



Asia-Pacific  
Economic Cooperation

# APEC

## ENERGY HANDBOOK

# 2015

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ENERGY WORKING GROUP  
OCTOBER 2017

COORDINATING AGENCY:  
ENERGY STATISTICS AND TRAINING OFFICE  
ASIA PACIFIC ENERGY RESEARCH CENTRE

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## Preface

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The APEC Energy Handbook 2015 is a handy, pocket-sized summary of key energy data and a supplement to APEC Energy Statistics 2015, which was released in October 2017.

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:

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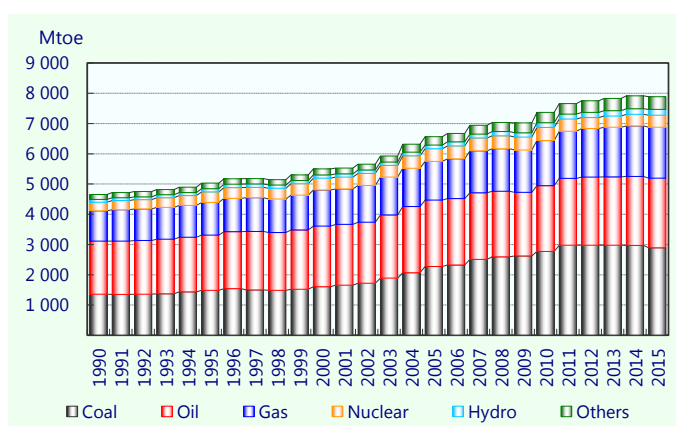
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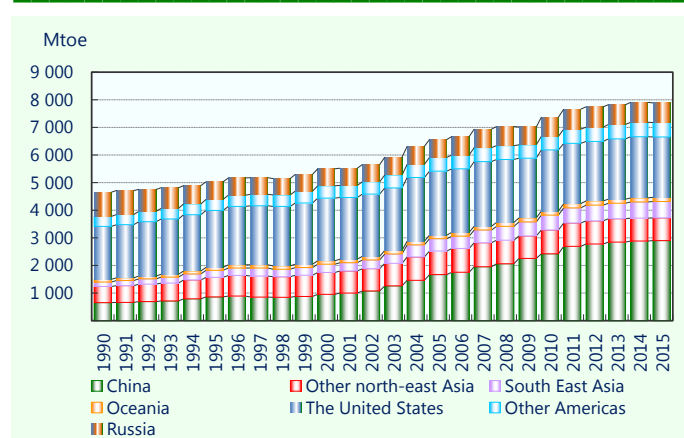
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## Total primary energy supply by energy APEC



	1990	1995	2000	2005	2010	Mtoe 2015
Coal	1 361.3	1 486.5	1 608.2	2 270.7	2 771.9	2 895.7
Oil	1 753.6	1 824.0	1 998.1	2 197.3	2 176.9	2 298.6
Gas	996.0	1 083.1	1 200.0	1 281.9	1 491.4	1 684.0
Nuclear	284.2	345.1	389.5	416.2	433.6	395.2
Hydro	92.9	108.1	107.7	125.3	153.4	190.7
Others	166.1	181.7	198.0	273.4	340.2	421.0
<b>Total</b>	<b>4 654.1</b>	<b>5 028.3</b>	<b>5 501.6</b>	<b>6 564.9</b>	<b>7 367.4</b>	<b>7 885.2</b>
	1990	1995	2000	2005	2010	Share (%) 2015
Coal	29.2	29.6	29.2	34.6	37.6	36.7
Oil	37.7	36.3	36.3	33.5	29.5	29.2
Gas	21.4	21.5	21.8	19.5	20.2	21.4
Nuclear	6.1	6.9	7.1	6.3	5.9	5.0
Hydro	2.0	2.1	2.0	1.9	2.1	2.4
Others	3.6	3.6	3.6	4.2	4.6	5.3

## Total primary energy supply by region APEC

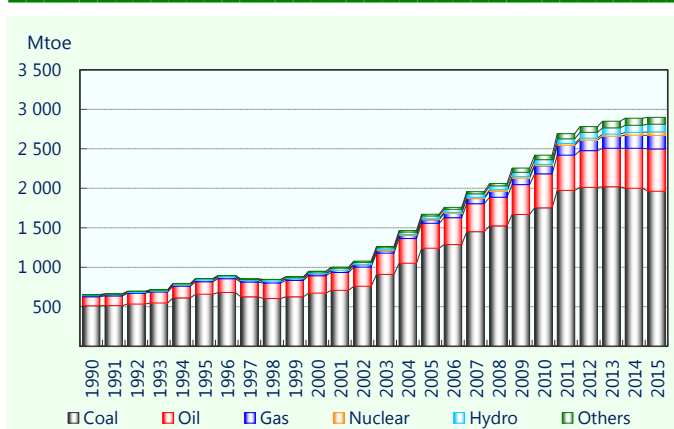


	Mtoe					
	1990	1995	2000	2005	2010	2015
Other north-east Asia	583.7	712.4	795.9	850.2	866.8	825.7
South East Asia	163.3	250.2	298.7	446.2	537.2	596.4
Oceania	100.0	108.5	121.3	132.2	148.0	149.7
Other Americas	358.9	395.3	442.0	495.0	492.1	517.7
China	654.0	858.0	951.2	1 670.9	2 419.7	2 897.6
Russia	879.2	636.6	619.3	651.7	688.4	709.7
The United States	1 915.1	2 067.3	2 273.3	2 318.8	2 215.2	2 188.3
<b>Total</b>	<b>4 654.1</b>	<b>5 028.3</b>	<b>5 501.6</b>	<b>6 564.9</b>	<b>7 367.4</b>	<b>7 885.2</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Other north-east Asia	12.5	14.2	14.5	13.0	11.8	10.5
South East Asia	3.5	5.0	5.4	6.8	7.3	7.6
Oceania	2.1	2.2	2.2	2.0	2.0	1.9
Other Americas	7.7	7.9	8.0	7.5	6.7	6.6
China	14.1	17.1	17.3	25.5	32.8	36.7
Russia	18.9	12.7	11.3	9.9	9.3	9.0
The United States	41.1	41.1	41.3	35.3	30.1	27.8

## Total primary energy supply by energy China

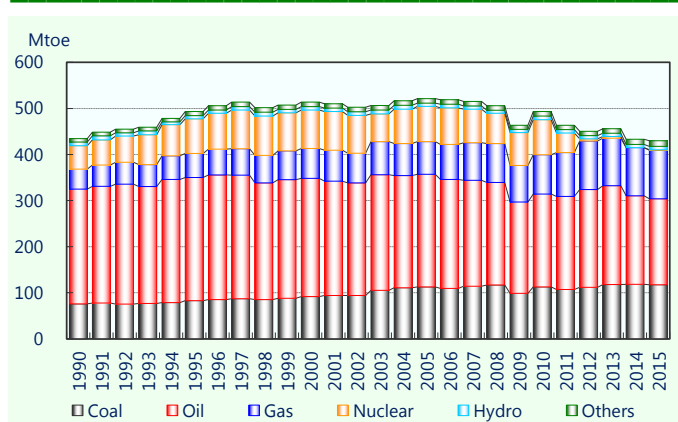


	Mtoe					
	1990	1995	2000	2005	2010	2015
Coal	512.2	659.2	672.7	1 239.7	1 753.1	1 963.1
Oil	114.4	158.5	221.0	317.8	428.4	535.2
Gas	14.2	16.7	22.4	43.2	100.6	171.2
Nuclear	-	3.3	4.4	13.8	19.3	44.5
Hydro	10.9	16.4	19.1	34.1	62.1	95.8
Others	2.3	3.8	11.6	22.3	56.3	87.7
<b>Total</b>	<b>654.0</b>	<b>858.0</b>	<b>951.2</b>	<b>1 670.9</b>	<b>2 419.7</b>	<b>2 897.6</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Coal	78.3	76.8	70.7	74.2	72.5	67.8
Oil	17.5	18.5	23.2	19.0	17.7	18.5
Gas	2.2	1.9	2.4	2.6	4.2	5.9
Nuclear	-	0.4	0.5	0.8	0.8	1.5
Hydro	1.7	1.9	2.0	2.0	2.6	3.3
Others	0.3	0.4	1.2	1.3	2.3	3.0



## Total primary energy supply by energy Japan



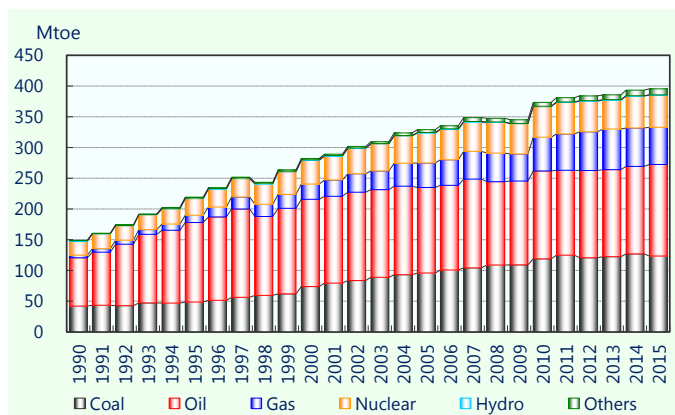
	Mtoe					
	1990	1995	2000	2005	2010	2015
Coal	75.7	82.8	91.8	112.9	112.5	117.2
Oil	249.1	267.4	256.5	244.3	201.8	186.9
Gas	43.5	52.0	64.9	70.9	85.3	105.2
Nuclear	51.0	75.0	83.3	76.4	76.2	1.2
Hydro	7.8	7.1	7.5	7.0	7.8	7.2
Others	7.5	8.8	9.6	9.8	9.6	12.4
<b>Total</b>	<b>434.6</b>	<b>493.2</b>	<b>513.6</b>	<b>521.2</b>	<b>493.2</b>	<b>430.1</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Coal	17.4	16.8	17.9	21.7	22.8	27.3
Oil	57.3	54.2	49.9	46.9	40.9	43.5
Gas	10.0	10.5	12.6	13.6	17.3	24.5
Nuclear	11.7	15.2	16.2	14.7	15.4	0.3
Hydro	1.8	1.4	1.5	1.4	1.6	1.7
Others	1.7	1.8	1.9	1.9	1.9	2.9

Primary Energy Supply

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

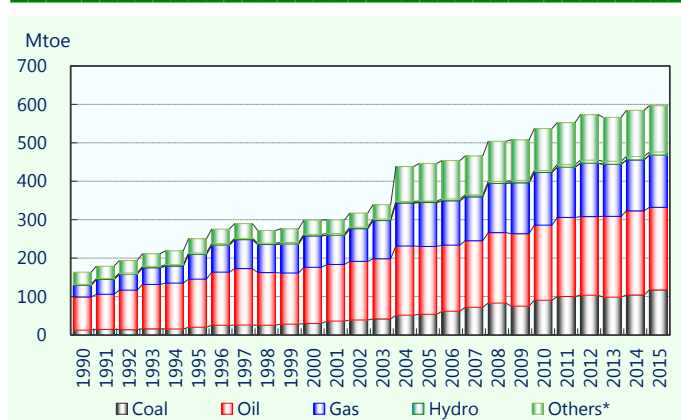


	Mtoe					
	1990	1995	2000	2005	2010	2015
Coal	42.0	48.4	73.6	95.7	118.9	123.5
Oil	78.4	129.6	142.3	139.3	143.2	148.8
Gas	4.5	12.0	24.6	39.9	54.8	60.5
Nuclear	22.3	26.7	38.4	48.7	49.6	52.4
Hydro	1.3	1.0	1.1	1.0	0.7	0.5
Others	0.6	1.5	2.2	4.4	6.5	9.8
<b>Total</b>	<b>149.0</b>	<b>219.2</b>	<b>282.2</b>	<b>329.0</b>	<b>373.6</b>	<b>395.6</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Coal	28.1	22.1	26.1	29.1	31.8	31.2
Oil	52.6	59.1	50.4	42.4	38.3	37.6
Gas	3.0	5.5	8.7	12.1	14.7	15.3
Nuclear	15.0	12.2	13.6	14.8	13.3	13.3
Hydro	0.8	0.5	0.4	0.3	0.2	0.1
Others	0.4	0.7	0.8	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

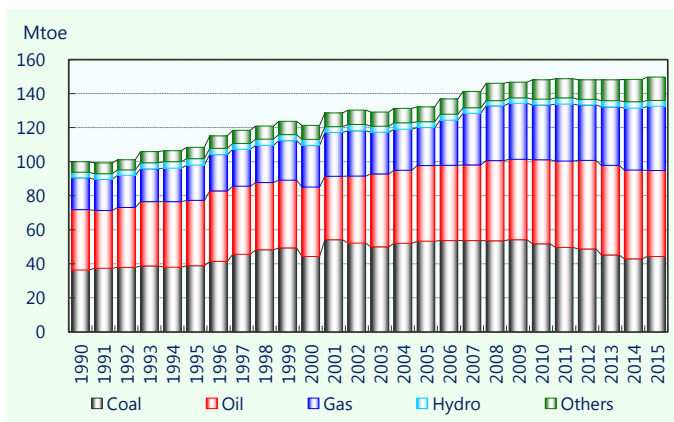


	Mtoe					
	1990	1995	2000	2005	2010	2015
Coal	12.8	20.2	29.9	53.6	90.4	116.9
Oil	86.0	125.0	145.9	176.8	195.4	214.9
Gas	30.2	64.4	81.8	114.1	136.8	136.1
Nuclear	-	-	-	-	-	-
Hydro	2.7	3.7	3.9	4.2	5.6	8.3
Others*	31.6	36.8	37.3	97.6	109.0	120.3
<b>Total</b>	<b>163.3</b>	<b>250.2</b>	<b>298.7</b>	<b>446.2</b>	<b>537.2</b>	<b>596.4</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Coal	7.9	8.1	10.0	12.0	16.8	19.6
Oil	52.7	50.0	48.8	39.6	36.4	36.0
Gas	18.5	25.8	27.4	25.6	25.5	22.8
Nuclear	-	-	-	-	-	-
Hydro	1.6	1.5	1.3	0.9	1.0	1.4
Others*	19.4	14.7	12.5	21.9	20.3	20.2

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

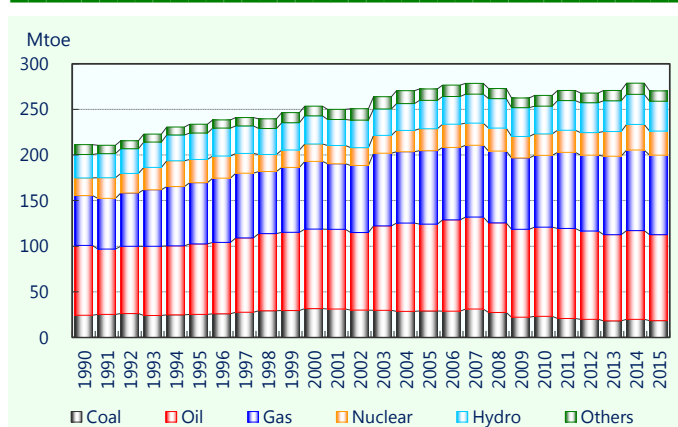
### Total primary energy supply by energy Oceania



	Mtoe					
	1990	1995	2000	2005	2010	2015
Coal	36.3	38.8	44.2	53.2	51.8	44.3
Oil	35.5	38.4	40.8	44.5	49.3	50.5
Gas	18.7	20.6	24.4	22.3	32.3	37.8
Nuclear	-	-	-	-	-	-
Hydro	3.3	3.8	3.6	3.4	3.4	3.3
Others	6.3	6.7	8.2	8.7	11.3	13.8
<b>Total</b>	<b>100.0</b>	<b>108.5</b>	<b>121.3</b>	<b>132.2</b>	<b>148.0</b>	<b>149.7</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Coal	36.3	35.8	36.5	40.3	35.0	29.6
Oil	35.5	35.4	33.6	33.7	33.3	33.8
Gas	18.7	19.0	20.2	16.9	21.8	25.2
Nuclear	-	-	-	-	-	-
Hydro	3.3	3.5	3.0	2.6	2.3	2.2
Others	6.3	6.2	6.8	6.6	7.6	9.2

## Total primary energy supply by energy Canada



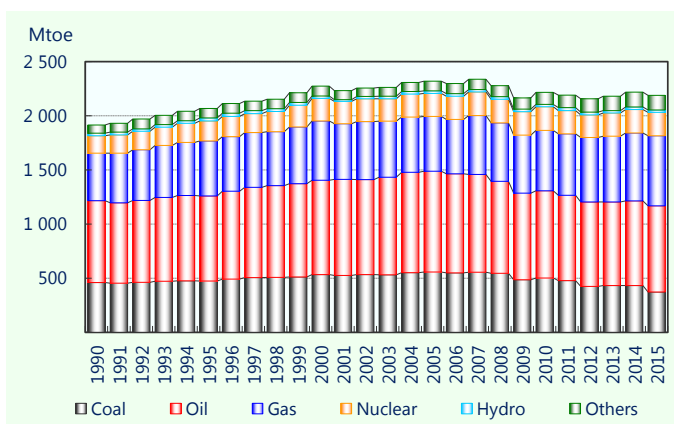
	Mtoe					
	1990	1995	2000	2005	2010	2015
Coal	24.3	25.3	31.7	28.9	23.2	18.4
Oil	76.5	77.2	87.1	95.3	97.8	94.3
Gas	54.7	67.1	74.2	80.6	78.6	87.0
Nuclear	19.4	25.6	19.0	24.0	23.6	26.4
Hydro	25.5	28.9	30.8	31.1	30.2	32.7
Others	10.8	9.8	10.8	12.5	11.8	11.3
<b>Total</b>	<b>211.3</b>	<b>233.8</b>	<b>253.6</b>	<b>272.4</b>	<b>265.2</b>	<b>270.2</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Coal	11.5	10.8	12.5	10.6	8.7	6.8
Oil	36.2	33.0	34.3	35.0	36.9	34.9
Gas	25.9	28.7	29.3	29.6	29.6	32.2
Nuclear	9.2	10.9	7.5	8.8	8.9	9.8
Hydro	12.1	12.4	12.2	11.4	11.4	12.1
Others	5.1	4.2	4.3	4.6	4.4	4.2

Primary Energy Supply

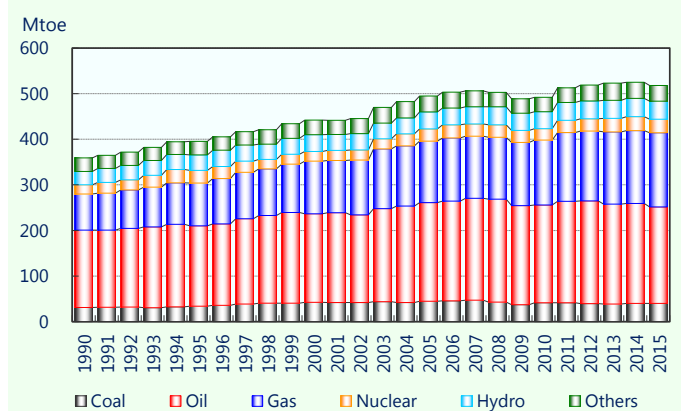
### Total primary energy supply by energy The United States



