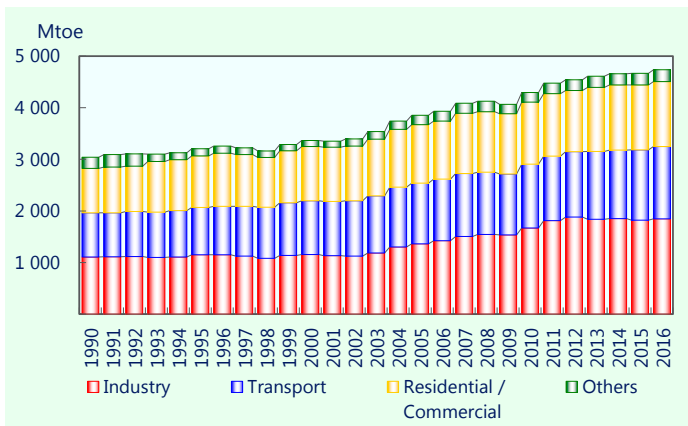
Total final energy consumption by energy APEC



	Mtoe					
	1990	1995	2000	2005	2010	2016
Coal	516.4	532.2	368.8	552.1	733.8	764.6
Oil	1 184.0	1 237.8	1 398.2	1 528.0	1 550.1	1 674.7
Gas	505.7	540.0	590.0	584.8	628.8	706.7
Electricity	501.8	561.0	667.9	809.7	976.9	1 149.6
Others	330.8	332.1	338.1	378.7	405.7	441.0
Total	3 038.8	3 203.0	3 363.0	3 853.3	4 295.3	4 736.6

	Share (%)					
	1990	1995	2000	2005	2010	2016
Coal	17.0	16.6	11.0	14.3	17.1	16.1
Oil	39.0	38.6	41.6	39.7	36.1	35.4
Gas	16.6	16.9	17.5	15.2	14.6	14.9
Electricity	16.5	17.5	19.9	21.0	22.7	24.3
Others	10.9	10.4	10.1	9.8	9.4	9.3

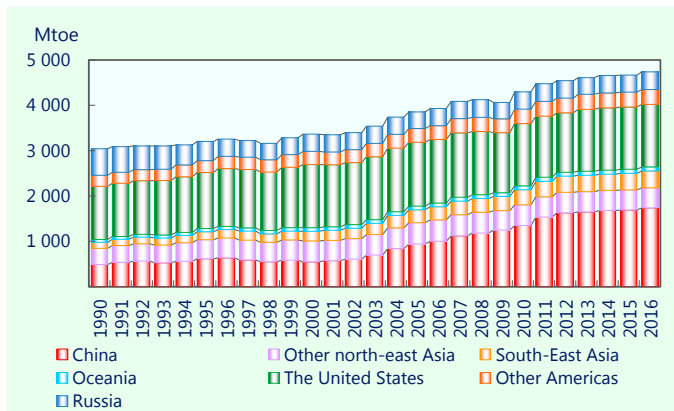
Total final energy consumption by sector APEC



	Mtoe					
	1990	1995	2000	2005	2010	2016
Industry	1 106.0	1 150.3	1 155.7	1 361.5	1 671.3	1 848.1
Transport	856.1	918.0	1 043.1	1 176.8	1 236.5	1 398.4
Residential / Commercial	861.5	996.0	1 048.5	1 131.1	1 198.7	1 260.1
Others	215.2	138.8	115.8	183.9	188.9	230.0
Total	3 038.8	3 203.0	3 363.0	3 853.3	4 295.3	4 736.6

	Share (%)					
	1990	1995	2000	2005	2010	2016
Industry	36.4	35.9	34.4	35.3	38.9	39.0
Transport	28.2	28.7	31.0	30.5	28.8	29.5
Residential / Commercial	28.3	31.1	31.2	29.4	27.9	26.6
Others	7.1	4.3	3.4	4.8	4.4	4.9

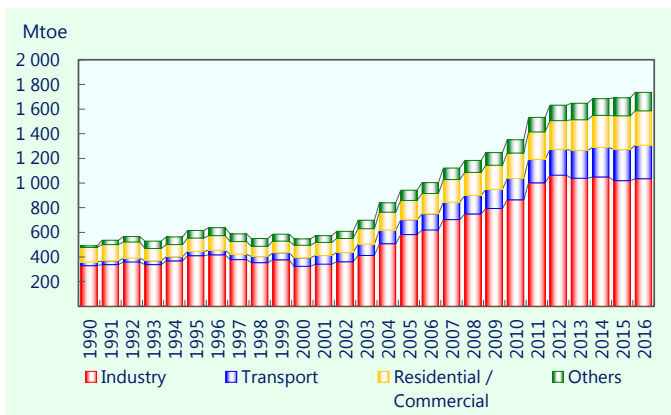
Total final energy consumption by region APEC



	Mtoe					
	1990	1995	2000	2005	2010	2016
China	489.9	615.9	546.5	941.6	1 350.9	1 736.5
Other north-east Asia	355.3	419.5	460.0	470.9	455.6	442.9
South-East Asia	132.0	177.0	216.2	282.5	329.6	370.3
Oceania	62.4	69.0	77.3	80.4	85.3	91.3
United States	1 174.5	1 236.9	1 393.2	1 406.6	1 377.6	1 378.6
Other Americas	239.8	261.1	288.3	303.6	315.8	329.4
Russia	584.8	423.6	381.5	367.7	380.3	387.7
Total	3 038.8	3 203.0	3 363.0	3 853.3	4 295.3	4 736.6

	Share (%)					
	1990	1995	2000	2005	2010	2016
China	16.1	19.2	16.3	24.4	31.5	36.7
Other north-east Asia	11.7	13.1	13.7	12.2	10.6	9.4
South-East Asia	4.3	5.5	6.4	7.3	7.7	7.8
Oceania	2.1	2.2	2.3	2.1	2.0	1.9
United States	38.6	38.6	41.4	36.5	32.1	29.1
Other Americas	7.9	8.2	8.6	7.9	7.4	7.0
Russia	19.2	13.2	11.3	9.5	8.9	8.2

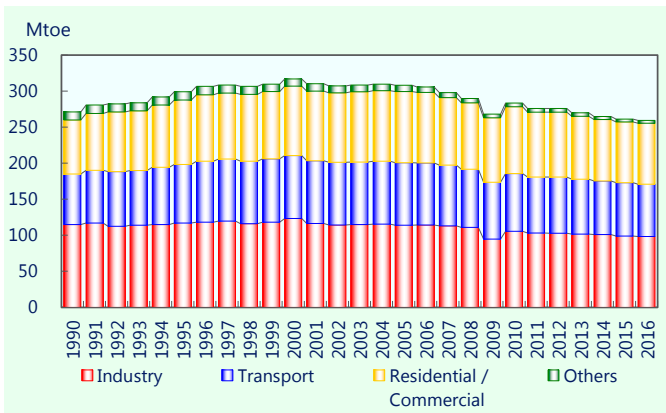
Total final energy consumption by sector China



	Mtoe					
	1990	1995	2000	2005	2010	2016
Industry	329.8	410.0	324.4	581.7	864.6	1 034.8
Transport	28.8	36.4	67.6	119.1	172.1	271.8
Residential / Commercial	118.4	107.0	102.7	157.1	206.0	279.3
Others	13.0	62.5	51.8	83.7	108.2	150.5
Total	489.9	615.9	546.5	941.6	1 350.9	1 736.5

	Share (%)					
	1990	1995	2000	2005	2010	2016
Industry	67.3	66.6	59.4	61.8	64.0	59.6
Transport	5.9	5.9	12.4	12.7	12.7	15.7
Residential / Commercial	24.2	17.4	18.8	16.7	15.2	16.1
Others	2.6	10.1	9.5	8.9	8.0	8.7

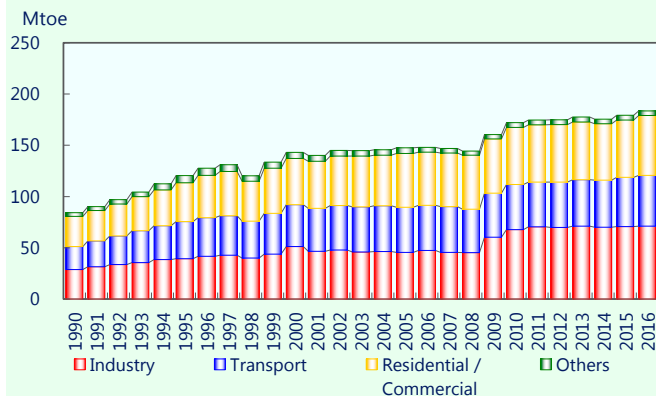
Total final energy consumption by sector Japan



	Mtoe					
	1990	1995	2000	2005	2010	2016
Industry	114.9	116.9	123.2	113.9	105.4	98.4
Transport	70.0	81.4	87.4	86.9	80.3	72.4
Residential / Commercial	75.0	89.6	96.4	98.7	92.6	84.6
Others	11.2	11.3	10.0	8.7	5.3	4.1
Total	271.1	299.1	316.9	308.1	283.5	259.5

	Share (%)					
	1990	1995	2000	2005	2010	2016
Industry	42.4	39.1	38.9	37.0	37.2	37.9
Transport	25.8	27.2	27.6	28.2	28.3	27.9
Residential / Commercial	27.6	29.9	30.4	32.0	32.7	32.6
Others	4.1	3.8	3.1	2.8	1.9	1.6

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

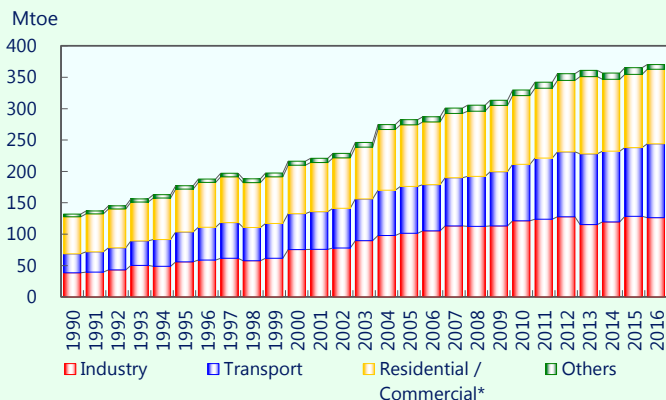


	Mtoe					
	1990	1995	2000	2005	2010	2016
Industry	28.8	39.4	51.1	45.6	67.7	71.1
Transport	22.5	36.1	41.0	44.0	43.9	49.5
Residential / Commercial	29.3	38.0	45.0	52.5	55.8	58.5
Others	3.6	6.9	5.9	5.4	4.6	4.3
Total	84.2	120.4	143.1	147.5	172.1	183.4

	Share (%)					
	1990	1995	2000	2005	2010	2016
Industry	34.2	32.7	35.7	30.9	39.3	38.7
Transport	26.7	30.0	28.7	29.8	25.5	27.0
Residential / Commercial	34.8	31.6	31.5	35.6	32.5	31.9
Others	4.3	5.7	4.1	3.7	2.7	2.3

*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

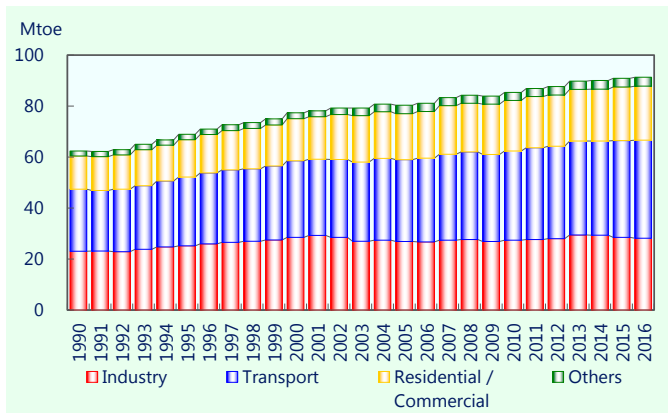


	Mtoe					
	1990	1995	2000	2005	2010	2016
Industry	38.6	55.7	75.5	101.3	121.3	126.2
Transport	30.1	47.7	57.3	74.9	90.0	117.7
Residential / Commercial*	59.0	68.5	77.2	98.0	109.3	118.9
Others	4.3	5.0	6.2	8.4	9.0	7.5
Total	132.0	177.0	216.2	282.5	329.6	370.3

