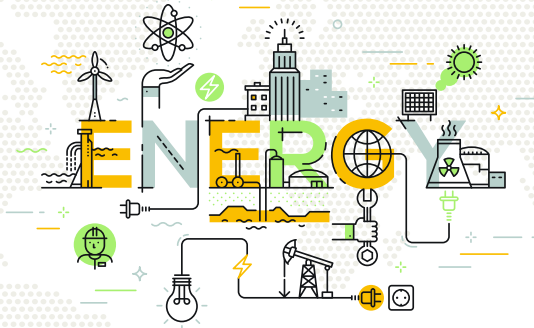




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CONTENTS

For the users	5
2017 Energy Balance Flow	6
1. Major Energy Indicators	8
2. Transformation	12
3. Energy Production, Imports & Exports	20
4. Primary Energy Supply	24
5. Final Energy Consumption	28
6. Final Energy Consumption by Sector	32
7. Final Energy Consumption by Source	36
8. Energy Balance	46
9. Energy Imports	54
10. Prices	70
11. Reserves & Distribution Map	76
12. Energy Consumption in the Korean Peninsula	82
13. World Energy Statistics	92
Appendices	96



For the users

1. Figures in this book are obtained from related agencies and institutions. And on the data source, see the notation in the table.
2. The data can be revised by the agencies and institutions concerned.
3. From 2007, figures are based on revised calorific value every 5 years.
4. Abbreviation
 - **TPES** Total Primary Energy Supply
 - **TFEC** Total Final Energy Consumption
 - **GDP** Gross Domestic Product
 - **Pop.** Population
 - **mil.** million
 - **bil.** billion
 - **tril.** trillion
 - **Cons.** Consumption
5. Symbols used in tables are as follow
 - - Not reported
 - **p** Preliminary
 - **e** Estimate

2017 Energy Balance Flow

Imports

Overseas Dependence
94.0%(109.5 bil. \$)

Middle East(81.7%)

- Saudi(28.5%)
- Kuwait(14.3%)
- Iran(13.2%)

Asia(8.7%)

Africa(2.5%)

Qatar,Australia, Oman
37.5 mil.ton

Australia, Indonesia, Russia
131.5 mil.ton

Russia,kazakh,Australia
Uranium 1,012.1 ton U

China, Australia, Russia
7.0 mil.ton

Domestic Production **6.0%**

Crude Oil
1,118.2 mil. bbl

Primary Energy

302.1 mil. toe
(100%)

Oil

39.5%

LNG

15.7%

Bituminous

27.0%

Nuclear

10.5%

Anthracite

1.5%

Hydro
Renewable

5.7%



Transformation

68.2 mil. toe
(22.6%)

Refining

3.1 mil. b/d

City Gas

18.4 mil. ton

Heat

2,441.0 thou. toe

Electricity

553.5 bil. kWh

Nuclear	26.8%
Bituminous	42.7%
LNG	22.2%
Oil	1.5%
Anthracite	0.4%
Hydro	1.3%
Renewable	5.1%

Final Energy

233.9 mil. toe
(77.4%)

Industrial
61.7%

Naphtha etc
Industrial resource
24.0%

Residential &
Commercial
17.1%

Transportation
18.3%

Public 3.0%

Electricity

Industrial 54.5%

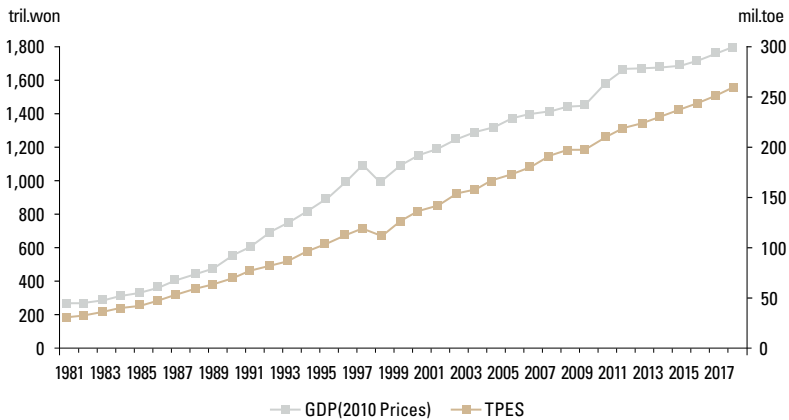
Residential &
Commercial 38.8%

Public 6.2%

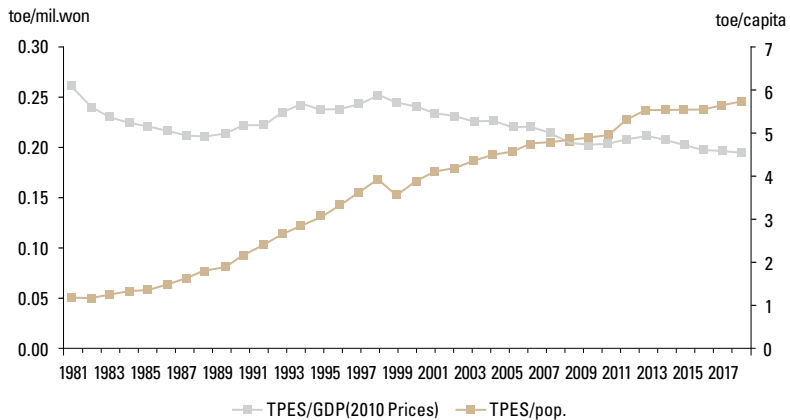
Transportation 0.6%

01 Major Energy Indicators

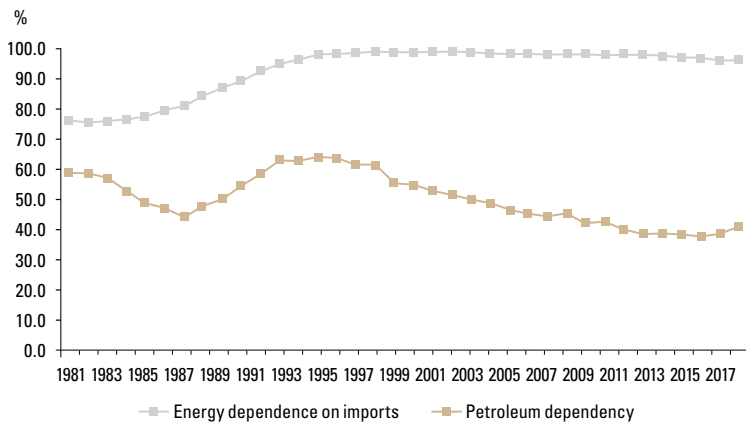
:: Trends in TPES and GDP



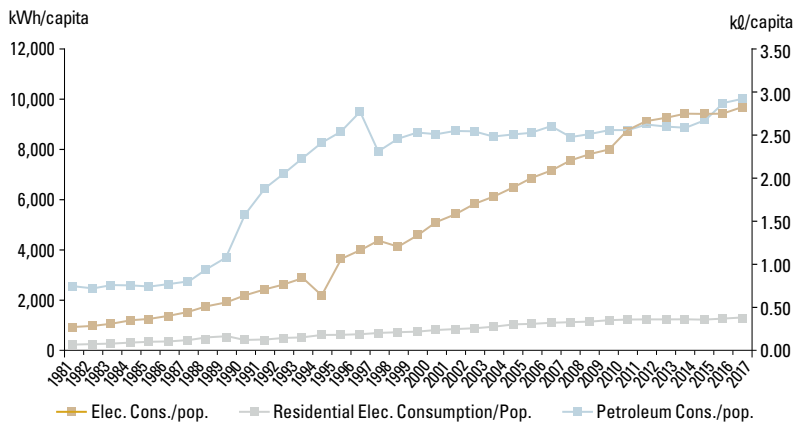
:: TPES per Capita and GDP



:: Energy Overseas Dependence and Petroleum Dependence



:: Electricity and Petroleum Consumption per Capita



01 Major Energy Indicators

1. Major Energy Indicators

	Population ¹ (thou. person)	GDP (2010 prices)		Total Primary Energy Supply (TPES) ²		Total Final Energy Consumption (TFEC) ²		CO ₂ Emissions	
		(bil. won)	Growth Rates(%)	(mil. toe)	Growth Rates(%)	(mil. toe)	Growth Rates(%)	(mil. tCO ₂)	Growth Rates(%)
1981	38,723	174,774	7.2	45.7	4.1	39.0	3.6	131.4	4.6
1982	39,326	189,219	8.3	45.6	-0.2	38.7	-0.6	131.2	-0.2
1983	39,910	214,276	13.2	49.4	8.3	41.3	6.8	139.2	6.1
1984	40,406	236,652	10.4	53.5	8.3	45.0	8.9	151.4	8.8
1985	40,806	254,992	7.7	56.3	5.2	47.0	4.4	155.7	2.8
1986	41,214	283,612	11.2	61.5	9.2	50.5	7.5	162.1	4.1
1987	41,622	318,971	12.5	67.9	10.4	55.2	9.2	168.4	3.9
1988	42,031	356,944	11.9	75.4	11.0	61.0	10.6	192.0	14.0
1989	42,449	382,036	7.0	81.7	8.4	65.9	7.9	203.2	5.8
1990	42,869	419,518	9.8	92.9	13.8	74.7	13.4	231.8	14.1
1991	43,296	462,955	10.4	103.3	11.2	83.3	11.6	255.8	10.4
1992	43,748	491,545	6.2	116.0	12.3	94.4	13.3	275.9	7.9
1993	44,195	525,199	6.8	126.8	9.4	103.9	10.0	302.9	9.8
1994	44,642	573,550	9.2	137.1	8.1	111.8	7.6	327.4	8.1
1995	45,093	628,442	9.6	149.8	9.3	121.3	8.5	357.3	9.1
1996	45,525	676,169	7.6	165.1	10.2	131.6	8.4	381.7	6.8
1997	45,954	716,213	5.9	181.1	9.6	144.5	9.9	402.3	5.4
1998	46,287	677,028	-5.5	166.3	-8.2	132.2	-8.6	343.7	-14.6
1999	46,617	753,590	11.3	181.7	9.3	143.0	8.2	378.2	10.0
2000	47,008	820,844	8.9	193.2	6.4	150.0	4.8	431.9	14.2
2001	47,370	857,990	4.5	198.9	2.9	153.1	2.1	445.9	3.2
2002	47,645	921,759	7.4	209.3	5.2	160.9	5.1	435.9	-2.2
2003	47,892	948,796	2.9	215.8	3.1	164.6	2.3	437.8	0.4
2004	48,083	995,286	4.9	220.8	2.3	166.5	1.2	459.8	5.0
2005	48,185	1,034,338	3.9	229.3	3.9	171.2	2.8	457.7	-0.5
2006	48,438	1,087,876	5.2	234.1	2.1	174.1	1.7	464.7	1.5
2007	48,684	1,147,311	5.5	236.7	1.1	181.5	4.2	477.4	2.7
2008	49,055	1,179,771	2.8	241.0	1.8	182.5	0.5	488.8	2.4
2009	49,308	1,188,118	0.7	243.5	1.0	181.5	-0.5	502.1	2.7
2010	49,554	1,265,308	6.5	264.1	8.4	194.9	7.4	550.9	9.7
2011	49,937	1,311,893	3.7	277.0	4.9	205.8	5.6	573.8	4.2
2012	50,200	1,341,967	2.3	278.3	0.5	207.5	0.8	575.5	0.3
2013	50,429	1,380,833	2.9	279.8	0.5	209.4	0.9	574.6	-0.2
2014	50,747	1,426,972	3.3	282.5	1.0	213.2	1.8	562.7	-2.1
2015	51,015	1,466,788	2.8	286.9	1.6	218.0	2.3	582.0	3.4
2016	51,246	1,509,755	2.9	293.8	2.4	225.2	3.3	589.2	1.2
2017	51,446	1,555,995	3.1	302.1	2.8	233.9	3.9

1. mid-year estimates

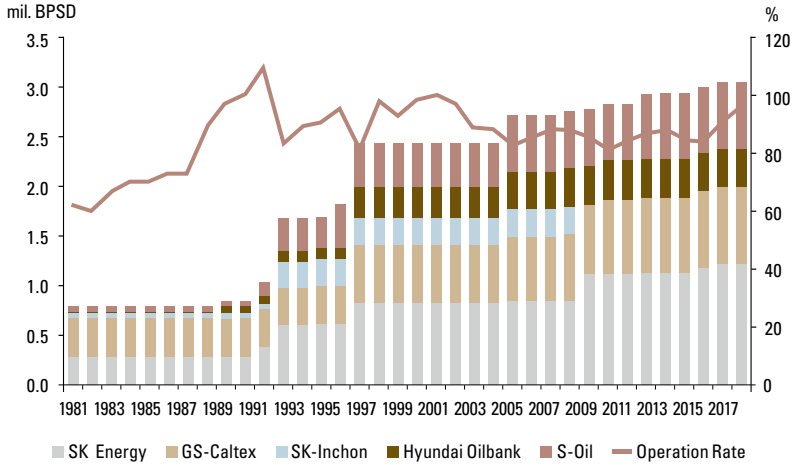
2. From 2007, figures are based on revised calorific value every 5 years.

TPES /GDP		CO ₂ Emissions/ GDP	TPES/ Population	CO ₂ Emissions/ Population	Oil Consumption/ Population	Elec. Consumption/ Population	Residential Elec. Consumption/ Population	
(toe/mil.won)	(toe/1,000\$)	(tCO ₂ /mil.won)	(toe/capita)	(tCO ₂ /capita)	(kl/capita)	(kWh/capita)	(kWh/capita)	
0.262	0.302	0.75	1.18	3.39	0.74	915	207	1981
0.241	0.279	0.69	1.16	3.34	0.72	963	230	1982
0.231	0.267	0.65	1.24	3.49	0.75	1,068	265	1983
0.226	0.262	0.64	1.32	3.75	0.75	1,164	299	1984
0.221	0.255	0.61	1.38	3.82	0.74	1,243	329	1985
0.217	0.251	0.57	1.49	3.93	0.77	1,367	353	1986
0.213	0.246	0.53	1.63	4.05	0.80	1,543	401	1987
0.211	0.244	0.54	1.79	4.57	0.95	1,771	473	1988
0.214	0.247	0.53	1.92	4.79	1.08	1,939	551	1989
0.222	0.256	0.55	2.17	5.41	1.32	2,202	414	1990
0.223	0.258	0.55	2.39	5.91	1.56	2,412	450	1991
0.236	0.273	0.56	2.65	6.31	1.87	2,639	498	1992
0.242	0.279	0.58	2.87	6.85	2.03	2,899	541	1993
0.239	0.276	0.57	3.07	7.33	2.21	3,297	595	1994
0.238	0.276	0.57	3.32	7.92	2.39	3,640	628	1995
0.244	0.282	0.56	3.63	8.38	2.52	4,006	673	1996
0.253	0.292	0.56	3.94	8.75	2.75	4,366	708	1997
0.246	0.284	0.51	3.59	7.43	2.30	4,167	711	1998
0.241	0.279	0.50	3.90	8.11	2.45	4,572	742	1999
0.235	0.272	0.53	4.11	9.19	2.51	5,067	789	2000
0.232	0.268	0.52	4.20	9.41	2.50	5,444	828	2001
0.227	0.262	0.47	4.39	9.15	2.55	5,845	887	2002
0.227	0.263	0.46	4.51	9.14	2.53	6,126	931	2003
0.222	0.256	0.46	4.59	9.56	2.48	6,491	1,011	2004
0.222	0.256	0.44	4.76	9.50	2.51	6,883	1,056	2005
0.215	0.249	0.43	4.83	9.59	2.51	7,191	1,084	2006
0.206	0.238	0.42	4.86	9.81	2.60	7,607	1,113	2007
0.204	0.236	0.41	4.91	9.96	2.46	7,922	1,146	2008
0.205	0.237	0.42	4.94	10.18	2.51	8,092	1,168	2009
0.209	0.241	0.44	5.33	11.12	2.55	8,883	1,235	2010
0.211	0.244	0.44	5.55	11.49	2.55	9,142	1,233	2011
0.207	0.240	0.43	5.54	11.46	2.61	9,331	1,266	2012
0.203	0.234	0.42	5.55	11.39	2.59	9,285	1,269	2013
0.198	0.229	0.39	5.57	11.09	2.56	9,305	1,235	2014
0.196	0.226	0.40	5.62	11.41	2.66	9,555	1,250	2015
0.195	0.225	0.39	5.73	11.50	2.86	9,699	1,291	2016
0.194	0.224	...	5.87	...	2.90	9,869	1,293	2017

Source: IEA 'CO₂ Emissions from Fuel Combustion(2018)',
IEA 'World Energy Balance 2018', Statistics Korea, Bank of Korea

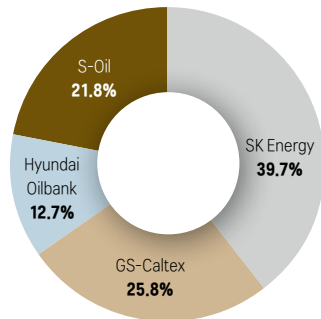
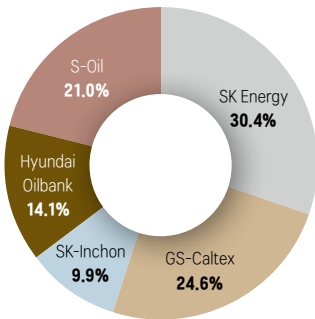
02 Transformation