	Mtoe					
	1990	1995	2000	2005	2010	2015
Coal	460.3	474.1	533.6	558.3	502.6	374.1
Oil	756.8	785.6	871.1	929.2	805.6	794.0
Gas	438.2	507.3	547.6	507.1	555.9	646.4
Nuclear	159.4	186.0	207.9	211.3	218.6	216.4
Hydro	23.5	27.0	21.8	23.4	22.6	21.6
Others	76.8	87.4	91.3	89.5	109.9	135.8
<b>Total</b>	<b>1,915.1</b>	<b>2,067.3</b>	<b>2,273.3</b>	<b>2,318.8</b>	<b>2,215.2</b>	<b>2,188.3</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Coal	24.0	22.9	23.5	24.1	22.7	17.1
Oil	39.5	38.0	38.3	40.1	36.4	36.3
Gas	22.9	24.5	24.1	21.9	25.1	29.5
Nuclear	8.3	9.0	9.1	9.1	9.9	9.9
Hydro	1.2	1.3	1.0	1.0	1.0	1.0
Others	4.0	4.2	4.0	3.9	5.0	6.2

## Total primary energy supply by energy Other Americas



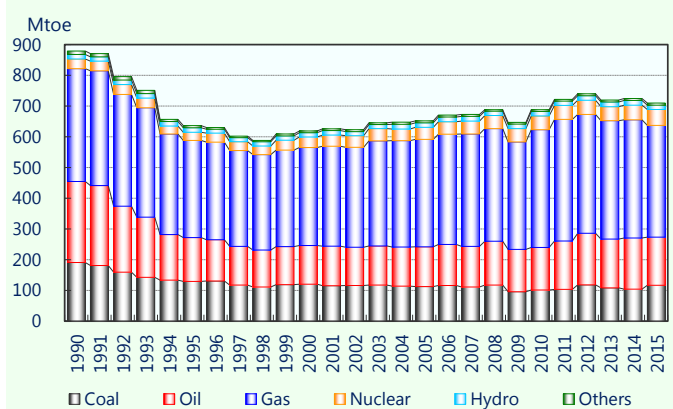
	Mtoe					
	1990	1995	2000	2005	2010	2015
Coal	31.0	33.8	42.3	44.7	41.7	40.0
Oil	169.6	176.6	194.5	216.3	214.1	211.6
Gas	79.4	93.5	115.4	134.9	142.2	162.7
Nuclear	20.2	27.8	21.1	26.8	25.2	29.4
Hydro	29.2	33.9	36.7	37.3	37.0	39.4
Others	29.5	29.7	32.1	34.9	31.8	34.5
<b>Total</b>	<b>358.9</b>	<b>395.3</b>	<b>442.0</b>	<b>495.0</b>	<b>492.1</b>	<b>517.7</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Coal	8.6	8.5	9.6	9.0	8.5	7.7
Oil	47.3	44.7	44.0	43.7	43.5	40.9
Gas	22.1	23.6	26.1	27.3	28.9	31.4
Nuclear	5.6	7.0	4.8	5.4	5.1	5.7
Hydro	8.1	8.6	8.3	7.5	7.5	7.6
Others	8.2	7.5	7.3	7.1	6.5	6.7

Primary Energy Supply

### Total primary energy supply by energy Russia

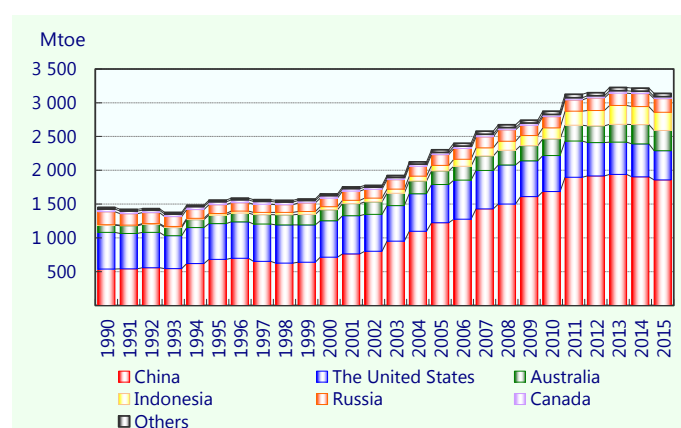


	Mtoe					
	1990	1995	2000	2005	2010	2015
Coal	191.1	129.2	120.0	112.6	100.9	116.4
Oil	263.8	142.7	126.1	129.2	139.1	156.7
Gas	367.3	316.5	318.9	349.6	383.4	364.1
Nuclear	31.3	26.2	34.4	39.3	44.8	51.3
Hydro	14.3	15.1	14.1	14.9	14.3	14.4
Others	11.5	6.9	5.7	6.2	5.9	6.7
<b>Total</b>	<b>879.2</b>	<b>636.6</b>	<b>619.3</b>	<b>651.7</b>	<b>688.4</b>	<b>709.7</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Coal	21.7	20.3	19.4	17.3	14.7	16.4
Oil	30.0	22.4	20.4	19.8	20.2	22.1
Gas	41.8	49.7	51.5	53.6	55.7	51.3
Nuclear	3.6	4.1	5.6	6.0	6.5	7.2
Hydro	1.6	2.4	2.3	2.3	2.1	2.0
Others	1.3	1.1	0.9	1.0	0.9	0.9



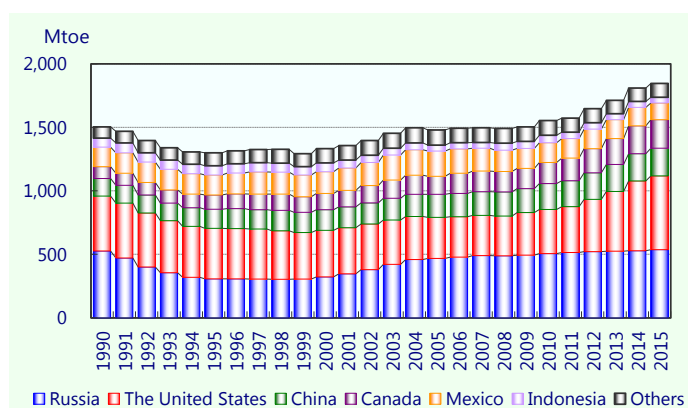
## Indigenous production of coal\* APEC



	Mtoe					
	1990	1995	2000	2005	2010	2015
China	540.0	680.4	715.8	1 224.3	1 686.5	1 858.6
The United States	542.3	529.8	536.9	565.3	531.8	431.3
Australia	106.1	127.8	164.6	201.6	246.6	298.6
Indonesia	5.8	24.0	44.0	82.8	161.8	271.4
Russia	192.4	130.7	128.5	157.4	166.4	200.3
Canada	37.9	40.8	34.4	34.6	33.9	30.6
Others	27.4	24.7	26.2	38.0	47.5	46.3
<b>Total</b>	<b>1 451.8</b>	<b>1 558.2</b>	<b>1 650.3</b>	<b>2 303.9</b>	<b>2 874.5</b>	<b>3 137.0</b>
	Share (%)					
	1990	1995	2000	2005	2010	2015
China	37.2	43.7	43.4	53.1	58.7	59.2
The United States	37.4	34.0	32.5	24.5	18.5	13.7
Australia	7.3	8.2	10.0	8.7	8.6	9.5
Russia	13.3	8.4	7.8	6.8	5.8	6.4
Indonesia	0.4	1.5	2.7	3.6	5.6	8.7
Canada	2.6	2.6	2.1	1.5	1.2	1.0
Others	1.9	1.6	1.6	1.7	1.7	1.5

\*Coal: hard coal, anthracite and lignite

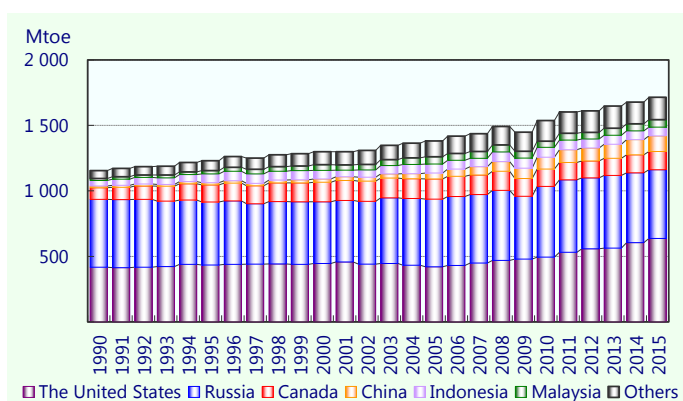
## Indigenous production of crude oil\* APEC



	Mtoe					
	1990	1995	2000	2005	2010	2015
Russia	526.3	306.6	323.3	468.7	506.5	536.3
The United States	432.5	397.9	365.6	322.5	346.7	582.1
China	138.4	150.0	163.0	181.4	203.8	217.1
Canada	94.1	113.5	128.4	142.9	167.2	226.2
Mexico	153.3	157.6	171.2	197.5	155.3	130.9
Indonesia	70.7	72.9	69.0	48.1	58.0	44.9
Others	88.4	100.7	111.8	118.7	117.0	109.2
<b>Total</b>	<b>1 503.8</b>	<b>1 299.2</b>	<b>1 332.3</b>	<b>1 479.9</b>	<b>1 554.4</b>	<b>1 846.7</b>
	Share (%)					
	1990	1995	2000	2005	2010	2015
Russia	35.0	23.6	24.3	31.7	32.6	29.0
The United States	28.8	30.6	27.4	21.8	22.3	31.5
China	9.2	11.5	12.2	12.3	13.1	11.8
Canada	6.3	8.7	9.6	9.7	10.8	12.3
Mexico	10.2	12.1	12.8	13.3	10.0	7.1
Indonesia	4.7	5.6	5.2	3.3	3.7	2.4
Others	5.9	7.8	8.4	8.0	7.5	5.9

\*Crude oil includes NGL and condensates

## Indigenous production of natural gas APEC

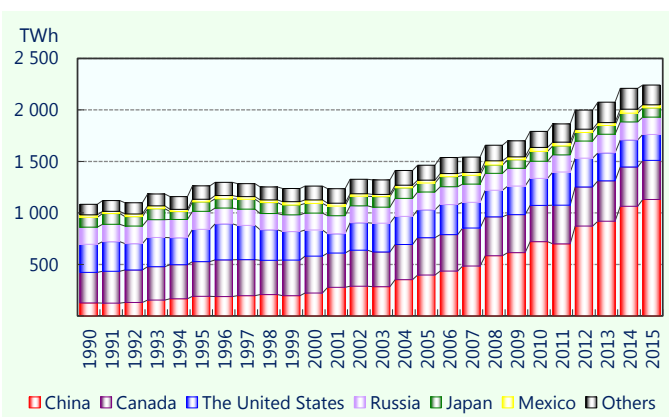


	Mtoe					
	1990	1995	2000	2005	2010	2015
The United States	418.1	434.5	446.8	421.4	494.6	636.5
Russia	516.7	480.4	470.6	515.7	540.0	524.2
Canada	88.6	130.2	148.3	154.1	132.4	139.1
China	14.2	16.7	25.3	45.9	89.2	119.8
Indonesia	41.0	68.0	65.8	68.7	76.6	67.3
Malaysia	15.4	24.5	42.3	55.0	46.6	56.5
Others	61.4	75.8	99.0	120.0	156.8	170.5
<b>Total</b>	<b>1 155.4</b>	<b>1 230.1</b>	<b>1 298.2</b>	<b>1 380.9</b>	<b>1 536.3</b>	<b>1 713.9</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
The United States	36.2	35.3	34.4	30.5	32.2	37.1
Russia	44.7	39.1	36.3	37.3	35.1	30.6
Canada	7.7	10.6	11.4	11.2	8.6	8.1
China	1.2	1.4	2.0	3.3	5.8	7.0
Indonesia	3.6	5.5	5.1	5.0	5.0	3.9
Malaysia	1.3	2.0	3.3	4.0	3.0	3.3
Others	5.3	6.2	7.6	8.7	10.2	10.0

## Indigenous production of hydro power APEC

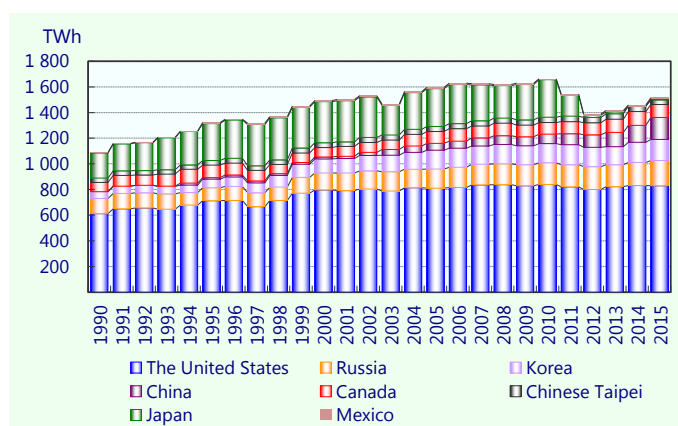


	TWh					
	1990	1995	2000	2005	2010	2015
China	126.7	190.6	222.4	397.0	722.2	1 130.3
Canada	296.7	335.9	358.5	361.9	351.4	380.6
The United States	273.2	314.1	253.2	272.4	262.3	251.0
Russia	165.9	175.4	164.1	172.7	166.5	168.0
Japan	95.6	90.0	94.2	87.1	95.3	89.0
Mexico	23.5	27.5	33.1	27.7	37.1	30.8
Others	103.0	130.1	134.7	144.0	156.8	192.0
<b>Total</b>	<b>1 084.6</b>	<b>1 263.7</b>	<b>1 260.2</b>	<b>1 462.8</b>	<b>1 791.5</b>	<b>2 241.7</b>

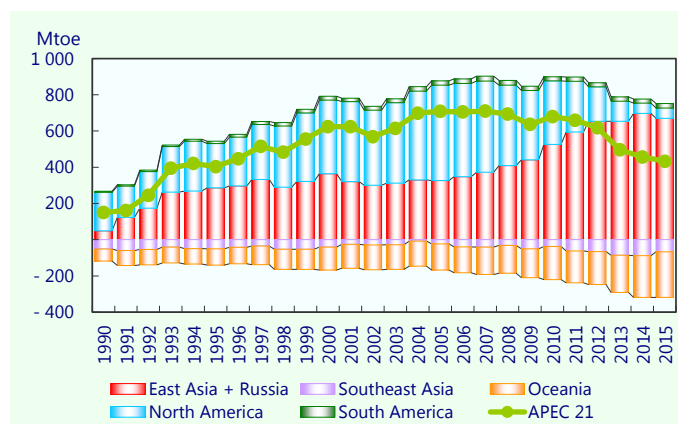
	Share (%)					
	1990	1995	2000	2005	2010	2015
China	11.7	15.1	17.6	27.1	40.3	50.4
Canada	27.4	26.6	28.4	24.7	19.6	17.0
The United States	25.2	24.9	20.1	18.6	14.6	11.2
Russia	15.3	13.9	13.0	11.8	9.3	7.5
Japan	8.8	7.1	7.5	6.0	5.3	4.0
Mexico	2.2	2.2	2.6	1.9	2.1	1.4
Others	9.5	10.3	10.7	9.8	8.8	8.6

## Indigenous production of nuclear power APEC



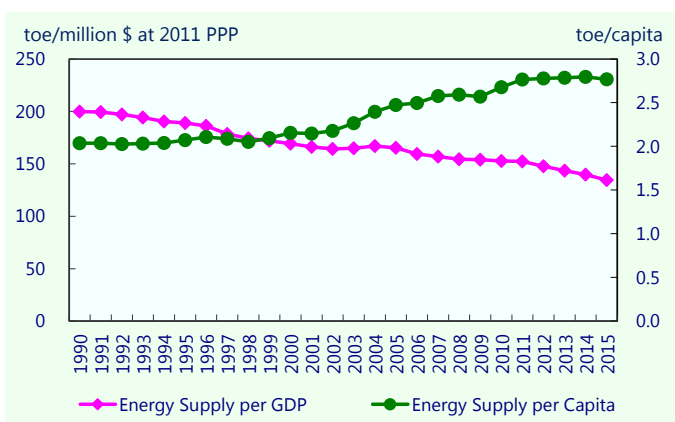
	TWh					
	1990	1995	2000	2005	2010	2015
The United States	611.6	713.8	797.7	810.7	838.9	830.3
Russia	118.3	99.5	130.7	149.4	170.4	195.5
Korea	52.9	67.0	109.0	146.8	148.6	164.8
China	.0	12.8	16.7	53.1	73.9	170.8
Canada	73.0	97.8	72.8	92.0	90.7	101.4
Chinese Taipei	32.9	35.3	38.5	40.0	41.6	36.5
Japan	195.8	287.9	319.8	293.0	292.4	4.5
Mexico	2.9	8.4	8.2	10.8	5.9	11.6
<b>Total</b>	<b>1 087.3</b>	<b>1 322.7</b>	<b>1 493.4</b>	<b>1 595.9</b>	<b>1 662.3</b>	<b>1 515.2</b>
	Share (%)					
	1990	1995	2000	2005	2010	2015
The United States	56.2	54.0	53.4	50.8	50.5	54.8
Russia	10.9	7.5	8.8	9.4	10.3	12.9
Korea	4.9	5.1	7.3	9.2	8.9	10.9
China	-	1.0	1.1	3.3	4.4	11.3
Canada	6.7	7.4	4.9	5.8	5.5	6.7
Chinese Taipei	3.0	2.7	2.6	2.5	2.5	2.4
Japan	18.0	21.8	21.4	18.4	17.6	0.3
Mexico	0.3	0.6	0.6	0.7	0.4	0.8

## Net import by region APEC



	Mtoe					
	1990	1995	2000	2005	2010	2015
Australia	-64.5	-89.2	-127.1	-148.7	-185.9	-249.6
Brunei Darussalam	-14.6	-15.6	-17.1	-19.5	-16.0	-14.1
Canada	-59.3	-119.7	-127.7	-129.7	-141.5	-199.2
Chile	7.0	10.8	17.7	20.5	22.3	24.0
China	-30.5	-8.9	33.3	137.3	344.8	485.1
Hong Kong, China	10.8	14.3	18.2	23.4	31.4	30.3
Indonesia	-65.9	-85.2	-82.4	-73.9	-140.7	-212.1
Japan	371.4	405.7	420.4	433.1	406.6	418.4
Korea	70.1	134.7	165.7	175.6	221.0	237.0
Malaysia	-25.6	-27.9	-26.8	-27.4	-13.2	-11.6
Mexico	-69.9	-69.3	-72.3	-79.6	-40.4	-1.6
New Zealand	2.1	3.1	3.4	4.9	2.9	4.9
Papua New Guinea	-3.7	-4.0	-2.7	-1.0	0.7	-6.2
Peru	-0.6	1.8	3.3	3.0	0.4	0.4
The Philippines	11.9	17.7	20.0	17.0	17.7	26.1
Russia	-412.5	-314.9	-349.5	-539.3	-579.1	-601.9
Singapore	24.5	32.4	40.8	50.2	69.4	77.1
Chinese Taipei	39.4	55.7	76.4	96.4	100.7	101.1
Thailand	18.1	32.8	34.4	48.3	52.8	63.4
The United States	341.9	433.4	606.4	736.1	533.4	257.7
Viet Nam	-0.2	-4.7	-9.8	-17.7	-7.9	3.5
<b>Total</b>	<b>150.1</b>	<b>403.1</b>	<b>624.6</b>	<b>709.0</b>	<b>679.4</b>	<b>432.8</b>