	Share (%)					
	1990	1995	2000	2005	2010	2016
Industry	29.2	31.5	34.9	35.9	36.8	34.1
Transport	22.8	27.0	26.5	26.5	27.3	31.8
Residential / Commercial*	44.7	38.7	35.7	34.7	33.2	32.1
Others	3.3	2.9	2.9	3.0	2.7	2.0

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

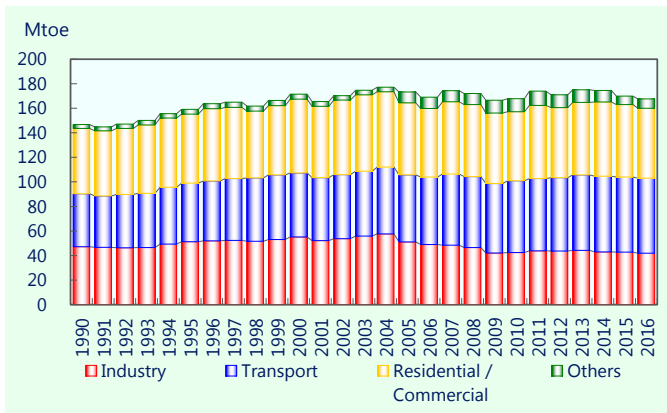
Total final energy consumption by sector Oceania



	Mtoe					
	1990	1995	2000	2005	2010	2016
Industry	23.1	25.2	28.5	26.9	27.4	28.2
Transport	24.3	27.0	30.0	32.0	35.0	38.5
Residential / Commercial	13.0	14.6	16.5	18.1	19.9	21.2
Others	2.0	2.1	2.3	3.3	3.1	3.5
Total	62.4	69.0	77.3	80.4	85.3	91.3

	Share (%)					
	1990	1995	2000	2005	2010	2016
Industry	37.0	36.6	36.9	33.5	32.1	30.9
Transport	38.9	39.1	38.8	39.9	41.0	42.1
Residential / Commercial	20.9	21.2	21.3	22.5	23.3	23.2
Others	3.2	3.1	3.0	4.1	3.7	3.8

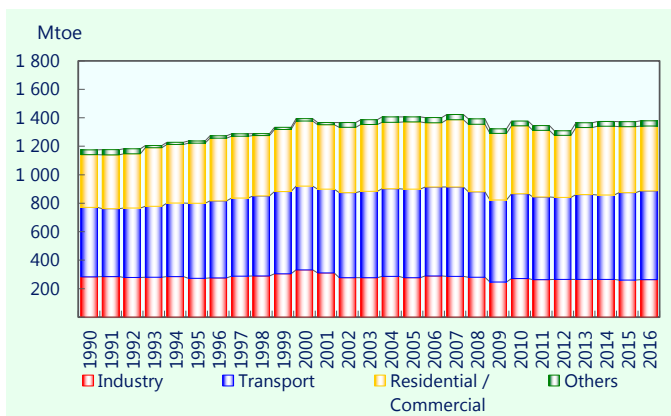
Total final energy consumption by sector Canada



	1990	1995	2000	2005	2010	Mtoe 2016
Industry	47.2	51.3	55.2	51.0	42.4	41.9
Transport	43.1	47.8	52.1	54.6	58.6	61.1
Residential / Commercial	53.2	56.3	60.0	58.8	56.3	56.9
Others	3.2	3.8	4.2	8.7	10.6	7.7
Total	146.8	159.1	171.5	173.2	167.8	167.6

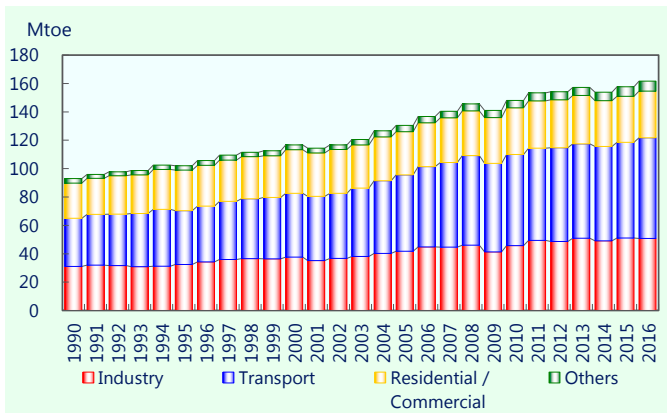
	1990	1995	2000	2005	2010	Share (%) 2016
Industry	32.2	32.2	32.2	29.5	25.3	25.0
Transport	29.4	30.0	30.4	31.5	34.9	36.5
Residential / Commercial	36.2	35.4	34.9	34.0	33.5	33.9
Others	2.2	2.4	2.4	5.0	6.3	4.6

Total final energy consumption by sector United States



	Mtoe					
	1990	1995	2000	2005	2010	2016
Industry	283.7	272.8	332.3	276.4	270.4	264.0
Transport	487.6	527.6	588.2	622.9	595.8	621.8
Residential / Commercial	369.1	421.0	457.1	472.1	477.5	456.3
Others	34.0	15.6	15.6	35.2	34.0	36.6
Total	1 174.5	1 236.9	1 393.2	1 406.6	1 377.6	1 378.6
	Share (%)					
	1990	1995	2000	2005	2010	2016
Industry	24.2	22.1	23.8	19.7	19.6	19.1
Transport	41.5	42.6	42.2	44.3	43.2	45.1
Residential / Commercial	31.4	34.0	32.8	33.6	34.7	33.1
Others	2.9	1.3	1.1	2.5	2.5	2.7

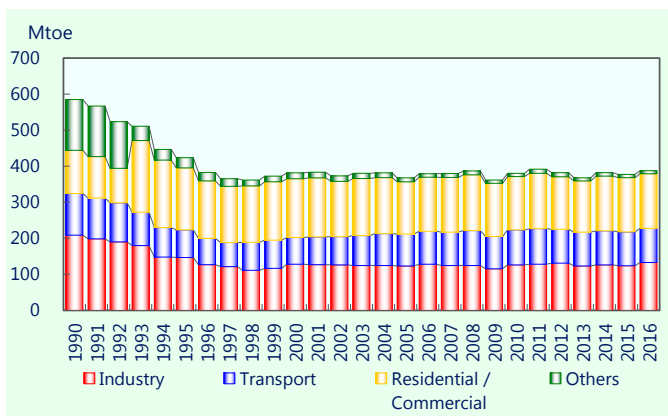
Total final energy consumption by sector Other Americas*



	Mtoe					
	1990	1995	2000	2005	2010	2016
Industry	31.1	32.4	37.6	41.7	45.7	50.8
Transport	33.8	38.0	44.9	53.9	64.2	70.9
Residential / Commercial	24.8	28.6	30.7	30.4	32.9	33.0
Others	3.4	3.1	3.4	4.4	5.2	7.1
Total	93.1	102.0	116.7	130.4	148.0	161.7
	Share (%)					
	1990	1995	2000	2005	2010	2016
Industry	33.4	31.7	32.3	32.0	30.9	31.4
Transport	36.4	37.2	38.5	41.3	43.4	43.8
Residential / Commercial	26.6	28.0	26.3	23.3	22.2	20.4
Others	3.6	3.0	2.9	3.4	3.5	4.4

*Other Americas include Chile; Mexico and Peru.

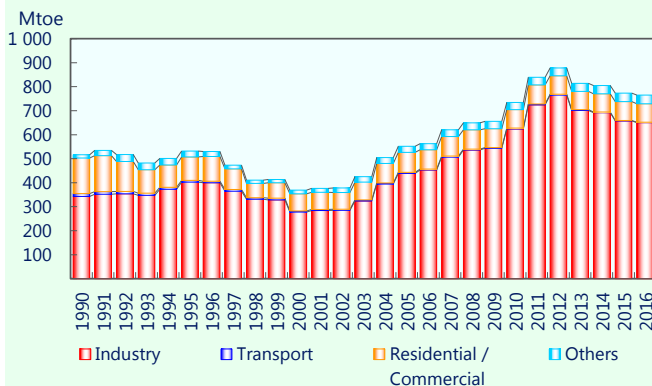
Total final energy consumption by sector Russia



	1990	1995	2000	2005	2010	2016
Industry	208.7	146.7	127.8	123.0	126.3	132.8
Transport	115.9	76.1	74.5	88.6	96.5	94.3
Residential / Commercial	119.8	172.4	162.9	145.3	148.5	151.8
Others	140.5	28.4	16.3	10.8	9.0	8.8
Total	584.8	423.6	381.5	367.7	380.3	387.7

	1990	1995	2000	2005	2010	2016
Industry	35.7	34.6	33.5	33.5	33.2	34.3
Transport	19.8	18.0	19.5	24.1	25.4	24.3
Residential / Commercial	20.5	40.7	42.7	39.5	39.0	39.1
Others	24.0	6.7	4.3	2.9	2.4	2.3

Coal* demand by sector APEC

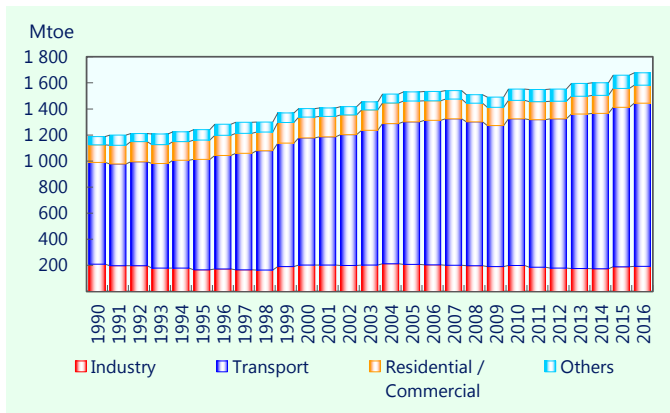


	1990	1995	2000	2005	2010	2016
Industry	343.0	402.9	278.0	438.9	624.0	650.3
Transport	11.2	7.1	4.7	4.4	3.2	2.0
Residential / Commercial	148.7	97.0	70.9	82.8	77.0	76.6
Others	13.6	25.0	15.3	26.0	29.7	35.6
Total	516.4	532.2	368.8	552.1	733.8	764.6

	1990	1995	2000	2005	2010	2016
Industry	66.4	75.7	75.4	79.5	85.0	85.1
Transport	2.2	1.3	1.3	0.8	0.4	0.3
Residential / Commercial	28.8	18.2	19.2	15.0	10.5	10.0
Others	2.6	4.7	4.1	4.7	4.0	4.7

*Coal and Coal Products

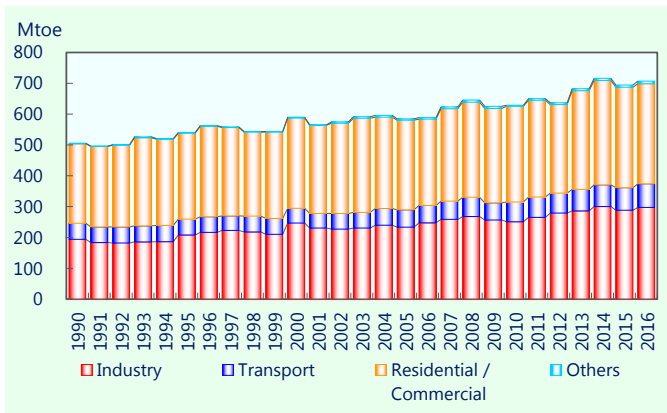
Oil demand by sector APEC



	Mtoe					
	1990	1995	2000	2005	2010	2016
Industry	209.1	165.8	202.0	207.4	198.7	191.7
Transport	779.8	847.0	976.6	1 093.5	1 126.4	1 252.2
Residential / Commercial	136.2	148.3	158.5	159.3	141.2	138.0
Others	62.4	79.8	65.0	70.4	86.5	96.0
Total	1 187.6	1 240.9	1 402.0	1 530.6	1 552.8	1 677.8

	Share (%)					
	1990	1995	2000	2005	2010	2016
Industry	17.6	13.4	14.4	13.5	12.8	11.4
Transport	65.7	68.3	69.7	71.4	72.5	74.6
Residential / Commercial	11.5	12.0	11.3	10.4	9.1	8.2
Others	5.3	6.4	4.6	4.6	5.6	5.7