:: Refinery Capacities



:: 2007 2,765 thou. BPSD

:: 2017 3,064 thou. BPSD

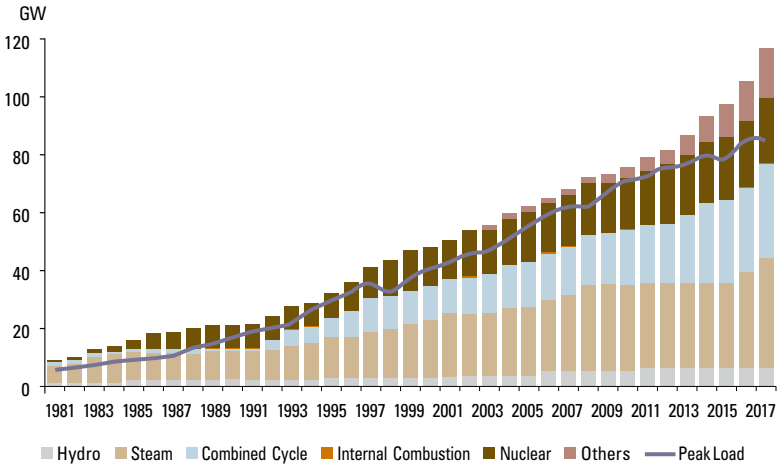


2-1. Refinery Capacities

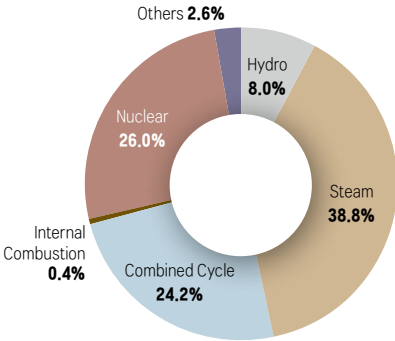
	Crude Oil refinery inputs	Product Production	Operation Rate	Refining Capacity(1,000 BPSD)					
	(1,000 Bbl)	(1,000 Bbl)	(%)	Total	SK Energy	GS-Caltex	SK-Inchon	Hyundai Oilbank	S-Oil
1981	178,322	173,793	61.90	790	280	380	60	10	60
1982	173,044	170,595	60.00	790	280	380	60	10	60
1983	190,643	188,667	66.08	790	280	380	60	10	60
1984	201,937	200,997	69.87	790	280	380	60	10	60
1985	201,131	197,559	69.75	790	280	380	60	10	60
1986	209,729	206,988	72.78	790	280	380	60	10	60
1987	210,914	208,662	73.16	790	280	380	60	10	60
1988	256,420	252,196	88.73	790	280	380	60	10	60
1989	296,722	292,062	96.79	840	280	380	60	60	60
1990	306,493	304,495	100.00	840	280	380	60	60	60
1991	413,055	408,215	109.37	1,035	375	380	60	60	160
1992	510,032	504,560	83.22	1,675	585	380	275	110	325
1993	544,504	539,986	88.97	1,675	585	380	275	110	325
1994	561,584	568,452	90.39	1,700	610	380	275	110	325
1995	631,078	643,102	95.10	1,818	610	380	275	110	443
1996	720,846	724,128	81.01	2,438	810	600	275	310	443
1997	871,974	911,462	97.99	2,438	810	600	275	310	443
1998	825,890	864,845	92.81	2,438	810	600	275	310	443
1999	872,742	911,086	98.08	2,438	810	600	275	310	443
2000	890,304	926,897	100.05	2,438	810	600	275	310	443
2001	860,115	907,345	96.66	2,438	810	600	275	310	443
2002	786,805	858,363	88.42	2,438	810	600	275	310	443
2003	782,951	841,038	87.98	2,438	810	600	275	310	443
2004	826,551	886,413	82.80	2,735	840	650	275	390	580
2005	852,439	922,897	85.39	2,735	840	650	275	390	580
2006	878,395	949,983	87.99	2,735	840	650	275	390	580
2007	882,117	955,898	87.41	2,765	840	680	275	390	580
2008	865,663	938,749	85.16	2,785	1,115	700	-	390	580
2009	838,475	912,654	81.03	2,835	1,115	750	-	390	580
2010	872,247	938,926	84.00	2,845	1,115	760	-	390	580
2011	924,441	1,002,257	86.32	2,934	1,115	775	-	390	654
2012	945,162	1,034,708	87.81	2,949	1,115	775	-	390	669
2013	906,674	1,001,980	84.23	2,949	1,115	775	-	390	669
2014	918,345	1,030,092	83.62	3,009	1,165	785	-	390	669
2015	1,016,157	1,116,986	91.01	3,059	1,215	785	-	390	669
2016	1,071,731	1,157,612	95.99	3,059	1,215	785	-	390	669
2017	1,117,376	1,229,652	99.91	3,064	1,215	790	-	390	669

02 Transformation

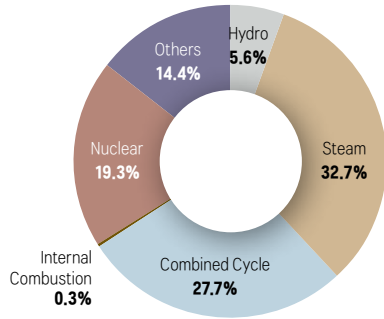
:: Generating Facilities



:: 2007 68,268 MW



:: 2017 116,908 MW



2-2. Generating Facilities

Unit: MW

	Total	Hydro	Steam	Combined Cycle	Internal Combustion	Nuclear	Others	Peak load
1981	9,835	1,202	6,812	920	314	587	-	6,144
1982	10,304	1,202	6,722	920	194	1,266	-	6,661
1983	13,115	1,202	8,882	920	196	1,916	-	7,602
1984	14,190	1,202	9,942	920	211	1,916	-	8,811
1985	16,137	2,223	9,912	920	216	2,866	-	9,349
1986	18,060	2,225	9,912	920	238	4,766	-	9,915
1987	19,021	2,232	9,912	920	240	5,716	-	11,039
1988	19,944	2,236	9,912	895	235	6,666	-	13,658
1989	20,997	2,339	9,912	840	290	7,616	-	15,058
1990	21,021	2,340	9,912	840	313	7,616	-	17,252
1991	21,111	2,445	9,912	760	378	7,616	-	19,124
1992	24,120	2,498	9,912	3,706	388	7,616	-	20,438
1993	27,654	2,504	11,972	5,173	389	7,616	-	22,112
1994	28,750	2,493	13,032	5,334	275	7,616	-	26,696
1995	32,184	3,093	14,032	6,184	259	8,616	-	29,878
1996	35,715	3,094	14,022	8,719	264	9,616	-	32,282
1997	41,042	3,115	16,078	11,269	265	10,316	-	35,851
1998	43,406	3,131	17,209	10,785	265	12,016	-	32,996
1999	46,978	3,148	18,909	10,935	271	13,716	-	37,293
2000	48,451	3,149	20,059	11,257	271	13,716	-	41,007
2001	50,859	3,876	21,559	11,436	273	13,716	-	43,125
2002	53,801	3,876	21,749	12,186	275	15,716	-	45,773
2003	56,053	3,877	21,749	13,086	246	15,716	1,380	47,385
2004	59,961	3,879	23,311	14,313	252	16,716	1,489	51,264
2005	62,258	3,883	23,811	15,015	297	17,716	1,537	54,631
2006	65,514	5,485	24,391	16,004	297	17,716	1,622	58,994
2007	68,268	5,492	26,491	16,511	303	17,716	1,755	62,285
2008	72,491	5,505	29,731	17,044	307	17,716	2,188	62,794
2009	73,470	5,515	29,571	17,575	347	17,716	2,747	66,797
2010	76,078	5,525	29,571	19,100	351	17,716	3,816	71,308
2011	79,342	6,418	29,571	19,799	355	18,716	4,482	73,137
2012	81,806	6,446	29,371	19,799	367	20,716	5,106	75,987
2013	86,969	6,454	29,371	23,473	330	20,716	6,625	76,522
2014	93,216	6,467	29,611	27,296	330	20,716	8,796	80,154
2015	97,649	6,471	29,611	28,512	330	21,716	11,009	78,790
2016	105,866	6,485	33,746	28,512	329	23,116	13,677	85,183
2017	116,908	6,489	38,265	32,416	339	22,529	16,869	85,133

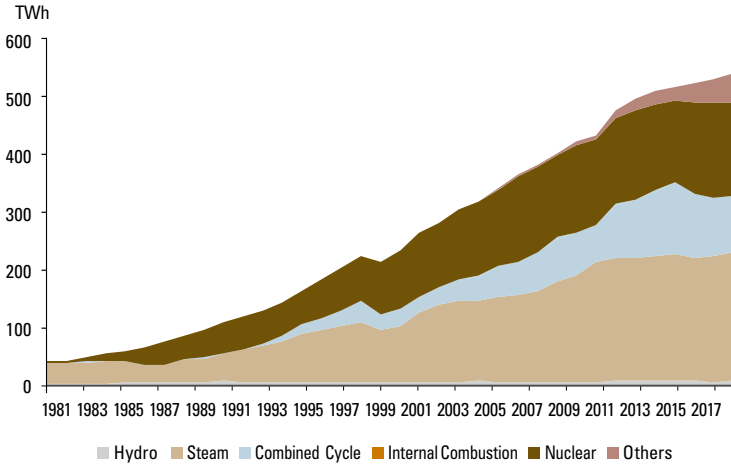
Note 1) Excludes non-utility in common use.

2) Others includes Group & Alternative Energy

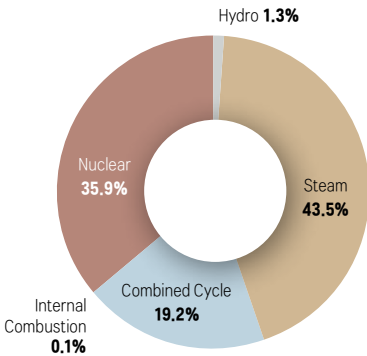
Source : Korea Electric Power Corporation

02 Transformation

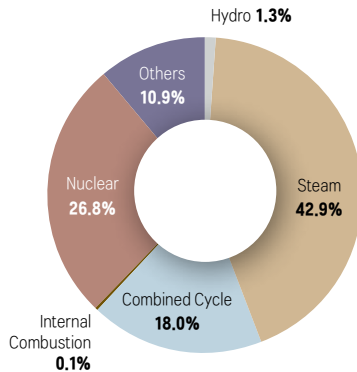
:: Electric Power Generation by Facilities



:: 2007 403,125 GWh



:: 2017 553,530 GWh



2-3. Electric Power Generation by Facilities

Unit: GWh

	Total	Hydro	Steam	Combined Cycle	Internal Combustion	Nuclear	Others
1981	40,207	2,709	34,305	258	38	2,897	-
1982	43,122	2,005	36,961	332	45	3,777	-
1983	48,850	2,723	36,897	214	42	8,965	-
1984	53,808	2,399	39,461	99	41	11,792	-
1985	58,007	3,659	37,411	58	61	16,745	-
1986	64,695	4,019	32,107	53	122	28,311	-
1987	73,992	5,344	28,927	66	171	39,314	-
1988	85,462	3,566	41,144	172	210	40,101	-
1989	94,472	4,558	41,754	221	253	47,365	-
1990	107,670	6,361	47,098	619	429	52,887	-
1991	118,619	5,051	55,389	785	472	56,311	-
1992	130,963	4,863	62,115	5,464	574	56,530	-
1993	144,437	6,006	68,916	9,188	640	58,138	-
1994	164,993	4,098	83,807	16,047	789	58,651	-
1995	184,661	5,478	89,252	20,521	825	67,029	-
1996	205,494	5,201	96,946	26,943	772	73,924	-
1997	224,445	5,404	104,798	34,424	718	77,086	-
1998	215,300	6,099	89,042	26,505	575	89,689	-
1999	239,325	6,066	96,473	28,675	382	103,064	-
2000	266,400	5,610	119,947	26,863	294	108,964	-
2001	285,224	4,151	135,436	29,033	325	112,133	-
2002	306,474	5,311	138,929	38,337	353	119,103	-
2003	322,452	6,887	140,269	40,375	370	129,672	-
2004	342,148	5,861	145,364	55,452	407	130,715	3,903
2005	364,639	5,189	151,207	57,457	575	146,779	3,163
2006	381,181	5,219	155,911	67,138	677	148,749	3,108
2007	403,125	5,042	173,415	76,405	578	142,937	3,916
2008	422,355	5,563	183,655	74,519	503	150,958	6,428
2009	433,604	5,641	206,535	64,486	697	147,771	7,618
2010	474,660	6,472	211,449	94,012	731	148,596	12,558
2011	496,893	7,831	211,205	101,479	821	154,723	20,021
2012	509,574	7,652	216,336	110,882	752	150,327	21,531
2013	517,148	8,394	218,585	124,400	741	138,784	24,563
2014	521,971	7,820	211,172	111,711	656	156,407	33,644
2015	528,091	5,796	216,378	100,598	643	164,762	39,337
2016	540,441	6,634	222,623	96,922	573	161,995	51,473
2017	553,530	6,995	237,332	99,619	513	148,427	60,340

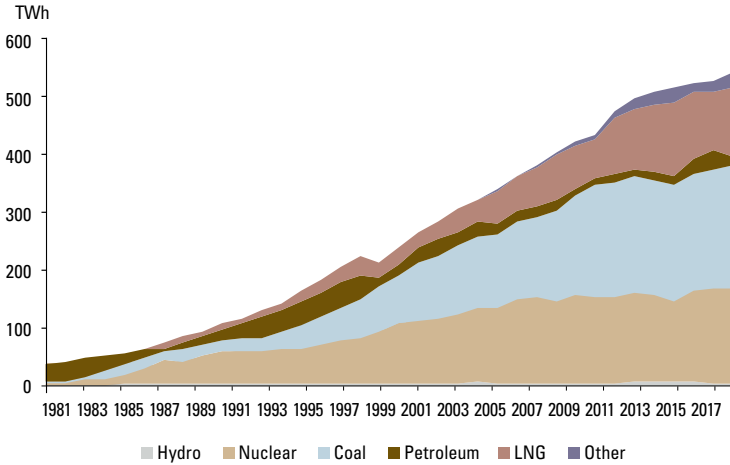
Note 1) Total includes the purchased power.

2) Others includes Group & Alternative Energy

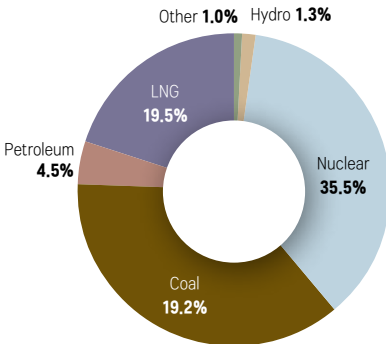
Source : Korea Electric Power Corporation

02 Transformation

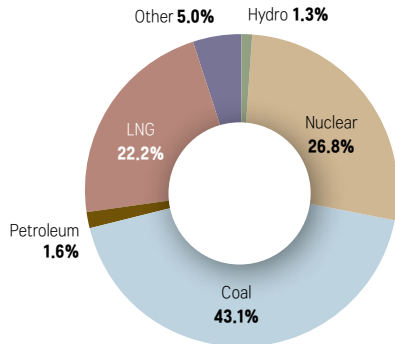
:: Electric Power Generation by Energy Source



:: 2007 403,124 GWh



:: 2017 553,530 GWh



2-4. Electric Power Generation by Energy Source

Unit: GWh

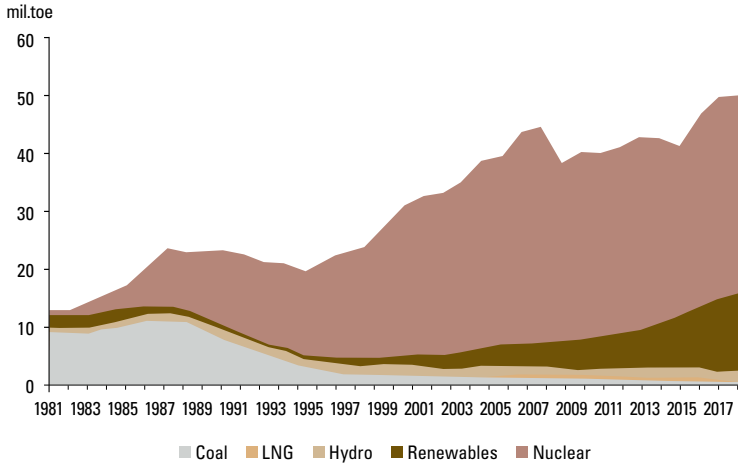
	Total	Hydro	Nuclear	Thermal			Others
				Coal	Petroleum	LNG	
1981	40,207	2,709	2,897	2,530	32,071	-	-
1982	43,122	2,005	3,777	2,612	34,728	-	-
1983	48,850	2,723	8,965	4,289	32,873	-	-
1984	53,808	2,399	11,792	13,383	26,234	-	-
1985	58,007	3,659	16,745	17,639	19,964	-	-
1986	64,695	4,019	28,311	18,220	13,895	250	-
1987	73,992	5,344	39,314	15,856	5,087	8,391	-
1988	85,462	3,566	40,101	19,840	11,523	10,432	-
1989	94,472	4,558	47,365	18,777	14,640	9,132	-
1990	107,670	6,361	52,887	19,961	18,856	9,604	-
1991	118,619	5,051	56,311	20,140	27,182	9,935	-
1992	130,963	4,863	56,530	22,072	35,311	12,187	-
1993	144,437	6,006	58,138	30,917	34,888	14,488	-
1994	164,993	4,098	58,651	41,835	40,363	20,046	-
1995	184,661	5,478	67,029	48,813	42,045	21,296	-
1996	205,494	5,201	73,924	56,881	42,436	27,050	-
1997	224,445	5,404	77,086	67,190	42,943	31,823	-
1998	215,300	6,099	89,689	75,498	17,712	26,302	-
1999	239,325	6,066	103,064	81,544	18,527	30,124	-
2000	266,400	5,610	108,964	97,538	26,142	28,146	-
2001	285,224	4,151	112,133	110,333	28,156	30,451	-
2002	306,474	5,311	119,103	118,022	25,095	38,943	-
2003	322,452	6,887	129,672	120,276	26,526	39,090	-
2004	342,148	5,861	130,715	127,158	18,511	55,999	3,903
2005	364,638	5,189	146,779	133,658	17,733	58,118	3,163
2006	381,181	5,219	148,749	139,205	16,598	68,302	3,108
2007	403,124	5,042	142,937	154,674	18,132	78,427	3,916
2008	422,355	5,561	150,958	173,508	10,094	75,809	6,428
2009	433,604	5,641	147,771	193,216	14,083	65,274	7,618
2010	474,660	6,472	148,596	197,916	12,878	96,734	12,064
2011	496,893	7,831	154,723	200,124	12,492	101,702	20,021
2012	509,574	7,652	150,327	198,831	15,156	113,984	23,624
2013	517,148	8,543	138,784	200,444	15,751	127,724	25,900
2014	521,971	7,820	156,407	203,446	24,950	114,654	14,695
2015	528,091	5,796	164,762	204,230	31,616	100,783	20,904
2016	540,441	6,634	161,995	213,803	14,221	120,852	22,936
2017	553,530	6,995	148,427	238,799	8,663	122,773	27,874