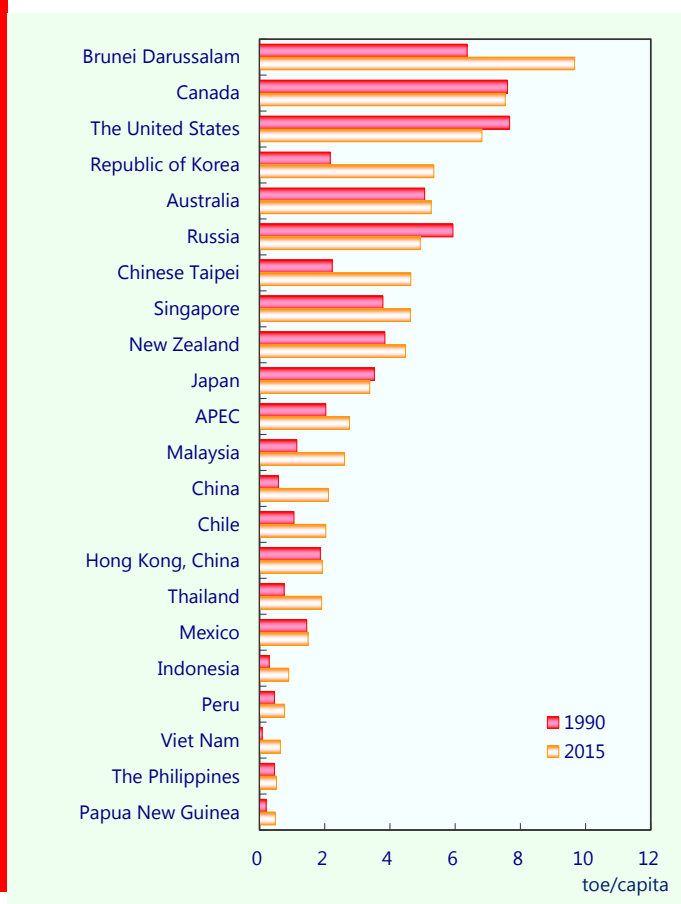
## Total primary energy supply per GDP & capita APEC



	1990	1995	2000	2005	2010	2015
Population (million)	2 286	2 429	2 554	2 655	2 753	2 849
Primary Energy Supply per Capita (toe)	2.04	2.07	2.15	2.47	2.68	2.77
GDP (\$ 2011 PPP)	23 295	26 599	32 483	39 729	48 250	58 668
Primary Energy Supply per GDP (toe/million \$ at 2011 PPP)	199.8	189.0	169.4	165.2	152.7	134.4

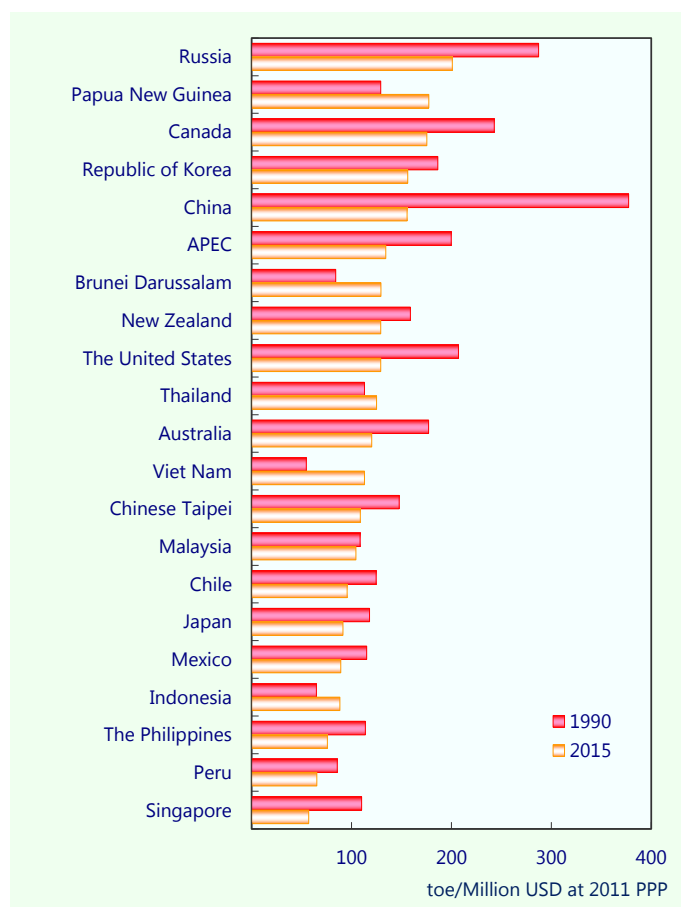
Primary Energy Supply

### Total primary energy supply per capita 1990 vs 2015 by economy



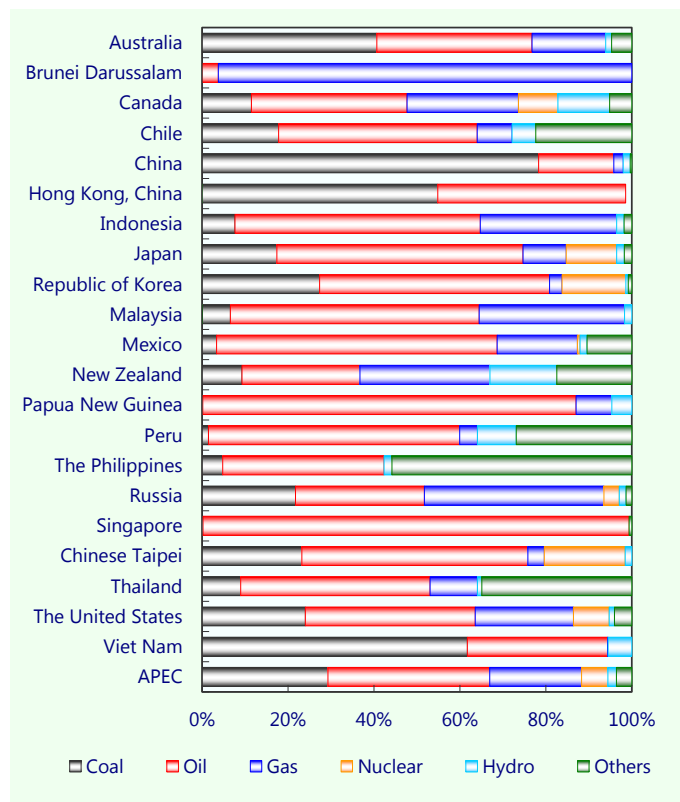


### Total primary energy supply per GDP 1990 vs 2015 by economy

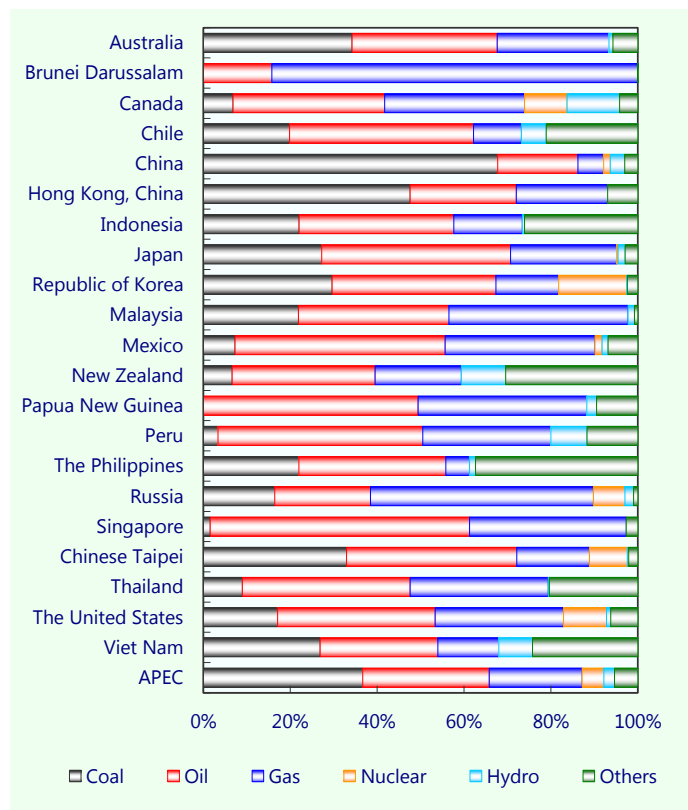


Primary Energy Supply

### Primary energy mix by economy 1990

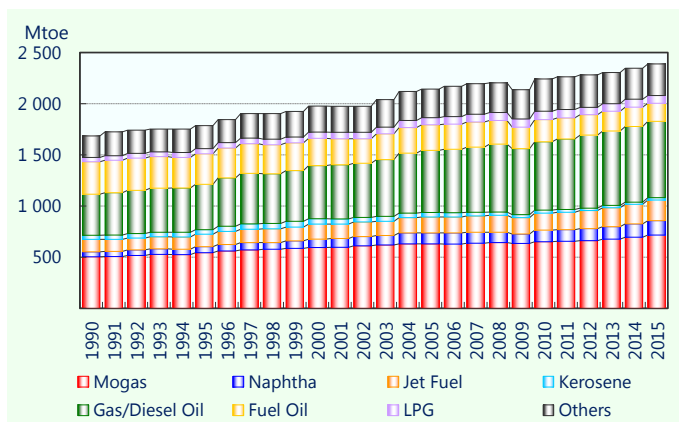


## Primary energy mix by economy 2015



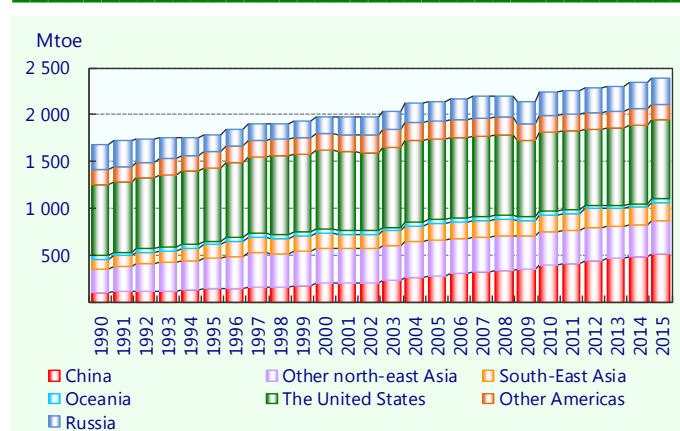
Primary Energy Supply

## Petroleum refining by product APEC



	Mtoe					
	1990	1995	2000	2005	2010	2015
Mogas	503.9	543.4	593.5	630.0	651.4	716.3
Naphtha	48.1	59.8	83.7	106.6	113.6	140.7
Jet Fuel	121.6	120.4	145.3	155.9	165.8	202.4
Kerosene	40.3	46.1	53.2	44.1	28.8	21.6
Gas/Diesel Oil	401.9	441.6	520.4	608.7	669.9	747.9
Fuel Oil	317.1	298.7	265.9	248.9	215.9	176.5
LPG	42.6	50.5	61.8	68.7	82.6	75.8
Others	210.3	224.8	253.1	280.9	315.3	308.9
<b>Total</b>	<b>1 685.7</b>	<b>1 785.3</b>	<b>1 976.9</b>	<b>2 143.8</b>	<b>2 243.3</b>	<b>2 390.0</b>
	Share (%)					
	1990	1995	2000	2005	2010	2015
Mogas	29.9	30.4	30.0	29.4	29.0	30.0
Naphtha	2.9	3.4	4.2	5.0	5.1	5.9
Jet Fuel	7.2	6.7	7.4	7.3	7.4	8.5
Kerosene	2.4	2.6	2.7	2.1	1.3	0.9
Gas/Diesel Oil	23.8	24.7	26.3	28.4	29.9	31.3
Fuel Oil	18.8	16.7	13.5	11.6	9.6	7.4
LPG	2.5	2.8	3.1	3.2	3.7	3.2
Others	12.5	12.6	12.8	13.1	14.1	12.9

## Petroleum refining by region APEC

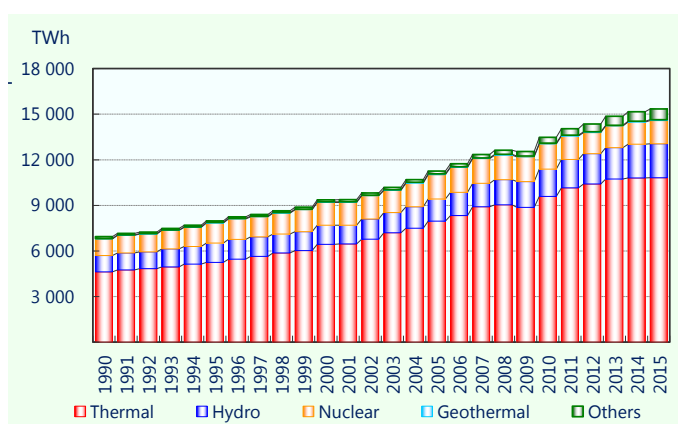


	Mtoe					
	1990	1995	2000	2005	2010	2015
China	107.4	140.6	197.9	281.1	402.0	515.9
Other north-east Asia	237.3	327.8	373.6	384.3	351.7	357.4
South-East Asia	111.7	144.4	158.2	173.6	179.1	192.5
Oceania	37.0	41.2	43.5	40.8	38.5	32.0
The United States	753.8	778.9	843.8	861.4	839.1	841.9
Other Americas	168.7	173.4	180.0	193.8	182.8	166.6
Russia	269.7	178.9	179.9	208.9	250.0	283.6
<b>Total</b>	<b>1 685.7</b>	<b>1 785.3</b>	<b>1 976.9</b>	<b>2 143.8</b>	<b>2 243.3</b>	<b>2 390.0</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
China	6.4	7.9	10.0	13.1	17.9	21.6
Other north-east Asia	14.1	18.4	18.9	17.9	15.7	15.0
South-East Asia	6.6	8.1	8.0	8.1	8.0	8.1
Oceania	2.2	2.3	2.2	1.9	1.7	1.3
The United States	44.7	43.6	42.7	40.2	37.4	35.2
Other Americas	10.0	9.7	9.1	9.0	8.1	7.0
Russia	16.0	10.0	9.1	9.7	11.1	11.9

## Electricity generation by type APEC

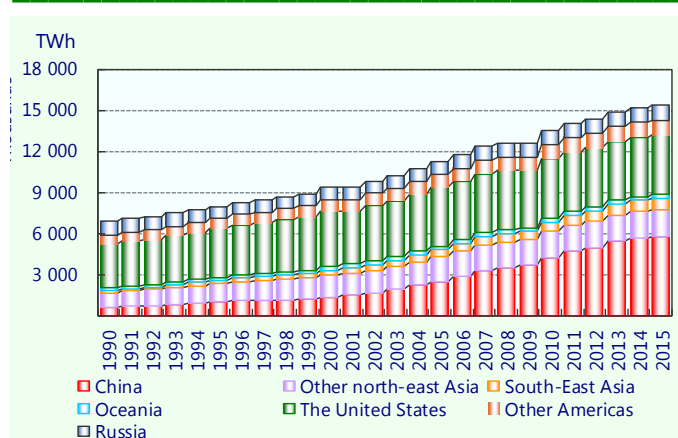


	TWh					
	1990	1995	2000	2005	2010	2015
Thermal	4 623.2	5 255.5	6 435.6	7 963.1	9 589.9	10 818.3
Hydro	1 084.6	1 263.7	1 260.2	1 462.8	1 791.5	2 241.7
Nuclear	1 087.3	1 322.7	1 493.4	1 595.9	1 662.3	1 515.2
Geothermal	31.5	34.1	43.4	47.5	53.0	57.5
Others	118.4	107.4	130.3	188.2	380.1	707.4
<b>Total</b>	<b>6 945.0</b>	<b>7 983.3</b>	<b>9 362.9</b>	<b>11 257.6</b>	<b>13 476.8</b>	<b>15 340.1</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Thermal	66.6	65.8	68.7	70.7	71.2	70.5
Hydro	15.6	15.8	13.5	13.0	13.3	14.6
Nuclear	15.7	16.6	16.0	14.2	12.3	9.9
Geothermal	0.5	0.4	0.5	0.4	0.4	0.4
Others	1.7	1.3	1.4	1.7	2.8	4.6

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

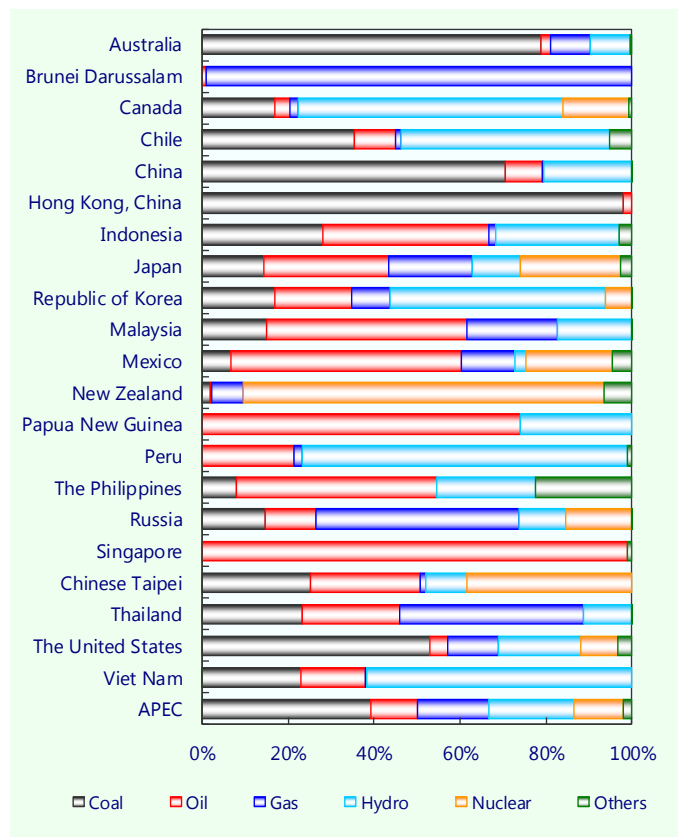
## Electricity generation by region APEC



	TWh					
	1990	1995	2000	2005	2010	2015
China	621	1 008	1 356	2 500	4 207	5 815
Other north-east Asia	1 064	1 308	1 593	1 808	1 942	1 899
South-East Asia	157	283	389	505	661	868
Oceania	188	210	251	275	301	301
The United States	3 203	3 558	4 026	4 269	4 354	4 292
Other Americas	630	756	871	949	976	1 100
Russia	1 082	859	876	951	1 036	1 066
<b>Total</b>	<b>6 945</b>	<b>7 983</b>	<b>9 363</b>	<b>11 258</b>	<b>13 477</b>	<b>15 340</b>

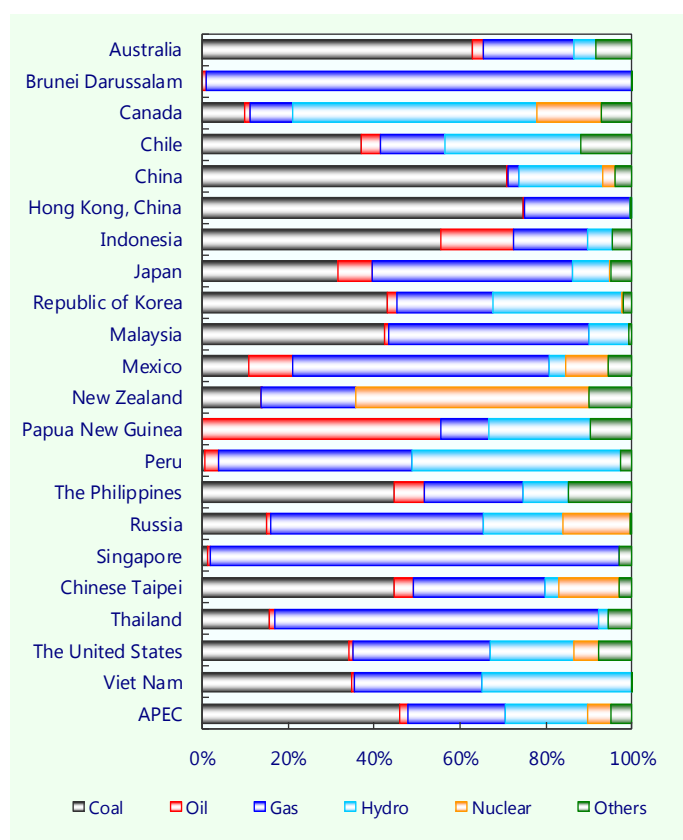
	Share (%)					
	1990	1995	2000	2005	2010	2015
China	8.9	12.6	14.5	22.2	31.2	37.9
Other north-east Asia	15.3	16.4	17.0	16.1	14.4	12.4
South-East Asia	2.3	3.5	4.2	4.5	4.9	5.7
Oceania	2.7	2.6	2.7	2.4	2.2	2.0
The United States	46.1	44.6	43.0	37.9	32.3	28.0
Other Americas	9.1	9.5	9.3	8.4	7.2	7.2
Russia	15.6	10.8	9.4	8.4	7.7	6.9