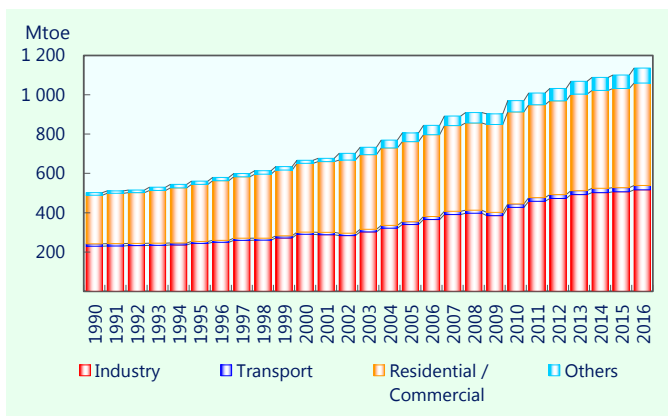
Gas demand by sector APEC



	Mtoe					
	1990	1995	2000	2005	2010	2016
Industry	193.9	208.5	246.8	233.8	251.0	297.4
Transport	52.5	51.1	47.6	56.1	64.3	76.9
Residential / Commercial	257.3	278.5	293.0	290.7	309.6	324.3
Others	2.0	1.9	2.6	4.2	3.9	8.1
Total	505.7	540.0	590.0	584.8	628.8	706.7

	Share (%)					
	1990	1995	2000	2005	2010	2016
Industry	38.3	38.6	41.8	40.0	39.9	42.1
Transport	10.4	9.5	8.1	9.6	10.2	10.9
Residential / Commercial	50.9	51.6	49.7	49.7	49.2	45.9
Others	0.4	0.3	0.4	0.7	0.6	1.1

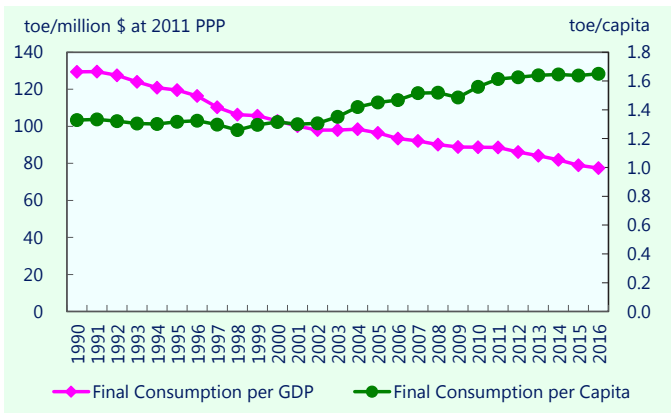
Electricity demand by sector APEC



	1990	1995	2000	2005	2010	2016
Industry	229.3	243.4	289.8	339.8	427.3	516.1
Transport	12.6	10.1	10.9	14.5	17.4	22.8
Residential / Commercial	246.8	291.0	350.0	407.1	468.0	520.6
Others	12.8	16.0	16.1	44.3	56.8	76.3
Total	501.6	560.5	666.8	805.8	969.4	1 135.8

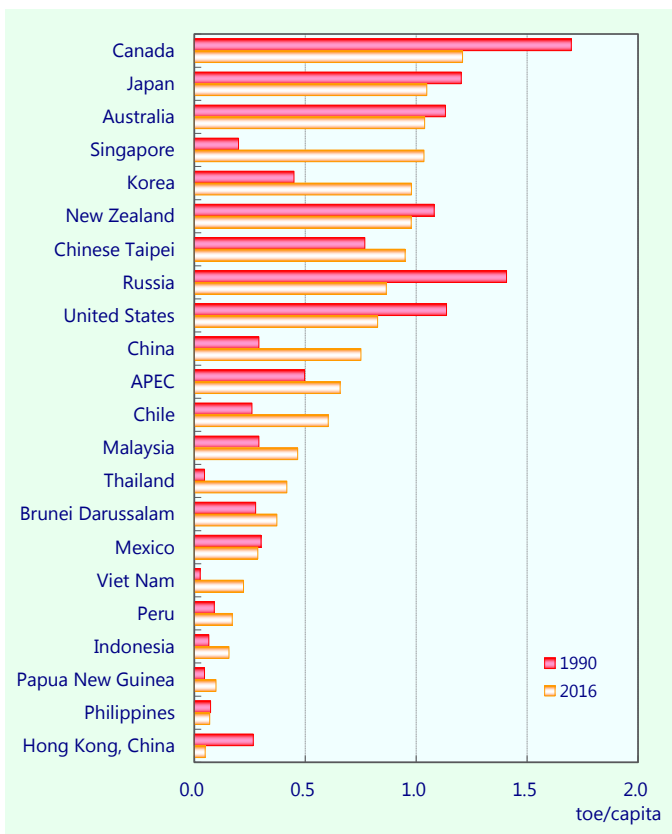
	1990	1995	2000	2005	2010	2016
Industry	45.7	43.4	43.5	42.2	44.1	45.4
Transport	2.5	1.8	1.6	1.8	1.8	2.0
Residential / Commercial	49.2	51.9	52.5	50.5	48.3	45.8
Others	2.6	2.9	2.4	5.5	5.9	6.7

Final consumption per capita and GDP APEC

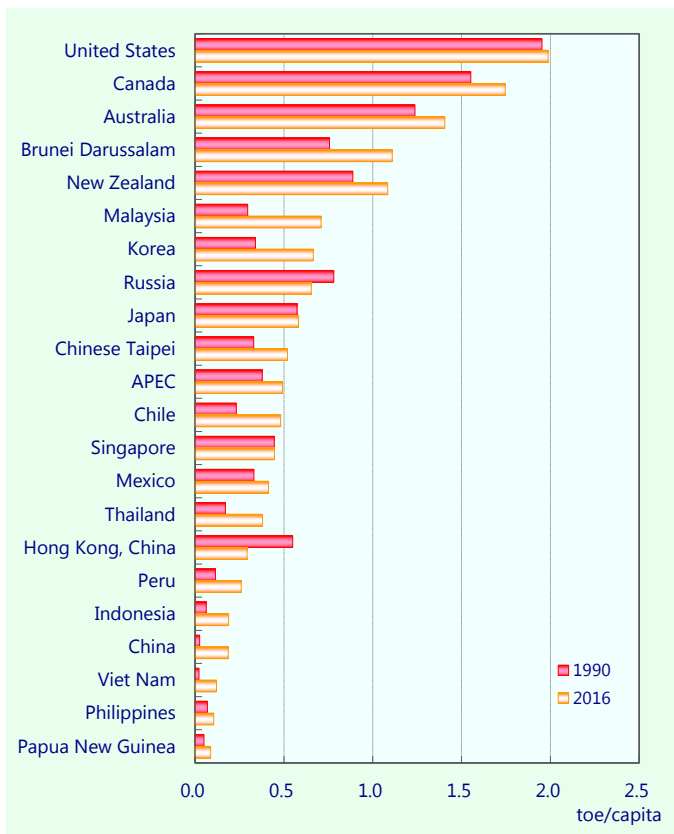


	1990	1995	2000	2005	2010	2016
Population (million)	2 288	2 432	2 557	2 657	2 754	2 871
Final Consumption per Capita (toe)	1.33	1.32	1.32	1.45	1.56	1.65
	1990	1995	2000	2005	2010	2016
GDP (billion \$ at 2011 PPP)	23 489	26 798	32 709	39 946	48 413	52 755
Final Consumption per GDP (toe/million \$ at 2011 PPP)	129.37	119.52	102.82	96.46	88.72	86.08

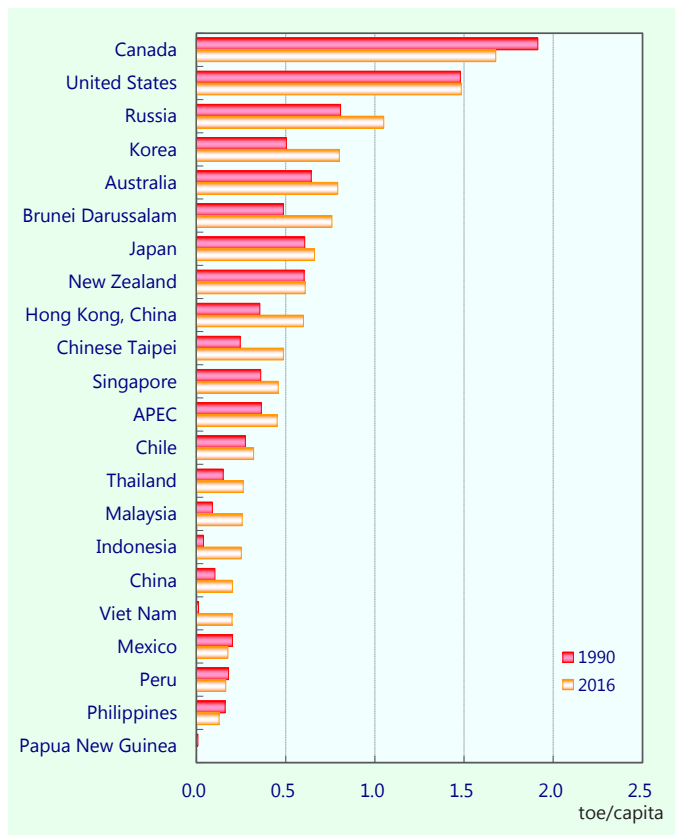
Energy consumption in industry: APEC



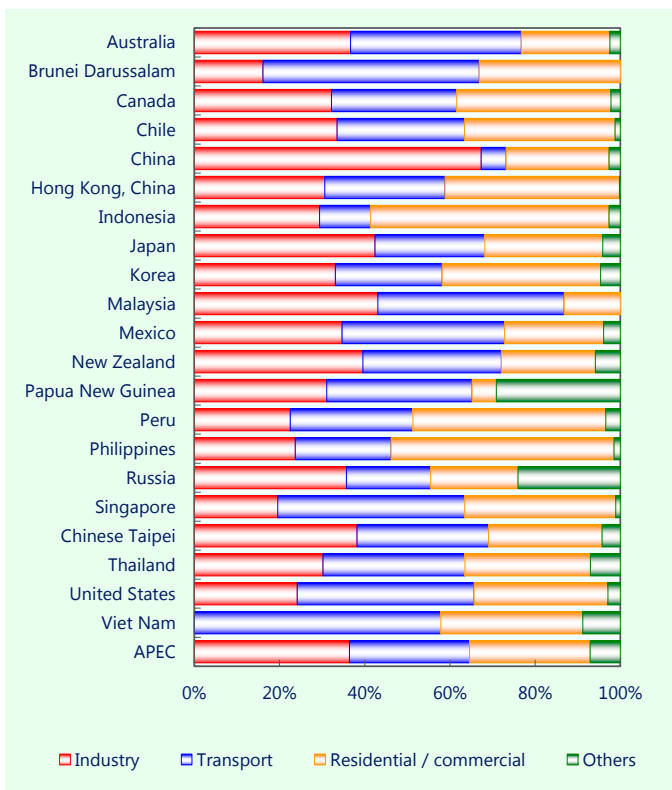
Energy consumption in transportation: APEC



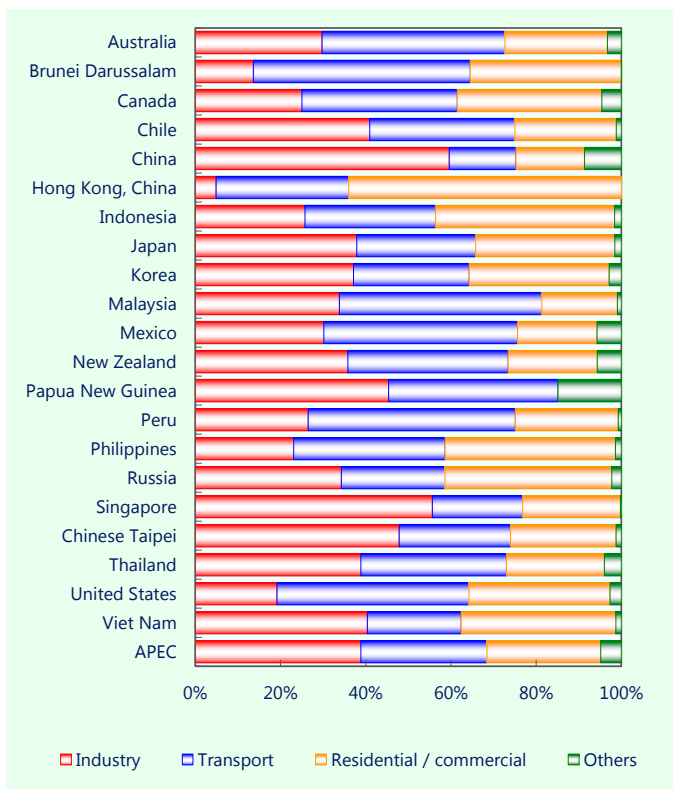
Energy consumption in residential/ commercial: APEC