Note: Others includes Group & Alternative Energy

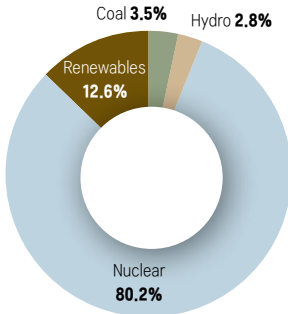
Source: Korea Electric Power Corporation

03 Energy Production, Imports & Exports

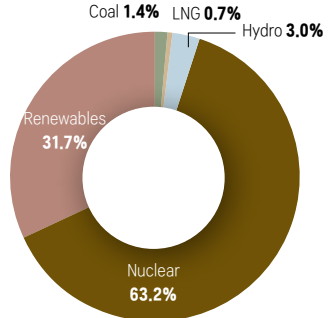
:: Energy Production



:: 2007 38,338 thousand toe



:: 2017 49,995 thousand toe



3-1. Energy Production

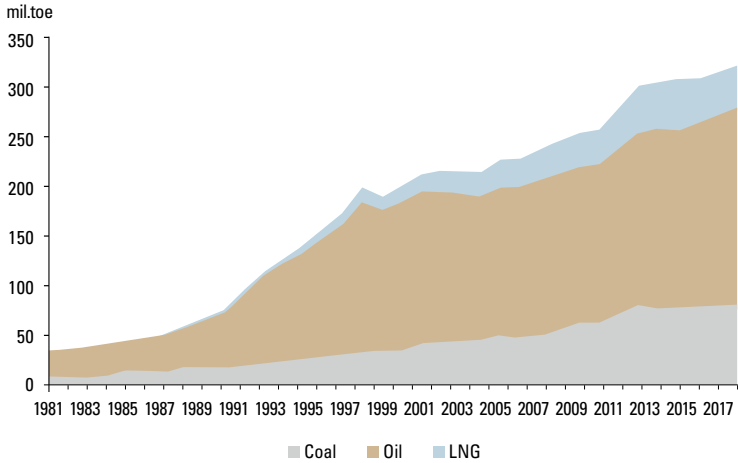
Unit: 1,000 toe

	Total	Coal	LNG	Hydro	Nuclear	Renewables
1981	13,031	9,138	-	677	724	2,492
1982	13,116	9,253	-	501	944	2,417
1983	14,436	9,136	-	681	2,241	2,378
1984	15,870	9,830	-	600	2,948	2,492
1985	17,502	10,370	-	915	4,186	2,031
1986	20,719	11,156	-	1,005	7,078	1,480
1987	23,649	11,166	-	1,336	9,829	1,319
1988	23,013	10,933	-	892	10,025	1,164
1989	23,367	9,353	-	1,140	11,841	1,033
1990	23,357	7,748	-	1,590	13,222	797
1991	22,734	6,776	-	1,263	14,078	618
1992	21,456	5,386	-	1,216	14,133	722
1993	21,011	4,233	-	1,502	14,535	742
1994	19,922	3,329	-	1,025	14,663	906
1995	21,751	2,574	-	1,369	16,757	1,050
1996	23,170	2,228	-	1,300	18,481	1,161
1997	23,997	2,030	-	1,351	19,271	1,344
1998	27,435	1,962	-	1,525	22,422	1,526
1999	30,977	1,889	-	1,517	25,766	1,806
2000	32,641	1,868	-	1,402	27,241	2,130
2001	33,244	1,718	-	1,038	28,033	2,456
2002	35,521	1,493	-	1,327	29,776	2,925
2003	38,864	1,484	-	1,722	32,418	3,241
2004	39,769	1,436	212	1,465	32,679	3,977
2005	43,745	1,274	518	1,297	36,695	3,961
2006	44,582	1,271	461	1,305	37,187	4,358
2007	38,338	1,342	353	1,084	30,731	4,828
2008	40,376	1,289	236	1,196	32,456	5,198
2009	40,133	1,171	498	1,213	31,771	5,480
2010	40,912	969	539	1,391	31,948	6,064
2011	42,987	969	451	1,684	33,265	6,618
2012	42,748	942	436	1,615	31,719	8,036
2013	41,321	817	463	1,771	29,283	8,987
2014	46,716	787	322	1,650	33,002	10,956
2015	49,809	794	188	1,223	34,765	12,839
2016	50,087	777	154	1,400	34,181	13,575
2017	49,995	702	341	1,490	31,615	15,847

Note : From 2007, figures are based on revised calorific value every 5 years.

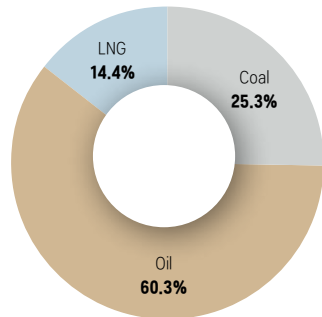
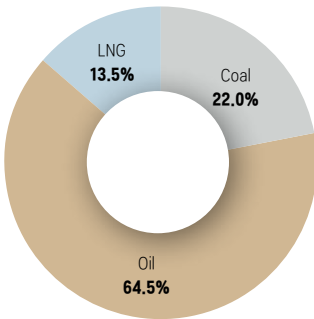
03 Energy Production, Imports & Exports

:: Energy Imports



:: 2007 246,306 thousand toe

:: 2017 339,687 thousand toe



3-2. Energy Imports & Exports

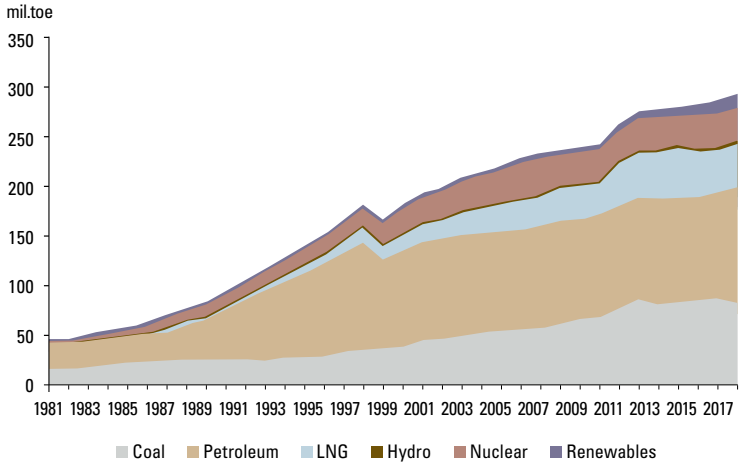
Unit: 1,000 toe

	Imports				Exports
	Total	Coal	Oil	LNG	Petroleum Products
1981	34,907	7,358	27,550	-	420
1982	35,302	7,341	27,961	-	946
1983	37,861	7,202	30,658	-	2,350
1984	41,226	8,593	32,633	-	3,480
1985	44,807	13,005	31,802	-	3,754
1986	47,749	13,593	34,003	153	3,894
1987	52,557	13,865	36,508	2,184	4,736
1988	60,501	16,087	41,736	2,678	4,460
1989	67,486	16,426	48,445	2,615	5,034
1990	76,040	15,721	57,345	2,974	3,997
1991	96,612	19,337	73,689	3,586	10,418
1992	114,946	19,762	90,732	4,453	13,769
1993	129,051	23,473	99,788	5,790	15,385
1994	140,427	25,863	106,857	7,707	13,791
1995	156,664	28,550	118,936	9,178	17,748
1996	174,277	30,314	131,489	12,473	22,690
1997	200,894	32,979	152,797	15,118	33,143
1998	191,456	33,847	143,829	13,780	42,232
1999	202,665	34,410	151,391	16,865	42,544
2000	215,687	40,559	156,177	18,951	43,758
2001	217,250	42,691	153,545	21,013	42,143
2002	216,801	44,990	149,101	22,711	33,914
2003	217,031	45,894	145,872	25,264	30,025
2004	227,497	50,139	148,558	28,799	33,841
2005	229,255	48,498	151,713	29,044	38,071
2006	239,683	49,854	157,041	32,788	41,810
2007	246,306	54,237	158,831	33,239	41,801
2008	254,887	61,665	157,786	35,436	47,586
2009	256,573	63,431	159,574	33,568	46,897
2010	279,145	72,576	164,184	42,384	48,365
2011	300,906	79,860	173,355	47,690	57,722
2012	303,395	77,546	178,665	47,184	61,687
2013	307,930	79,230	176,702	51,998	59,910
2014	308,558	80,460	179,710	48,388	62,592
2015	313,516	81,688	188,320	43,509	66,279
2016	321,918	81,311	196,984	43,623	67,840
2017	339,687	85,869	204,794	49,023	70,629

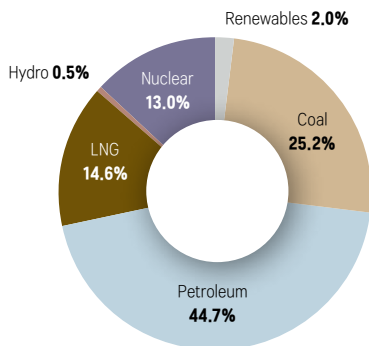
Note : From 2007, figures are based on revised calorific value every 5 years.

04 Primary Energy Supply

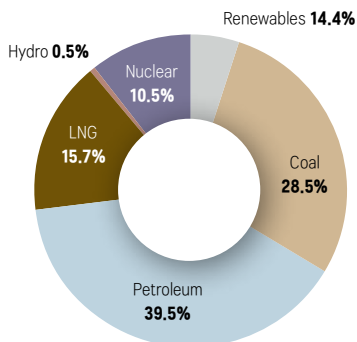
:: Primary Energy Supply



∴ 2007 236,678 thousand toe



∴ 2017 302,065 thousand toe



04 Primary Energy Supply

4. Primary Energy Supply

	Total		Coal			Petroleum	
		Growth Rate(%)	Sub-Total	Anthracite	Bituminous	Sub-Total	Energy Use
1981	45,718	4.1	15,244	10,338	4,906	26,580	23,110
1982	45,625	-0.2	15,451	9,839	5,612	26,312	22,649
1983	49,420	8.3	16,491	10,133	6,358	27,629	23,250
1984	53,535	8.3	19,867	11,455	8,412	27,629	22,663
1985	56,296	5.2	22,022	12,322	9,700	27,142	21,836
1986	61,462	9.2	23,330	13,239	10,091	28,499	22,408
1987	67,878	10.4	23,639	12,935	10,704	29,653	22,958
1988	75,351	11.0	25,162	12,441	12,721	35,390	27,869
1989	81,660	8.4	24,493	10,984	13,509	40,524	32,506
1990	92,931	13.8	24,124	9,685	14,440	50,175	39,653
1991	103,294	11.2	24,206	8,065	16,141	59,627	45,773
1992	115,962	12.3	23,570	6,251	17,319	71,740	52,311
1993	126,836	9.4	25,840	5,016	20,824	78,495	57,139
1994	137,108	8.1	26,532	3,394	23,139	86,364	62,677
1995	149,841	9.3	27,495	2,794	24,701	93,956	68,946
1996	165,136	10.2	32,100	2,526	29,574	99,923	73,261
1997	181,058	9.6	34,927	2,118	32,810	109,372	74,141
1998	166,265	-8.2	36,051	2,218	33,832	90,904	53,946
1999	181,651	9.3	38,157	2,426	35,731	97,556	59,007
2000	193,240	6.4	42,925	3,096	39,829	100,618	59,743
2001	198,865	2.9	45,724	3,680	42,044	100,827	59,049
2002	209,290	5.2	49,131	4,070	45,061	103,034	58,602
2003	215,772	3.1	51,124	4,562	46,563	103,073	57,605
2004	220,756	2.3	53,198	4,369	48,829	101,085	53,794
2005	229,301	3.9	54,795	4,770	50,025	102,197	53,415
2006	234,062	2.1	56,652	5,172	51,480	102,555	51,795
2007	236,678	1.1	59,653	5,580	54,073	105,718	50,728
2008	240,994	1.8	66,100	5,927	60,173	100,373	45,668
2009	243,500	1.0	68,595	5,687	62,908	102,534	45,569
2010	264,053	8.4	77,142	6,044	71,097	104,499	46,385
2011	276,997	4.9	83,687	6,827	76,860	105,459	44,263
2012	278,324	0.5	80,636	5,382	75,254	106,133	43,968
2013	279,801	0.5	81,544	5,500	76,044	105,693	43,350
2014	282,481	1.0	84,399	5,226	79,173	104,701	41,276
2015	286,936	1.6	85,401	5,593	79,808	109,094	44,505
2016	293,778	2.4	81,499	5,687	75,812	117,605	48,463
2017	302,065	2.8	86,177	4,524	81,653	119,400	47,298

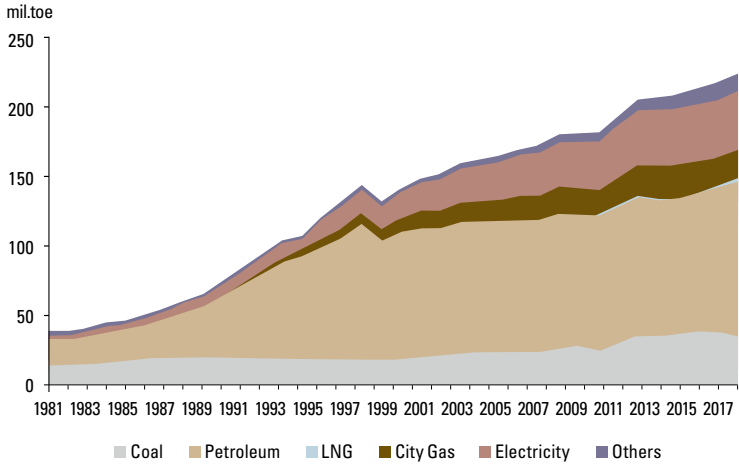
Note : From 2007, figures are based on revised calorific value every 5 years.

Unit: 1,000 toe

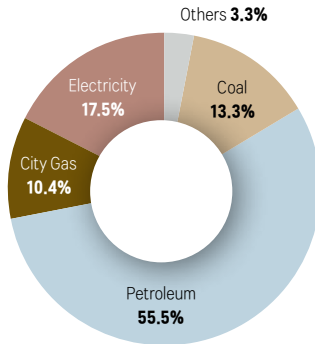
Petroleum		LNG	Hydro	Nuclear	Renewables	
LPG	Non-Energ Use					
511	2,959	-	677	724	2,492	1981
750	2,913	-	501	944	2,417	1982
1,031	3,347	-	681	2,241	2,378	1983
1,262	3,703	-	600	2,948	2,492	1984
1,467	3,839	-	915	4,186	2,031	1985
1,799	4,292	71	1,005	7,078	1,480	1986
2,161	4,533	2,104	1,336	9,829	1,319	1987
2,629	4,892	2,718	892	10,025	1,164	1988
3,066	4,951	2,630	1,140	11,841	1,033	1989
3,601	6,921	3,023	1,590	13,222	797	1990
4,339	9,515	3,503	1,263	14,078	618	1991
5,441	13,988	4,581	1,216	14,133	722	1992
5,990	15,366	5,723	1,502	14,535	742	1993
6,398	17,289	7,618	1,025	14,663	906	1994
6,654	18,356	9,213	1,369	16,757	1,050	1995
6,874	19,787	12,172	1,300	18,481	1,161	1996
7,201	28,030	14,792	1,351	19,271	1,344	1997
6,877	30,081	13,838	1,525	22,422	1,526	1998
7,808	30,741	16,849	1,517	25,766	1,806	1999
8,644	32,231	18,924	1,402	27,241	2,130	2000
8,676	33,102	20,787	1,038	28,033	2,456	2001
9,398	35,035	23,096	1,327	29,776	2,925	2002
9,140	36,327	24,194	1,722	32,418	3,241	2003
9,186	38,105	28,351	1,465	32,679	3,977	2004
9,484	39,299	30,355	1,297	36,695	3,961	2005
9,689	41,071	32,004	1,305	37,187	4,358	2006
10,127	44,863	34,663	1,084	30,731	4,828	2007
10,647	44,059	35,671	1,196	32,456	5,198	2008
11,079	45,886	33,908	1,213	31,771	5,480	2009
10,924	47,190	43,008	1,391	31,948	6,064	2010
10,303	50,893	46,284	1,684	33,265	6,618	2011
9,912	52,253	50,185	1,615	31,719	8,036	2012
9,701	52,642	52,523	1,771	29,283	8,987	2013
9,343	54,082	47,773	1,650	33,002	10,956	2014
9,303	55,287	43,613	1,223	34,765	12,839	2015
11,166	57,977	45,518	1,400	34,181	13,575	2016
10,729	61,373	47,536	1,490	31,615	15,847	2017