### Electricity generation by economy 1990



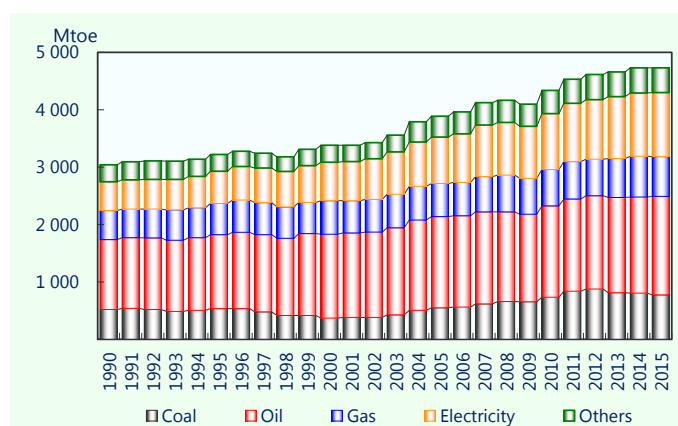


## Electricity generation by economy 2015



Transformation

### Total final energy consumption by energy APEC

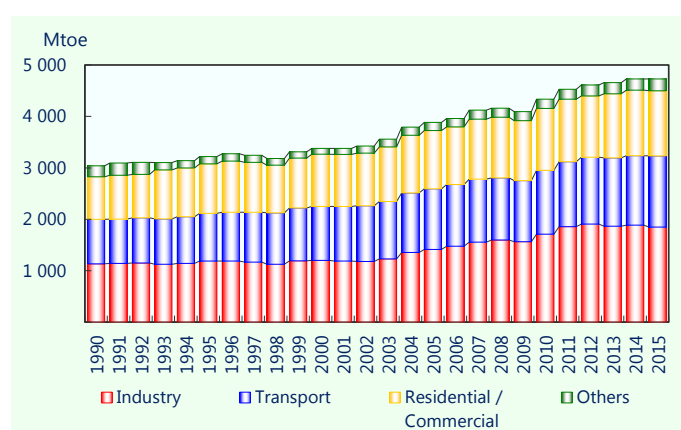


	Mtoe					
	1990	1995	2000	2005	2010	2015
Coal	519.8	537.5	371.8	552.6	733.7	774.5
Oil	1 218.5	1 286.2	1 461.1	1 585.6	1 593.7	1 716.8
Gas	506.2	541.5	582.5	576.4	629.5	692.1
Electricity	502.1	563.6	671.2	809.3	974.9	1 115.0
Others	293.7	291.9	293.3	362.6	404.4	429.7
<b>Total</b>	<b>3 040.3</b>	<b>3 220.6</b>	<b>3 379.8</b>	<b>3 886.5</b>	<b>4 336.1</b>	<b>4 728.1</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Coal	17.1	16.7	11.0	14.2	16.9	16.4
Oil	40.1	39.9	43.2	40.8	36.8	36.3
Gas	16.6	16.8	17.2	14.8	14.5	14.6
Electricity	16.5	17.5	19.9	20.8	22.5	23.6
Others	9.7	9.1	8.7	9.3	9.3	9.1

## Total final energy consumption by sector APEC

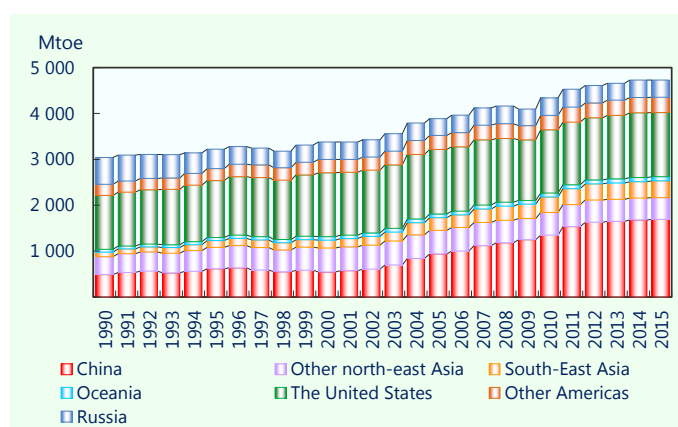


	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	1 135.3	1 188.3	1 198.4	1 413.3	1 710.4	1 849.3
Transport	862.3	926.2	1 053.2	1 178.1	1 242.6	1 382.8
Residential / Commercial	831.1	963.8	1 014.1	1 132.9	1 203.5	1 267.6
Others	211.5	142.3	114.2	162.2	179.6	228.5
<b>Total</b>	<b>3 040.3</b>	<b>3 220.6</b>	<b>3 379.8</b>	<b>3 886.5</b>	<b>4 336.1</b>	<b>4 728.1</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	37.3	36.9	35.5	36.4	39.4	39.1
Transport	28.4	28.8	31.2	30.3	28.7	29.2
Residential / Commercial	27.3	29.9	30.0	29.1	27.8	26.8
Others	7.0	4.4	3.4	4.2	4.1	4.8

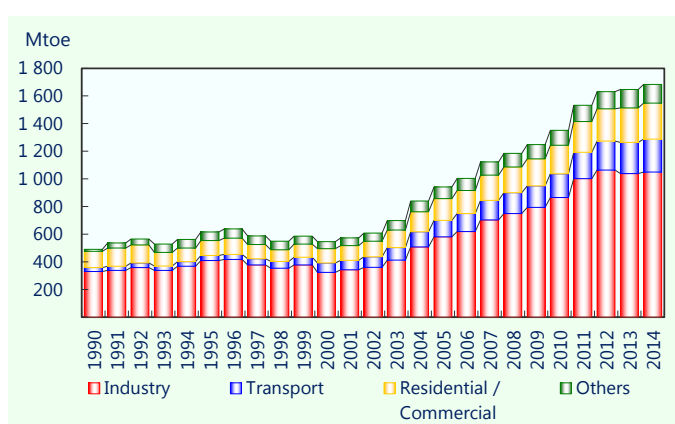
## Total final energy consumption by region APEC



	Mtoe					
	1990	1995	2000	2005	2010	2015
China	489.9	615.9	546.5	941.6	1 350.9	1 692.0
Other north-east Asia	390.8	467.2	520.0	512.3	491.3	476.1
South-East Asia	98.1	146.9	172.9	274.4	337.6	364.3
Oceania	62.4	69.0	77.3	80.4	85.3	91.5
The United States	1 174.5	1 236.9	1 393.2	1 406.5	1 377.1	1 396.8
Other Americas	239.8	261.1	288.3	303.5	313.7	329.8
Russia	584.8	423.6	381.5	367.7	380.2	377.6
<b>Total</b>	<b>3 040.3</b>	<b>3 220.6</b>	<b>3 379.8</b>	<b>3 886.5</b>	<b>4 336.1</b>	<b>4 728.1</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
China	16.1	19.1	16.2	24.2	31.2	35.8
Other north-east Asia	12.9	14.5	15.4	13.2	11.3	10.1
South-East Asia	3.2	4.6	5.1	7.1	7.8	7.7
Oceania	2.1	2.1	2.3	2.1	2.0	1.9
The United States	38.6	38.4	41.2	36.2	31.8	29.5
Other Americas	7.9	8.1	8.5	7.8	7.2	7.0
Russia	19.2	13.2	11.3	9.5	8.8	8.0

## Total final energy consumption by sector China

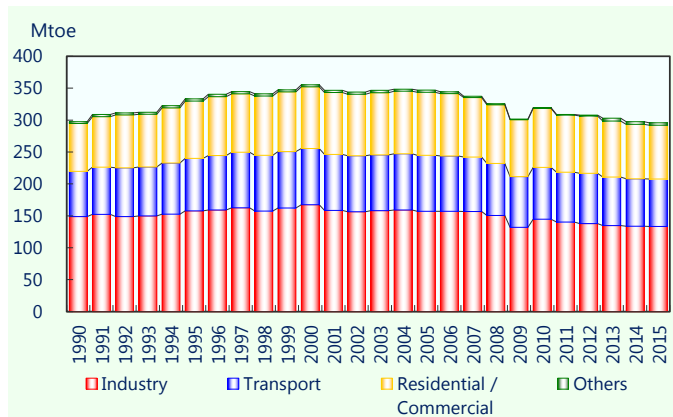


	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	329.8	410.0	324.4	581.7	864.6	1 018.8
Transport	28.8	36.4	67.6	119.1	172.1	252.6
Residential / Commercial	118.4	107.0	102.7	157.1	206.0	274.2
Others	13.0	62.5	51.8	83.7	108.2	146.4
<b>Total</b>	<b>489.9</b>	<b>615.9</b>	<b>546.5</b>	<b>941.6</b>	<b>1 350.9</b>	<b>1 692.0</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	67.3	66.6	59.4	61.8	64.0	60.2
Transport	5.9	5.9	12.4	12.7	12.7	14.9
Residential / Commercial	24.2	17.4	18.8	16.7	15.2	16.2
Others	2.6	10.1	9.5	8.9	8.0	8.7

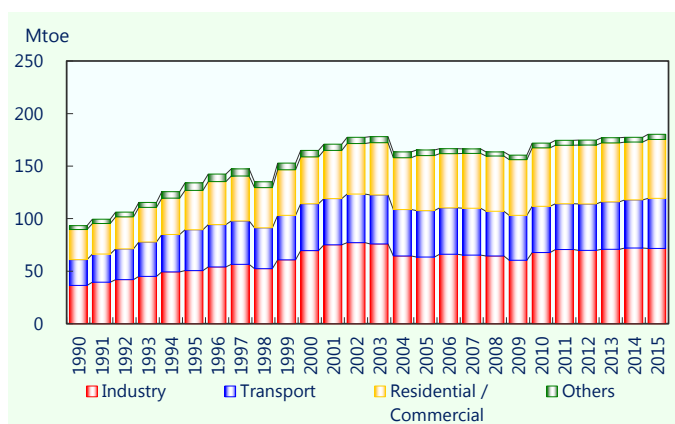
## Total final energy consumption by sector Japan



	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	148.7	157.9	167.3	157.1	144.8	133.5
Transport	70.9	82.2	88.2	87.6	81.0	74.1
Residential / Commercial	75.0	89.6	96.5	98.8	92.6	84.3
Others	2.9	3.5	3.1	3.5	1.0	4.1
<b>Total</b>	<b>297.5</b>	<b>333.2</b>	<b>355.2</b>	<b>347.0</b>	<b>319.4</b>	<b>295.9</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	50.0	47.4	47.1	45.3	45.3	45.1
Transport	23.8	24.7	24.8	25.3	25.4	25.0
Residential / Commercial	25.2	26.9	27.2	28.5	29.0	28.5
Others	1.0	1.1	0.9	1.0	0.3	1.4

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



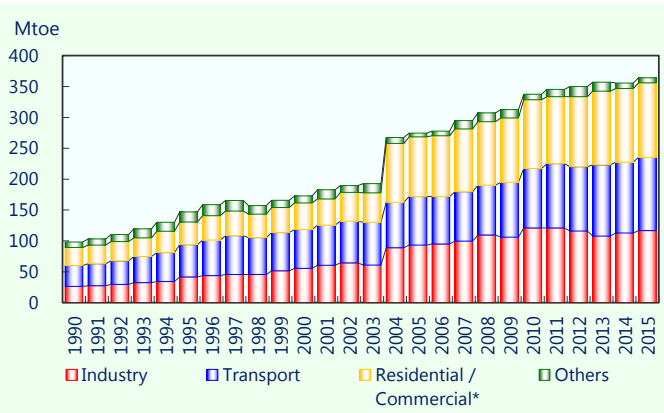
	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	36.4	50.5	69.6	63.4	67.7	71.7
Transport	24.4	38.8	44.5	44.2	43.9	47.7
Residential / Commercial	28.7	37.6	44.7	52.3	55.7	55.9
Others	3.8	7.1	6.1	5.4	4.6	4.9
<b>Total</b>	<b>93.3</b>	<b>134.0</b>	<b>164.8</b>	<b>165.3</b>	<b>171.9</b>	<b>180.2</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	39.1	37.7	42.2	38.4	39.4	39.8
Transport	26.2	28.9	27.0	26.7	25.6	26.5
Residential / Commercial	30.7	28.1	27.1	31.6	32.4	31.0
Others	4.0	5.3	3.7	3.2	2.7	2.7

\*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	2015
Industry	26.6	41.5	55.5	93.3	121.1	116.9
Transport	33.5	52.5	63.1	78.5	96.2	118.8
Residential / Commercial*	29.3	36.7	43.0	96.8	111.4	120.5
Others	8.8	16.2	11.3	5.9	9.0	8.3
<b>Total</b>	<b>98.1</b>	<b>146.9</b>	<b>172.9</b>	<b>274.4</b>	<b>337.6</b>	<b>364.3</b>

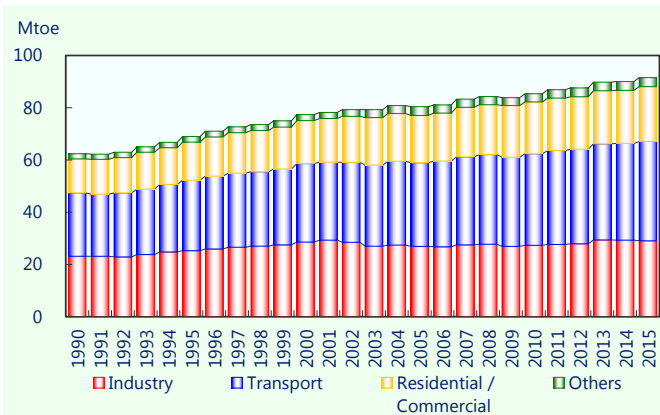
  

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	27.1	28.3	32.1	34.0	35.9	32.1
Transport	34.1	35.7	36.5	28.6	28.5	32.6
Residential / Commercial*	29.8	25.0	24.9	35.3	33.0	33.1
Others	9.0	11.0	6.5	2.1	2.7	2.3

\*\*Abrupt increase in 2004 due to the availability of biomass data from Indonesia and Viet Nam



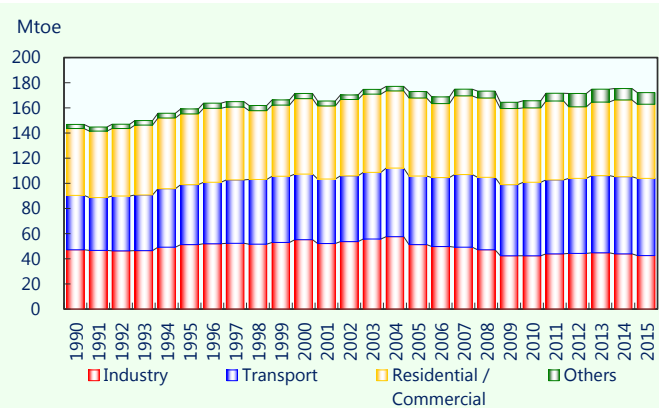
## Total final energy consumption by sector Oceania



	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	23.1	25.2	28.5	26.9	27.4	29.1
Transport	24.3	27.0	30.0	32.0	35.0	38.0
Residential / Commercial	13.0	14.6	16.5	18.1	19.9	21.0
Others	2.0	2.1	2.3	3.3	3.1	3.4
<b>Total</b>	<b>62.4</b>	<b>69.0</b>	<b>77.3</b>	<b>80.4</b>	<b>85.3</b>	<b>91.5</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	37.0	36.6	36.9	33.5	32.1	31.8
Transport	38.9	39.1	38.8	39.9	41.0	41.5
Residential / Commercial	20.9	21.2	21.3	22.5	23.3	23.0
Others	3.2	3.1	3.0	4.1	3.7	3.7

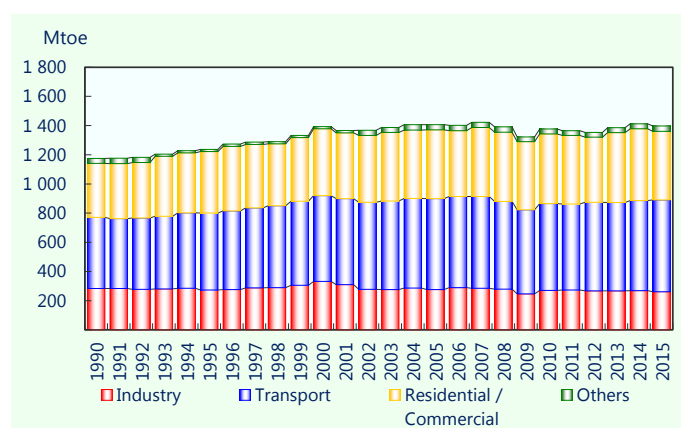
## Total final energy consumption by sector Canada



	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	47.2	51.3	55.2	51.3	42.4	42.5
Transport	43.1	47.8	52.1	54.6	58.5	61.4
Residential / Commercial	53.2	56.3	60.0	62.0	59.2	59.0
Others	3.2	3.8	4.2	5.2	5.6	9.2
<b>Total</b>	<b>146.8</b>	<b>159.1</b>	<b>171.5</b>	<b>173.0</b>	<b>165.7</b>	<b>172.1</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	32.2	32.2	32.2	29.6	25.6	24.7
Transport	29.4	30.0	30.4	31.6	35.3	35.7
Residential / Commercial	36.2	35.4	34.9	35.8	35.7	34.3
Others	2.2	2.4	2.4	3.0	3.4	5.4

## Total final energy consumption by sector The United States



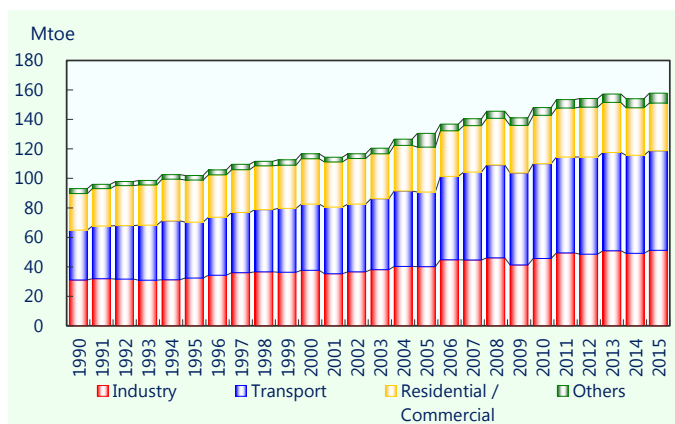
	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	283.7	272.8	332.3	276.4	270.4	261.6
Transport	487.6	527.6	588.2	622.9	595.2	629.0
Residential / Commercial	369.1	421.0	457.1	472.0	477.5	469.8
Others	34.0	15.6	15.6	35.2	34.0	36.5
<b>Total</b>	<b>1 174.5</b>	<b>1 236.9</b>	<b>1 393.2</b>	<b>1 406.5</b>	<b>1 377.1</b>	<b>1 396.8</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	24.2	22.1	23.8	19.7	19.6	18.7
Transport	41.5	42.6	42.2	44.3	43.2	45.0
Residential / Commercial	31.4	34.0	32.8	33.6	34.7	33.6
Others	2.9	1.3	1.1	2.5	2.5	2.6

Final Energy Consumption

### Total final energy consumption by sector Other Americas\*



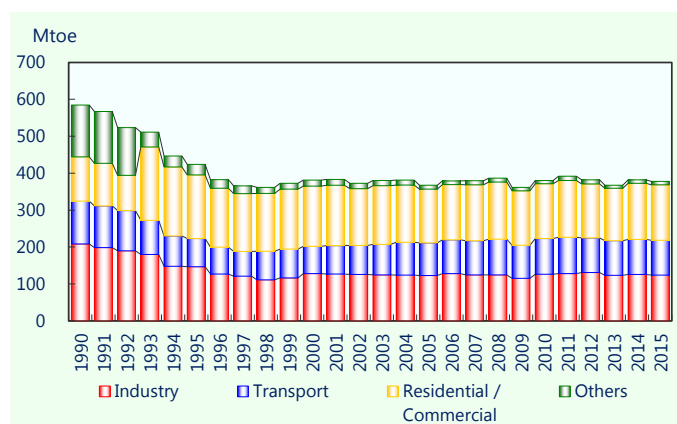
	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	31.1	32.4	37.6	40.2	45.7	51.2
Transport	33.8	38.0	44.9	50.6	64.2	67.5
Residential / Commercial	24.8	28.6	30.7	30.4	32.9	32.4
Others	3.4	3.1	3.4	9.3	5.2	6.7
<b>Total</b>	<b>93.1</b>	<b>102.0</b>	<b>116.7</b>	<b>130.5</b>	<b>148.0</b>	<b>157.7</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	33.4	31.7	32.3	30.8	30.9	32.4
Transport	36.4	37.2	38.5	38.8	43.4	42.8
Residential / Commercial	26.6	28.0	26.3	23.3	22.2	20.5
Others	3.6	3.0	2.9	7.1	3.5	4.2

\*Other Americas include Chile; Mexico and Peru.