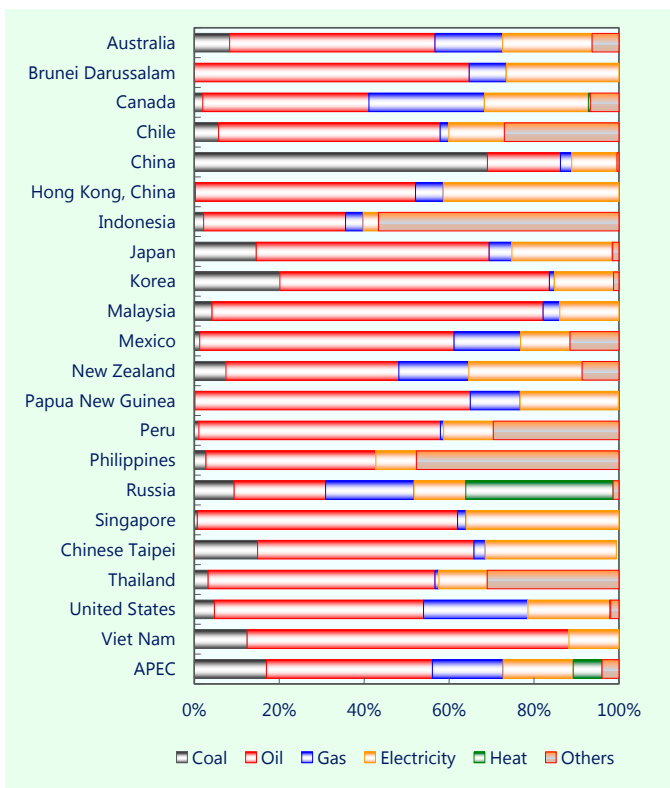
Final energy consumption by sector 1990



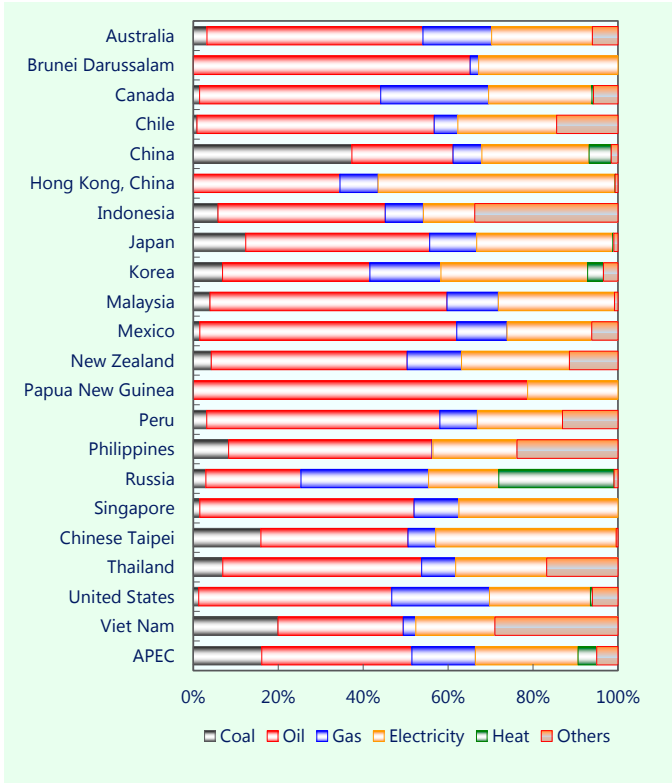
Final energy consumption by sector 2016



Final energy consumption by energy 1990



Final energy consumption by energy 2016



APEC, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	2 900 955		1 813 963	
2 Import	442 514	10 844	1 406 123	539 511
3 Export	- 617 987	- 10 363	- 612 338	- 612 280
4 International marine and aviation bunkers				- 198 177
5 Stock change	63 030	7 685	- 9 417	205
6 Total primary energy supply	2 788 512	8 166	2 598 330	- 270 741
7 Transfers			- 39 604	56 073
8 Main activity producers	- 1 455 413	- 9 298	- 3 282	- 41 971
9 Autoproducers	- 207 050	- 42 940	- 842	- 27 741
10 Gas processing	- 7 813	- 13		772
11 Petroleum refineries			- 2 546 914	2 508 510
12 Coal transformation	- 516 234	219 140		- 786
13 Other transformation			18 142	- 11 842
14 Loss & own-use	- 33 698	- 17 204	- 10 889	- 135 253
15 Discrepancy	68 039	42 439	- 1 436	20 048
16 Total final consumption	636 343	200 290	13 505	2 097 069
17 Total final energy consumption	591 395	173 248	3 152	1 674 674
18 Industry sector	482 322	168 053	3 134	188 550
19 Transport sector	2 000	22		1 252 211
20 Other sector	107 074	5 173	18	233 912
20.1 Residential & Commercial	71 914	4 704		137 970
20.2 Agriculture	14 307	361	8	51 913
20.3 Other	20 852	108	10	44 030
21 Non-energy	44 948	27 043	10 353	422 396

Australia, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	292 031		17 567	
2 Import	19	143	16 193	27 387
3 Export	- 251 555	- 459	- 11 664	- 1 786
4 International marine and aviation bunkers				- 4 730
5 Stock change	3 584	- 9	165	- 61
6 Total primary energy supply	44 079	- 325	22 261	20 810
7 Transfers			- 658	4 178
8 Main activity producers	- 39 849	- 11		- 276
9 Autoproducers				- 946
10 Gas processing				
11 Petroleum refineries			- 22 352	22 376
12 Coal transformation	- 2 465	1 617		
13 Other transformation			132	
14 Loss & own-use		- 843	- 59	- 3 919
15 Discrepancy	263	2	691	585
16 Total final consumption	2 028	440	15	42 808
17 Total final energy consumption	2 028	440	15	38 990
18 Industry sector	2 022	439	15	3 611
19 Transport sector				31 935
20 Other sector	6	1		3 444
20.1 Residential & Commercial	6	1		1 142
20.2 Agriculture				2 302
20.3 Other				
21 Non-energy				3 818

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
1 733 780	200 181	409 627	103 664	339 960		7 502 130	604 110	
390 721				4 798	10 788	2 805 298	4 801	
- 423 199				- 4 704	- 10 788	- 2 291 658	- 4 704	
						- 198 177		
12 960				- 246		74 217	- 230	
1 714 262	200 181	409 627	103 664	339 808		7 891 811	603 977	
						16 469		
- 622 678	- 196 777	- 409 628	- 93 331	- 65 436	1 370 981	- 1 526 833	- 326 505	
- 114 408	- 3 404		- 6 449	- 28 908	237 637	- 194 106	- 33 127	
7 004						49		
						- 38 404		
						- 297 880		
- 10 699				- 21 027		- 25 425	- 21 028	
- 175 571			- 2	- 502	- 246 741	- 619 859	- 360	
- 19 863		1	1	2 036	- 4 271	106 995		
778 049			3 883	225 971	1 357 607	5 312 717	225 051	
706 677			3 883	225 971	1 357 607	4 736 607	225 051	
297 432			125	72 946	635 561	1 848 124	69 064	
76 895				44 428	22 811	1 398 366	44 429	
332 350			3 758	108 597	699 236	1 490 117	111 558	
324 259			3 576	101 885	615 788	1 260 097	104 725	
3 801			106	5 329	21 349	97 176	5 376	
4 290			75	1 382	62 098	132 845	1 457	
71 372						576 110		

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
72 514	1 296		1 939	5 146		390 493	8 287	
5 126						48 868		
- 43 094						- 308 558		
						- 4 730		
						3 679		
34 546	1 296		1 939	5 146		129 752	8 287	
						3 520		
- 9 247	- 1 296		- 1 089	- 326	19 968	- 32 126	- 2 711	
- 2 772			- 494	- 575	2 071	- 2 716	- 1 069	
						24		
						- 848		
- 119						13		
- 10 186						- 3 825	- 18 832	
928						2 469		
13 150			356	4 245	18 214	81 256	4 506	
12 399			356	4 245	18 214	76 687	4 506	
7 240				2 850	6 645	22 822	2 757	
285				161	540	32 921	161	
4 874			356	1 234	11 029	20 944	1 588	
4 820			356	1 234	10 878	18 437	1 588	
54					151	2 507		
751						4 569		

Brunei Darussalam, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production			6 459.2	
2 Import			4.9	380.8
3 Export			- 6 125.6	
4 International marine and aviation bunkers				- 77.5
5 Stock change			29.1	14.0
6 Total primary energy supply			367.7	317.2
7 Transfers				
8 Main activity producers				- 12.6
9 Auto-producers				
10 Gas processing				20.5
11 Petroleum refineries			- 266.0	263.2
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy			- 101.7	- 7.5
16 Total final consumption				580.8
17 Total final energy consumption				556.4
18 Industry sector				102.2
19 Transport sector				434.4
20 Other sector				19.9
20.1 Residential & Commercial				19.9
20.2 Agriculture				
20.3 Other				
21 Non-energy				24.4

Canada, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	30 025		224 019	
2 Import	3 919	642	52 041	12 720
3 Export	- 18 060	- 29	- 168 564	- 21 329
4 International marine and aviation bunkers				- 1 054
5 Stock change	573	- 113	- 125	836
6 Total primary energy supply	16 457	500	107 371	- 8 827
7 Transfers			- 9 263	13 074
8 Main activity producers	- 14 472			- 1 637
9 Auto-producers		- 7		- 540
10 Gas processing				
11 Petroleum refineries			- 94 385	91 837
12 Coal transformation	- 1 920	1 103		
13 Other transformation			2 361	
14 Loss & own-use				- 15 940
15 Discrepancy	881	- 68	- 6 084	14 197
16 Total final consumption	946	1 528		92 164
17 Total final energy consumption	920	1 506		71 561
18 Industry sector	914	1 506		5 715
19 Transport sector				55 178
20 Other sector	6			10 668
20.1 Residential & Commercial	6			5 529
20.2 Agriculture				5 139
20.3 Other				
21 Non-energy	26	22		20 603

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
11 128.8			0.1			17 588.2	0.1	
						385.7		
- 7 537.7						- 13 663.3		
						- 77.5		
33.6						76.7		
3 624.8			0.1			4 309.7	0.1	
- 1 170.0			- 0.1		367.3	- 815.4	- 0.1	
- 160.5					40.8	- 119.7		
- 374.1						- 353.6		
						- 2.8		
- 1 367.1					- 100.7	- 1 467.8		
3.3					- 27.0	- 133.0		
556.2					280.3	1 417.4		
17.0					280.3	853.8		
					14.2	116.4		
						434.4		
17.0					266.1	303.0		
17.0					266.1	303.0		
539.2						563.6		

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
146 033	33 284	26 354	2 950	13 048		475 713	49 076	
16 994				958	800	88 074	958	
- 68 767				- 1 241	- 6 316	- 284 306	- 1 241	
						- 1 054		
499						1 670		
94 759	33 284	26 354	2 950	12 765	- 5 516	280 097	48 793	
						3 811		
- 8 368	- 30 625	- 26 354	- 2 811	- 427	52 221	- 32 473	- 33 799	
- 6 458	- 2 659		- 97	- 2 733	5 770	- 6 724	- 5 489	
						- 2 548		
						- 817		
- 2 993						- 632		
- 28 717				- 2	- 9 880	- 54 539	- 2	
- 2 530					- 1 170	5 226		
45 693			42	9 603	41 425	191 401	9 503	
42 567			42	9 603	41 425	167 624	9 503	
13 875				4 874	15 054	41 938	4 732	
3 627				1 712	594	61 111	1 712	
25 065			42	3 017	25 777	64 575	3 059	
24 244				3 017	24 110	56 906	3 017	
821					862	6 822		
			42		805	847	42	
3 126						23 777		