05 Final Energy Consumption

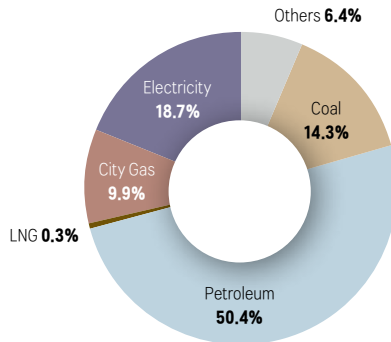
:: Final Energy Consumption



2007 181,498 thousand toe



2017 233,901 thousand toe



05 Final Energy Consumption

5. Final Energy Consumption

	Total		Coal			Petroleum	
		Growth Rate(%)	Sub-Total	Anthracite	Bituminous	Sub-Total	Energy Use
1981	38,952	14,478	14,478	9,571	4,906	18,912	15,471
1982	38,711	14,548	14,548	8,937	5,612	18,460	14,835
1983	41,337	15,336	15,336	9,338	5,997	19,921	15,589
1984	44,998	16,806	16,806	10,600	6,206	21,602	16,690
1985	46,998	17,940	17,940	11,632	6,308	22,580	17,360
1986	50,524	18,887	18,887	12,336	6,552	25,181	19,211
1987	55,197	19,778	19,778	12,006	7,772	28,372	21,767
1988	61,033	20,565	20,565	11,527	9,039	32,511	25,083
1989	65,875	20,116	20,116	10,057	10,059	36,967	29,106
1990	74,701	19,454	19,454	8,792	10,662	45,252	34,991
1991	83,336	19,447	19,447	7,119	12,328	52,675	39,266
1992	94,403	18,469	18,469	5,363	13,105	62,939	44,139
1993	103,850	18,860	18,860	3,981	14,879	69,876	49,369
1994	111,787	17,423	17,423	2,401	15,022	76,339	53,637
1995	121,333	17,327	17,327	1,702	15,625	82,679	58,898
1996	131,573	18,406	18,406	1,385	17,021	88,566	63,046
1997	144,541	18,891	18,891	1,072	17,819	98,036	63,564
1998	132,177	17,993	17,993	1,111	16,882	86,712	50,159
1999	143,027	18,325	18,325	1,271	17,055	92,928	54,817
2000	149,958	19,661	19,661	1,813	17,848	93,839	53,275
2001	153,103	20,357	20,357	2,470	17,887	93,617	52,021
2002	160,876	21,485	21,485	2,919	18,566	96,635	52,366
2003	164,550	22,428	22,428	3,342	19,086	96,669	51,292
2004	166,452	22,100	22,100	3,309	18,791	95,942	48,739
2005	171,176	22,154	22,154	3,711	18,443	97,076	48,430
2006	174,136	22,461	22,461	4,112	18,349	97,665	46,990
2007	181,498	24,056	24,056	4,385	19,671	100,720	45,816
2008	182,490	25,879	25,879	4,636	21,243	97,316	42,833
2009	181,491	23,015	23,015	4,183	18,832	98,516	41,812
2010	194,971	28,189	28,189	4,629	23,560	100,519	42,913
2011	205,772	32,860	32,860	5,844	27,017	102,294	41,766
2012	207,497	31,017	31,017	4,511	26,507	101,682	40,279
2013	209,366	31,603	31,603	4,649	26,954	101,701	39,603
2014	213,201	35,198	35,198	4,212	30,985	102,721	39,480
2015	218,006	34,849	34,849	4,539	30,310	106,858	42,492
2016	225,160	32,342	32,342	4,431	27,911	114,264	45,372
2017	233,901	33,360	33,360	3,986	29,374	117,861	45,978

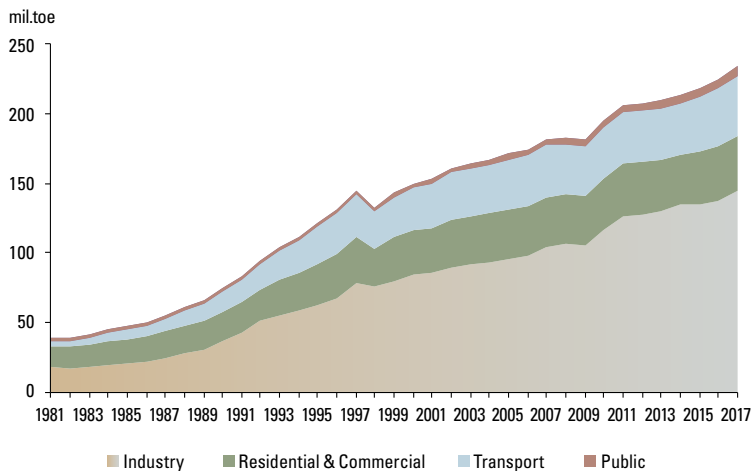
Note : From 2007, figures are based on revised calorific value every 5 years.

Unit: 1,000toe

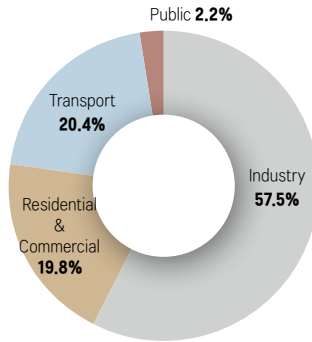
Petroleum		LNG	City Gas	Electricity	Others	
LPG	Non-Energ Use					
500	2,942	-	23	3,046	2,492	1981
735	2,890	-	28	3,258	2,417	1982
1,010	3,322	-	37	3,665	2,378	1983
1,242	3,670	-	52	4,046	2,492	1984
1,424	3,795	-	84	4,363	2,031	1985
1,736	4,235	-	132	4,843	1,480	1986
2,110	4,495	-	199	5,519	1,329	1987
2,561	4,866	-	339	6,391	1,226	1988
2,947	4,914	-	619	7,069	1,104	1989
3,368	6,893	-	1,011	8,111	872	1990
3,894	9,515	-	1,540	8,976	698	1991
4,812	13,988	-	2,219	9,911	865	1992
5,141	15,366	-	3,027	10,985	1,102	1993
5,414	17,289	-	4,057	12,602	1,366	1994
5,425	18,356	-	5,594	14,041	1,691	1995
5,733	19,787	-	6,937	15,692	1,971	1996
6,442	28,030	-	8,093	17,267	2,253	1997
6,472	30,081	-	8,425	16,638	2,408	1998
7,371	30,741	-	10,513	18,422	2,839	1999
8,333	32,231	-	12,561	20,600	3,297	2000
8,493	33,102	-	13,290	22,165	3,674	2001
9,235	35,034	-	14,567	23,947	4,242	2002
9,050	36,327	-	15,470	25,250	4,733	2003
9,099	38,104	-	16,193	26,840	5,377	2004
9,348	39,298	-	17,811	28,588	5,548	2005
9,608	41,067	-	18,379	29,990	5,641	2006
10,052	44,851	-	18,955	31,700	6,067	2007
10,432	44,050	-	19,765	33,116	6,415	2008
10,840	45,864	-	19,459	33,925	6,576	2009
10,448	47,158	559	21,081	37,338	7,285	2010
9,670	50,858	801	22,871	39,136	7,810	2011
9,194	52,209	717	24,728	40,127	9,226	2012
9,536	52,562	467	24,878	40,837	9,881	2013
9,271	53,970	460	23,041	41,073	10,708	2014
9,214	55,151	437	21,678	41,594	12,590	2015
11,059	57,833	504	22,186	42,745	13,119	2016
10,579	61,304	795	23,258	43,666	14,961	2017

06 Final Energy Consumption by Sector

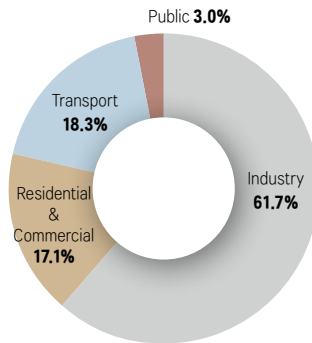
:: Final Energy Consumption by Sector



2007 181,498 thousand toe



2017 233,901 thousand toe



06 Final Energy Consumption by Sector

6. Final Energy Consumption by Sector

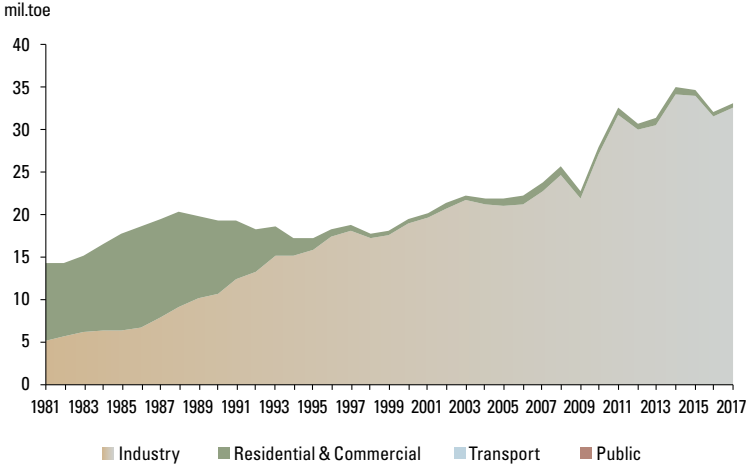
	Final Energy Consumption(1,000 toe)				
	Total	Industry	Residential & Commercial	Transport	Public
1981	38,952	17,506	15,836	3,721	1,888
1982	38,711	17,354	15,197	4,216	1,945
1983	41,337	18,346	15,438	5,434	2,118
1984	44,998	19,508	17,342	6,007	2,141
1985	46,998	20,015	18,180	6,707	2,096
1986	50,524	21,865	18,605	7,699	2,355
1987	55,197	24,648	18,893	9,275	2,381
1988	61,033	28,200	19,700	10,747	2,385
1989	65,875	30,871	20,080	12,269	2,655
1990	74,701	36,144	21,572	14,173	2,812
1991	83,336	42,701	21,666	16,156	2,813
1992	94,403	50,818	22,807	18,531	2,247
1993	103,850	55,563	24,872	21,119	2,296
1994	111,787	58,741	26,728	23,857	2,462
1995	121,333	62,695	29,093	27,130	2,415
1996	131,573	67,751	31,374	29,789	2,659
1997	144,541	78,322	32,768	30,736	2,715
1998	132,177	76,353	27,156	26,178	2,489
1999	143,027	80,114	31,640	28,625	2,649
2000	149,958	84,237	32,153	30,945	2,623
2001	153,103	85,562	32,639	31,910	2,991
2002	160,876	89,755	34,160	33,765	3,196
2003	164,550	91,400	34,915	34,634	3,601
2004	166,452	93,650	34,566	34,635	3,600
2005	171,176	95,211	36,336	35,534	4,095
2006	174,136	97,839	35,925	36,522	3,849
2007	181,498	104,348	35,943	37,059	4,148
2008	182,490	106,338	36,292	35,756	4,104
2009	181,491	105,464	35,835	35,892	4,299
2010	194,971	116,160	37,427	36,903	4,481
2011	205,772	126,545	37,821	36,842	4,564
2012	207,497	127,702	38,236	36,783	4,776
2013	209,366	129,405	37,813	36,961	5,187
2014	213,201	135,117	35,518	37,241	5,326
2015	218,006	135,385	37,021	39,851	5,750
2016	225,160	137,912	38,728	42,271	6,248
2017	233,901	144,260	39,907	42,796	6,938

Note : From 2007, figures are based on revised calorific value every 5 years.

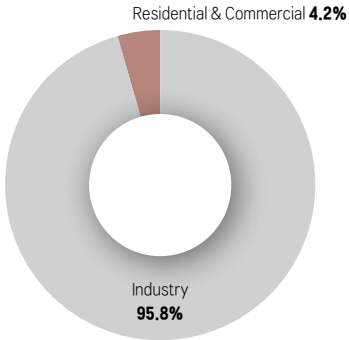
Final Energy Consumption(%)					
Total	Industry	Residential & Commercial	Transport	Public	
100.0	44.9	40.7	9.6	4.8	1981
100.0	44.8	39.3	10.9	5.0	1982
100.0	44.4	37.3	13.1	5.1	1983
100.0	43.4	38.5	13.3	4.8	1984
100.0	42.6	38.7	14.3	4.5	1985
100.0	43.3	36.8	15.2	4.7	1986
100.0	44.7	34.2	16.8	4.3	1987
100.0	46.2	32.3	17.6	3.9	1988
100.0	46.9	30.5	18.6	4.0	1989
100.0	48.1	29.3	18.9	3.7	1990
100.0	51.2	26.2	19.3	3.4	1991
100.0	53.7	24.3	19.6	2.4	1992
100.0	53.4	24.1	20.3	2.2	1993
100.0	53.4	23.1	21.3	2.2	1994
100.0	51.6	24.1	22.3	2.0	1995
100.0	51.4	24.0	22.6	2.0	1996
100.0	53.9	22.9	21.3	1.9	1997
100.0	57.5	20.8	19.8	1.9	1998
100.0	55.8	22.3	20.0	1.9	1999
100.0	56.0	21.6	20.6	1.8	2000
100.0	55.7	21.5	20.9	2.0	2001
100.0	55.6	21.4	21.0	2.0	2002
100.0	55.4	21.3	21.1	2.2	2003
100.0	56.0	21.0	20.9	2.2	2004
100.0	55.2	21.6	20.8	2.4	2005
100.0	56.0	20.7	21.0	2.2	2006
100.0	57.5	19.8	20.4	2.3	2007
100.0	58.3	19.8	19.6	2.2	2008
100.0	58.3	19.6	19.7	2.4	2009
100.0	59.8	19.0	18.9	2.3	2010
100.0	61.7	18.2	17.9	2.2	2011
100.0	61.7	18.2	17.8	2.3	2012
100.0	62.0	17.8	17.8	2.5	2013
100.0	63.3	16.6	17.6	2.5	2014
100.0	62.2	16.8	18.5	2.6	2015
100.0	61.4	17.0	18.9	2.8	2016
100.0	61.7	17.1	18.3	3.0	2017

07 Final Energy Consumption by Source

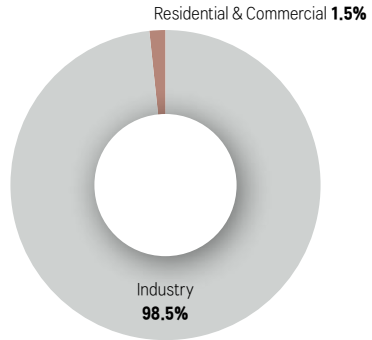
:: Coal



:: **2007** 24,056 thousand toe



:: **2017** 33,360 thousand toe



7-1. Coal

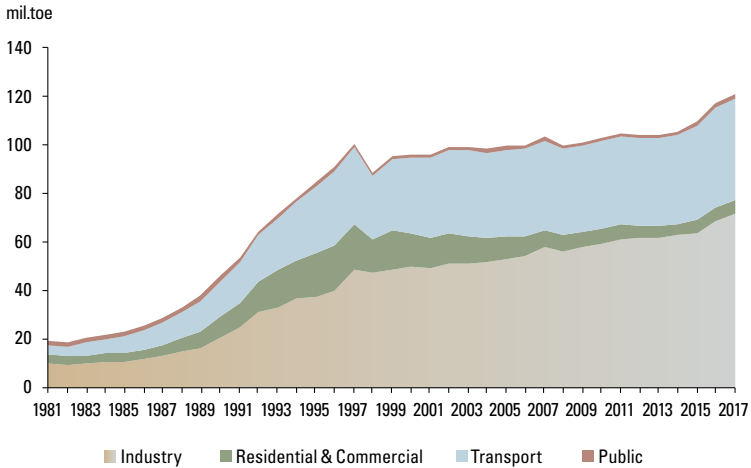
Unit : 1,000 toe

	TFEC		Coal				
		%		Industry	Residential & Commercial	Transport	Public
1981	38,952	37.2	14,478	5,276	9,105	2	95
1982	38,711	37.6	14,548	5,844	8,629	2	74
1983	41,337	37.1	15,336	6,240	9,040	-	55
1984	44,998	37.3	16,806	6,412	10,323	-	71
1985	46,998	38.2	17,940	6,490	11,399	-	50
1986	50,524	37.4	18,887	6,800	12,033	-	54
1987	55,197	35.8	19,778	8,015	11,721	-	42
1988	61,033	33.7	20,565	9,315	11,205	-	45
1989	65,875	30.5	20,116	10,263	9,811	-	42
1990	74,701	26.0	19,454	10,806	8,627	-	46
1991	83,336	23.3	19,447	12,532	6,916	-	-
1992	94,403	19.6	18,469	13,381	5,087	-	-
1993	103,850	18.2	18,860	15,299	3,561	-	-
1994	111,787	15.6	17,423	15,305	2,118	-	-
1995	121,333	14.3	17,327	15,972	1,355	-	-
1996	131,573	14.0	18,406	17,523	883	-	-
1997	144,541	13.1	18,891	18,266	625	-	-
1998	132,177	13.6	17,993	17,440	553	-	-
1999	143,027	12.8	18,325	17,822	503	-	-
2000	149,958	13.1	19,661	19,125	536	-	-
2001	153,103	13.3	20,357	19,804	553	-	-
2002	160,876	13.4	21,485	20,956	529	-	-
2003	164,550	13.6	22,428	21,890	539	-	-
2004	166,452	13.3	22,100	21,475	626	-	-
2005	171,176	12.9	22,154	21,242	912	-	-
2006	174,136	12.9	22,461	21,398	1,063	-	-
2007	181,498	13.3	24,056	23,043	1,014	-	-
2008	182,490	14.2	25,879	24,791	1,088	-	-
2009	181,491	12.7	23,015	22,075	940	-	-
2010	194,971	14.5	28,189	27,288	901	-	-
2011	205,772	16.0	32,860	31,989	871	-	-
2012	207,497	14.9	31,017	30,185	832	-	-
2013	209,366	15.1	31,603	30,730	872	-	-
2014	213,201	16.5	35,198	34,452	745	-	-
2015	218,006	16.0	34,849	34,177	672	-	-
2016	225,160	14.4	32,342	31,770	571	-	-
2017	233,901	14.3	33,360	32,847	513	-	-

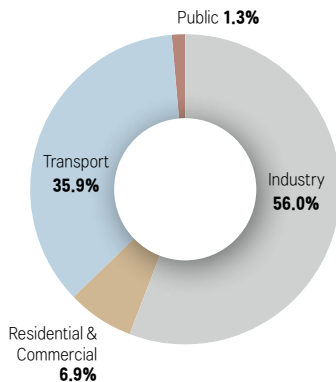
Note : From 2007, figures are based on revised calorific value every 5 years.