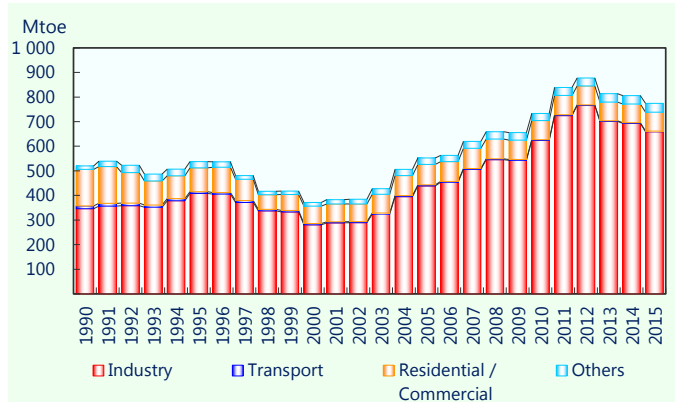
## Total final energy consumption by sector Russia



	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	208.7	146.7	127.8	123.0	126.3	124.2
Transport	115.9	76.1	74.5	88.6	96.5	93.9
Residential / Commercial	119.8	172.4	162.9	145.3	148.5	150.6
Others	140.5	28.4	16.3	10.8	9.0	9.0
<b>Total</b>	<b>584.8</b>	<b>423.6</b>	<b>381.5</b>	<b>367.7</b>	<b>380.2</b>	<b>377.6</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	35.7	34.6	33.5	33.5	33.2	32.9
Transport	19.8	18.0	19.5	24.1	25.4	24.9
Residential / Commercial	20.5	40.7	42.7	39.5	39.0	39.9
Others	24.0	6.7	4.3	2.9	2.4	2.4

### Coal\* demand by sector APEC



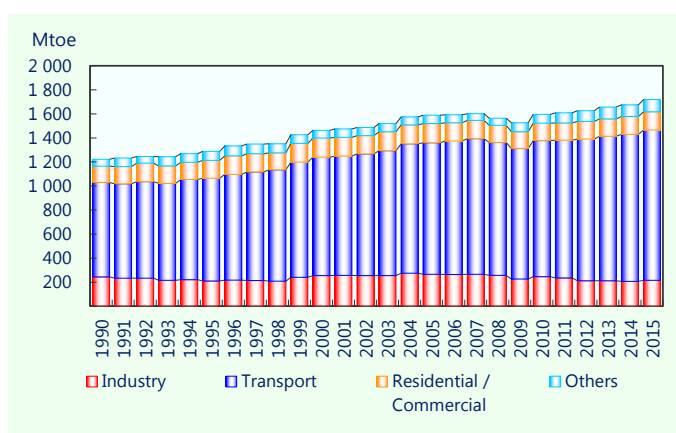
	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	346.4	408.2	280.9	439.0	623.8	659.0
Transport	11.2	7.1	4.7	4.4	3.2	2.4
Residential / Commercial	148.7	97.0	70.9	82.8	77.0	77.3
Others	13.6	25.1	15.3	26.4	29.7	35.7
<b>Total</b>	<b>519.8</b>	<b>537.5</b>	<b>371.8</b>	<b>552.6</b>	<b>733.7</b>	<b>774.5</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	66.6	76.0	75.5	79.4	85.0	85.1
Transport	2.2	1.3	1.3	0.8	0.4	0.3
Residential / Commercial	28.6	18.1	19.1	15.0	10.5	10.0
Others	2.6	4.7	4.1	4.8	4.0	4.6

\*Coal and Coal Products

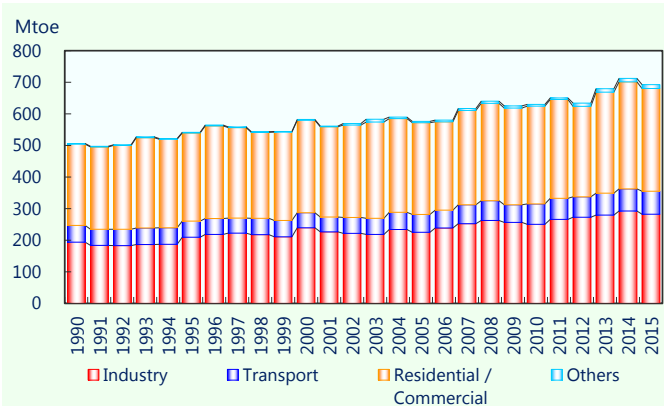
## Oil demand by sector APEC



	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	243.9	209.8	254.1	265.8	246.0	215.2
Transport	786.0	855.2	986.6	1 094.7	1 131.8	1 251.1
Residential / Commercial	135.7	148.0	158.8	158.7	145.2	151.2
Others	56.5	76.2	63.7	69.1	73.3	101.5
<b>Total</b>	<b>1 222.1</b>	<b>1 289.1</b>	<b>1 463.2</b>	<b>1 588.2</b>	<b>1 596.3</b>	<b>1 719.0</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	20.0	16.3	17.4	16.7	15.4	12.5
Transport	64.3	66.3	67.4	68.9	70.9	72.8
Residential / Commercial	11.1	11.5	10.9	10.0	9.1	8.8
Others	4.6	5.9	4.4	4.3	4.6	5.9

## Gas demand by sector APEC

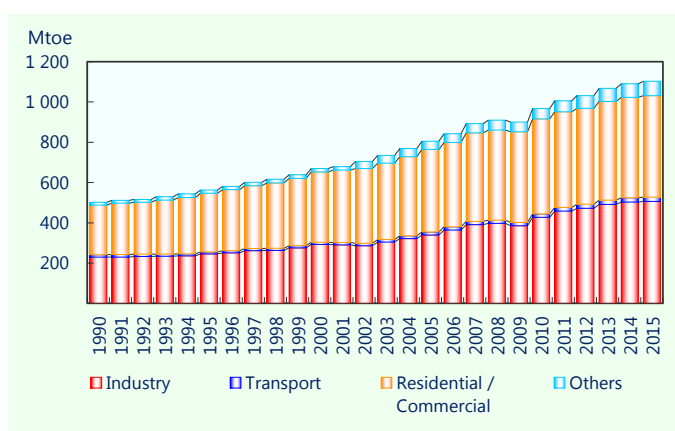


	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	194.2	209.7	239.6	225.3	250.7	282.3
Transport	52.5	51.1	47.6	56.1	64.3	72.6
Residential / Commercial	257.3	278.5	292.6	290.6	309.4	325.3
Others	2.2	2.2	2.7	4.3	5.1	11.8
<b>Total</b>	<b>506.2</b>	<b>541.5</b>	<b>582.5</b>	<b>576.4</b>	<b>629.5</b>	<b>692.1</b>

	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	38.4	38.7	41.1	39.1	39.8	40.8
Transport	10.4	9.4	8.2	9.7	10.2	10.5
Residential / Commercial	50.8	51.4	50.2	50.4	49.2	47.0
Others	0.4	0.4	0.5	0.8	0.8	1.7



## Electricity demand by sector APEC

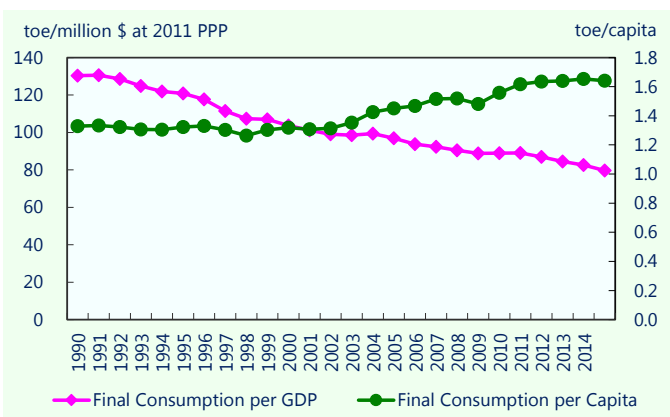


	Mtoe					
	1990	1995	2000	2005	2010	2015
Industry	229.4	245.6	292.5	339.6	427.4	505.9
Transport	12.6	10.1	10.9	14.6	17.4	21.1
Residential / Commercial	246.3	290.7	349.4	409.9	470.8	504.5
Others	13.2	16.2	16.4	41.1	51.8	71.1
<b>Total</b>	<b>501.6</b>	<b>562.6</b>	<b>669.3</b>	<b>805.3</b>	<b>967.4</b>	<b>1 102.7</b>

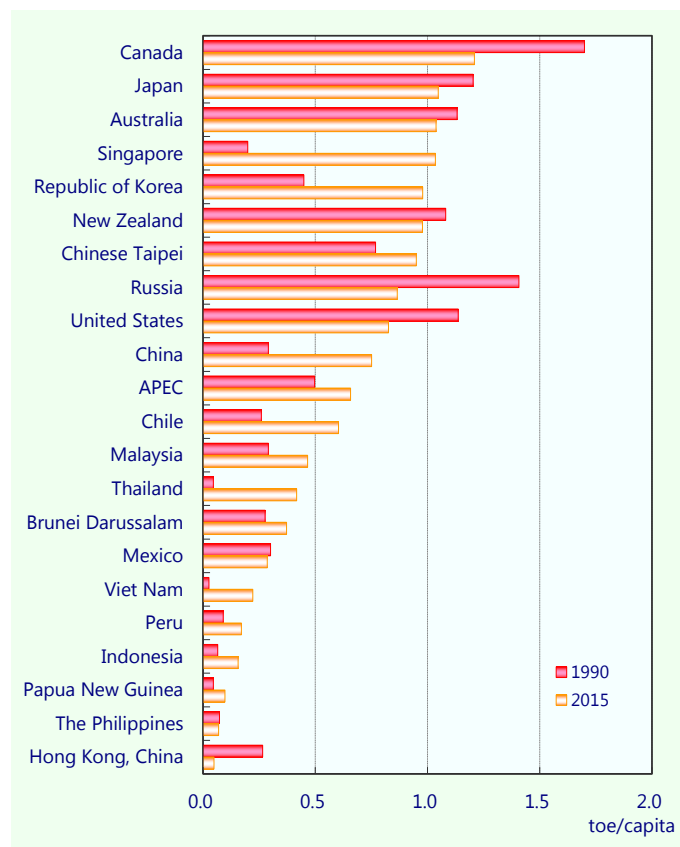
	Share (%)					
	1990	1995	2000	2005	2010	2015
Industry	45.7	43.7	43.7	42.2	44.2	45.9
Transport	2.5	1.8	1.6	1.8	1.8	1.9
Residential / Commercial	49.1	51.7	52.2	50.9	48.7	45.8
Others	2.6	2.9	2.5	5.1	5.4	6.5

## Final consumption per capita and GDP APEC



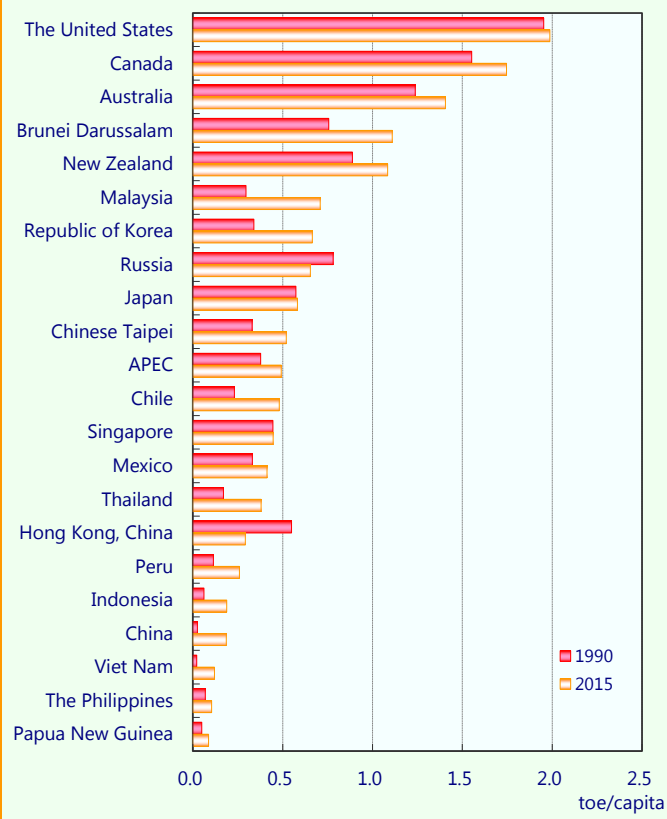
	1990	1995	2000	2005	2010	2015
Population (million)	2 286	2 429	2 554	2 655	2 753	2 849
Final Consumption per Capita (toe)	1.33	1.32	1.32	1.45	1.56	1.64
GDP (billion \$ at 2011 PPP)	23 295	26 599	32 483	39 729	48 250	52 497
Final Consumption per GDP (toe/million \$ at 2011 PPP)	130.33	120.79	103.69	96.93	88.92	86.91