Chile, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	1 014		256	
2 Import	6 624		8 607	8 456
3 Export	- 349	- 105		- 445
4 International marine and aviation bunkers				- 714
5 Stock change	- 148	52	46	- 91
6 Total primary energy supply	7 141	- 53	8 909	7 206
7 Transfers			919	- 872
8 Main activity producers	- 6 955			- 641
9 Auto-producers				- 121
10 Gas processing				- 2
11 Petroleum refineries			- 10 124	9 678
12 Coal transformation	- 366	281		
13 Other transformation				
14 Loss & own-use		- 152		- 326
15 Discrepancy	316	6	296	- 128
16 Total final consumption	136	82		14 794
17 Total final energy consumption	136	82		14 490
18 Industry sector	135	82		3 884
19 Transport sector				8 726
20 Other sector	1			1 880
20.1 Residential & Commercial				1 620
20.2 Agriculture				
20.3 Other	1			260
21 Non-energy				304

China, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	1 708 384		203 663	
2 Import	122 330	24	381 007	54 896
3 Export	- 4 953	- 6 940	- 2 941	- 53 526
4 International marine and aviation bunkers				- 18 285
5 Stock change	61 021	10 381	- 17 428	570
6 Total primary energy supply	1 886 782	3 466	564 301	- 16 345
7 Transfers			59 600	- 59 600
8 Main activity producers	- 795 013	- 1 358	- 131	- 3 351
9 Auto-producers	- 178 189	- 33 855		- 3 875
10 Gas processing	- 5 878	- 13		
11 Petroleum refineries			- 617 001	634 256
12 Coal transformation	- 386 386	151 807		
13 Other transformation				
14 Loss & own-use	- 31 999	- 6 361	- 3 608	- 38 459
15 Discrepancy	70 837	45 389	203	219
16 Total final consumption	560 154	159 075	3 365	512 844
17 Total final energy consumption	515 654	132 941	3 097	410 598
18 Industry sector	413 204	128 911	3 097	81 862
19 Transport sector	2 000	22		237 584
20 Other sector	100 451	4 008		91 152
20.1 Residential & Commercial	65 425	3 539		37 028
20.2 Agriculture	14 175	361		17 684
20.3 Other	20 850	108		36 440
21 Non-energy	44 499	26 134	267	102 247

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
1 013	2 001		471	7 782		12 537	10 254	
3 656				1		27 344	1	
- 303						- 1 202		
						- 714		
- 18				- 11		- 170	- 11	
4 348	2 001		471	7 772		37 795	10 244	
						47		
- 2 071	- 1 987		- 438	- 1 060	6 219	- 6 933	- 3 485	
- 64	- 14			- 3 132	600	- 2 731	- 3 146	
4						2		
						- 446		
						- 85		
				- 66		- 66	- 66	
- 201				- 26	- 548	- 1 253	- 26	
- 321				227	- 238	158		
1 695			33	3 715	6 033	26 488	3 746	
1 436			33	3 715	6 033	25 925	3 746	
819				1 942	3 750	10 612	1 940	
24					85	8 835		
593			33	1 773	2 198	6 478	1 806	
593				1 773	2 191	6 177	1 773	
			33		7	301	33	
259						563		

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
123 461	99 999	55 028	25 685	75 533		2 291 753	175 744	
66 408					532	625 196		
- 3 007					- 1 626	- 72 992		
						- 18 285		
						54 545		
186 862	99 999	55 028	25 685	75 533	- 1 094	2 880 216	175 744	
- 30 802	- 99 999	- 55 028	- 25 685	- 35 853	524 320	- 522 898	- 136 122	
- 8 551					107 020	- 117 451		
614						- 5 277		
						17 254		
						- 234 579		
				- 11 490		- 11 490	- 11 490	
- 18 762				- 191	- 101 379	- 200 759	- 191	
- 6 781				- 504	- 42	109 320		
122 579				27 496	528 823	1 914 336	27 496	
117 849				27 496	528 823	1 736 459	27 496	
52 778				6 001	348 911	1 034 764	6 001	
21 463					10 763	271 831		
43 608				21 494	169 150	429 864	21 494	
39 224				16 460	117 653	279 330	16 460	
97				3 656	9 421	45 395	3 656	
4 287				1 378	42 076	105 139	1 378	
4 730						177 877		

Hong Kong, China, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production				
2 Import	7 030			20 414
3 Export				- 368
4 International marine and aviation bunkers				- 15 407
5 Stock change	- 334			- 927
6 Total primary energy supply	6 695			3 712
7 Transfers				
8 Main activity producers	- 6 695			- 91
9 Auto-producers				
10 Gas processing				- 329
11 Petroleum refineries				
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				- 949
16 Total final consumption				2 343
17 Total final energy consumption				2 343
18 Industry sector				98
19 Transport sector				2 038
20 Other sector				207
20.1 Residential & Commercial				207
20.2 Agriculture				
20.3 Other				
21 Non-energy				

Indonesia, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	268 244		43 978	
2 Import	2 293		21 979	23 772
3 Export	- 194 704		- 18 595	- 4 365
4 International marine and aviation bunkers				
5 Stock change	- 22 590		5 728	2 974
6 Total primary energy supply	53 243		53 091	22 381
7 Transfers			3 028	1 683
8 Main activity producers	- 44 335			- 5 023
9 Auto-producers				
10 Gas processing				
11 Petroleum refineries				
12 Coal transformation	- 18	14	- 55 664	48 522
13 Other transformation				- 1 977
14 Loss & own-use				- 96
15 Discrepancy			- 455	- 879
16 Total final consumption	8 891	14		64 611
17 Total final energy consumption	8 891	14		60 437
18 Industry sector	8 891			4 527
19 Transport sector				44 751
20 Other sector			14	11 159
20.1 Residential & Commercial			14	8 738
20.2 Agriculture				
20.3 Other				2 421
21 Non-energy				4 174

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
			1	64		66	65	
3 028				3	999	31 474	6	
					- 104	- 471		
						- 15 407		
3 028			1	67	896	14 400	71	
						- 1 262		
- 2 419					3 281	- 5 923		
			- 1	- 11	4	- 8	- 14	
						- 329		
				- 12		- 12	- 13	
					- 391	- 391		
						- 950		
610				44	3 790	6 787	44	
610				44	3 790	6 787	44	
25					208	331		
				4	71	2 112	5	
585				40	3 512	4 344	38	
585				40	3 512	4 344	38	

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
63 372	1 606		9 166	52 321		438 688	63 094	
					60	48 104		
- 30 878				- 355		- 248 896	- 355	
						- 13 888		
32 494	1 606		9 166	51 966	60	224 008	62 739	
						4 711		
- 10 937	- 1 606		- 9 166	- 216	21 321	- 49 963	- 10 989	
						2 090		
2 090						- 7 141		
						- 3		
						- 1 977		
- 7 406					- 2 742	- 10 244		
- 2 494				- 53	- 63	- 3 944		
13 747				51 697	18 576	157 536	51 697	
13 747				51 697	18 576	153 361	51 697	
13 367				6 836	5 860	39 481	6 836	
				2 240	19	47 010	2 240	
380				42 621	12 697	66 871	42 621	
380				42 621	12 697	64 450	42 621	
						2 421		
						4 174		

Japan, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	788		478	
2 Import	115 820	1 491	166 809	40 016
3 Export		- 635		- 18 958
4 International marine and aviation bunkers				- 11 202
5 Stock change	- 413		1 428	1 221
6 Total primary energy supply	116 195	856	168 715	11 077
7 Transfers			- 94	96
8 Main activity producers	- 62 761	- 5 186	- 3 151	- 8 810
9 Autoproducers	- 4 633	- 2 039		- 10 560
10 Gas processing				- 1 115
11 Petroleum refineries			- 165 424	168 346
12 Coal transformation	- 33 900	29 986		- 786
13 Other transformation				
14 Loss & own-use	- 547	- 3 022		- 10 461
15 Discrepancy	115	- 3 009	- 47	353
16 Total final consumption	14 469	17 585		148 139
17 Total final energy consumption	14 469	17 585		112 404
18 Industry sector	14 469	16 994		17 144
19 Transport sector				70 352
20 Other sector		591		24 908
20.1 Residential & Commercial		591		21 261
20.2 Agriculture				2 282
20.3 Other				1 365
21 Non-energy				35 735

Korea, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	768		689	
2 Import	81 131	235	149 275	40 536
3 Export			- 522	- 63 752
4 International marine and aviation bunkers				- 15 480
5 Stock change	- 667		- 927	- 22
6 Total primary energy supply	81 232	235	148 515	- 38 718
7 Transfers			- 3 496	3 533
8 Main activity producers	- 46 546	- 1 957		- 3 198
9 Autoproducers	- 5 473	- 2 248		- 1 591
10 Gas processing				- 106
11 Petroleum refineries			- 155 876	150 979
12 Coal transformation	- 24 081	11 567		
13 Other transformation			10 598	- 10 295
14 Loss & own-use		- 3 083		- 7 533
15 Discrepancy	- 100	- 116	259	1 009
16 Total final consumption	5 032	4 398		94 080
17 Total final energy consumption	5 032	3 825		44 698
18 Industry sector	5 032	3 267		3 578
19 Transport sector				32 985
20 Other sector		558		8 135
20.1 Residential & Commercial		558		5 895
20.2 Agriculture				341
20.3 Other				1 899
21 Non-energy		573		49 382

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
3 747	6 878	4 687	6 562	8 713		31 853	22 153	
97 847						421 983		
						- 19 593		
						- 11 202		
1 168						3 404		
102 762	6 878	4 687	6 562	8 713		426 444	22 153	
						2		
- 70 418	- 6 544	- 4 687	- 2 788	- 2 381	77 217	- 89 509	- 11 714	
- 3 067	- 334		- 3 341	- 6 577	14 878	- 15 673	- 10 252	
3 152						2 036		
						2 922		
						- 4 700		
- 4 498					- 4 865	- 23 393		
962			1	2 366	- 3 452	- 2 711		
28 893			433	2 122	83 778	295 418	2 555	
28 702			433	2 122	83 778	259 492	2 555	
14 622				2 101	33 030	98 360	2 101	
72					2 000	72 423		
14 009			433	21	48 748	88 709	454	
14 009			365	21	48 400	84 646	386	
			68		348	2 698	68	
						1 365		
190						35 925		

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
138	245	42 209	818	6 412		51 279	4 298	
39 608						310 785		
						- 64 274		
						- 15 480		
1 567						- 49		
41 313	245	42 209	818	6 412		282 261	4 298	
						37		
- 19 312	- 245	- 42 209	- 574	- 1 166	46 636	- 68 571	- 1 985	
- 1 236			- 54	- 1 008	6 647	- 4 963	- 472	
						- 106		
						- 4 897		
						- 12 514		
						303		
- 86					- 4 864	- 15 566		
853				- 1	819	2 723		
21 532			190	4 237	49 238	178 707	1 840	
21 532			190	4 237	49 238	128 752	1 840	
7 509			5	2 808	25 620	47 819	609	
1 201				495	231	34 912	495	
12 822			185	934	23 387	46 021	736	
12 819			161	871	22 011	42 315	648	
3			24	63	1 190	1 621	88	
					186	2 085		
						49 955		

Malaysia, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	1 521		35 704	
2 Import	17 160		10 881	15 332
3 Export	- 15		- 16 627	- 12 206
4 International marine and aviation bunkers				- 2 710
5 Stock change	244		70	796
6 Total primary energy supply	18 910		30 028	1 211
7 Transfers				
8 Main activity producers	- 17 090			- 319
9 Autoproducers				- 46
10 Gas processing				2 632
11 Petroleum refineries			- 29 998	24 670
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				- 351
15 Discrepancy	- 37		- 30	117
16 Total final consumption	1 783			27 914
17 Total final energy consumption	1 783			25 270
18 Industry sector	1 783			2 423
19 Transport sector				20 949
20 Other sector				1 898
20.1 Residential & Commercial				1 530
20.2 Agriculture				97
20.3 Other				271
21 Non-energy				2 644

Mexico, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	6 960		124 685	
2 Import	4 884	753	511	42 809
3 Export	- 1		- 65 726	- 9 334
4 International marine and aviation bunkers				- 4 611
5 Stock change	- 213		- 133	- 16
6 Total primary energy supply	11 630	753	59 337	28 848
7 Transfers			- 6 073	7 083
8 Main activity producers	- 8 890			- 6 624
9 Autoproducers		- 123		- 1 522
10 Gas processing				- 328
11 Petroleum refineries			- 53 412	51 521
12 Coal transformation	- 1 265	525		
13 Other transformation			100	- 67
14 Loss & own-use		- 377		- 5 502
15 Discrepancy	- 431	30	48	1 833
16 Total final consumption	1 044	808		75 242
17 Total final energy consumption	1 044	723		70 436
18 Industry sector	1 044	723		7 065
19 Transport sector				52 822
20 Other sector				10 549
20.1 Residential & Commercial				7 379
20.2 Agriculture				3 170
20.3 Other				
21 Non-energy		85		4 806