07 Final Energy Consumption by Source

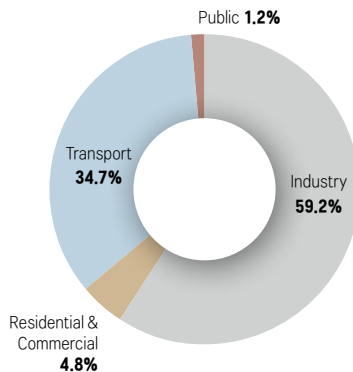
:: Petroleum



:: **2007** 100,720 thousand toe



:: **2017** 117,861 thousand toe



7-2. Petroleum

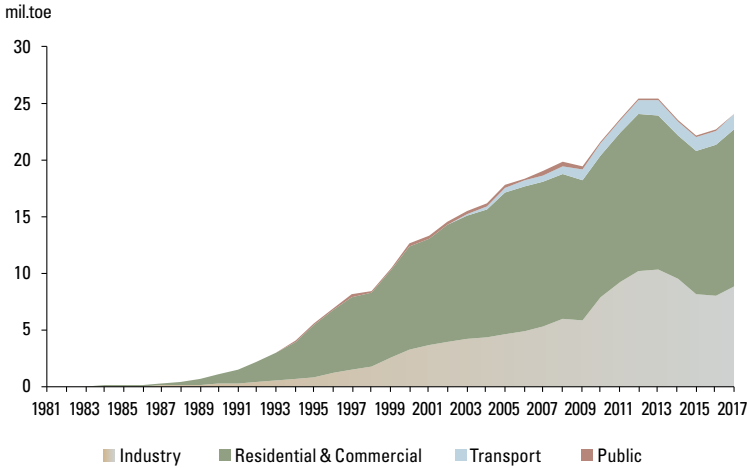
Unit : 1,000 toe

	TFEC		Petroleum				
		%		Industry	Residential & Commercial	Transport	Public
1981	38,952	48.6	18,912	10,141	3,525	3,680	1,567
1982	38,711	47.7	18,460	9,322	3,344	4,173	1,620
1983	41,337	48.2	19,921	9,671	3,073	5,390	1,787
1984	44,998	48.0	21,602	10,444	3,438	5,955	1,765
1985	46,998	48.0	22,580	10,697	3,525	6,645	1,712
1986	50,524	49.8	25,181	11,857	3,747	7,624	1,954
1987	55,197	51.4	28,372	12,915	4,284	9,201	1,972
1988	61,033	53.3	32,511	14,600	5,331	10,667	1,913
1989	65,875	56.1	36,967	15,936	6,694	12,187	2,151
1990	74,701	60.6	45,252	20,014	8,876	14,086	2,276
1991	83,336	63.2	52,675	24,251	10,161	16,062	2,201
1992	94,403	66.7	62,939	30,514	12,405	18,430	1,590
1993	103,850	67.3	69,876	32,654	14,669	21,011	1,541
1994	111,787	68.3	76,339	35,906	15,183	23,732	1,518
1995	121,333	68.1	82,679	36,830	17,434	26,991	1,424
1996	131,573	67.3	88,566	38,940	18,451	29,644	1,530
1997	144,541	67.8	98,036	47,429	18,570	30,584	1,453
1998	132,177	65.6	86,712	46,456	12,999	26,042	1,215
1999	143,027	65.0	92,928	47,800	15,382	28,476	1,270
2000	149,958	62.6	93,839	48,522	13,408	30,770	1,140
2001	153,103	61.1	93,617	48,254	12,327	31,708	1,328
2002	160,876	60.1	96,635	50,032	11,894	33,490	1,220
2003	164,550	58.7	96,669	49,898	11,073	34,288	1,411
2004	166,452	57.6	95,942	50,839	9,578	34,178	1,347
2005	171,176	56.7	97,076	51,746	8,955	34,958	1,417
2006	174,136	56.1	97,665	53,114	7,496	35,776	1,279
2007	181,498	55.5	100,720	56,364	6,942	36,139	1,274
2008	182,490	53.3	97,316	54,964	6,569	34,606	1,176
2009	181,491	54.3	98,516	56,616	6,145	34,491	1,264
2010	194,930	51.6	100,519	57,576	6,397	35,246	1,299
2011	205,772	49.7	102,294	59,977	5,937	35,139	1,241
2012	207,497	49.0	101,682	60,072	5,370	34,981	1,258
2013	209,366	48.6	101,701	60,368	4,998	35,107	1,227
2014	213,201	48.2	102,721	61,343	4,706	35,366	1,306
2015	218,006	49.0	106,858	62,156	5,320	37,932	1,450
2016	225,160	50.7	114,264	66,820	5,684	40,328	1,432
2017	233,901	50.4	117,861	69,833	5,690	40,869	1,470

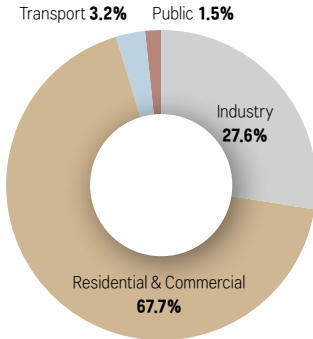
Note : From 2007, figures are based on revised calorific value every 5 years.

07 Final Energy Consumption by Source

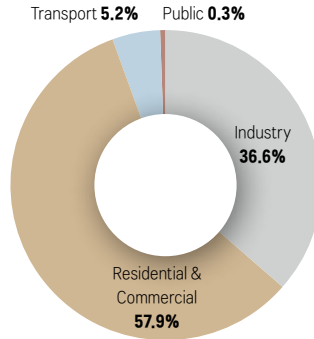
:: LNG & City Gas



:: **2007** 18,955 thousand toe



:: **2017** 24,053 thousand toe



7-3. LNG & City Gas

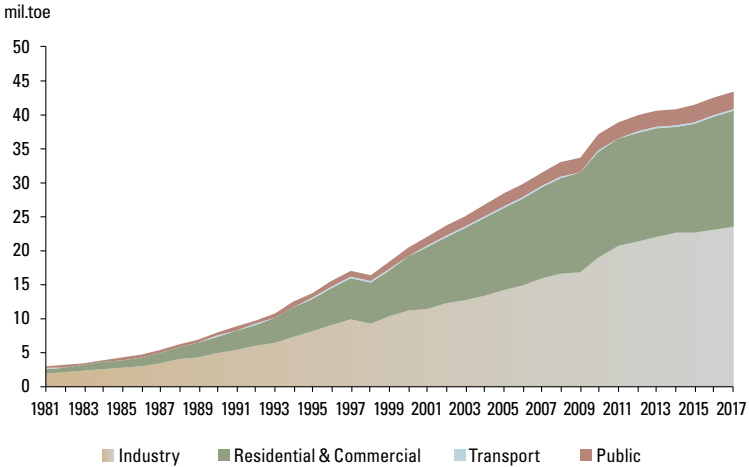
Unit : 1,000 toe

	TFEC		LNG & City Gas				
		%		Industry	Residential & Commercial	Transport	Public
1981	38,952	0.1	23	-	23	-	-
1982	38,711	0.1	28	-	28	-	-
1983	41,337	0.1	37	-	37	-	-
1984	44,998	0.1	52	1	51	-	-
1985	46,998	0.2	84	15	69	-	-
1986	50,524	0.3	132	40	92	-	-
1987	55,197	0.4	199	75	124	-	-
1988	61,033	0.6	339	110	229	-	-
1989	65,875	0.9	619	158	461	-	-
1990	74,701	1.4	1,011	235	777	-	-
1991	83,336	1.8	1,540	313	1,160	-	68
1992	94,403	2.4	2,219	377	1,760	-	82
1993	103,850	2.9	3,027	460	2,450	-	117
1994	111,787	3.6	4,057	600	3,313	-	143
1995	121,333	4.6	5,594	863	4,607	-	125
1996	131,573	5.3	6,937	1,196	5,588	-	153
1997	144,541	5.6	8,093	1,496	6,436	-	161
1998	132,177	6.4	8,425	1,812	6,454	-	160
1999	143,027	7.4	10,513	2,530	7,784	-	199
2000	149,958	8.4	12,561	3,308	9,024	-	229
2001	153,103	8.7	13,290	3,612	9,412	7	259
2002	160,876	9.1	14,567	3,984	10,241	80	262
2003	164,550	9.4	15,470	4,177	10,889	146	259
2004	166,452	9.7	16,193	4,382	11,293	239	279
2005	171,176	10.4	17,811	4,656	12,503	339	313
2006	174,136	10.6	18,379	4,847	12,858	475	199
2007	181,498	10.4	18,955	5,225	12,831	615	285
2008	182,490	10.8	19,765	5,933	12,763	777	292
2009	181,491	10.7	19,459	5,891	12,332	960	277
2010	194,930	10.8	21,640	7,888	12,489	1,112	152
2011	205,772	11.1	23,672	9,184	13,201	1,174	112
2012	207,497	11.9	25,445	10,218	13,797	1,248	181
2013	209,366	11.9	25,345	10,370	13,578	1,299	98
2014	213,201	10.8	23,501	9,510	12,599	1,307	85
2015	218,006	9.9	22,115	8,081	12,661	1,288	85
2016	225,160	9.9	22,690	8,040	13,292	1,270	88
2017	233,901	9.9	24,053	8,805	13,918	1,253	77

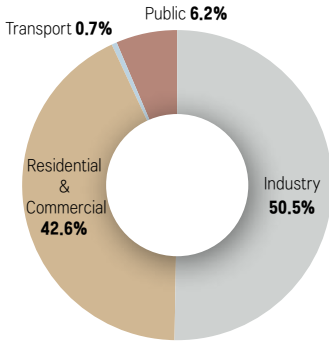
Note : From 2007, figures are based on revised calorific value every 5 years.

07 Final Energy Consumption by Source

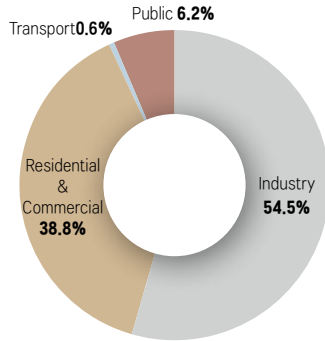
:: Electricity



:: 2007 31,700 thousand toe



:: 2017 43,666 thousand toe



7-4. Electricity

Unit : 1,000 toe

	TFEC		Electricity				
		%	Industry	Residential & Commercial	Transport	Public	
1981	38,952	7.8	3,046	2,089	691	40	226
1982	38,711	8.4	3,258	2,188	779	40	251
1983	41,337	8.9	3,665	2,435	910	44	276
1984	44,998	9.0	4,046	2,651	1,038	52	305
1985	46,998	9.3	4,363	2,812	1,155	62	333
1986	50,524	9.6	4,843	3,168	1,253	76	347
1987	55,197	10.0	5,519	3,643	1,435	74	367
1988	61,033	10.5	6,391	4,175	1,710	80	426
1989	65,875	10.7	7,069	4,514	2,011	83	461
1990	74,701	10.9	8,111	5,089	2,421	87	514
1991	83,336	10.8	8,976	5,606	2,732	94	544
1992	94,403	10.5	9,911	6,063	3,174	101	572
1993	103,850	10.6	10,985	6,581	3,663	108	633
1994	111,787	11.3	12,602	6,304	5,423	124	752
1995	121,333	11.6	14,041	8,293	4,801	138	808
1996	131,573	11.9	15,692	9,179	5,464	145	904
1997	144,541	11.9	17,267	10,009	6,090	151	1,017
1998	132,177	12.6	16,638	9,359	6,121	136	1,022
1999	143,027	12.9	18,422	10,394	6,793	149	1,086
2000	149,958	13.7	20,600	11,374	7,891	175	1,160
2001	153,103	14.5	22,165	11,678	9,005	194	1,288
2002	160,876	14.9	23,947	12,423	9,859	195	1,470
2003	164,550	15.3	25,250	12,933	10,585	200	1,531
2004	166,452	16.1	26,840	13,617	11,352	213	1,658
2005	171,176	16.7	28,588	14,346	12,233	224	1,785
2006	174,136	17.2	29,990	15,021	12,883	218	1,868
2007	181,498	17.5	31,700	16,018	13,513	209	1,960
2008	182,490	18.1	33,116	16,738	14,144	196	2,039
2009	181,491	18.7	33,925	17,006	14,593	187	2,138
2010	194,930	19.2	37,338	19,193	15,636	188	2,321
2011	205,772	19.0	39,136	20,830	15,758	193	2,355
2012	207,497	19.3	40,127	21,426	16,049	194	2,459
2013	209,366	19.5	40,837	22,088	16,077	186	2,485
2014	213,201	19.3	41,073	22,757	15,706	172	2,438
2015	218,006	19.1	41,594	22,844	16,019	191	2,540
2016	225,160	19.0	42,745	23,218	16,650	231	2,646
2017	233,901	18.7	43,666	23,794	16,932	246	2,693

Note : From 2007, figures are based on revised calorific value every 5 years.

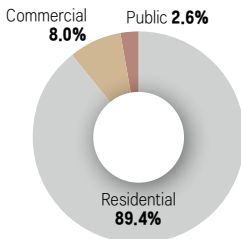
07 Final Energy Consumption by Source

7-5. Heat Energy

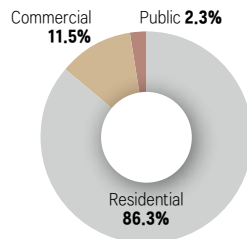
Unit : 1,000 toe

	Production	Sales			
		Residential	Commercial	Public	
1987	10	10	10	0	-
1988	63	55	51	3	1
1989	71	71	65	5	1
1990	79	75	68	6	1
1991	84	80	72	7	1
1992	163	143	134	7	1
1993	391	360	354	2	4
1994	495	460	440	14	6
1995	689	641	610	22	10
1996	847	811	762	33	15
1997	941	909	850	42	17
1998	933	882	825	41	16
1999	1,082	1,033	959	56	18
2000	1,221	1,167	1,084	63	20
2001	1,287	1,218	1,111	80	27
2002	1,405	1,316	1,203	84	30
2003	1,627	1,523	1,382	104	37
2004	1,532	1,449	1,299	116	34
2005	1,889	1,652	1,466	143	42
2006	1,804	1,549	1,383	129	37
2007	1,848	1,576	1,409	127	41
2008	1,757	1,668	1,490	138	39
2009	1,821	1,709	1,530	133	46
2010	2,038	1,939	1,747	152	39
2011	2,055	1,976	1,774	158	44
2012	2,175	2,102	1,878	177	47
2013	2,212	2,102	1,870	185	47
2014	2,074	1,528	1,376	126	27
2015	2,028	1,967	1,758	173	36
2016	2,197	2,183	1,895	238	50
2017	2,446	2,441	2,105	280	55

2007 1,576 thousand toe



2017 2,441 thousand toe



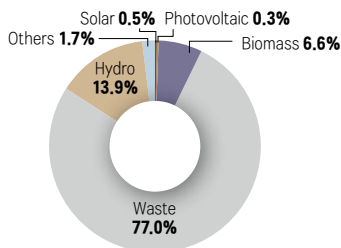
7-6. Renewables

Unit : 1,000 toe

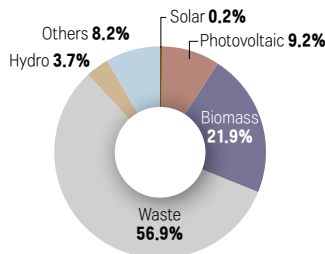
	Total	Solar	Photovoltaic	Biomass	Waste	Hydro	Others ¹
1991	411.6	-	-	-	-	-	-
1992	552.4	12.6	1.8	57.3	461.2	19.5	0.1
1993	648.1	14.1	0.5	58.8	545.6	28.8	0.3
1994	776.3	16.8	0.5	57.2	678.8	22.5	0.3
1995	906.9	22.1	0.6	59.2	804.5	20.4	0.1
1996	1,160.0	32.0	0.6	50.4	1,056.4	20.4	0.1
1997	1,419.0	45.5	0.8	67.6	1,282.5	22.5	0.2
1998	1,712.9	44.0	1.0	63.2	1,577.2	27.2	0.4
1999	1,897.3	42.1	1.1	65.0	1,760.5	27.1	1.5
2000	2,127.3	41.7	1.3	82.0	1,977.7	20.5	4.2
2001	2,453.3	37.2	1.6	82.5	2,308.0	20.9	3.2
2002	2,917.3	34.8	1.8	116.8	2,732.5	27.7	3.8
2003	4,437.4	32.9	1.9	131.1	3,039.3	1,225.6	6.6
2004	4,582.4	36.1	2.5	135.0	3,313.3	1,082.3	13.2
2005	4,879.2	34.7	3.6	181.3	3,705.6	918.5	35.6
2006	5,225.2	33.0	7.8	274.5	3,975.3	867.1	67.6
2007	5,608.8	29.4	15.3	370.2	4,319.3	780.9	93.7
2008	5,858.5	28.0	61.1	426.8	4,568.6	660.1	113.8
2009	6,086.3	30.7	121.7	580.4	4,558.1	606.6	188.7
2010	6,856.3	29.3	166.2	754.6	4,862.3	792.3	251.7
2011	7,582.9	27.4	197.2	963.4	5,121.5	965.4	308.0
2012	8,850.7	26.3	237.5	1,334.7	5,998.5	814.9	438.8
2013	9,879.2	27.8	344.5	1,558.5	6,502.4	892.2	553.8
2014	11,537.4	28.5	547.4	2,822.0	6,904.7	581.2	653.5
2015	13,293.0	28.5	849.4	2,765.7	8,436.2	453.8	759.5
2016	14,178.4	28.5	1,092.8	2,765.5	8,742.7	603.2	945.7
2017	16,448.4	28.1	1,516.3	3,598.8	9,359.0	600.7	1,345.5