## Energy consumption in industry: APEC

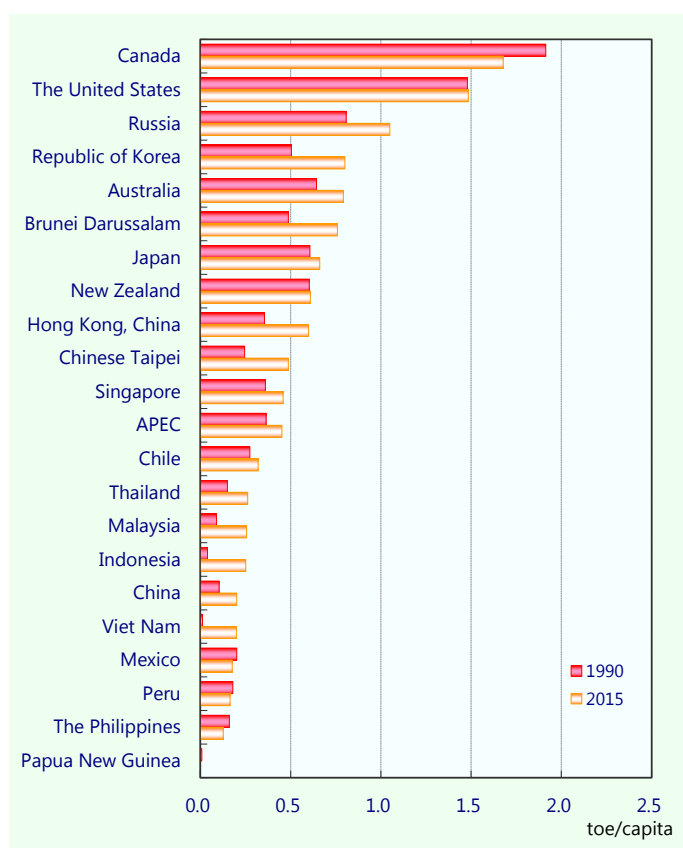


Final Energy Consumption

## Energy consumption in transportation: APEC

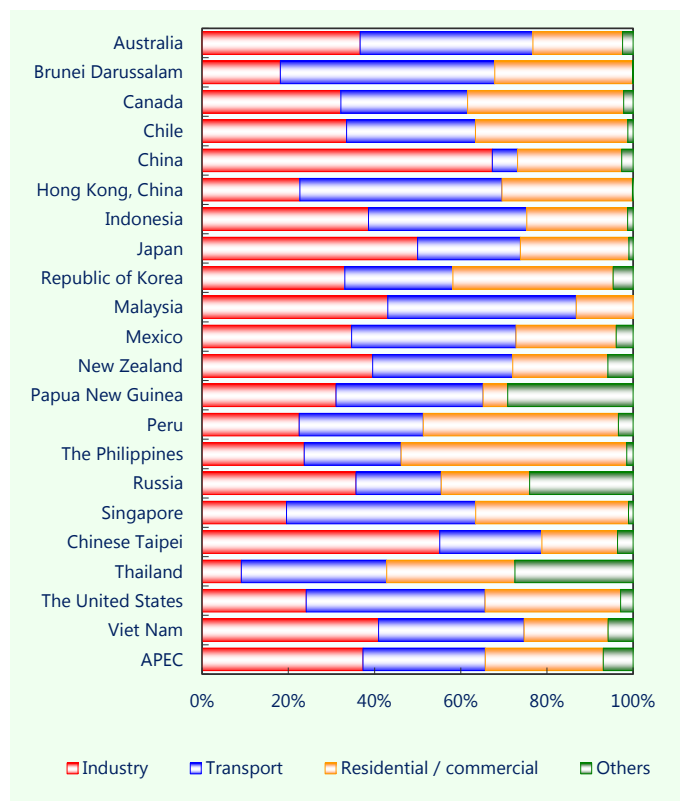


## Energy consumption in residential/ commercial: APEC

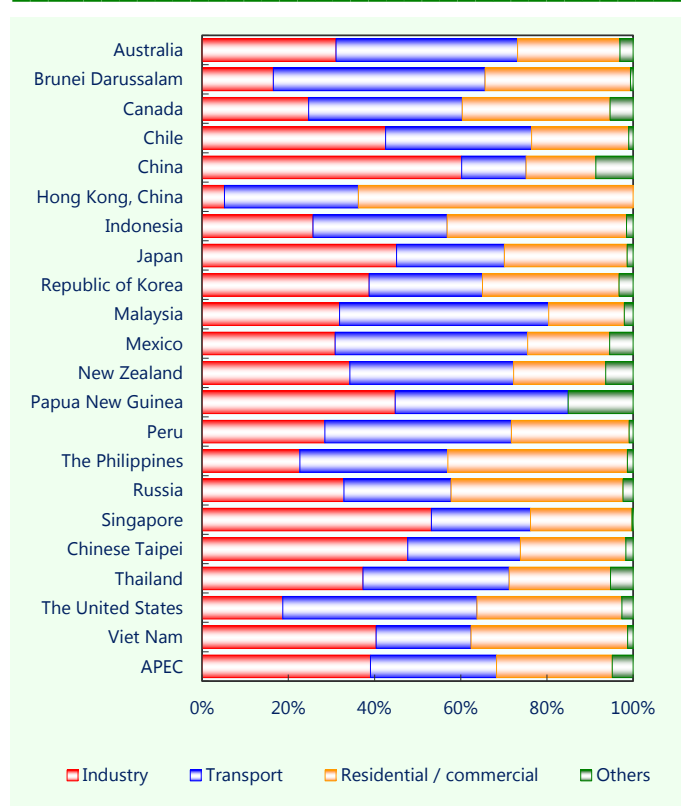


Final Energy Consumption

### Final energy consumption by sector 1990

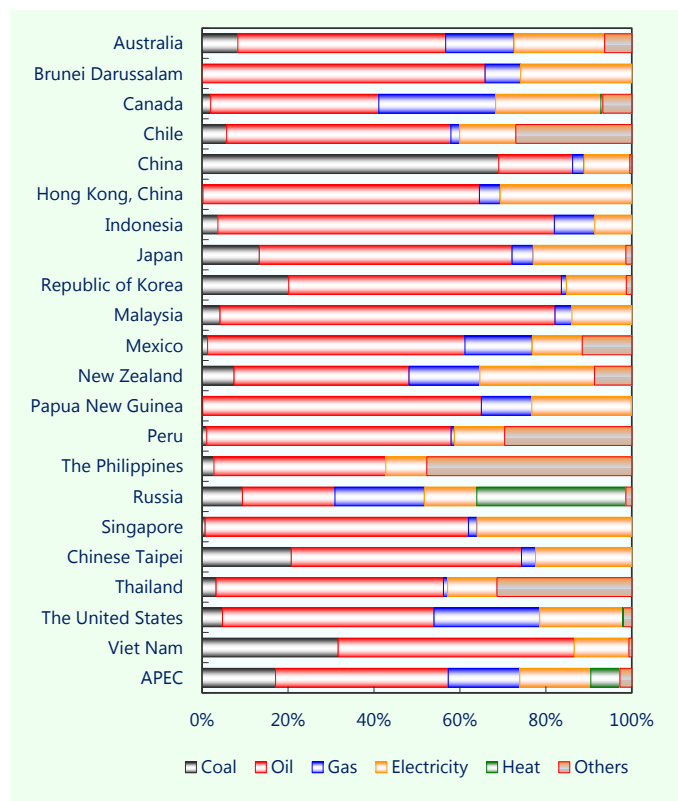


## Final energy consumption by sector 2015



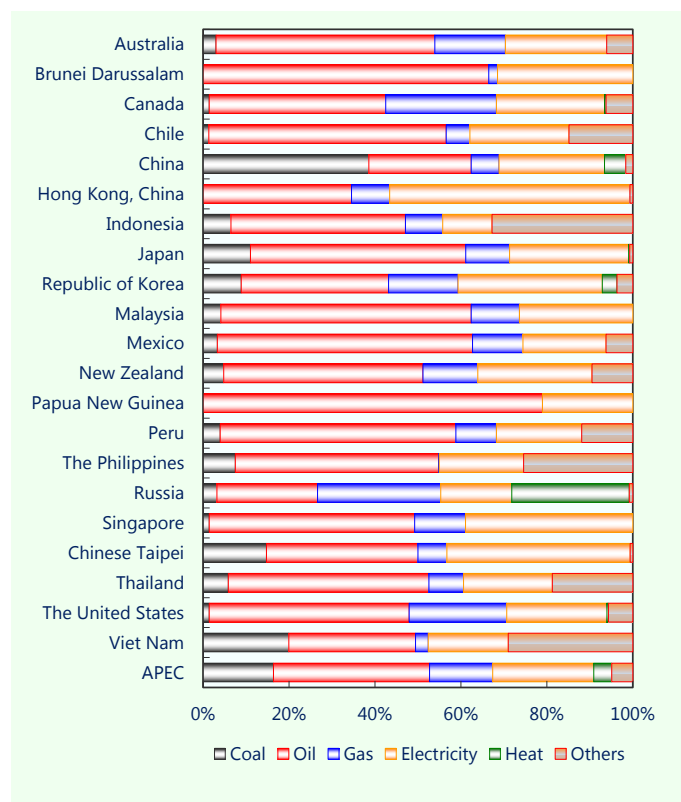
Final Energy Consumption

### Final energy consumption by energy 1990





## Final energy consumption by energy 2015



Final Energy Consumption

## APEC, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	3 137 022		1 846 703	18
2 Import	414 737	10 446	1 317 291	521 298
3 Export	- 635 815	- 9 985	- 595 331	- 579 118
4 International marine and aviation bunkers				- 189 799
5 Stock change	- 19 356	- 1 395	- 16 930	- 5 540
6 Total primary energy supply	2 896 588	- 935	2 551 736	- 253 140
7 Transfers			- 110 637	123 764
8 Main activity producers	- 1 447 162	- 9 025	- 5 348	- 45 738
9 Autoproducers	- 202 721	- 42 281	- 661	- 31 749
10 Gas processing	- 8 473	- 13		248
11 Petroleum refineries			- 2 446 725	2 389 994
12 Coal transformation	- 522 770	245 977		- 1 064
13 Other transformation			39 419	- 12 004
14 Loss & own-use	- 45 426	- 17 675	- 14 669	- 105 849
15 Discrepancy	- 6 522	3 348	855	25 715
16 Total final consumption	663 515	179 396	13 970	2 090 177
17 Total final energy consumption	616 203	158 276	2 184	1 716 837
18 Industry sector	506 240	152 808	2 116	213 081
19 Transport sector	2 396	21		1 251 096
20 Other sector	107 567	5 447	68	252 660
20.1 Residential & Commercial	72 291	4 976		151 414
20.2 Agriculture	13 628	337	10	55 068
20.3 Other	21 647	134	58	46 178
21 Non-energy	47 312	21 121	11 786	373 340

## Australia, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	298 581		18 090	
2 Import	83	84	19 845	23 177
3 Export	- 253 391	- 609	- 12 725	- 1 880
4 International marine and aviation bunkers				- 4 647
5 Stock change	- 1 840		263	- 235
6 Total primary energy supply	43 434	- 525	25 473	16 415
7 Transfers			430	4 066
8 Main activity producers	- 38 742	- 16		- 308
9 Autoproducers				- 1 056
10 Gas processing				
11 Petroleum refineries			- 25 511	25 559
12 Coal transformation	- 2 741	1 822		
13 Other transformation			81	
14 Loss & own-use		- 849	- 55	- 3 337
15 Discrepancy	- 54	1	- 403	1 215
16 Total final consumption	1 897	433	15	42 554
17 Total final energy consumption	1 897	433	15	39 293
18 Industry sector	1 891	432	15	4 473
19 Transport sector	1			31 531
20 Other sector	5	1		3 289
20.1 Residential & Commercial	5	1		1 159
20.2 Agriculture				2 130
20.3 Other				
21 Non-energy				3 261

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
1 713 876	190 692	395 217	87 922	332 595		64	7 704 109
372 676				3 919	10 966		2 651 333
- 384 709				- 3 241	- 10 398		- 2 218 597
				- 167			- 189 966
- 17 830				- 680			- 61 731
1 684 013	190 692	395 217	87 922	332 427	570	64	7 885 183
				- 418			12 709
- 610 848	- 186 932	- 395 218	- 77 667	- 54 324	1 202 576	122 250	- 1 507 435
- 114 374	- 3 761		- 6 136	- 33 152	117 643	114 332	- 202 859
- 4 042				- 1			- 12 281
							- 56 731
							- 277 856
- 10 150				- 23 227	11	- 66	- 6 017
- 178 361				- 586	- 204 027	- 38 385	- 604 980
- 5 232	2	1	3	4 909	- 1 650	- 430	21 000
761 006			4 121	225 629	1 115 122	197 766	5 250 702
692 095			4 121	225 629	1 115 122	197 766	4 728 232
286 533			113	75 994	512 612	99 824	1 849 321
72 635				35 559	21 118		1 382 825
332 926			4 008	114 075	581 391	97 942	1 496 085
325 332			3 824	108 069	510 070	91 835	1 267 812
3 544			112	4 753	17 684	2 447	97 583
4 050			72	1 253	53 637	3 661	130 690
68 911							522 470

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
56 363	1 149		1 856	5 288			381 327
5 136							48 325
- 29 282							- 297 887
							- 4 647
32 217	1 149		1 856	5 288			125 307
							4 496
- 9 143	- 1 149		- 995	- 356	19 504		- 31 205
- 2 741			- 506	- 539	2 193		- 2 649
							48
- 73							- 919
- 7 197					- 3 523		8
450				40	2		- 14 961
13 513			355	4 353	18 172		1 167
12 705			355	4 353	18 172		81 292
7 708				2 870	6 612		77 223
267				246	470		24 001
4 730			355	1 237	11 090		32 515
4 701			355	1 237	10 870		20 707
29					220		18 328
							2 379
808							4 069

## Brunei Darussalam, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production			6 714	18
2 Import			9	326
3 Export			- 6 366	- 86
4 International marine and aviation bunkers				- 77
5 Stock change			95	3
6 Total primary energy supply			452	184
7 Transfers				
8 Main activity producers				- 11
9 Auto-producers				
10 Gas processing				18
11 Petroleum refineries			- 434	457
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy			- 18	- 30
16 Total final consumption				618
17 Total final energy consumption				617
18 Industry sector				136
19 Transport sector				456
20 Other sector				24
20.1 Residential & Commercial				18
20.2 Agriculture				
20.3 Other				6
21 Non-energy				1

## Canada, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	30 609		226 233	
2 Import	4 688	417	50 448	11 675
3 Export	- 18 156	- 50	- 170 858	- 22 686
4 International marine and aviation bunkers				- 1 039
5 Stock change	1 026	- 115	- 252	810
6 Total primary energy supply	18 166	252	105 572	- 11 240
7 Transfers			- 10 366	14 791
8 Main activity producers	- 15 307			- 1 503
9 Auto-producers		- 7		- 413
10 Gas processing				
11 Petroleum refineries			- 93 408	90 642
12 Coal transformation	- 1 994	1 162		
13 Other transformation				2 432
14 Loss & own-use	- 1			- 15 763
15 Discrepancy	241	- 1	- 4 230	12 527
16 Total final consumption	1 105	1 406		89 041
17 Total final energy consumption	1 074	1 383		70 691
18 Industry sector	1 068	1 383		4 902
19 Transport sector				55 586
20 Other sector	6			10 203
20.1 Residential & Commercial	6			5 503
20.2 Agriculture				4 700
20.3 Other				
21 Non-energy	31	23		18 350

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
11 461							18 194
							335
- 7 959							- 14 411
- 104							- 77
3 398							- 6
							4 034
- 1 184					361		- 834
- 166					40		- 126
							18
							22
- 1 659					- 69		- 1 728
62					74		- 40
450					292		1 360
19					292		928
					17		153
							456
19					275		319
19					275		313
							6
431							432

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
139 112	32 732	26 431	2 566	13 647			471 330
16 297				974	750		85 249
- 65 988				- 815	- 5 870		- 284 423
							- 1 039
- 2 395							- 926
87 026	32 732	26 431	2 566	13 806	- 5 119		270 192
							4 425
- 8 074	- 30 062	- 26 431	- 2 491	- 427	51 569	614	- 32 112
- 6 508	- 2 671		- 33	- 2 732	6 114	22	- 6 228
							- 2 766
							- 832
- 3 205							- 773
- 31 323				- 2	- 9 974		- 57 063
9 370	1			- 2	675		18 581
47 286			42	10 643	43 265	636	193 424
44 374			42	10 643	43 265	636	172 108
14 220				5 851	14 488	605	42 517
3 578				1 776	444		61 384
26 576			42	3 016	28 333	31	68 207
25 739				3 016	24 693	11	58 968
837					837		6 374
			42		2 803	20	2 865
2 912							21 316

## Chile, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	2 090		296	
2 Import	5 674	2	8 699	7 559
3 Export	- 561	- 28		- 489
4 International marine and aviation bunkers				- 695
5 Stock change		- 12	- 37	- 39
6 Total primary energy supply	7 203	- 38	8 957	6 337
7 Transfers			1 065	- 1 003
8 Main activity producers	- 6 556			640
9 Auto-producers				- 121
10 Gas processing				
11 Petroleum refineries			- 10 322	9 909
12 Coal transformation	- 365	252		
13 Other transformation				
14 Loss & own-use	- 2	- 156		- 340
15 Discrepancy	- 23	7	300	- 272
16 Total final consumption	257	65		13 870
17 Total final energy consumption	257	65		13 774
18 Industry sector	254	65		3 933
19 Transport sector				8 340
20 Other sector	3			1 501
20.1 Residential & Commercial	3			1 291
20.2 Agriculture				
20.3 Other				210
21 Non-energy				96

## People's Republic of China, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	1 858 627		217 050	
2 Import	100 467	25	335 483	52 617
3 Export	- 3 170	- 6 620	- 2 866	- 41 120
4 International marine and aviation bunkers				- 17 026
5 Stock change	12 740	1 080	- 6 238	- 2 707
6 Total primary energy supply	1 968 665	- 5 515	543 429	- 8 237
7 Transfers				
8 Main activity producers	- 778 958	- 1 268	- 125	- 3 207
9 Auto-producers	- 165 031	- 32 243	- 67	- 3 594
10 Gas processing	- 6 480	- 13		
11 Petroleum refineries			- 545 202	515 855
12 Coal transformation	- 390 971	175 456		
13 Other transformation			10 715	
14 Loss & own-use	- 43 886	- 6 554	- 5 278	- 4 004
15 Discrepancy	- 162	6 389	- 52	- 329
16 Total final consumption	583 177	136 252	3 421	496 484
17 Total final energy consumption	536 287	115 943	2 078	401 604
18 Industry sector	432 136	111 751	2 078	80 583
19 Transport sector	2 395	21		220 410
20 Other sector	101 756	4 171		100 611
20.1 Residential & Commercial	66 637	3 700		44 944
20.2 Agriculture	13 473	337		17 717
20.3 Other	21 646	134		37 950
21 Non-energy	46 890	20 309	1 343	94 880

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
846	2 054		320	7 300			12 906
3 132							25 066
							- 1 078
							- 695
2							- 86
3 980	2 054		320	7 300			36 113
							62
- 1 901	- 2 050		- 290	- 928	5 948		- 6 417
- 39	- 4			- 2 708	535		- 2 337
8				- 1			7
							- 413
							- 113
				- 72			- 72
- 245					- 663		- 1 406
- 289				74	- 72		- 275
1 514			30	3 665	5 748		25 149
1 384			30	3 665	5 748		24 923
771				1 943	3 635		10 601
27					79		8 446
586			30	1 722	2 034		5 876
582				1 722	2 025		5 623
4			30		9		253
130							226

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
119 795	95 844	44 508	16 309	72 448			2 424 581
54 283					534		543 408
- 2 888					- 1 604		- 58 268
							- 17 026
							4 876
171 190	95 844	44 508	16 309	72 448	- 1 070		2 897 571
- 26 564	- 95 844	- 44 508	- 16 309	- 33 632	442 340	52 452	- 505 623
- 7 040					57 714	43 531	- 106 730
1 298							- 5 195
							- 29 347
							- 215 515
				- 10 715			
- 25 355				- 249	- 83 471	- 12 647	- 181 443
597				- 198	- 11	12	6 246
114 126				27 653	415 501	83 348	1 859 963
109 575				27 653	415 501	83 348	1 691 989
47 953				8 621	279 867	55 801	1 018 791
20 120					9 680		252 625
41 502				19 032	125 953	27 548	420 573
37 374				14 330	83 310	23 889	274 184
84				3 449	8 943	26	44 027
4 044				1 253	33 700	3 633	102 362
4 551							167 974

## Hong Kong, China, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production				
2 Import	7 044			20 122
3 Export				- 701
4 International marine and aviation bunkers				- 14 922
5 Stock change	- 350			- 1 066
6 Total primary energy supply	6 694			3 433
7 Transfers				
8 Main activity producers	- 6 694			- 62
9 Auto-producers				
10 Gas processing				- 266
11 Petroleum refineries				
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				- 771
16 Total final consumption				2 334
17 Total final energy consumption				2 334
18 Industry sector				104
19 Transport sector				2 024
20 Other sector				207
20.1 Residential & Commercial				207
20.2 Agriculture				
20.3 Other				
21 Non-energy				

## Indonesia, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	271 401		44 906	
2 Import	1 769		21 573	28 534
3 Export	- 215 120		- 17 584	- 477
4 International marine and aviation bunkers				
5 Stock change	- 7 003		448	5 134
6 Total primary energy supply	51 047		49 343	33 191
7 Transfers			- 1 460	2 450
8 Main activity producers	- 41 207			- 8 656
9 Auto-producers				
10 Gas processing				1 947
11 Petroleum refineries			- 57 108	53 779
12 Coal transformation	- 8	6		
13 Other transformation			8 698	- 2 452
14 Loss & own-use				- 78
15 Discrepancy			527	- 2 952
16 Total final consumption	9 832	6		77 228
17 Total final energy consumption	9 832	6		61 765
18 Industry sector	9 832	6		3 622
19 Transport sector				47 328
20 Other sector				10 815
20.1 Residential & Commercial				8 496
20.2 Agriculture				
20.3 Other				2 319
21 Non-energy				15 463



Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
			1	64			65
2 953				6	1 010		31 135
					- 102		- 803
							- 14 922
							- 1 416
2 953			1	70	908		14 059
- 2 352					3 261		- 5 847
			- 1	- 13	4		- 9
							- 266
							- 13
							- 393
							- 772
601				44	3 781		6 760
601				44	3 781		6 760
27					221		351
				5	71		2 100
574				38	3 489		4 309
574				38	3 489		4 309

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
67 294	1 182		8 643	51 818			445 243
					1		51 876
- 30 761							- 263 941
							- 1 422
36 533	1 182		8 643	51 818	1		231 757
							990
- 7 686	- 1 182		- 8 643	- 175	20 166		- 47 383
							- 816
							- 3 329
							- 2
- 624				- 1 789			3 833
- 6 584						- 2 726	- 9 388
- 1 517					4		- 3 939
17 359				49 853	17 445		171 724
13 163				49 853	17 445		152 064
12 906				7 222	5 511		39 098
35					18		47 380
223				42 631	11 916		65 585
223				42 631	11 916		63 267
							2 319
4 196							19 659

## Japan, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	671		517	
2 Import	116 057	1 909	169 499	45 022
3 Export		- 439		- 17 206
4 International marine and aviation bunkers				- 10 563
5 Stock change	- 959		- 785	392
6 Total primary energy supply	115 769	1 470	169 231	17 645
7 Transfers			- 239	241
8 Main activity producers	- 54 723	- 4 417	- 5 223	- 9 891
9 Autoproducers	- 12 276	- 2 606		- 11 720
10 Gas processing				- 1 279
11 Petroleum refineries			- 163 840	168 447
12 Coal transformation	- 33 205	29 319		- 1 064
13 Other transformation				
14 Loss & own-use	- 548	- 2 929		- 10 423
15 Discrepancy	- 275	- 3 022	71	- 259
16 Total final consumption	14 742	17 815		151 697
17 Total final energy consumption	14 742	17 815		148 331
18 Industry sector	14 742	17 211		51 633
19 Transport sector				72 134
20 Other sector		605		24 563
20.1 Residential & Commercial		605		20 916
20.2 Agriculture				2 279
20.3 Other				1 368
21 Non-energy				3 366