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
52 446	1 722		27	717		92 137	2 466	
6 295					3	49 670		
- 30 739				- 82	- 60	- 59 730	- 82	
						- 2 710		
				- 34		1 077	- 34	
28 002	1 722		27	600	- 57	80 444	2 349	
- 11 698	- 1 722		- 27	- 76	12 938	- 17 994	- 1 824	
- 965				- 147	535	- 623	- 147	
1 019						3 651		
						- 5 328		
- 985						- 985		
- 4 516					- 869	- 5 736		
- 1					- 162	- 112		
10 855				377	12 386	53 316	377	
5 488				377	12 386	45 305	377	
5 283					5 819	15 309		
184				377	29	21 540	377	
21					6 538	8 457		
21					6 491	8 042		
					47	144		
						271		
5 367						8 011		

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
30 433	2 640	2 753	4 325	8 668		180 464	15 620	
35 554					192	84 703		
- 22					- 169	- 75 252		
						- 4 611		
216						- 146		
66 181	2 640	2 753	4 325	8 668	23	185 158	15 620	
						1 010		
- 26 805	- 2 563	- 2 753	- 3 321		22 881	- 28 075	- 5 884	
- 9 407	- 77		- 761	- 1 745	4 664	- 8 971	- 2 570	
234						- 94		
						- 1 891		
						- 740		
						33		
- 12 275					- 5 293	- 23 447		
- 3 669				- 1	971	- 1 219		
14 259			243	6 922	23 246	121 764	7 165	
13 760			243	6 922	23 246	116 374	7 165	
12 753			12	914	12 548	35 059	926	
23					98	52 943		
984			231	6 008	10 600	28 372	6 239	
984			231	6 008	7 133	21 735	6 239	
					975	4 145		
					2 492	2 492		
499						5 390		

New Zealand, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	1 631		1 834	
2 Import	230		5 574	2 656
3 Export	- 859		- 1 574	- 192
4 International marine and aviation bunkers				- 1 167
5 Stock change	151		- 60	- 177
6 Total primary energy supply	1 153		5 774	1 120
7 Transfers			- 189	197
8 Main activity producers	- 108			- 1
9 Autoproducers	- 7	- 168		
10 Gas processing				
11 Petroleum refineries			- 5 684	5 757
12 Coal transformation	- 432	256		
13 Other transformation				
14 Loss & own-use	- 58	- 50		- 334
15 Discrepancy	- 35	- 1	99	- 373
16 Total final consumption	513	37		6 366
17 Total final energy consumption	513	37		5 994
18 Industry sector	453	37		452
19 Transport sector				4 883
20 Other sector	60			659
20.1 Residential & Commercial	31			232
20.2 Agriculture	29			362
20.3 Other				65
21 Non-energy				372

Papua New Guinea, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production			1 178	
2 Import			1 382	952
3 Export			- 1 178	- 469
4 International marine and aviation bunkers				
5 Stock change			32	50
6 Total primary energy supply			1 415	533
7 Transfers				- 1
8 Main activity producers				- 79
9 Autoproducers				- 555
10 Gas processing				
11 Petroleum refineries			- 1 422	1 375
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy			7	
16 Total final consumption				1 273
17 Total final energy consumption				1 273
18 Industry sector				481
19 Transport sector				643
20 Other sector				148
20.1 Residential & Commercial				
20.2 Agriculture				
20.3 Other				148
21 Non-energy				

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
4 230	2 212		5 032	1 471		16 410	8 715	
						8 460		
						- 2 625		
						- 1 167		
- 21						- 107		
4 209	2 212		5 032	1 471		20 971	8 715	
						8		
- 1 058	- 2 212		- 4 795	- 24	3 574	- 4 624	- 7 031	
- 37	- 1		- 45	- 157	160	- 255	- 203	
						73		
						- 176		
- 221					- 370	- 1 033		
19	1				- 59	- 349		
2 912			192	1 290	3 305	14 615	1 482	
1 662			192	1 290	3 305	12 993	1 482	
1 316			108	1 088	1 197	4 651	1 196	
				3	5	4 891	3	
346			84	199	2 103	3 451	283	
311			70	199	1 873	2 716	269	
35			14		218	658	14	
					12	77		
1 250						1 622		

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
6 656	86		361			8 282	448	
						2 335		
- 5 873						- 7 521		
						82		
783	86		361			3 178	448	
						- 1		
	- 56				80	- 55	- 56	
- 130	- 31		- 361		303	- 775	- 392	
						- 47		
- 616					- 39	- 655		
- 37						- 30		
					343	1 616		
					343	1 616		
					252	733		
						643		
					92	240		
					92	240		

Peru, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	175		5 553	
2 Import	427	80	5 323	4 787
3 Export	- 115		- 117	- 5 083
4 International marine and aviation bunkers				
5 Stock change	318	- 21	14	69
6 Total primary energy supply	804	59	10 774	- 226
7 Transfers			- 2 109	3 300
8 Main activity producers	- 215			- 270
9 Auto-producers	- 84			- 161
10 Gas processing				
11 Petroleum refineries			- 7 965	8 588
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				- 252
15 Discrepancy	51		- 699	- 48
16 Total final consumption	556	59		10 931
17 Total final energy consumption	556	59		10 663
18 Industry sector	556	59		982
19 Transport sector				8 517
20 Other sector				1 164
20.1 Residential & Commercial				1 027
20.2 Agriculture				57
20.3 Other				79
21 Non-energy				268

Philippines, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	5 917		702	
2 Import	10 572		10 569	10 885
3 Export	- 3 607		- 674	- 1 245
4 International marine and aviation bunkers				- 1 345
5 Stock change	205		- 217	- 127
6 Total primary energy supply	13 086		10 380	8 169
7 Transfers				
8 Main activity producers	- 10 232			- 1 230
9 Auto-producers				
10 Gas processing				
11 Petroleum refineries			- 10 498	9 961
12 Coal transformation				
13 Other transformation				
14 Loss & own-use			- 121	
15 Discrepancy			240	- 308
16 Total final consumption	2 854			16 591
17 Total final energy consumption	2 677			15 463
18 Industry sector	2 677			1 458
19 Transport sector				11 021
20 Other sector				2 984
20.1 Residential & Commercial				2 755
20.2 Agriculture				42
20.3 Other				187
21 Non-energy	177			1 129

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
12 648	2 079		145	2 472		23 072	4 696	
				344	2	10 964	344	
- 5 181					- 3	- 10 499		
						380		
7 467	2 079		145	2 816	- 1	23 916	5 040	
						1 191		
- 4 064	- 2 034		- 112	- 123	4 283	- 2 536	- 2 269	
- 227	- 45			- 139	186	- 468	- 183	
						623		
				- 57		- 57	- 57	
- 1 238					- 541	- 2 031		
- 227				8	- 25	- 941		
1 712			33	2 505	3 902	19 698	2 538	
1 712			33	2 505	3 902	19 429	2 538	
1 040				157	2 347	5 141	157	
584				351	4	9 456	351	
88			33	1 996	1 551	4 832	2 029	
88			33	1 993	1 551	4 692	2 026	
				3		60	3	
						79		
						268		

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
3 270	698		9 699	9 877		30 163	20 273	
				145		32 171	145	
						- 5 526		
						- 1 345		
				27		- 113	27	
3 270	698		9 699	10 049		55 349	20 445	
- 3 082	- 698		- 9 699	- 289	7 809	- 17 421	- 10 685	
- 123						- 123		
						- 537		
				- 2 080		- 2 080	- 2 080	
- 123					- 1 431	- 1 675		
123						54		
65				7 679	6 377	33 567	7 679	
65				7 679	6 377	32 261	7 679	
65				1 176	2 074	7 450	1 176	
				430	9	11 460	430	
				6 073	4 294	13 351	6 073	
				6 069	4 077	12 900	6 069	
				1	192	234	1	
				3	26	217	3	
						1 306		

Russia, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	209 159		550 364	
2 Import	13 951	51	753	1 162
3 Export	- 107 467	- 1 567	- 256 134	- 106 137
4 International marine and aviation bunkers				- 15 625
5 Stock change	- 798	- 40	- 414	- 708
6 Total primary energy supply	114 845	- 1 556	294 569	- 121 308
7 Transfers				
8 Main activity producers	- 45 314			- 1 484
9 Autoproducers	- 12 436	- 3 102	- 842	- 5 327
10 Gas processing				
11 Petroleum refineries			- 286 585	275 983
12 Coal transformation	- 46 244	12 739		
13 Other transformation				
14 Loss & own-use	- 1 062	- 964	- 7 101	- 11 798
15 Discrepancy	- 5 258	- 1	- 1	- 1 607
16 Total final consumption	4 531	7 116	40	134 459
17 Total final energy consumption	4 316	7 116	40	86 770
18 Industry sector	1 144	7 116	22	16 005
19 Transport sector				57 625
20 Other sector	3 172		18	13 140
20.1 Residential & Commercial	3 108			9 788
20.2 Agriculture	63		8	2 807
20.3 Other	1		10	545
21 Non-energy	215			47 689

Singapore, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production				
2 Import	420	7	48 886	121 385
3 Export			- 751	- 97 565
4 International marine and aviation bunkers				- 54 641
5 Stock change			- 20	146
6 Total primary energy supply	420	7	48 115	- 30 675
7 Transfers			7 173	- 7 231
8 Main activity producers	- 259			- 47
9 Autoproducers				- 84
10 Gas processing				
11 Petroleum refineries			- 55 288	53 000
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				- 2 060
15 Discrepancy				- 5
16 Total final consumption	161	7		12 898
17 Total final energy consumption	161	7		5 632
18 Industry sector	161	7		3 398
19 Transport sector				2 129
20 Other sector				105
20.1 Residential & Commercial				105
20.2 Agriculture				
20.3 Other				
21 Non-energy				7 266

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
538 402	15 874	51 579	165	8 135		1 373 678	18 951	
7 342				6	275	23 540	6	
-175 120				-32	-1 521	-647 978	-32	
689				14		-15 625	30	
371 313	15 874	51 579	165	8 123	-1 246	732 358	18 955	
-132 561	-15 759	-51 580	-166		146 459	-100 405	-15 925	
-66 830	-114			-4 369	75 530	-17 490	-688	
						-10 602		
						-33 505		
-2 214				-80		-2 294	-80	
-18 899				-144	-51 438	-91 406		
-22	-1	1	1	-2		-6 890		
150 787				3 528	169 305	469 766	2 261	
116 629				3 528	169 305	387 704	2 261	
36 418				1 144	70 984	132 833	64	
29 569					7 099	94 293		
50 642				2 384	91 222	160 578	2 197	
49 342				2 258	87 279	151 775	2 132	
1 299				126	3 909	8 212	65	
1					34	591		
34 158						82 062		

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
			12	656		668	340	
8 712				69		179 479	69	
						-98 316		
						-54 641		
37						163		
8 749			12	725		27 353	409	
						-58		
-6 641			-12	-725	3 926	-3 758	-409	
-887					517	-454		
						-2 288		
-11					-262	-2 333		
-35						-40		
1 175					4 181	18 422		
1 175					4 181	11 156		
1 012					1 630	6 208		
10					227	2 366		
153					2 324	2 582		
151					2 300	2 556		
2					24	26		
						7 266		

Chinese Taipei, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production			8	
2 Import	36 672	133	44 845	19 729
3 Export	- 1			- 17 530
4 International marine and aviation bunkers				- 4 043
5 Stock change	392		141	2
6 Total primary energy supply	37 063	133	44 994	- 1 843
7 Transfers				- 518
8 Main activity producers	- 19 131			- 2 443
9 Autoproducers	- 4 684	- 1 037		- 736
10 Gas processing				
11 Petroleum refineries			- 45 068	46 791
12 Coal transformation	- 6 857	3 520		
13 Other transformation				
14 Loss & own-use		- 1 249		- 2 285
15 Discrepancy	- 96	209	74	463
16 Total final consumption	6 296	1 578		39 429
17 Total final energy consumption	6 266	1 349		16 582
18 Industry sector	6 266	1 349		1 824
19 Transport sector				12 398
20 Other sector				2 360
20.1 Residential & Commercial				2 018
20.2 Agriculture				4
20.3 Other				339
21 Non-energy	30	229		22 847