1. Include wind, fuel cells, geothermal and tidal

2007 5,609 thousand toe



2017 16,447 thousand toe



08 Energy Balance

2007

	Coal (1,000 ton)	Petroleum (1,000 Bbl)	LNG (1,000 ton)	City Gas (10 ⁶ m ³)
Domestic Production	2,886	-	271	-
Imports	84,799	1,165,028	25,568	-
Exports	-	-292,072	-	-
Intl' Bunkers	-	-50,543	-	-
Stock Changes(+/-)	1,320	2,329	837	-
Statistical Difference	5,123	-29,863	-13	-
Primary Energy Supply	94,127	794,879	26,664	-
Transformation	-57,936	-32,159	-26,664	17,967
Electric Generation	-57,936	-28,176	-11,296	-26
District Heating	-	-3,213	-631	-198
Gas Manufacturing	-	-770	-14,596	17,786
Own Use & Loss	-	-	-141	404
Final Consumption	36,191	762,720	-	17,967
Industry	34,100	429,531	-	4,952
Agri. Fishery	-	17,802	-	2
Mining	-	550	-	-
Manufacturing	28,951	394,535	-	4,951
Food, Tobacco	49	3,713	-	391
Textile & Apparel	-	4,436	-	304
Wood & Wood Prod.	-	237	-	37
Pulp & Publications	-	4,914	-	122
Petro. Chemical	376	352,301	-	720
Non-Metallic	5,051	6,708	-	446
Iron & Steel	21,519	3,375	-	1,156
Non-Ferrous	167	862	-	158
Fabricated Metal	-	4,208	-	1,059
Other Manufact.	1,788	8,503	-	559
Other Energy	-	5,278	-	-
Construction	-	16,645	-	0
Transportation	-	268,379	-	583
Rail	-	1,607	-	-
Land	-	216,460	-	583
Water	-	27,331	-	-
Air	-	22,981	-	-
Residential	2,091	32,619	-	9,216
Commercial	-	23,108	-	2,946
Public	-	9,082	-	270

Note : Domestic anthracite consumption for the commercial sector is included in the residential sector.

Hydro (GWh)	Nuclear (GWh)	Electricity (GWh)	Heat (1,000 toe)	Renewables (1,000 toe)	Total (1,000 toe)
5,042	142,937	-	-	4,828	38,338
-	-	-	-	-	246,306
-	-	-	-	-	-41,801
-	-	-	-	-	-7,738
-	-	-	-	-	1,998
-	-	-	-	-	-1,218
5,042	142,937	-	-	4,828	236,678
-5,042	-142,937	368,605	1,576	-337	-55,180
-5,042	-142,937	403,124	1,208	-337	-51,003
-	-	-	640	-	-894
-	-	-	-	-	-286
-	-	-34,519	-272	-	-2,996
-	-	368,605	1,576	4,491	181,498
-	-	186,252	-	3,699	104,348
-	-	7,795	-	-	3,214
-	-	1,484	-	-	206
-	-	176,973	-	-	91,292
-	-	7,822	-	-	1,686
-	-	12,017	-	-	2,044
-	-	1,558	-	-	209
-	-	9,802	-	-	1,737
-	-	36,568	-	-	49,221
-	-	11,105	-	-	5,576
-	-	27,241	-	-	19,120
-	-	5,591	-	-	873
-	-	62,983	-	-	7,125
-	-	2,286	-	-	2,913
-	-	-	-	-	788
-	-	-	-	-	2,565
-	-	2,433	-	96	37,059
-	-	2,433	-	-	441
-	-	-	-	96	29,186
-	-	-	-	-	4,235
-	-	-	-	-	3,197
-	-	54,174	1,409	69	21,034
-	-	102,957	127	39	14,909
-	-	22,790	41	588	4,148

08 Energy Balance

2007

	Coal	Petroleum	LNG	City Gas
Domestic Production	1,342	-	353	-
Imports	54,237	158,831	33,239	-
Exports	-	-41,801	-	-
Intl' Bunkers	-	-7,738	-	-
Stock Changes(+/-)	654	256	1,088	-
Statistical Difference	3,421	-4,622	-17	-
Primary Energy Supply	59,653	105,718	34,663	-
Transformation	-35,597	-4,999	-34,663	18,955
Electric Generation	-35,597	-4,419	-14,684	-27
District Heating	-	-505	-821	-209
Gas Manufacturing	-	-75	-18,975	18,764
Own Use & Loss	-	-	-183	427
Final Consumption	24,056	100,720	-	18,955
Industry	23,043	56,364	-	5,225
Agri. Fishery	-	2,542	-	2
Mining	-	79	-	-
Manufacturing	19,671	51,178	-	5,223
Food. Tobacco	31	571	-	412
Textile & Apparel	-	690	-	320
Wood & Wood Prod.	-	35	-	39
Pulp & Publications	-	765	-	129
Petro. Chemical	233	45,083	-	760
Non-Metallic	3,132	1,019	-	470
Iron & Steel	15,063	495	-	1,219
Non-Ferrous	104	122	-	167
Fabricated Metal	-	592	-	1,117
Other Manufact.	1,109	1,018	-	589
Other Energy	-	788	-	-
Construction	-	2,565	-	0
Transportation	-	36,139	-	615
Rail	-	231	-	-
Land	-	28,475	-	615
Water	-	4,235	-	-
Air	-	3,197	-	-
Residential	1,014	4,161	-	9,723
Commercial	-	2,781	-	3,108
Public	-	1,274	-	285

Note : Domestic anthracite consumption for the commercial sector is included in the residential sector.

Unit : 1,000 toe

Hydro	Nuclear	Electricity	Heat	Renewables	Total
1,084	30,731	-	-	4,828	38,338
-	-	-	-	-	246,306
-	-	-	-	-	-41,801
-	-	-	-	-	-7,738
-	-	-	-	-	1,998
-	-	-	-	-	-1,218
1,084	30,731	-	-	4,828	236,678
-1,084	-30,731	31,700	1,576	-337	-55,180
-1,084	-30,731	34,669	1,208	-337	-51,003
-	-	-	640	-	-894
-	-	-	-	-	-286
-	-	-2,969	-272	-	-2,996
-	-	31,700	1,576	4,491	181,498
-	-	16,018	-	3,699	104,348
-	-	670	-	-	3,214
-	-	128	-	-	206
-	-	15,220	-	-	91,292
-	-	673	-	-	1,686
-	-	1,033	-	-	2,044
-	-	134	-	-	209
-	-	843	-	-	1,737
-	-	3,145	-	-	49,221
-	-	955	-	-	5,576
-	-	2,343	-	-	19,120
-	-	481	-	-	873
-	-	5,417	-	-	7,125
-	-	197	-	-	2,913
-	-	-	-	-	788
-	-	-	-	-	2,565
-	-	209	-	96	37,059
-	-	209	-	-	441
-	-	-	-	96	29,186
-	-	-	-	-	4,235
-	-	-	-	-	3,197
-	-	4,659	1,409	69	21,034
-	-	8,854	127	39	14,909
-	-	1,960	41	588	4,148

08 Energy Balance

2017

	Coal (1,000 ton)	Petroleum (1,000 Bbl)	LNG (1,000 ton)	City Gas (10 ⁶ m ³)
Domestic Production	1,485	-	261	
Imports	138,467	1,544,139	37,537	
Exports	-	-509,113	-	
Intl' Bunkers	-	-59,136	-	
Stock Changes(+/-)	-290	-1,663	-585	
Statistical Difference	88	-37,132	-814	
Primary Energy Supply	139,750	937,095	36,398	
Transformation	-89,388	-10,472	-35,790	22,603
Electric Generation	-89,388	-8,060	-15,594	-326
District Heating	-	-1,184	-1,684	-398
Gas Manufacturing	-	-1,228	-18,390	23,327
Own Use & Loss	-	-	-122	0
Final Consumption	50,363	926,623	608	22,603
Industry	49,284	566,956	608	7,784
Agri. Fishery	-	9,173	-	3
Mining	-	395	-	-
Manufacturing	43,181	540,304	608	7,780
Food. Tobacco	39	681	-	689
Textile & Apparel	-	693	-	278
Wood & Wood Prod.	-	29	-	28
Pulp & Publications	-	316	-	245
Petro. Chemical	343	513,296	269	1,049
Non-Metallic	4,175	3,398	-	519
Iron & Steel	36,290	838	340	1,203
Non-Ferrous	606	274	-	270
Fabricated Metal	-	2,470	-	1,608
Other Manufact.	1,727	10,342	-	1,891
Other Energy	-	7,965	-	-
Construction	-	17,084	-	1
Transportation	-	303,220	-	1,218
Rail	-	703	-	-
Land	-	245,057	-	1,218
Water	-	22,793	-	-
Air	-	34,668	-	-
Residential	1,079	28,052	-	9,950
Commercial	-	17,890	-	3,576
Public	-	10,505	-	74

Note : Domestic anthracite consumption for the commercial sector is included in the residential sector.

Hydro (GWh)	Nuclear (GWh)	Electricity (GWh)	Heat (1,000 toe)	Renewables (1,000 toe)	Total (1,000 toe)
6,995	148,427	-	-	15,847	49,995
-	-	-	-	-	339,687
-	-	-	-	-	-70,629
-	-	-	-	-	-9,028
-	-	-	-	-	-1,169
-	-	-	-	-	-6,790
6,995	148,427	-	-	15,847	302,065
-6,995	-148,427	507,746	2,441	-3,327	-68,164
-6,995	-148,427	553,530	1,494	-3,327	-62,079
-	-	-	953	-	-1,844
-	-	-	-	-	-139
-	-	-45,784	-5	-	-4,102
-	-	507,746	2,441	12,520	233,901
-	-	276,670	-	8,981	144,260
-	-	15,979	-	-	2,676
-	-	1,746	-	-	205
-	-	258,945	-	-	126,291
-	-	11,282	-	-	1,789
-	-	11,261	-	-	1,347
-	-	1,925	-	-	199
-	-	9,784	-	-	1,138
-	-	60,469	-	-	69,207
-	-	12,612	-	-	4,602
-	-	35,524	-	-	30,121
-	-	9,805	-	-	1,513
-	-	102,310	-	-	10,791
-	-	3,972	-	-	4,481
-	-	-	-	-	1,103
-	-	-	-	-	2,634
-	-	2,864	-	428	42,796
-	-	2,820	-	-	343
-	-	45	-	428	34,101
-	-	-	-	-	3,546
-	-	-	-	-	4,806
-	-	66,517	2,105	254	22,479
-	-	130,377	280	214	17,428
-	-	31,317	55	2,643	6,938

08 Energy Balance

2017

	Coal	Petroleum	LNG	City Gas
Domestic Production	702	-	341	-
Imports	85,869	204,794	49,023	-
Exports	-	-70,629	-	-
Intl' Bunkers	-	-9,028	-	-
Stock Changes(+/-)	-135	-270	-764	-
Statistical Difference	-259	-5,467	-1,064	-
Primary Energy Supply	86,177	119,400	47,536	-
Transformation	-52,817	-1,539	-46,742	23,258
Electric Generation	-52,817	-1,227	-20,366	-335
District Heating	-	-187	-2,200	-409
Gas Manufacturing	-	-125	-24,017	24,003
Own Use & Loss	-	-	-159	0
Final Consumption	33,360	117,861	795	23,258
Industry	32,847	69,833	795	8,010
Agri. Fishery	-	1,298	-	3
Mining	-	55	-	-
Manufacturing	29,374	65,847	795	8,006
Food. Tobacco	23	87	-	709
Textile & Apparel	-	93	-	286
Wood & Wood Prod.	-	4	-	29
Pulp & Publications	-	44	-	252
Petro. Chemical	203	62,373	351	1,080
Non-Metallic	2,472	512	-	534
Iron & Steel	25,294	90	444	1,238
Non-Ferrous	359	34	-	278
Fabricated Metal	-	337	-	1,655
Other Manufact.	1,023	1,171	-	1,946
Other Energy	-	1,103	-	-
Construction	-	2,633	-	1
Transportation	-	40,869	-	1,253
Rail	-	101	-	-
Land	-	32,416	-	1,253
Water	-	3,546	-	-
Air	-	4,806	-	-
Residential	513	3,648	-	10,238
Commercial	-	2,042	-	3,680
Public	-	1,470	-	77

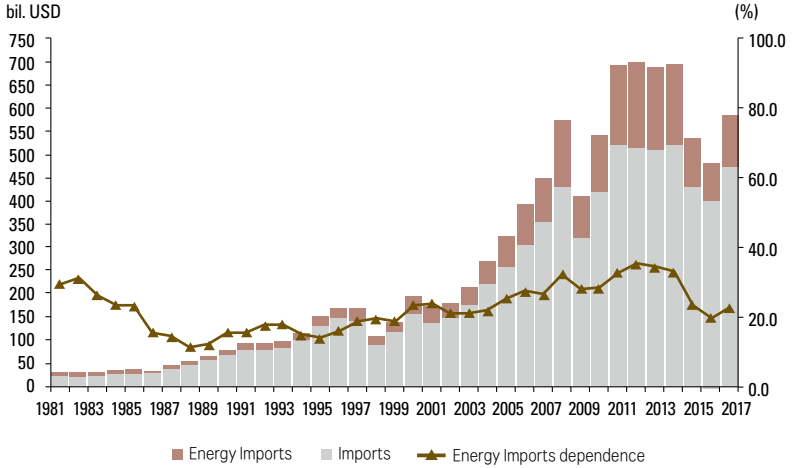
Note : Domestic anthracite consumption for the commercial sector is included in the residential sector.

Unit : 1,000 toe

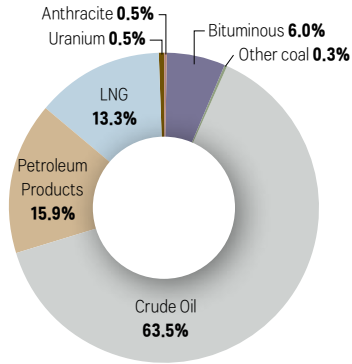
Hydro	Nuclear	Electricity	Heat	Renewables	Total
1,490	31,615	-	-	15,847	49,995
-	-	-	-	-	339,687
-	-	-	-	-	-70,629
-	-	-	-	-	-9,028
-	-	-	-	-	-1,169
-	-	-	-	-	-6,790
1,490	31,615	-	-	15,847	302,065
-1,490	-31,615	43,666	2,441	-3,327	-68,164
-1,490	-31,615	47,604	1,494	-3,327	-62,079
-	-	-	953	-	-1,844
-	-	-	-	-	-139
-	-	-3,937	-5	-	-4,102
-	-	43,666	2,441	12,520	233,901
-	-	23,794	-	8,981	144,260
-	-	1,374	-	-	2,676
-	-	150	-	-	205
-	-	22,269	-	-	126,291
-	-	970	-	-	1,789
-	-	968	-	-	1,347
-	-	166	-	-	199
-	-	841	-	-	1,138
-	-	5,200	-	-	69,207
-	-	1,085	-	-	4,602
-	-	3,055	-	-	30,121
-	-	843	-	-	1,513
-	-	8,799	-	-	10,791
-	-	342	-	-	4,481
-	-	-	-	-	1,103
-	-	-	-	-	2,634
-	-	246	-	428	42,796
-	-	242	-	-	343
-	-	4	-	428	34,101
-	-	-	-	-	3,546
-	-	-	-	-	4,806
-	-	5,720	2,105	254	22,479
-	-	11,212	280	214	17,428
-	-	2,693	55	2,643	6,938

09 Energy Imports

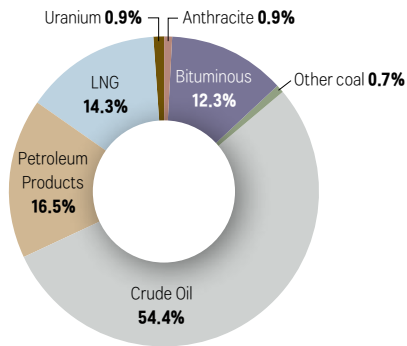
:: Energy Imports



2007 94,978 million USD



2017 109,466 million USD



09 Energy Imports

9-1. Energy Imports

	Total Imports (CIF) (A)	Energy Imports				
		Total (B)	Coal			
			Anthracite	Bituminous	Others	
1981	26,131	7,763	302	484	31	
1982	24,251	7,580	165	601	19	
1983	26,192	6,936	49	588	17	
1984	30,631	7,263	46	663	17	
1985	31,136	7,322	138	890	15	
1986	31,584	4,995	214	798	16	
1987	41,020	5,926	149	828	15	
1988	51,811	5,920	129	1,021	16	
1989	61,465	7,516	75	1,212	19	
1990	69,844	10,908	52	1,217	19	
1991	81,525	12,754	66	1,514	20	
1992	81,775	14,654	42	1,535	39	
1993	83,800	15,088	40	1,643	50	
1994	102,348	15,471	33	1,695	48	
1995	135,119	19,053	35	1,992	54	
1996	150,339	24,243	46	2,251	40	
1997	144,616	27,308	38	2,301	60	
1998	93,282	18,276	36	2,147	46	
1999	119,752	22,745	46	1,866	53	
2000	160,481	37,888	72	2,033	80	
2001	141,098	33,894	118	2,157	72	
2002	152,126	32,290	148	2,254	72	
2003	178,827	38,306	177	2,266	109	
2004	224,463	49,600	233	3,891	314	
2005	261,238	66,697	429	4,803	211	
2006	309,383	85,566	407	4,700	211	
2007	356,846	94,978	447	5,675	323	
2008	435,275	141,475	991	11,156	663	
2009	323,085	91,160	672	8,997	326	
2010	425,212	121,654	1,016	11,425	690	
2011	524,413	172,490	1,774	16,052	651	
2012	519,584	184,800	1,361	14,221	488	
2013	515,586	178,698	1,143	11,624	307	
2014	525,515	174,137	921	10,723	471	
2015	436,499	102,715	813	8,675	474	
2016	406,193	80,942	759	8,168	383	
2017	478,478	109,466	933	13,481	765	