## Republic of Korea, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	785		658	
2 Import	80 860	268	142 110	37 602
3 Export			- 346	- 62 430
4 International marine and aviation bunkers				- 13 837
5 Stock change	- 1 077		- 1 426	347
6 Total primary energy supply	80 568	268	140 997	- 38 315
7 Transfers			- 3 029	3 506
8 Main activity producers	- 47 280	- 1 975		- 2 246
9 Autoproducers	- 4 811	- 2 296		- 1 994
10 Gas processing				- 88
11 Petroleum refineries			- 147 910	144 507
12 Coal transformation	- 23 741	13 592		
13 Other transformation			9 755	- 9 395
14 Loss & own-use		- 3 125	- 1	- 7 113
15 Discrepancy	643	- 48	188	1 435
16 Total final consumption	5 379	6 416		90 297
17 Total final energy consumption	5 379	5 864		43 521
18 Industry sector	5 379	5 209		3 482
19 Transport sector				31 637
20 Other sector		655		8 402
20.1 Residential & Commercial		655		5 610
20.2 Agriculture				499
20.3 Other				2 293
21 Non-energy		552		46 776

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
2 409	7 207	1 162	6 169	6 270			24 405
103 544							436 030
							- 17 645
							- 10 563
- 797							- 2 149
105 156	7 207	1 162	6 169	6 270			430 078
							2
- 69 322	- 6 523	- 1 162	- 2 094	- 1 538	75 881	591	- 78 421
- 3 928	- 684		- 3 632	- 7 872	14 808	170	- 27 740
1 341							62
							4 607
							- 4 950
- 4 395					- 7 335		- 25 630
1 236				4 856	- 1 301	- 75	1 231
30 089			443	1 716	82 053	686	299 240
30 089			443	1 716	82 053	686	295 874
15 228				1 694	32 952		133 459
77					1 867		74 079
14 783			443	22	47 234	686	88 336
14 783			370	22	46 945	613	84 254
			73		289	73	2 714
							1 368
							3 366

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
169	185	42 938	643	5 850		64	51 292
38 933				10			299 783
							- 62 776
							- 13 837
234				16			- 1 906
39 335	185	42 938	643	5 876		64	272 559
							59
- 18 292	- 185	- 42 938	- 437	- 402	44 666	1 594	- 67 495
- 875			- 43	- 963	2 558	3 237	- 5 187
							- 88
							- 3 403
							- 10 149
					11	- 33	338
- 68					- 4 697	- 145	- 15 149
398			1	392	59	- 355	2 713
20 498			164	4 485	42 597	4 362	174 198
20 498			164	4 485	42 597	4 362	126 870
7 411			5	2 510	22 563	2 570	49 129
1 164				418	191		33 410
11 923			159	1 557	19 843	1 792	44 331
11 920			137	1 491	18 583	1 792	40 188
3				66	1 002		1 592
					258		2 551
							47 328

## Malaysia, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	1 612		34 018	
2 Import	16 040		8 387	14 201
3 Export	- 156		- 16 103	- 10 315
4 International marine and aviation bunkers				- 2 851
5 Stock change	10		57	394
6 Total primary energy supply	17 506		26 360	1 429
7 Transfers			- 1 574	1 624
8 Main activity producers	- 15 616			380
9 Autoproducers				- 51
10 Gas processing				211
11 Petroleum refineries			- 24 948	24 805
12 Coal transformation				
13 Other transformation			389	
14 Loss & own-use				- 1 368
15 Discrepancy	- 113		- 226	257
16 Total final consumption	1 777			26 527
17 Total final energy consumption	1 777			25 106
18 Industry sector	1 777			2 185
19 Transport sector				20 628
20 Other sector				2 294
20.1 Residential & Commercial				1 440
20.2 Agriculture				190
20.3 Other				664
21 Non-energy				1 420

## Mexico, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	7 986		130 949	
2 Import	4 821	466	401	34 669
3 Export	- 2		- 62 281	- 9 728
4 International marine and aviation bunkers				- 4 301
5 Stock change	382		368	556
6 Total primary energy supply	13 188	466	69 437	21 195
7 Transfers			- 5 977	7 035
8 Main activity producers	- 8 728			- 5 987
9 Autoproducers	- 13	- 142		- 1 620
10 Gas processing				- 769
11 Petroleum refineries			- 65 964	57 796
12 Coal transformation	- 1 747	938		
13 Other transformation			210	- 157
14 Loss & own-use		- 390		- 5 715
15 Discrepancy	300	9	2 294	930
16 Total final consumption	3 000	881		72 708
17 Total final energy consumption	3 000	769		67 985
18 Industry sector	3 000	769		6 254
19 Transport sector				50 981
20 Other sector				10 750
20.1 Residential & Commercial				7 620
20.2 Agriculture				3 130
20.3 Other				
21 Non-energy		112		4 723

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
56 477	1 197		23	891			94 219
7 714					1		46 343
- 31 198				- 182			- 57 954
				- 114			- 2 851
32 993	1 197		23	595	1		347
							80 104
							50
- 12 662	- 1 197		- 23	- 91	12 482		- 17 489
- 1 646				- 116	429		- 1 384
- 5 480							- 5 269
							- 143
				- 389			
- 2 103					- 1 079		- 4 550
- 2 046				1	- 464		- 2 591
9 054					11 369		48 727
4 823					11 369		43 076
4 551					5 215		13 728
249					23		20 900
23					6 131		8 448
23					6 091		7 554
					40		230
							664
4 231							5 652

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
34 356	2 650	3 017	4 203	8 624			191 785
30 166					142		70 665
- 24					- 200		- 72 235
							- 4 301
146							1 452
64 644	2 650	3 017	4 203	8 624	- 58		187 366
							1 058
- 26 525	- 2 584	- 3 017	- 3 399	- 1 699	22 593		- 27 647
- 8 061	- 66		- 587		4 165		- 8 023
489							- 280
							- 8 168
							- 809
							53
- 13 365					- 5 031		- 24 501
- 3 250					472		755
13 932			217	6 925	22 141		119 804
13 446			217	6 925	22 141		114 483
12 392			11	887	12 039		35 352
17					98		51 096
1 037			206	6 038	10 004		28 035
1 037			206	6 038	6 860		21 761
					865		3 995
					2 279		2 279
486							5 321

## New Zealand, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	1 935		2 159	
2 Import	220		5 446	2 182
3 Export	- 977		- 1 804	- 195
4 International marine and aviation bunkers				- 1 177
5 Stock change	189		149	8
6 Total primary energy supply	1 367		5 951	816
7 Transfers			- 215	224
8 Main activity producers	- 266			
9 Autoproducers	- 6	- 180		
10 Gas processing				
11 Petroleum refineries			- 5 809	5 852
12 Coal transformation	- 445	275		
13 Other transformation				
14 Loss & own-use	- 22	- 54		- 369
15 Discrepancy	- 61	- 11	73	- 310
16 Total final consumption	567	40		6 213
17 Total final energy consumption	567	40		5 876
18 Industry sector	488	40		419
19 Transport sector				4 806
20 Other sector	79			651
20.1 Residential & Commercial	32			212
20.2 Agriculture	47			369
20.3 Other				70
21 Non-energy				337

## Papua New Guinea, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production			1 221	
2 Import			625	1 285
3 Export			- 1 221	
4 International marine and aviation bunkers				
5 Stock change			- 11	- 5
6 Total primary energy supply			614	1 280
7 Transfers				- 1
8 Main activity producers				- 80
9 Autoproducers				- 555
10 Gas processing				
11 Petroleum refineries			- 614	609
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				1
16 Total final consumption				1 253
17 Total final energy consumption				1 253
18 Industry sector				467
19 Transport sector				637
20 Other sector				149
20.1 Residential & Commercial				
20.2 Agriculture				
20.3 Other				149
21 Non-energy				

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
4 042	2 110		5 082	1 175			16 503
							7 848
							- 2 976
							- 1 177
45							391
4 088	2 110		5 082	1 175			20 589
							9
- 1 174	- 2 109		- 4 854	- 38	3 676		- 4 765
- 39	- 1		- 44	- 116	126	33	- 227
							43
							- 170
							- 33
- 226					- 420		- 1 091
43					- 17		- 273
2 692			184	1 021	3 365		14 082
1 614			184	1 021	3 365		12 667
1 242			97	860	1 195		4 341
1				3	5		4 815
371			87	158	2 165		3 511
336			70	158	1 897		2 705
35			17		239		707
					29		99
1 078							1 415

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
8 427	87		363				10 098
							1 910
- 6 939							- 8 159
							- 16
1 489	87		363				3 833
							- 1
	- 57				79		- 58
- 128	- 30		- 363		293		- 784
- 9							- 9
							- 5
							- 794
- 756					- 38		- 595
- 596					334		1 587
					334		1 587
					244		711
							637
					89		239
					89		239

## Peru, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	170		6 394	
2 Import	283	24	4 333	3 259
3 Export	- 177		- 402	- 2 928
4 International marine and aviation bunkers				
5 Stock change	508	2	309	377
6 Total primary energy supply	784	27	10 633	708
7 Transfers			- 1 800	1 760
8 Main activity producers	- 63			122
9 Autoproducers	- 102			- 178
10 Gas processing				
11 Petroleum refineries			- 8 978	8 269
12 Coal transformation				
13 Other transformation			129	
14 Loss & own-use			- 3 465	- 3 632
15 Discrepancy	80		3 482	3 557
16 Total final consumption	699	27		10 363
17 Total final energy consumption	699	27		10 058
18 Industry sector	698	27		1 242
19 Transport sector				7 363
20 Other sector	1			1 453
20.1 Residential & Commercial	1			1 280
20.2 Agriculture				49
20.3 Other				124
21 Non-energy				305

## The Philippines, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	3 913		827	
2 Import	9 120		10 471	10 152
3 Export	- 1 639		- 832	- 1 324
4 International marine and aviation bunkers				- 1 243
5 Stock change	240		- 36	- 83
6 Total primary energy supply	11 634		10 431	7 502
7 Transfers				
8 Main activity producers	- 9 265			- 1 413
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 10 420	10 266
12 Coal transformation				
13 Other transformation			239	
14 Loss & own-use				
15 Discrepancy	- 19		- 250	- 1 283
16 Total final consumption	2 350			15 072
17 Total final energy consumption	2 218			14 025
18 Industry sector	2 218			1 382
19 Transport sector				10 185
20 Other sector				2 459
20.1 Residential & Commercial				2 265
20.2 Agriculture				34
20.3 Other				159
21 Non-energy	132			1 047



Unit: ktoe							Total
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	
11 419	2 004		97	2 531			22 614
				300			8 199
- 4 320					- 5		- 7 831
				- 108			1 087
7 100	2 004		97	2 723	- 5		24 069
							- 40
- 3 700	- 1 953		- 71	- 112	3 917		- 2 103
- 221	- 51			- 167	217		- 502
							- 709
				- 223			- 94
- 1 227					- 491		- 8 815
- 221				- 64			6 834
1 730			26	2 157	3 638		18 640
1 730			26	2 157	3 638		18 335
1 003				127	2 121		5 217
575					4		7 942
153			25	2 031	1 514		5 176
153			25	2 031	1 514		5 004
							49
							124
							305

Unit: ktoe							Total
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	
2 877	745		9 574	10 029			27 966
				169			29 913
							- 3 795
							- 1 243
							121
2 877	745		9 574	10 199			52 962
- 2 719	- 745		- 9 574	- 158	7 088		- 16 787
							- 154
				- 2 505			- 2 266
- 108					- 1 256		- 1 364
				- 61			- 1 558
50				7 530	5 831		30 834
50				7 530	5 831		29 655
50				1 132	1 936		6 718
					8		10 194
				6 397	3 887		12 743
				6 397	3 684		12 346
					179		213
					24		184
							1 179

## Russian Federation, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	200 270		536 284	
2 Import	14 239	63	3 543	1 960
3 Export	- 98 043	- 1 703	- 247 532	- 115 733
4 International marine and aviation bunkers				- 20 678
5 Stock change	1 492	86	- 2 280	1 173
6 Total primary energy supply	117 957	- 1 555	290 014	- 133 278
7 Transfers				
8 Main activity producers	- 47 929			- 1 670
9 Autoproducers	- 13 575	- 3 128	- 594	- 7 557
10 Gas processing				
11 Petroleum refineries			- 283 459	283 621
12 Coal transformation	- 47 289	13 028		
13 Other transformation				
14 Loss & own-use	- 929	- 1 058	- 5 870	- 14 770
15 Discrepancy	- 3 279	1		8 285
16 Total final consumption	4 956	7 288	91	134 631
17 Total final energy consumption	4 772	7 288	91	88 390
18 Industry sector	1 226	7 273	23	14 451
19 Transport sector				59 591
20 Other sector	3 546	15	68	14 348
20.1 Residential & Commercial	3 453	15		10 540
20.2 Agriculture	92		10	3 292
20.3 Other	1		58	516
21 Non-energy	184			46 241

## Singapore, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production				
2 Import	400	7	39 950	118 577
3 Export			- 754	- 90 468
4 International marine and aviation bunkers				- 50 863
5 Stock change			- 156	- 999
6 Total primary energy supply	400	7	39 040	- 23 753
7 Transfers			6 948	- 7 114
8 Main activity producers	- 256			- 14
9 Autoproducers				- 214
10 Gas processing				
11 Petroleum refineries			- 45 988	44 457
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				- 1 715
15 Discrepancy				- 1
16 Total final consumption	144	7		11 646
17 Total final energy consumption	144	7		5 020
18 Industry sector	144	7		2 724
19 Transport sector				2 187
20 Other sector				109
20.1 Residential & Commercial				109
20.2 Agriculture				
20.3 Other				
21 Non-energy				6 626

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
524 178	14 447	51 279	157	7 569			1 334 184
7 229				4	566		27 604
- 164 926				- 21	- 1 569		- 629 527
							- 20 678
- 2 332				10			- 1 851
364 149	14 447	51 279	157	7 563	- 1 003		709 730
- 139 601	- 14 319	- 51 280	- 158		85 452	57 013	- 112 492
- 65 785	- 129			- 4 281	6 191	67 327	- 21 531
							162
							- 34 261
- 1 993							- 1 993
- 17 411				- 238	- 28 177	- 21 064	- 89 517
1 809	1	1	1	- 34		1	6 786
141 168				3 010	62 463	103 277	456 884
108 291				3 010	62 463	103 277	377 582
35 489				873	28 294	36 537	124 166
27 210					7 062		93 863
45 592				2 137	27 107	66 740	159 553
44 485				2 009	25 689	64 384	150 575
1 107				128	1 398	2 348	8 375
					20	8	603
32 877							79 302

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
			6	614			620
9 323				63			168 320
							- 91 222
							- 50 863
- 88							- 1 243
9 235			6	677			25 612
							- 166
- 7 267			- 6	- 677	3 858		- 4 362
- 889					477		- 626
							- 1 531
- 12					- 249		- 1 976
174					1		174
1 241					4 087		17 125
1 241					4 087		10 499
1 089					1 622		5 586
14					210		2 411
138					2 255		2 502
136					2 231		2 476
							26
2					24		6 626

## Chinese Taipei, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production			8	
2 Import	36 257	124	44 172	19 062
3 Export				- 16 494
4 International marine and aviation bunkers				- 3 654
5 Stock change	- 466	23	- 224	- 171
6 Total primary energy supply	35 791	148	43 956	- 1 257
7 Transfers				700
8 Main activity producers	- 18 231			- 2 496
9 Autoproducers	- 4 846	- 1 036		- 375
10 Gas processing				6
11 Petroleum refineries			- 43 994	44 437
12 Coal transformation	- 5 973	3 671		
13 Other transformation				
14 Loss & own-use		- 1 274		- 1 460
15 Discrepancy	- 1 197	16	38	700
16 Total final consumption	5 543	1 524		38 849
17 Total final energy consumption	5 469	1 400		16 406
18 Industry sector	5 469	1 400		1 919
19 Transport sector				12 045
20 Other sector				2 441
20.1 Residential & Commercial				2 089
20.2 Agriculture				4
20.3 Other				349
21 Non-energy	75	124		22 443

## Thailand, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	3 859		18 587	
2 Import	6 876	6 970	44 903	2 420
3 Export	- 16		- 136	- 11 934
4 International marine and aviation bunkers				- 5 706
5 Stock change	- 3 864	- 2 079	4 880	- 2 486
6 Total primary energy supply	6 856	4 890	68 235	- 17 705
7 Transfers			- 5 188	5 634
8 Main activity producers	- 6 260	- 1 147		- 188
9 Autoproducers				6
10 Gas processing				473
11 Petroleum refineries			- 58 817	51 772
12 Coal transformation				
13 Other transformation			1 960	
14 Loss & own-use				- 1 447
15 Discrepancy	63		47	- 431
16 Total final consumption	659	3 744	6 236	38 101
17 Total final energy consumption	659	3 744		35 225
18 Industry sector	659	3 744		5 938
19 Transport sector				22 876
20 Other sector				6 412
20.1 Residential & Commercial				2 466
20.2 Agriculture				3 946
20.3 Other				
21 Non-energy			6 236	2 876

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
299	350	9 504	309	1 944			12 414
17 913							117 529
							- 16 494
							- 3 654
9				4			- 825
18 221	350	9 504	309	1 948			108 970
							- 700
- 13 756	- 350	- 9 504	- 206		18 808		- 25 736
- 62				- 1 733	3 382		- 4 669
							443
							- 2 303
				- 4			- 4
- 339					- 2 451		- 5 524
- 922				- 23	215		- 1 173
3 142			102	189	19 954		69 304
3 142			102	189	19 954		46 661
1 771				189	11 503		22 250
					116		12 161
1 372			102		8 336		12 251
1 372			102		8 092		11 654
					164		167
					80		429
							22 642

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
28 486	334		234	25 255			76 754
13 175				105	1 240		75 689
				- 25	- 195		- 12 305
				32			- 5 706
41 661	334		234	25 367	1 045		130 916
							446
- 25 547	- 334		- 233		12 754		- 20 954
			- 1	- 3 725	3 100	12	- 620
							473
							- 7 045
				- 7 517			- 5 557
- 8 204					- 1 300		- 10 951
- 2				- 23		- 12	- 359
7 908			1	14 102	15 598		86 349
6 070			1	14 102	15 598		75 399
3 358				7 811	6 615		28 125
2 710					9		25 595
1			1	6 291	8 975		21 679
1			1	6 291	8 942		17 700
					33		3 979
1 838							10 950

## The United States, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	431 282		582 082	
2 Import	5 960	88	407 354	75 536
3 Export	-43 430	- 536	-43 850	-171 659
4 International marine and aviation bunkers				-36 520
5 Stock change	-18 862	- 381	-12 054	- 6 937
6 Total primary energy supply	374 951	- 829	933 533	-139 581
7 Transfers			-89 076	91 081
8 Main activity producers	- 337 881	- 203		- 6 607
9 Autoproducers	- 2 061	- 643		- 2 295
10 Gas processing	- 1 993			
11 Petroleum refineries			- 844 078	841 946
12 Coal transformation	-14 290	6 456		
13 Other transformation			4 811	
14 Loss & own-use	- 38	-1 287		- 34 316
15 Discrepancy	- 2 666	- 2	- 983	3 447
16 Total final consumption	16 022	3 492	4 207	753 675
17 Total final energy consumption	16 022	3 492		649 955
18 Industry sector	15 350	3 492		21 542
19 Transport sector				578 525
20 Other sector	672			49 888
20.1 Residential & Commercial	672			33 577
20.2 Agriculture				16 311
20.3 Other				
21 Non-energy			4 207	103 720