Thailand, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	4 300		20 066	
2 Import	6 579	7 142	44 249	2 669
3 Export	- 23	- 3	- 1 638	- 9 192
4 International marine and aviation bunkers				- 4 510
5 Stock change	- 1 505	- 3 086	6 321	- 3 518
6 Total primary energy supply	9 351	4 052	68 999	- 14 551
7 Transfers			- 6 205	6 206
8 Main activity producers	- 7 579	- 561		- 108
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 57 190	48 653
12 Coal transformation				
13 Other transformation				497
14 Loss & own-use				- 1 465
15 Discrepancy			1 484	3
16 Total final consumption	1 771	3 491	7 088	39 236
17 Total final energy consumption	1 771	3 491		35 574
18 Industry sector	1 771	3 491		6 601
19 Transport sector				23 485
20 Other sector				5 488
20.1 Residential & Commercial				2 485
20.2 Agriculture				2 992
20.3 Other				10
21 Non-energy			7 088	3 662

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
263	564	8 169	324	1 549		10 876	1 878	
17 770						119 149		
						- 17 531		
						- 4 043		
58						594		
18 091	564	8 169	324	1 549		109 045	1 878	
						- 518		
- 13 202	- 564	- 8 169	- 125	- 31	19 542	- 24 122	- 689	
- 59			- 96	- 1 417	3 171	- 4 856	- 1 000	
- 741						- 741		
						1 723		
						- 3 337		
- 187			- 2		- 1 729	- 5 450	- 2	
- 759					- 650	- 759		
3 145			101	102	20 335	70 985	188	
3 145			101	102	20 335	47 879	188	
1 710				102	11 669	22 920	87	
					117	12 515		
1 435			101		8 549	12 445	101	
1 435			101		8 297	11 851	101	
					168	172		
					83	421		
						23 106		

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
28 437	314		346	27 312		80 775	27 972	
12 832				63	1 705	75 239	63	
				- 23	- 123	- 11 002	- 23	
						- 4 510		
37				60		- 1 692	60	
41 305	314		346	27 412	1 581	138 810	28 072	
						1		
- 27 068	- 314		- 340	- 7 432	16 137	- 27 266	- 8 086	
						- 8 537		
				- 7 241		- 6 744	- 7 241	
- 7 887					- 1 454	- 10 806		
1 561						3 048		
7 912			7	12 738	16 264	88 507	12 745	
6 091			7	12 738	16 264	75 937	12 745	
3 624				7 237	6 779	29 504	7 237	
2 466					10	25 960		
1			7	5 502	9 475	20 473	5 508	
1			7	5 502	9 453	17 448	5 508	
					23	3 015		
						10		
1 820						12 570		

United States, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	348 463		560 147	
2 Import	5 064	143	437 181	74 738
3 Export	- 35 581	- 625	- 50 837	- 187 331
4 International marine and aviation bunkers				- 41 390
5 Stock change	23 587	521	- 4 326	- 892
6 Total primary energy supply	341 533	39	942 165	- 154 875
7 Transfers			- 81 129	83 864
8 Main activity producers	- 313 826	- 225		- 5 862
9 Autoproducers	- 1 545	- 361		- 1 676
10 Gas processing	- 1 935			
11 Petroleum refineries			- 865 569	848 914
12 Coal transformation	- 12 300	5 725		
13 Other transformation			4 951	
14 Loss & own-use	- 32	- 1 103		- 34 472
15 Discrepancy	1 534	- 2	2 580	5 496
16 Total final consumption	13 429	4 073	2 998	741 389
17 Total final energy consumption	13 429	4 073		626 621
18 Industry sector	12 891	4 073		20 206
19 Transport sector				564 833
20 Other sector	538			41 582
20.1 Residential & Commercial	538			27 438
20.2 Agriculture				14 144
20.3 Other				
21 Non-energy			2 998	114 768

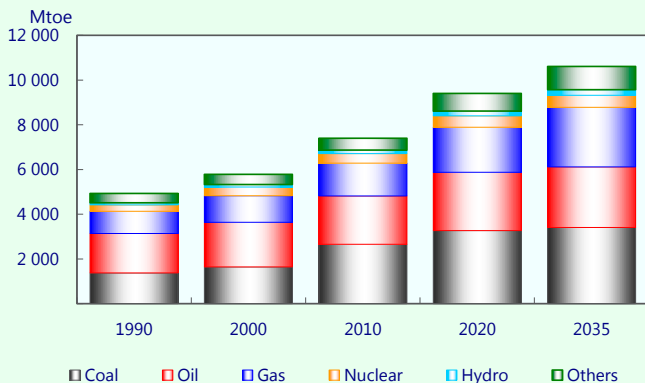
Viet Nam, 2016

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	21 575		16 613	
2 Import	7 391		51	13 828
3 Export	- 696		- 8 671	- 1 467
4 International marine and aviation bunkers				- 1 183
5 Stock change	- 378		258	64
6 Total primary energy supply	27 892		8 251	11 243
7 Transfers			- 1 109	1 080
8 Main activity producers	- 16 144			- 464
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 7 142	7 039
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				79
16 Total final consumption	11 748			18 976
17 Total final energy consumption	11 748			18 319
18 Industry sector	8 908			7 134
19 Transport sector				8 923
20 Other sector	2 840			2 262
20.1 Residential & Commercial	2 800			1 772
20.2 Agriculture	40			490
20.3 Other				
21 Non-energy				657

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
627 317	23 187	218 848	35 619	102 108		1 915 689	156 291	
69 549				3 209	5 985	595 869	3 209	
- 52 677				- 2 970	- 802	- 330 823	- 2 970	
						- 41 390		
8 695				- 301		27 284	- 301	
652 884	23 187	218 848	35 619	102 046	5 183	2 166 629	156 229	
						2 735		
- 234 168	- 23 057	- 218 848	- 32 166	- 15 308	366 292	- 477 168	- 67 328	
- 13 558	- 130		- 1 199	- 5 829	15 540	- 8 758	- 6 433	
1 130						- 805		
						- 16 655		
						- 6 575		
- 4 388						563		
- 58 375				- 139	- 52 981	- 147 102	- 139	
- 7 436			- 1	- 4		2 167		
336 089			2 253	80 766	334 034	1 515 031	82 325	
317 407			2 253	80 766	334 034	1 378 583	82 325	
123 292				29 731	73 760	263 953	29 260	
17 389				38 654	911	621 787	38 654	
176 726			2 253	12 381	259 363	492 843	14 411	
175 234			2 253	11 219	239 568	456 250	13 249	
1 492				1 162	3 534	20 332	1 162	
					16 261	16 261		
18 682						136 448		

							Unit: ktoe	
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity and Heat	Total	Total Renewables	
8 271	5 496		17	7 975		59 947	13 488	
					235	21 506		
					- 64	- 10 898		
						- 1 183		
						- 55		
8 271	5 496		17	7 975	172	69 317	13 488	
						- 28		
- 7 587	- 5 496		- 17		15 511	- 14 198	- 5 514	
				- 1 070		- 1 070	- 1 070	
						- 103		
						- 1 740		
						- 172	- 94	
684				6 905	13 770	52 084	6 905	
684				6 905	13 770	51 427	6 905	
684				3 985	7 409	28 121	3 985	
						8 923		
				2 920	6 362	14 384	2 920	
				2 601	6 050	13 224	2 601	
				319	311	1 160	319	
						658		

Primary energy supply outlook by energy

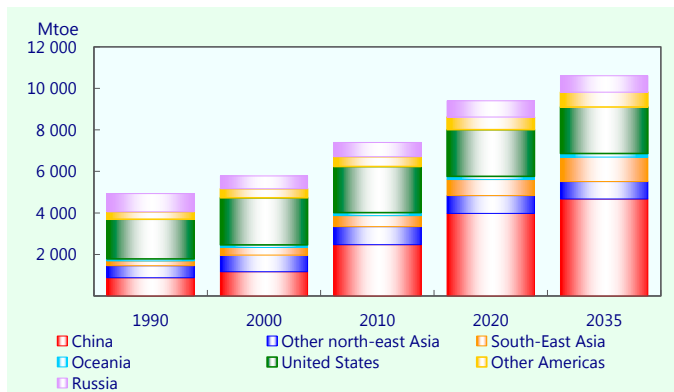


	Mtoe				
	1990	2000	2010	2020	2035
Coal	1 377	1 640	2 656	3 270	3 411
Oil	1 761	2 003	2 160	2 605	2 704
Gas	994	1 184	1 467	2 014	2 665
Nuclear	286	390	432	516	543
Hydro	92	107	152	210	247
Others	421	461	533	790	1 042
Total	4 931	5 786	7 400	9 403	10 611

	Share (%)				
	1990	2000	2010	2020	2035
Coal	27.9	28.3	35.9	34.8	32.1
Oil	35.7	34.6	29.2	27.7	25.5
Gas	20.2	20.5	19.8	21.4	25.1
Nuclear	5.8	6.7	5.8	5.5	5.1
Hydro	1.9	1.9	2.1	2.2	2.3
Others	8.5	8.0	7.2	8.4	9.8

Source: Asia Pacific Energy Research Centre, May 2016.

Primary energy supply outlook by region



	Mtoe				
	1990	2000	2010	2020	2035
China	871	1 161	2 469	3 974	4 674
Other north-east Asia	589	806	874	862	840
South-East Asia	223	367	530	769	1 175
Oceania	100	126	145	159	175
United States	1 915	2 273	2 215	2 253	2 241
Other Americas	355	434	478	608	716
Russia	879	619	690	778	790
APEC 21	4 931	5 786	7 400	9 403	10 611
	Share (%)				
	1990	2000	2010	2020	2035
China	17.7	20.1	33.4	42.3	44.0
Other north-east Asia	11.9	13.9	11.8	9.2	7.9
South-East Asia	4.5	6.3	7.2	8.2	11.1
Oceania	2.0	2.2	2.0	1.7	1.6
United States	38.8	39.3	29.9	24.0	21.1
Other Americas	7.2	7.5	6.5	6.5	6.8
Russia	17.8	10.7	9.3	8.3	7.4

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

Selected energy indicators APEC region

	Population			Real GDP			Real GDP	
	Millions			Billion (constant 2010 USD)			Billion, PPP at constant 2011USD	
	1990	2000	2016	1990	2000	2016	1990	2000
APEC	2 288	2 557	2 871	19 893	27 083	43 944	23 489	32 709
North-east Asia	1 328	1 465	1 588	6 162	8 759	17 669	6 498	10 783
China	1 135	1 263	1 379	830	2 237	9 505	1 733	4 673
Hong Kong, China	5.7	6.7	7.3	104	153	270.1	154	227
Japan	124	127	127	4 704	5 349	6 053	3 778	4 296
Korea	43	47	51	363	710	1 306	499	976
Chinese Taipei	20	22	24	162	309	535	335	611
South-East Asia	390	460	565	734	1 167	2 550	1 880	2 956
Brunei Darussalam	0.3	0.3	0.4	10	12	13.3	22	27
Indonesia	181	212	261	310	453	1 038	839	1 228
Malaysia	18	23	31	82	163	344	190	378
Philippines	62	78	103	95	125	284	248	329
Singapore	3.0	4.0	5.6	68	134	299.2	105	208
Thailand	57	63	69	142	218	407	376	579
Viet Nam	68	80	95	29	61	164	99	206
Oceania	25	29	37	727	1 005	1 602	578	799
Australia	17	19	24	638	884	1 405	489	678
New Zealand	3.3	3.9	4.7	83	112	176.1	79	107
Papua New Guinea	4.3	5.6	8.1	6.4	10	20.4	10	15
Americas	398	456	537	10 856	15 201	20 469	11 472	16 111
Canada	28	31	36	1 014	1 343	1 828	870	1 152
Mexico	85	102	128	640	915	1 259	1 116	1 595
United States	250	282	323	9 064	12 713	16 920	9 252	12 976
Chile	13	15	18	79	145	268	119	218
Peru	22	26	32	58	86	194	116	170
Russia	148	147	144	1 414	952	1 654	3 061	2 060