Source : Korea International Trade Association

Unit : Million USD

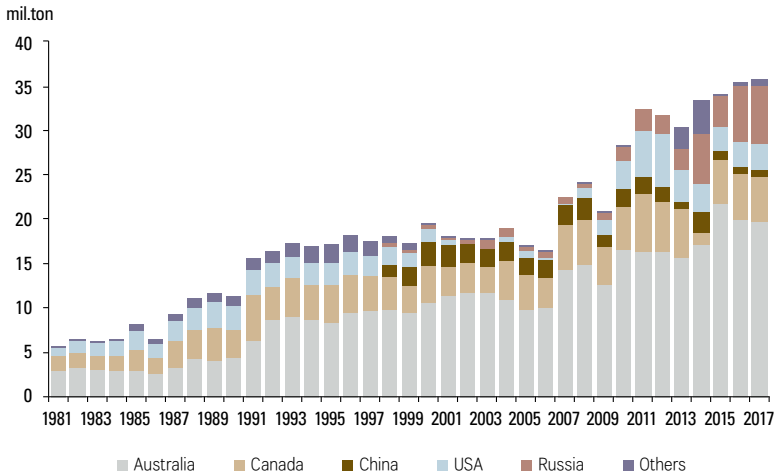
Energy Imports				Energy/Imports B/A(%)	Energy Imports Growth Rate (%)	
Petroleum		LNG	Uranium			
Crude Oil	Petroleum Products					
6,371	551	0	23	29.7	17.3	1981
6,097	684	0	14	31.3	-2.4	1982
5,572	701	0	8	26.5	-8.5	1983
5,771	747	0	19	23.7	4.7	1984
5,572	685	0	22	23.5	0.8	1985
3,346	585	13	24	15.8	-31.8	1986
3,702	949	284	0	14.4	18.6	1987
3,688	743	323	0	11.4	-0.1	1988
4,933	928	347	1	12.2	27.0	1989
6,386	2,774	460	1	15.6	45.1	1990
8,134	2,451	485	84	15.6	16.9	1991
9,548	2,829	562	98	17.9	14.9	1992
9,151	3,288	781	135	18.0	3.0	1993
8,878	3,664	961	191	15.1	2.5	1994
10,809	4,673	1,275	215	14.1	23.2	1995
14,432	5,395	1,878	201	16.1	27.2	1996
17,772	4,606	2,296	236	18.9	12.6	1997
11,241	3,043	1,549	214	19.6	-33.1	1998
14,783	3,802	1,973	222	19.0	24.5	1999
25,216	6,379	3,882	225	23.6	66.6	2000
21,368	5,956	3,990	233	24.0	-10.5	2001
19,200	6,214	4,120	280	21.2	-4.7	2002
23,082	7,325	5,082	265	21.4	18.6	2003
29,917	8,357	6,552	336	22.1	29.5	2004
42,606	9,716	8,646	286	25.5	34.5	2005
55,865	12,119	11,925	339	27.7	28.3	2006
60,324	15,066	12,653	489	26.6	11.0	2007
85,855	22,275	19,806	729	32.5	49.0	2008
50,757	15,811	13,875	722	28.2	-35.6	2009
68,662	22,241	17,006	615	28.6	33.5	2010
100,806	28,541	23,859	807	32.9	41.8	2011
108,298	32,373	27,364	695	35.6	7.1	2012
99,333	34,628	30,645	1,018	34.7	-3.3	2013
94,907	34,983	31,403	731	33.1	-2.6	2014
55,120	17,986	18,779	869	23.5	-41.0	2015
44,295	14,579	12,170	589	19.9	-21.2	2016
59,603	18,077	15,616	991	22.9	35.2	2017

09

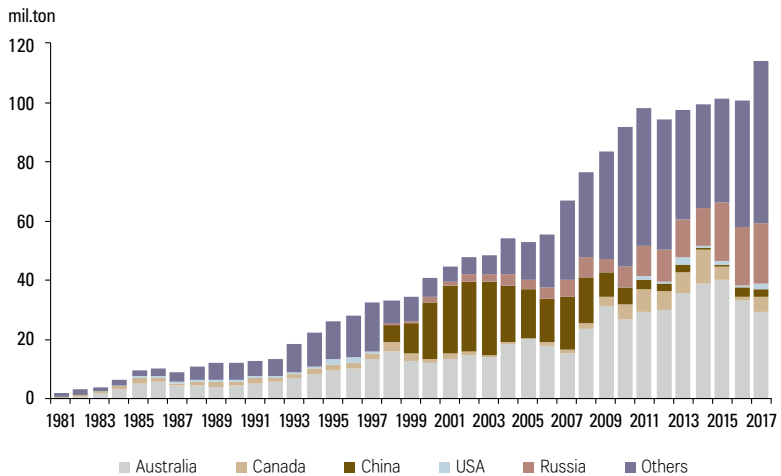
Energy
Imports

09 Energy Imports

Imports of Coking Coal by Country



Imports of Steaming Coal by Country



09 Energy Imports

9-2. Imports of Coking and Steaming Coal by Country

	Coking coal						
	Total	Australia	Canada	China	USA	Russia	Others
1981	5,811	3,038	1,585	-	903	-	285
1982	6,439	3,414	1,616	-	1,267	-	142
1983	6,394	3,102	1,582	-	1,486	-	224
1984	6,321	2,930	1,727	-	1,617	-	47
1985	8,125	3,016	2,348	-	2,089	-	672
1986	6,575	2,704	1,707	-	1,486	-	678
1987	9,248	3,426	2,920	-	2,164	-	738
1988	11,236	4,216	3,384	-	2,479	-	1,157
1989	11,651	4,034	3,765	-	3,000	-	852
1990	11,287	4,543	3,130	-	2,603	-	1,011
1991	15,572	6,391	5,126	-	2,841	-	1,214
1992	16,381	8,758	3,718	-	2,558	-	1,347
1993	17,320	9,121	4,348	-	2,294	-	1,557
1994	16,901	8,735	3,961	-	2,281	-	1,924
1995	17,151	8,451	4,272	-	2,335	-	2,093
1996	18,226	9,520	4,147	-	2,652	-	1,907
1997	17,395	9,709	3,907	-	2,256	-	1,523
1998	17,976	9,829	3,663	1,313	2,164	256	751
1999	17,227	9,437	3,057	2,134	1,586	308	706
2000	19,575	10,641	4,097	2,781	1,419	394	242
2001	17,899	11,396	3,337	2,341	571	187	66
2002	17,714	11,676	3,298	2,360	-	327	52
2003	17,676	11,714	3,026	1,919	-	976	42
2004	18,954	11,059	4,206	2,232	500	956	-
2005	16,975	9,929	3,842	1,858	795	461	89
2006	16,466	9,963	3,505	1,905	304	741	48
2007	22,532	14,362	5,034	2,172	252	712	-
2008	24,083	14,856	5,072	2,341	1,132	633	49
2009	20,660	12,577	4,371	1,313	1,642	726	31
2010	28,160	16,445	4,944	1,936	3,238	1,553	44
2011	32,234	16,281	6,560	1,922	5,213	2,258	-
2012	31,544	16,320	5,669	1,583	5,954	2,018	-
2013	30,194	15,697	5,450	825	3,536	2,378	2,308
2014	33,175	17,052	1,309	2,390	3,291	5,482	3,651
2015	33,933	21,706	4,813	1,061	2,639	3,532	182
2016	35,255	19,889	5,168	725	2,742	6,342	389
2017	35,676	19,614	5,137	618	3,080	6,492	735

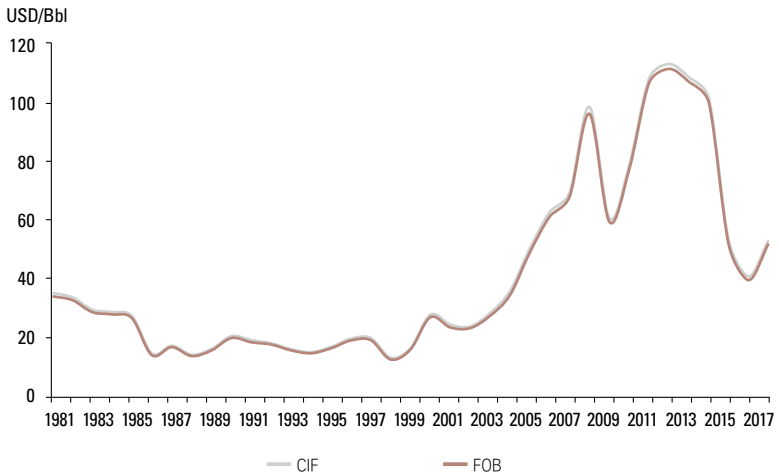
Source: IEA, 'Oil, Gas, Coal and Electricity(2018, 2Q)'

Unit : 1,000 ton

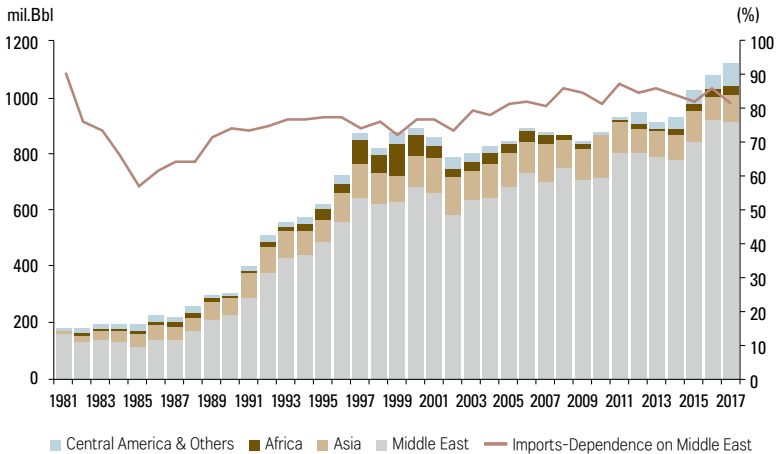
Steaming coal							
Total	Australia	Canada	China	USA	Russia	Others	
1,421	51	37	-	544	-	789	1981
2,600	445	590	-	52	-	1,513	1982
3,757	1,523	440	-	40	-	1,754	1983
5,873	3,067	1,157	-	55	-	1,594	1984
9,006	4,800	1,664	-	634	-	1,908	1985
9,862	5,281	1,453	-	627	-	2,501	1986
8,587	3,916	1,071	-	495	-	3,105	1987
10,677	4,135	1,387	-	718	-	4,437	1988
11,849	3,820	1,608	-	617	-	5,804	1989
11,560	3,870	1,348	-	741	-	5,601	1990
12,333	4,779	1,616	-	703	-	5,235	1991
13,274	5,683	1,171	-	671	-	5,749	1992
17,837	6,502	1,443	-	851	-	9,041	1993
21,798	8,123	1,527	-	823	-	11,325	1994
25,655	9,159	2,157	-	1,658	-	12,681	1995
27,698	9,935	1,859	-	1,518	-	14,386	1996
31,919	12,769	1,992	-	856	-	16,302	1997
32,589	15,724	2,696	6,023	148	393	7,605	1998
33,874	12,233	2,364	10,639	-	531	8,107	1999
40,026	11,597	1,647	18,660	-	2,171	5,950	2000
43,958	12,765	2,114	22,426	71	1,699	4,884	2001
46,926	14,398	1,244	22,931	-	2,566	5,785	2002
47,642	13,619	741	24,611	86	2,058	6,527	2003
53,150	18,072	280	19,065	149	4,087	11,497	2004
52,355	19,850	276	16,253	-	3,030	12,946	2005
54,422	17,637	943	14,307	63	4,058	17,415	2006
65,753	14,799	1,059	17,748	71	5,643	26,433	2007
75,502	23,347	1,450	15,536	44	6,864	28,261	2008
82,324	30,353	3,306	8,353	200	3,994	36,118	2009
90,431	26,512	4,980	5,356	66	7,004	46,513	2010
96,916	28,470	7,944	3,254	854	10,474	45,920	2011
92,725	29,444	6,180	2,363	771	10,944	43,023	2012
96,313	34,754	7,434	2,203	2,524	13,001	36,397	2013
97,857	37,945	11,437	1,040	603	12,679	34,153	2014
99,971	39,446	4,520	641	1,328	19,536	34,500	2015
99,208	32,424	1,376	2,967	1,024	19,107	42,310	2016
112,559	28,728	5,132	2,458	2,011	20,126	54,104	2017

09 Energy Imports

Crude Oil Price



Crude Oil Imports by Region



09 Energy Imports

9-3. Crude Oil Imports by Region and Prices

	Region(1,000 bbl)			
	Total	Middle East	Asia	Africa
1981	182,814	165,858	5,141	1,467
1982	178,369	135,527	21,942	6,415
1983	192,969	141,816	27,367	12,053
1984	199,681	132,467	39,329	11,705
1985	198,313	113,013	47,996	11,912
1986	230,063	142,423	52,128	9,912
1987	216,163	138,659	51,265	15,141
1988	261,079	168,479	50,980	17,775
1989	296,411	211,819	63,585	17,180
1990	308,368	229,017	62,530	9,689
1991	399,303	294,357	82,695	5,551
1992	509,378	380,452	95,033	12,822
1993	560,563	430,839	99,147	12,876
1994	573,714	439,330	91,083	23,225
1995	624,945	486,528	82,050	37,911
1996	721,927	561,098	98,631	37,024
1997	873,415	645,678	122,379	81,119
1998	819,094	622,005	113,494	61,907
1999	874,090	632,067	93,517	109,560
2000	893,943	686,916	112,669	67,749
2001	859,367	661,649	130,033	39,155
2002	790,992	579,865	136,756	35,877
2003	804,809	639,453	100,721	34,156
2004	825,790	645,183	116,287	42,874
2005	843,203	689,356	111,937	34,424
2006	888,794	730,843	110,306	42,814
2007	872,541	704,020	131,273	35,557
2008	864,872	746,458	108,482	9,932
2009	835,085	705,363	116,379	11,608
2010	872,415	713,647	152,354	4,592
2011	927,044	807,908	108,402	2,772
2012	947,292	805,971	88,190	9,233
2013	915,075	786,813	97,047	8,096
2014	927,524	778,923	88,623	25,301
2015	1,026,107	844,637	106,263	26,691
2016	1,078,119	926,201	72,756	30,496
2017	1,118,167	913,446	97,233	28,189

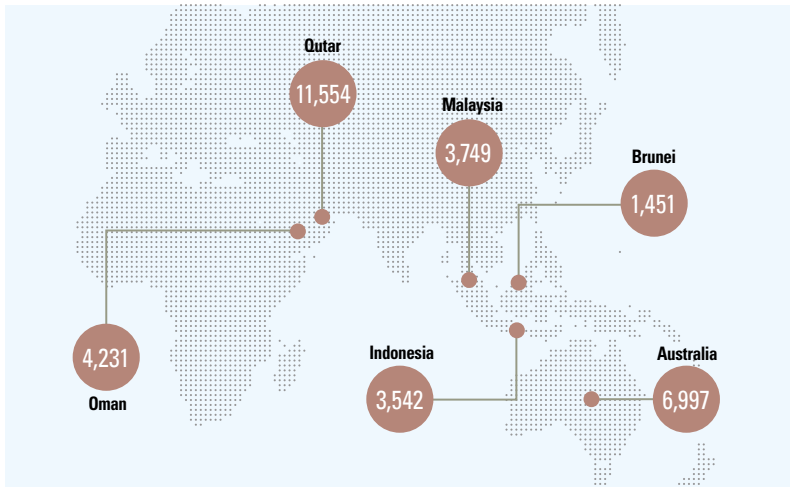
Source: Korea National Oil Corporation

Central America & Others	Imports-Dependence on Middle East (%)	Imports Price(CIF) (US\$/bbl)	Imports Price(FOB) (US\$/bbl)	
10,348	90.72	35.57	34.11	1981
14,486	75.98	34.05	32.82	1982
11,734	73.49	29.89	28.76	1983
16,180	66.34	29.06	27.98	1984
25,392	56.99	27.73	26.67	1985
25,601	61.91	15.11	14.17	1986
11,098	64.15	17.74	16.93	1987
23,845	64.53	14.71	13.89	1988
3,826	71.46	16.63	15.81	1989
7,132	74.27	20.96	19.99	1990
16,701	73.72	19.62	18.55	1991
21,071	74.69	18.54	17.79	1992
17,702	76.86	16.59	15.81	1993
20,075	76.58	15.55	14.84	1994
18,456	77.85	17.32	16.50	1995
25,174	77.72	20.11	19.16	1996
24,240	73.93	20.35	19.28	1997
21,689	75.94	13.71	12.74	1998
38,946	72.31	16.91	16.13	1999
26,610	76.84	28.22	27.04	2000
28,530	76.99	24.86	23.58	2001
38,494	73.31	24.24	23.34	2002
30,479	79.45	28.74	27.48	2003
21,447	78.13	36.18	34.49	2004
7,487	81.75	50.53	48.94	2005
4,831	82.23	62.83	61.08	2006
1,690	80.69	69.37	67.86	2007
-	86.31	98.28	95.82	2008
1,734	84.47	60.75	59.30	2009
1,823	81.80	78.72	77.12	2010
7,962	87.15	108.00	106.33	2011
43,899	85.10	112.79	111.07	2012
23,119	85.98	108.27	106.67	2013
34,678	83.98	101.24	99.59	2014
48,516	82.31	53.29	51.54	2015
48,667	85.91	41.08	39.57	2016
79,300	81.69	53.36	51.91	2017