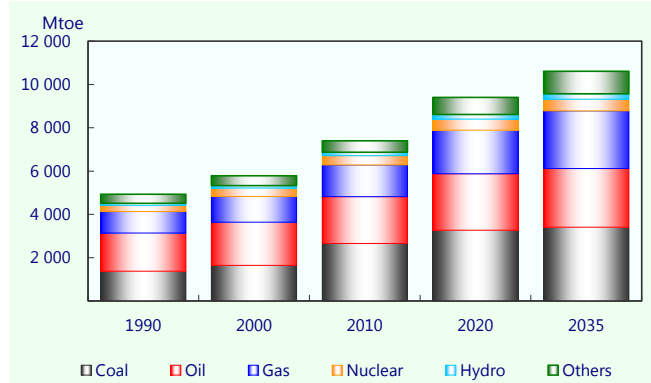
## Viet Nam, 2015

	Coal	Coal products	Crude oil, NGL	Petroleum products
1 Indigenous production	23 231		19 710	
2 Import	3 879		39	11 361
3 Export	- 979		- 9 673	-1 266
4 International marine and aviation bunkers				
5 Stock change	- 1 523			- 4
6 Total primary energy supply	24 608		10 076	10 092
7 Transfers			- 156	170
8 Main activity producers	-13 200			- 256
9 Autoproducers				
10 Gas processing				
11 Petroleum refineries			- 9 920	7 009
12 Coal transformation				
13 Other transformation				
14 Loss & own-use				
15 Discrepancy				
16 Total final consumption	11 409			17 015
17 Total final energy consumption	11 409			15 607
18 Industry sector	9 910			1 690
19 Transport sector				11 826
20 Other sector	1 499			2 091
20.1 Residential & Commercial	1 482			1 673
20.2 Agriculture	17			419
20.3 Other				
21 Non-energy				1 408

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
636 487	21 588	216 378	31 356	99 354			2 018 527
62 878				2 288	6 516		560 620
- 40 425				- 2 198	- 783		- 302 881
				- 167			- 36 687
- 12 550				- 520			- 51 304
646 390	21 588	216 378	31 356	98 757	5 734		2 188 277
							2 005
- 225 492	- 21 463	- 216 378	- 27 873	- 15 730	354 250	9 986	- 487 391
- 16 246	- 125		- 926	- 6 488	15 297		- 13 487
1 075							- 918
							- 2 132
							- 7 834
- 4 255							556
- 57 783				- 97	- 50 128	- 4 529	- 148 178
- 10 528			1	- 25	- 3	- 1	- 10 760
333 161			2 558	76 417	325 150	5 456	1 520 138
317 788			2 558	76 417	325 150	5 456	1 396 838
117 874				29 669	69 336	4 311	261 574
16 591				33 111	763		628 990
183 323			2 558	13 637	255 051	1 145	506 274
181 874			2 558	12 527	237 454	1 145	469 807
1 449				1 110	3 276		22 146
					14 321		14 321
15 373							123 300

Unit: ktoe							
Natural gas, LNG	Hydro	Nuclear	Geothermal, solar, etc.	Others	Electricity	Heat	Total
9 378	4 827		10	11 925			69 081
					206		15 485
					- 70		- 11 987
							- 1 527
9 378	4 827		10	11 925	136		71 052
							14
- 7 887	- 4 827		- 10	- 59	13 925		- 12 313
							- 2 911
							- 557
					- 557		- 557
					- 1 166		- 1 166
1 491				11 866	12 338		54 119
1 491				11 866	12 338		52 711
1 491				3 735	6 627		23 454
							11 826
				8 130	5 711		17 432
				8 130	5 511		16 796
					200		636
							1 408

## Primary energy supply outlook by energy



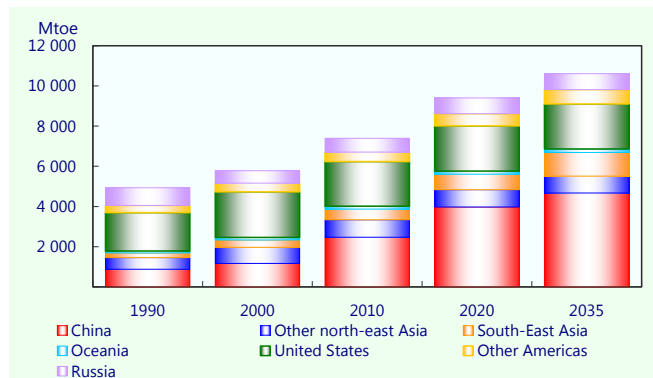
	Mtoe				
	1990	2000	2010	2020	2035
Coal	1 377	1 640	2 656	3 270	3 411
Oil	1 761	2 003	2 160	2 605	2 704
Gas	994	1 184	1 467	2 014	2 665
Nuclear	286	390	432	516	543
Hydro	92	107	152	210	247
Others	421	461	533	790	1 042
<b>Total</b>	<b>4 931</b>	<b>5 786</b>	<b>7 400</b>	<b>9 403</b>	<b>10 611</b>

	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
<b>APEC 21</b>	<b>4 931</b>	<b>5 786</b>	<b>7 400</b>	<b>9 403</b>	<b>10 611</b>
	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			Billions of 2010 Price and 2010 USD			Billions of 2010 Price and 2010 PPP	
	1990	2000	2015	1990	2000	2015	1990	2000
APEC	2 303	2 554	2 849	20 139	27 046	42 618	23 508	32 238
North-east Asia	1 344	1 465	1 580	6 431	8 759	16 954	6 824	10 757
China	1 151	1 263	1 371	907	2 237	8 908	1 894	4 673
Hong Kong, China	6	7	7	110	153	264	159	222
Japan	124	127	127	4 838	5 349	5 986	3 886	4 296
Republic of Korea	43	47	51	400	710	1 269	551	977
Chinese Taipei	21	22	23	175	309	527	334	589
South-East Asia	387	458	557	734	1 167	2 435	1 861	2 925
Brunei Darussalam	0.3	0.3	0.4	10	12	14	22	27
Indonesia	181	212	258	310	453	988	839	1 228
Malaysia	18	23	31	82	163	330	186	371
The Philippines	62	78	102	95	125	266	243	323
Singapore	3	4	6	68	134	289	105	208
Thailand	57	63	69	142	218	394	369	567
Viet Nam	66	78	92	29	61	155	97	202
Oceania	25	29	36	725	1 003	1 542	572	791
Australia	17	19	24	637	882	1 361	488	676
New Zealand	3	4	5	84	114	166	78	106
Papua New Guinea	4	6	8	4	7	14	7	10
Americas	398	456	532	10 835	15 167	20 055	11 190	15 705
Canada	28	31	36	1 014	1 343	1 796	870	1 152
Mexico	85	102	126	620	881	1 210	1 021	1 452
The United States	250	282	321	9 064	12 713	16 597	9 064	12 713
Chile	13	15	18	79	145	265	119	218
Peru	22	26	31	58	86	186	116	170
Russia	148	147	144	1 414	952	1 632	3 061	2 060

	Energy Indigenous Production			Net Import			Total Primary Energy Supply			
	Mtoe			Mtoe			Mtoe			
2015	1990	2000	2015	1990	2000	2015	1990	2000	2015	
58 325	4 655	4 977	7 704	150	625	433	4 654	5 502	7 885	
26 546	814	1 091	2 513	461	714	1 272	1 238	1 747	3 723	
18 607	706	940	2 425	- 30	33	485	654	951	2 898	PRC
383	0	0	0.1	11	18	30	11	15	14	HKC
4 808	75	105	24	371	420	418	435	514	430	JPN
1 745	23	34	51	70	166	237	93	188	273	ROK
1 003	11	11	12	39	76	101	45	79	109	CT
6 127	231	367	732	- 52	- 41	- 68	163	299	596	
31	16	19	18	- 15	- 17	- 14	2	2	4	BD
2 677	119	184	445	- 66	- 82	- 212	53	101	232	INA
752	46	76	94	- 26	- 27	- 12	21	48	80	MAS
685	17	20	28	12	20	26	28	39	53	RP
448	0	0	1	25	41	77	12	19	26	SIN
1 025	26	43	77	18	34	63	42	75	131	THA
509	6	26	69		- 10	3	5	15	71	VN
1 218	174	252	408	- 66	- 127	- 251	100	121	150	
1 043	158	234	381	- 65	- 127	- 250	86	103	125	AUS
154	11	14	17	2	3	5	13	17	21	NZ
21	5	4	10	- 4	- 3	- 6	1	1	4	PNG
20 902	2 143	2 289	2 717	219	427	81	2 274	2 715	2 706	
1 541	276	375	471	- 59	- 128	- 199	211	254	270	CDA
1 994	196	229	192	- 70	- 72	- 2	124	151	187	MEX
16 597	1 653	1 667	2 019	342	606	258	1 915	2 273	2 188	USA
400	8	9	13	7	18	24	14	25	36	CHL
369	11	9	23	- 1	3	0	10	12	24	PE
3 532	1 293	978	1 334	- 413	- 350	- 602	879	619	710	RUS

## Energy Indicators

	Total Final Energy Consumption			Final Consumption of Electricity			Total Primary Energy	
	Mtoe			TWh			toe / Person	
	1990	2000	2015	1990	2000	2015	1990	2000
APEC	3 040	3 380	4 728	5 838	7 805	12 797	2.02	2.15
North-east Asia	881	1 067	2 159	1 543	2 460	6 415	0.92	1.19
China	490	547	1 684	606	1 036	4 686	0.57	0.75
Hong Kong, China	7	11	7	24	36	44	1.85	2.26
Japan	297	355	297	745	964	966	3.51	4.05
Republic of Korea	58	102	124	94	263	487	2.15	4.00
Chinese Taipei	28	52	46	74	160	232	2.21	3.55
South-East Asia	98	173	356	130	347	737	0.42	0.65
Brunei Darussalam		1	1	1	2	3	6.14	6.38
Indonesia	31	59	152	31	109	199	0.29	0.48
Malaysia	12	28	43	20	61	128	1.15	2.08
The Philippines	19	23	28	21	37	63	0.46	0.50
Singapore	3	6	11	13	27	46	3.78	4.63
Thailand	29	45	71	38	88	168	0.75	1.19
Viet Nam	4	12	51	6	22	128	0.08	0.19
Oceania	62	77	90	159	209	250	4.05	4.24
Australia	53	65	76	129	173	208	5.06	5.38
New Zealand	9	11	13	28	34	38	3.84	4.42
Papua New Guinea	1	1	2	2	2	4	0.20	0.20
Americas	1 414	1 681	1 741	3 179	4 180	4 657	5.72	5.96
Canada	147	172	175	418	482	510	7.60	8.24
Mexico	74	88	112	100	145	252	1.45	1.48
The United States	1 174	1 393	1 412	2 634	3 499	3 788	7.67	8.06
Chile	10	18	24	15	37	67	1.06	1.65
Peru	9	11	17	12	17	40	0.46	0.48
Russia	585	382	382	827	609	738	5.93	4.22

	Total Primary Energy Supply per Real GDP			Total Primary Energy Supply per Real GDP			Total Final Energy Consumption per			
	toe / Million 2010 USD			toe / Million 2010 PPP			toe / Person			
	1990	2000	2015	1990	2000	2015	1990	2000	2015	
2.77	231.1	203.4	185.0	198.0	170.7	135.2	1.32	1.32	1.66	
2.36	192.5	199.5	219.6	181.4	162.4	140.3	0.66	0.73	1.37	
2.11	721.3	425.2	325.3	345.3	203.6	155.7	0.43	0.43	1.23	PRC
1.92	97	98	53	67	68	37	1.16	1.68	0.94	HKC
3.38	90	96	72	112	120	89	2.40	2.80	2.34	JPN
5.34	232	265	215	169	193	156	1.34	2.17	2.43	ROK
4.64	260	255	207	136	134	109	1.38	2.31	1.97	CT
1.07	222	256	245	88	102	97	0.25	0.38	0.64	
9.66	170	178	296	75	78	130	1.47	1.78	2.22	BD
0.90	172	223	235	63	82	87	0.17	0.28	0.59	INA
2.61	253	297	243	111	130	106	0.68	1.19	1.39	MAS
0.52	299	311	199	116	121	77	0.31	0.30	0.27	RP
4.63	171	139	89	110	90	57	1.02	1.39	1.93	SIN
1.91	300	343	333	115	132	128	0.50	0.72	1.03	THA
0.77	184	243	460	56	74	140	0.06	0.15	0.56	VN
4.12	138	121	97	175	153	123	2.53	2.71	2.48	
5.27	136	117	92	177	153	120	3.09	3.40	3.19	AUS
4.48	152	150	124	164	161	133	2.73	2.93	2.73	NZ
0.48	197	172	271	132	115	181	0.14	0.16	0.19	PNG
5.09	210	179	135	203	173	129	3.55	3.69	3.27	
7.54	208	189	150	243	220	175	5.28	5.57	4.89	CDA
1.49	200	171	155	121	104	94	0.87	0.86	0.89	MEX
6.82	211	179	132	211	179	132	4.70	4.94	4.40	USA
2.03	178	174	136	118	115	90	0.77	1.18	1.37	CHL
0.77	170	144	129	86	73	65	0.40	0.42	0.55	PE
4.93	622	651	435	287	301	201	3.94	2.60	2.65	RUS

	Energy Related CO <sub>2</sub> Emission			CO <sub>2</sub> Emission per Capita		
	Mt-C			t-C / Person		
	1990	2000	2015	1990	2000	2015
APEC	3 265	3 816	5 522	1.42	1.49	1.94
North-east Asia	971.3	1 335.5	2 990.9	0.72	0.91	1.89
China	581.5	835.7	2 401.1	0.51	0.66	1.75
Hong Kong, China	8.9	8.5	11.1	1.55	1.28	1.51
Japan	288.6	317.5	357.6	2.33	2.50	2.81
Republic of Korea	62.4	115.5	155.4	1.44	2.46	3.05
Chinese Taipei	29.9	58.2	65.7	1.45	2.61	2.79
South-East Asia	97.8	185.3	341.9	0.25	0.40	0.61
Brunei Darussalam	1.0	1.5	2.5	3.81	4.62	5.88
Indonesia	37.3	73.0	130.6	0.21	0.35	0.51
Malaysia	15.4	28.6	54.3	0.85	1.23	1.77
The Philippines	9.8	17.5	27.2	0.16	0.22	0.27
Singapore	7.9	11.6	12.1	2.60	2.88	2.19
Thailand	21.8	41.1	68.7	0.38	0.65	1.00
Viet Nam	4.7	12.0	46.6	0.07	0.15	0.51
Oceania	77.5	99.8	114.4	3.14	3.49	3.15
Australia	70.6	91.0	103.7	4.14	4.75	4.36
New Zealand	6.3	7.9	8.5	1.88	2.06	1.85
Papua New Guinea	.6	.8	2.2	0.15	0.15	0.27
Americas	1 506.6	1 791.6	1 672.7	3.79	3.93	3.15
Canada	114.7	141.0	150.6	4.13	4.58	4.20
Mexico	70.3	98.3	121.1	0.82	0.97	0.96
The United States	1 308.1	1 531.6	1 359.2	5.24	5.43	4.24
Chile	8.1	13.4	22.3	0.61	0.88	1.26
Peru	5.3	7.4	19.5	0.24	0.28	0.62
Russia	611.8	403.6	402.3	4.13	2.75	2.79

CO <sub>2</sub> Emission per Real GDP			CO <sub>2</sub> Emission per Real GDP			CO <sub>2</sub> Emission per Total Primary Energy Supply			
kt-C / Billions of 2010 USD			kt-C / Billions of 2010 PPP			t-C / toe			
1990	2000	2015	1990	2000	2015	1990	2000	2015	
162.1	141.1	129.6	138.9	118.4	94.7	0.70	0.69	0.70	
151.0	152.5	176.4	142.3	124.2	112.7	0.78	0.76	0.80	
641.4	373.6	269.5	307.1	178.9	129.0	0.89	0.88	0.83	PRC
81.1	55.5	41.9	56.0	38.4	28.9	0.84	0.56	0.79	HKC
59.6	59.4	59.7	74.2	73.9	74.4	0.66	0.62	0.83	JPN
155.8	162.7	122.5	113.3	118.3	89.1	0.67	0.61	0.57	ROK
170.6	188.3	124.7	89.6	98.9	65.5	0.66	0.74	0.60	CT
133.2	158.9	140.4	52.6	63.4	55.8	0.60	0.62	0.57	
105.9	128.6	179.9	46.4	56.3	78.8	0.62	0.72	0.61	BD
120.4	161.0	132.2	44.4	59.4	48.8	0.70	0.72	0.56	INA
187.9	176.0	164.5	82.4	77.2	72.2	0.74	0.59	0.68	MAS
103.7	139.4	102.2	40.3	54.1	39.7	0.35	0.45	0.51	RP
117.4	86.1	41.9	75.8	55.6	27.1	0.69	0.62	0.47	SIN
153.7	188.8	174.4	59.0	72.5	67.0	0.51	0.55	0.52	THA
158.2	196.6	301.3	48.0	59.7	91.4	0.86	0.81	0.66	VN
106.9	99.5	74.2	135.4	126.1	93.9	0.77	0.82	0.76	
110.9	103.2	76.2	144.7	134.7	99.5	0.82	0.88	0.83	AUS
74.5	69.6	51.2	80.3	75.0	55.2	0.49	0.46	0.41	NZ
144.3	127.5	153.3	96.5	85.2	102.5	0.73	0.74	0.57	PNG
139.0	118.1	83.4	134.6	114.1	80.0	0.66	0.66	0.62	
113.2	105.0	83.8	131.9	122.5	97.7	0.54	0.56	0.56	CDA
113.4	111.6	100.0	68.8	67.7	60.7	0.57	0.65	0.65	MEX
144.3	120.5	81.9	144.3	120.5	81.9	0.68	0.67	0.62	USA
102.7	92.7	84.4	67.9	61.3	55.8	0.58	0.53	0.62	CHL
91.3	85.7	104.6	46.0	43.2	52.8	0.54	0.60	0.81	PE
432.7	424.1	246.5	199.9	195.9	113.9	0.70	0.65	0.57	RUS

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## Glossary

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### 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.

### Energies

#### 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 C<sub>5</sub> to C<sub>12</sub> range. The distillation range is 25 °C to 220 °C.

#### Naphtha

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

#### Jet fuel

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

Gasoline type: Light hydrocarbon for use in aviation turbine power units, distilling between 100 °C and 250 °C. They are obtained by blending kerosene and gasoline or naphtha in such a way that the aromatic content does not exceed 25 per cent in volume, and the vapour pressure is between 13.7 kPa and 20.6 kPa.



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

#### Kerosene

Mixtures of hydrocarbons in the range C<sub>9</sub> to C<sub>16</sub> and distilling over the temperature interval 145 °C to 300 °C, but not usually above 250 °C and with a flash point above 38 °C.

#### Diesel oil

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

#### Fuel oil

Comprises residual fuel oil and heavy fuel oil. Residual fuel oils have a distillation range of 350 °C to 650 °C and a kinematic viscosity in the range 6 to 55 centistokes (cSt) at 100 °C. Their flash point is always above 60 °C and their specific gravity is above 0.95. Heavy fuel oil is a general term describing a blended product based on the residues from various refinery processes.

#### LPG

LPG refers to liquefied propane (C<sub>3</sub>H<sub>8</sub>) and butane (C<sub>4</sub>H<sub>10</sub>) 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..

### 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.