	Energy Indigenous Production			Net Import			Total Primary Energy Supply			
	Mtoe			Mtoe			Mtoe			
2016	1990	2000	2016	1990	2000	2016	1990	2000	2016	
61 201	4 705	5 023	7 502	143	617	514	4 692	5 537	7 892	
28 036	814	1 091	2 386	460	710	1 334	1 235	1 742	3 712	
19 854	706	940	2 292	- 30	33	552	654	951	2 880	PRC
399.2	0.0	0.0	0.1	11	18	31	8.9	13	14	HKC
4 862	75	105	32	369	417	402	433	510	426	JPN
1 795	23	34	51	70	166	247	93	188	282	ROK
1 127	11	11	11	40	75	102	46	80	109	CT
6 486	282	414	720	- 57	- 45	- 41	204	339	600	
30.4	16	19	17.6	- 15	- 17	- 13.3	1.3	2.8	4.3	BD
2 811	170	230	439	- 71	- 87	- 201	94	140	224	INA
801	46	76	92	- 26	- 27	- 10	21	48	80	MAS
747	17	20	30	12	20	27	28	39	55	RP
463.3	0.1	0.2	0.7	25	41	81.2	12	19	27.4	SIN
1 082	26	43	81	18	34	64	42	75	139	THA
552	5.8	26	60	- 0.2	- 10	11	5.4	15	69	VN
1 276	174	252	415	- 66	- 127	- 259	100	121	154	
1 077	158	234	390	- 65	- 127	- 260	86	103	130	AUS
167.9	11	14	16.4	2.1	3.4	5.8	13	17	21.0	NZ
30.9	4.6	3.9	8.3	- 3.7	- 2.7	- 5.2	0.9	1.1	3.2	PNG
21 821	2 143	2 289	2 607	219	427	105	2 274	2 715	2 694	
1 568	276	375	476	- 59	- 128	- 196	211	254	280	CDA
2 195	196	229	180	- 70	- 72	9	124	151	185	MEX
17 270	1 653	1 667	1 916	342	606	265	1 915	2 273	2 167	USA
405	7.9	8.6	13	7.0	18	26	14	25	38	CHL
384	11	9.1	23	- 0.6	3.3	0.5	10	12	24	PE
3 581	1 293	978	1 374	- 413	- 350	- 624	879	619	732	RUS

	Total Final Energy Consumption			Final Consumption of Electricity			Total Primary Energy Supply	
	Mtoe			TWh			toe / Person	
	1990	2000	2016	1990	2000	2016	1990	2000
APEC	3 039	3 363	4 737	5 835	7 766	13 367	2.05	2.17
North-east Asia	845	1 007	2 179	1 546	2 459	6 866	0.93	1.19
China	490	547	1 736	606	1 036	5 102	0.58	0.75
Hong Kong, China	5.0	8.6	6.8	24	36	44	1.56	1.88
Japan	271	317	259	745	964	966	3.50	4.02
Korea	58	102	129	94	263	517	2.17	4.00
Chinese Taipei	21	32	48	77	160	236	2.27	3.58
South-East Asia	132	216	370	125	309	835	0.52	0.74
Brunei Darussalam	0.4	0.6	0.9	1.2	2.5	3.3	4.92	8.27
Indonesia	66	105	153	28	80	216	0.52	0.66
Malaysia	12	28	45	20	61	144	1.15	2.08
Philippines	19	23	32	21	37	74	0.46	0.50
Singapore	3.1	6	11	13	27	49	3.78	4.63
Thailand	29	47	76	38	88	189	0.75	1.19
Viet Nam	2.4	7.0	51	3.3	13	160	0.08	0.18
Oceania	62	77	91	159	209	254	4.05	4.24
Australia	53	65	77	129	173	212	5.06	5.38
New Zealand	9	11	13	28	34	38	3.84	4.42
Papua New Guinea	0.6	0.9	1.6	1.7	2.3	4.0	0.20	0.20
Americas	1 414	1 681	1 708	3 179	4 180	4 667	5.72	5.96
Canada	147	172	168	418	482	475	7.60	8.24
Mexico	74	88	116	100	145	270	1.45	1.48
United States	1 174	1 393	1 379	2 634	3 499	3 807	7.67	8.06
Chile	10	18	26	15	37	70	1.06	1.65
Peru	8.7	11	19	12	17	45	0.46	0.48
Russia	585	382	388	827	609	745	5.93	4.22

	Total Primary Energy Supply per Real GDP			Total Primary Energy Supply per Real GDP			Total Final Energy Consumption per Capita			
	toe / Million USD at constant 2010 values			toe / Million USD at 2011 PPP			toe / Person			
2016	1990	2000	2016	1990	2000	2016	1990	2000	2016	
2.75	235.9	204.4	179.6	199.8	169.3	128.9	1.33	1.32	1.65	
2.34	200.4	198.9	210.1	190.0	161.6	132.4	0.64	0.69	1.37	
2.09	788.4	425.2	303.0	377.4	203.6	145.1	0.43	0.43	1.26	PRC
1.96	86	82	53	58	55	36	0.87	1.30	0.93	HKC
3.36	92	95	70	114	119	88	2.19	2.50	2.04	JPN
5.51	256	265	216	186	193	157	1.36	2.17	2.51	ROK
4.63	287	258	204	139	131	97	1.03	1.45	2.03	CT
1.06	278	290	235	109	115	92	0.34	0.47	0.66	
10.18	133	230	324	58	101	142	1.47	1.73	2.02	BD
0.86	304	310	216	112	114	80	0.36	0.50	0.59	INA
2.58	253	297	234	109	127	100	0.68	1.19	1.45	MAS
0.54	299	311	195	114	118	74	0.31	0.30	0.31	RP
4.88	171	139	91	110	90	59	1.02	1.39	1.99	SIN
2.02	300	343	341	113	129	128	0.51	0.75	1.10	THA
0.73	184	243	422	55	72	126	0.04	0.09	0.54	VN
4.16	138	121	96	173	152	121	2.53	2.71	2.47	
5.36	135	117	92	177	152	120	3.09	3.40	3.17	AUS
4.47	155	153	119	162	160	125	2.73	2.93	2.77	NZ
0.39	134	117	156	84	73	103	0.14	0.16	0.20	PNG
5.02	209	179	132	198	169	123	3.55	3.69	3.18	
7.72	208	189	153	243	220	179	5.28	5.57	4.62	CDA
1.45	193	165	147	111	95	84	0.87	0.86	0.91	MEX
6.70	211	179	128	207	175	125	4.70	4.94	4.26	USA
2.11	178	174	141	118	115	93	0.77	1.18	1.45	CHL
0.75	170	144	124	86	73	62	0.40	0.42	0.61	PE
5.07	622	651	443	287	301	204	3.94	2.60	2.69	RUS

	Energy Related CO ₂ Emission			CO ₂ Emission per Capita		
	Mt-C			t-C / Person		
	1990	2000	2016	1990	2000	2016
APEC	3 360	3 936	5 583	1.47	1.54	1.94
North-east Asia	1 001.2	1 387.6	3 024.6	0.75	0.95	1.90
China	581.5	835.7	2 463.8	0.51	0.66	1.79
Hong Kong, China	8.9	10.2	10.2	1.56	1.53	1.38
Japan	318.6	368.0	323.7	2.58	2.90	2.55
Korea	62.4	115.5	155.5	1.46	2.46	3.03
Chinese Taipei	29.9	58.2	71.4	1.46	2.61	3.03
South-East Asia	97.9	185.4	347.2	0.25	0.40	0.61
Brunei Darussalam	1.0	1.6	2.2	3.98	4.68	5.20
Indonesia	37.3	73.0	131.0	0.21	0.35	0.50
Malaysia	15.4	28.6	56.0	0.85	1.23	1.79
Philippines	9.8	17.5	30.1	0.16	0.22	0.29
Singapore	7.9	11.6	12.4	2.60	2.88	2.21
Thailand	21.8	41.1	63.6	0.38	0.65	0.92
Viet Nam	4.7	12.0	51.9	0.07	0.15	0.55
Oceania	77.5	99.8	117.3	3.14	3.49	3.17
Australia	70.6	91.0	106.9	4.14	4.75	4.42
New Zealand	6.3	7.9	8.3	1.88	2.06	1.77
Papua New Guinea	0.6	0.8	2.1	0.15	0.15	0.26
Americas	1 571.6	1 859.2	1 699.9	3.95	4.08	3.17
Canada	113.8	140.2	137.3	4.09	4.56	3.78
Mexico	70.3	98.3	121.9	0.82	0.97	0.96
United States	1 374.1	1 600.0	1 402.4	5.50	5.67	4.34
Chile	8.1	13.4	23.5	0.61	0.88	1.31
Peru	5.3	7.4	14.8	0.24	0.28	0.47
Russia	611.8	403.6	394.3	4.13	2.75	2.7

CO ₂ Emission per Real GDP			CO ₂ Emission per Real GDP			CO ₂ Emission per Total Primary Energy Supply			
kt-C / Billion USD at constant 2010 values			kt-C / Billion USD at 2011 PPP			t-C / toe			
1990	2000	2016	1990	2000	2016	1990	2000	2016	
168.9	145.3	127.1	143.0	120.3	91.2	0.72	0.71	0.71	
162.5	158.4	171.2	154.1	128.7	107.9	0.81	0.80	0.81	
701.0	373.6	259.2	335.6	178.9	124.1	0.89	0.88	0.86	PRC
85.4	66.5	37.6	57.8	45.0	25.4	1.00	0.81	0.71	HKC
67.7	68.8	53.5	84.3	85.6	66.6	0.74	0.72	0.76	JPN
171.9	162.7	119.1	125.1	118.4	86.6	0.67	0.61	0.55	ROK
184.8	188.2	133.4	89.3	95.2	63.4	0.64	0.73	0.65	CT
133.3	158.9	136.2	52.1	62.7	53.5	0.48	0.55	0.58	
107.4	130.3	165.5	47.0	57.1	72.5	0.81	0.57	0.51	BD
120.4	161.0	126.2	44.4	59.4	46.6	0.40	0.52	0.58	INA
187.9	176.0	162.7	80.7	75.6	69.9	0.74	0.59	0.70	MAS
103.7	139.4	105.9	39.5	53.0	40.3	0.35	0.45	0.54	RP
117.4	86.1	41.4	75.8	55.6	26.7	0.69	0.62	0.45	SIN
153.7	188.8	156.3	57.8	71.1	58.8	0.51	0.55	0.46	THA
158.2	196.6	316.2	47.0	58.5	94.0	0.86	0.81	0.75	VN
106.6	99.3	73.3	134.0	124.8	92.0	0.77	0.82	0.76	
110.7	103.0	76.1	144.3	134.3	99.3	0.82	0.88	0.82	AUS
75.7	70.9	47.3	79.4	74.4	49.6	0.49	0.46	0.40	NZ
98.2	86.7	102.7	61.7	54.5	68.0	0.73	0.74	0.66	PNG
144.8	122.3	83.0	137.0	115.4	77.9	0.69	0.68	0.63	
112.2	104.4	75.1	130.8	121.7	87.5	0.54	0.55	0.49	CDA
109.8	107.4	96.8	63.0	61.6	55.5	0.57	0.65	0.66	MEX
151.6	125.9	82.9	148.5	123.3	81.2	0.72	0.70	0.65	USA
102.7	92.7	87.7	67.9	61.3	58.0	0.58	0.53	0.62	CHL
91.3	85.7	76.4	46.0	43.2	38.5	0.54	0.60	0.62	PE
432.7	424.1	238.4	199.9	195.9	110.1	0.70	0.65	0.54	RUS

Glossary

General note

The definition 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 definition 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 C₉ to C₁₆ 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 (C₃H₈) and butane (C₄H₁₀) or mixtures of both. Commercial grades are usually mixtures of the gases with small amounts of propylene, butylene, isobutene and isobutylene stored under pressure in containers.

Others

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

Gas

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

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

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

Natural gas may be liquefied (LNG) by reducing its temperature in order to simplify storage and transportation when production sites are remote from

centres of consumption and pipeline transportation is not economically practicable.

Hydro

The primary equivalent of electricity generated from hydroelectric power plants.

Nuclear

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

Others

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

Total renewables

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

Sectors

Indigenous production

Quantities of fuels extracted within the economy.

Net imports

Defined as imports minus exports.

Total primary energy supply (TPES)

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

Refining

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

Power generation

Production of electricity from thermal, hydro, nuclear, geothermal and other power plants of public utilities and auto-producers. An auto-producer is an establishment which, in addition to its main activities, generates electricity wholly or partially for its own use, such as industries, railways, refineries, etc.

Total final consumption

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

Total final energy consumption (TFEC)

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

Industry

These sector 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.