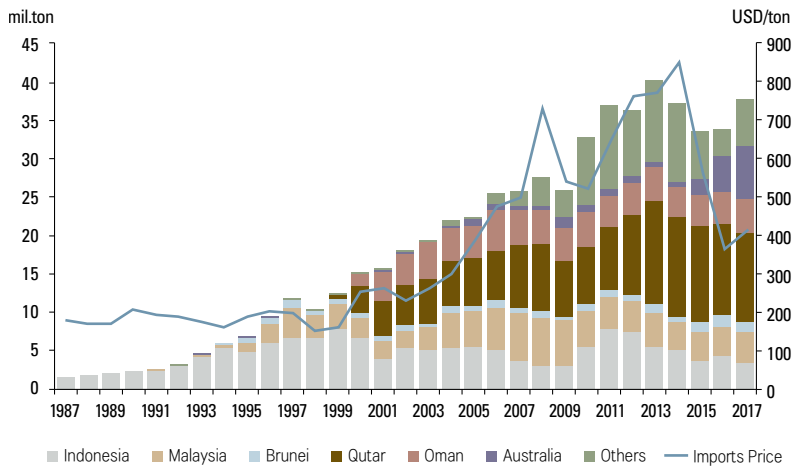
09 Energy Imports

∴ LNG Imports by Region 2017

Unit : 1,000 ton



● LNG Imports & Prices



09 Energy Imports

9-4. LNG Imports by Region and Prices

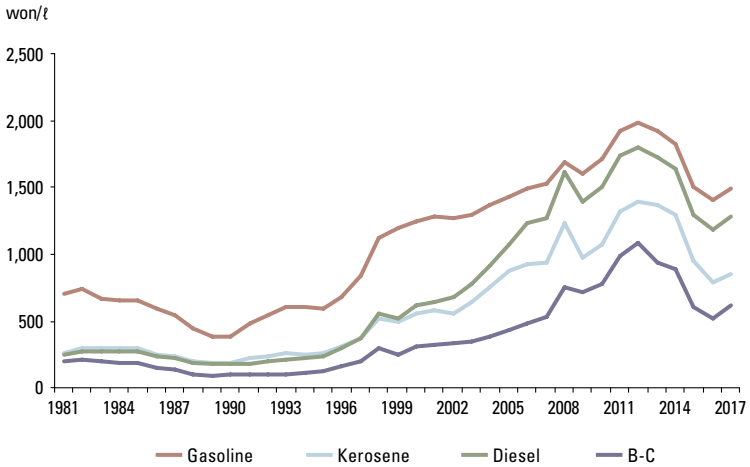
	Import Price	Region(1,000 ton)			
		Total	Indonesia	Malaysia	Brunei
1986	143	117	117	-	-
1987	179	1,682	1,682	-	-
1988	170	1,898	1,898	-	-
1989	172	2,015	2,015	-	-
1990	205	2,237	2,237	-	-
1991	195	2,494	2,436	58	-
1992	188	2,994	2,935	58	-
1993	175	4,459	4,112	290	-
1994	160	5,996	5,433	292	271
1995	189	6,756	4,892	1,040	710
1996	203	9,258	5,975	2,573	654
1997	200	11,471	6,730	3,928	757
1998	152	10,189	6,736	2,851	541
1999	161	12,284	7,943	3,046	698
2000	255	15,239	6,633	2,529	849
2001	260	15,318	4,055	2,175	591
2002	229	17,993	5,256	2,400	769
2003	263	19,308	5,200	2,798	610
2004	301	21,781	5,290	4,638	838
2005	387	22,317	5,502	4,688	594
2006	472	25,256	5,060	5,546	850
2007	495	25,569	3,755	6,161	590
2008	727	27,259	3,053	6,247	738
2009	537	25,822	3,084	5,874	530
2010	522	32,603	5,451	4,745	787
2011	650	36,685	7,894	4,144	756
2012	756	36,184	7,445	4,082	773
2013	769	39,876	5,627	4,314	1,141
2014	846	37,107	5,176	3,673	717
2015	563	33,366	3,776	3,698	1,228
2016	364	33,453	4,362	3,813	1,402
2017	416	37,537	3,542	3,749	1,451

Source: Korea International Trade Association

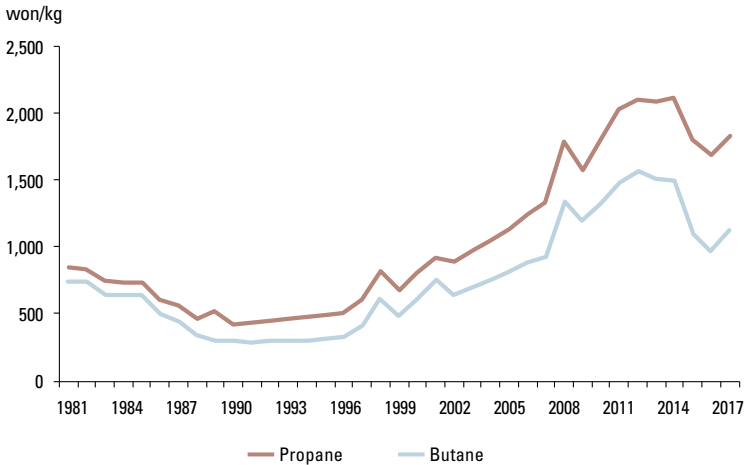
Region(1,000 ton)				
Qatar	Oman	Australia	Others	
-	-	-	-	1986
-	-	-	-	1987
-	-	-	-	1988
-	-	-	-	1989
-	-	-	-	1990
-	-	-	-	1991
-	-	-	-	1992
-	-	57	-	1993
-	-	-	-	1994
-	-	114	-	1995
-	-	56	-	1996
-	-	-	56	1997
-	-	-	61	1998
480	-	-	117	1999
3,251	1,619	54	304	2000
4,655	3,784	57	1	2001
5,123	3,970	176	298	2002
5,694	4,714	123	169	2003
5,818	4,411	285	501	2004
6,211	4,244	748	332	2005
6,458	5,221	701	1,420	2006
8,031	4,792	422	1,817	2007
8,744	4,544	398	3,535	2008
6,973	4,551	1,314	3,496	2009
7,449	4,557	1,030	8,585	2010
8,153	4,195	787	10,755	2011
10,278	4,127	832	8,647	2012
13,354	4,331	620	10,488	2013
12,853	3,726	836	10,126	2014
12,442	3,990	1,952	6,279	2015
11,880	4,081	4,695	3,221	2016
11,554	4,231	6,997	6,013	2017

10 Prices

:: Petroleum Products



:: LPG



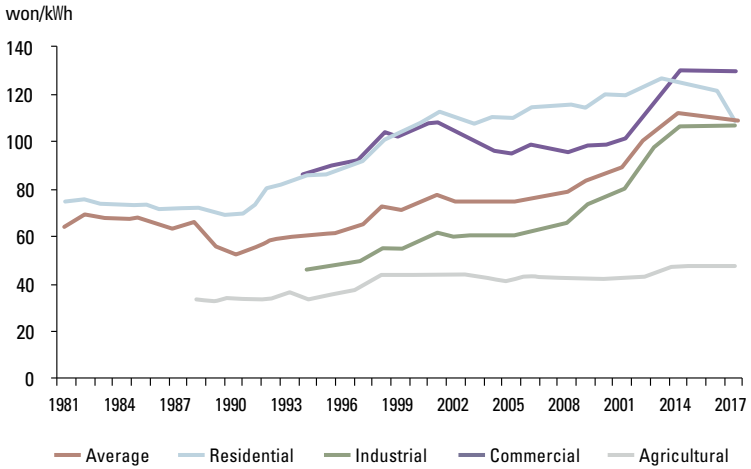
10-1. Prices of Major Petroleum Products

	Gasoline	Kerosene	Diesel	B-C	Propane	Butane
	(won/ℓ)			(won/kg)		
1981	697.7	257.7	245.9	193.1	848.0	740.2
1982	740.0	292.0	278.0	208.1	836.3	736.2
1983	667.9	292.3	278.3	194.9	747.7	647.9
1984	660.0	291.0	277.0	186.6	740.0	640.0
1985	660.0	291.0	277.0	185.8	740.0	640.0
1986	587.5	249.2	238.3	147.9	605.9	502.3
1987	547.0	234.7	225.1	136.7	556.4	443.4
1988	445.6	194.7	187.3	105.0	458.6	336.6
1989	379.8	186.0	179.0	89.1	514.0	293.0
1990	383.5	191.3	179.0	95.3	415.0	293.0
1991	482.2	226.9	179.0	94.7	430.4	286.3
1992	546.0	231.1	195.1	97.5	449.4	293.9
1993	610.0	254.0	210.0	102.5	460.0	304.0
1994	611.0	252.3	219.5	106.5	475.0	304.0
1995	598.0	261.6	231.5	129.5	489.7	314.9
1996	675.9	314.3	294.1	156.7	510.0	330.0
1997	838.7	373.5	376.2	195.9	599.0	417.8
1998	1,122.6	524.2	553.5	292.1	815.0	620.0
1999	1,191.9	491.2	521.8	242.3	678.3	483.3
2000	1,248.4	559.6	612.8	304.1	809.3	614.3
2001	1,280.0	580.2	644.6	320.5	919.0	755.1
2002	1,269.1	554.4	677.6	334.4	887.3	639.3
2003	1,294.8	638.8	772.0	349.6	980.0	698.5
2004	1,365.3	752.2	907.9	377.5	1,050.2	750.6
2005	1,432.3	871.0	1,079.7	432.5	1,131.5	807.1
2006	1,492.4	931.9	1,228.2	475.9	1,242.7	889.3
2007	1,525.9	932.2	1,272.7	526.6	1,330.6	931.3
2008	1,692.1	1,238.7	1,614.4	757.1	1,789.9	1,343.0
2009	1,600.7	976.2	1,397.5	718.7	1,577.2	1,191.0
2010	1,710.4	1,076.0	1,502.8	772.3	1,812.7	1,320.3
2011	1,929.3	1,321.2	1,745.7	987.2	2,034.0	1,480.4
2012	1,985.8	1,394.1	1,806.3	1,088.7	2,105.9	1,572.5
2013	1,924.5	1,366.7	1,729.6	935.4	2,085.3	1,515.6
2014	1,827.3	1,296.7	1,636.7	885.5	2,112.9	1,492.3
2015	1,510.4	947.4	1,299.6	604.2	1,801.3	1,097.7
2016	1,402.6	784.5	1,182.5	523.8	1,689.1	966.2
2017	1,491.3	853.1	1,282.5	619.8	1,833.8	1,127.3

Note : Butane is for residential and commercial

10 Prices

:: Average Revenues per kWh Sold



10-2. Average Revenues per kWh Sold

Unit: won/kWh

	Average	Residential	Industrial	Commercial	Agricultural
1981	64.31	74.61	-	-	-
1982	69.87	75.19	-	-	-
1983	67.71	73.26	-	-	-
1984	67.42	73.33	-	-	-
1985	67.92	73.42	-	-	-
1986	65.51	71.33	-	-	-
1987	63.48	71.75	-	-	-
1988	65.49	71.94	-	-	33.48
1989	55.43	69.13	-	-	32.70
1990	52.94	68.66	-	-	34.06
1991	54.23	73.03	-	-	33.80
1992	58.09	81.22	-	-	33.56
1993	58.90	82.29	-	-	35.82
1994	60.22	85.95	46.14	86.92	34.59
1995	61.28	86.47	47.14	89.00	36.17
1996	62.99	88.95	48.37	90.32	37.11
1997	65.26	92.05	49.86	93.19	38.96
1998	72.08	100.62	55.01	104.16	44.31
1999	71.59	103.07	54.78	102.45	44.04
2000	74.65	107.30	58.30	106.04	43.04
2001	77.06	111.71	61.56	107.99	43.51
2002	75.21	110.31	60.08	104.42	43.16
2003	74.68	107.96	60.30	100.59	43.45
2004	74.58	110.41	60.23	96.85	41.95
2005	74.46	110.82	60.25	95.24	41.67
2006	76.43	114.33	61.92	97.91	42.96
2007	77.85	114.31	64.56	97.68	42.45
2008	78.76	114.97	66.24	95.30	42.38
2009	83.59	114.45	73.69	98.50	42.13
2010	86.12	119.85	76.63	98.93	42.54
2011	89.32	119.99	81.23	101.69	42.72
2012	99.10	123.69	92.83	112.50	42.90
2013	106.33	127.02	100.70	121.98	45.51
2014	111.28	125.14	106.83	129.75	47.31
2015	111.57	123.69	107.41	130.46	47.31
2016	111.23	121.52	107.11	130.41	47.41
2017	109.53	108.50	107.41	130.42	47.57

10 Prices

:: City Gas per m³



10-3. City Gas per m³Unit: won/m³, won/MJ

	Average	Residential	Industrial	Commercial
1987	378.40	351.60	332.80	332.80
1988	271.00	326.30	292.70	292.70
1989	234.40	287.90	227.00	232.10
1990	220.20	284.85	206.80	214.46
1991	217.53	284.85	199.11	211.34
1992	232.71	290.16	193.99	220.85
1993	232.70	295.47	193.99	230.36
1994	235.97	296.16	196.70	230.90
1995	245.73	300.56	196.70	237.25
1996	245.73	301.90	196.70	242.39
1997	334.70	325.74	206.63	266.23
1998	353.20	432.39	283.47	377.93
1999	348.00	404.11	248.21	356.72
2000	418.36	463.96	294.45	416.57
2001	464.99	497.99	369.43	495.54
2002	415.58	422.51	323.03	439.52
2003	417.15	451.86	357.11	468.87
2004	493.47	473.95	379.94	490.96
2005	487.44	485.65	396.20	502.66
2006	570.35	568.77	485.57	585.78
2007	631.37	598.97	509.44	615.98
2008	657.00	643.26	549.71	662.11
2009	707.72	690.28	629.12	744.49
2010	704.94	716.55	661.83	785.14
2011	815.78	783.68	724.16	837.55
2012	856.08	847.76	792.62	891.44
2013	20.63	20.83	19.48	21.68
2014	21.75	22.18	20.71	22.91
2015	17.24	18.56	16.39	19.03
2016	14.25	15.14	12.56	15.65
2017	13.82	15.72	13.30	16.12

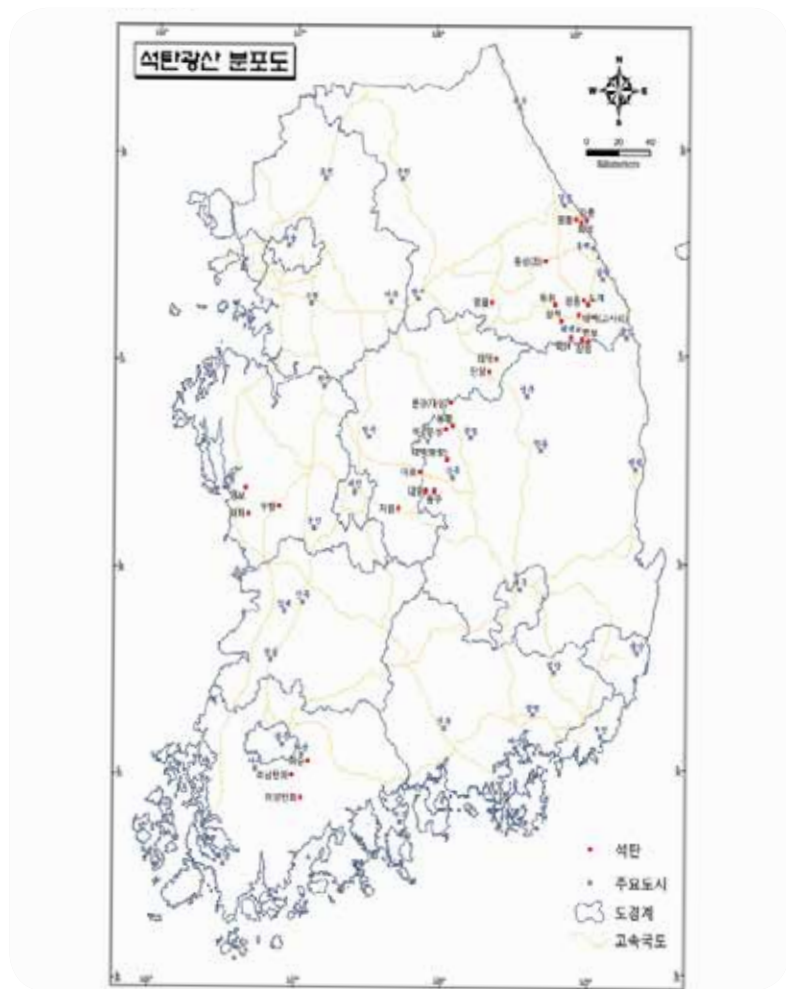
Note 1) The Price is based on MJ since July 2012.

2) The Price is retail prices in Seoul.

Source : Korea City Gas Association

11 Reserves & Distribution Map

:: 11-1. Major Coal Fields



Source : Korea Resources Corporation

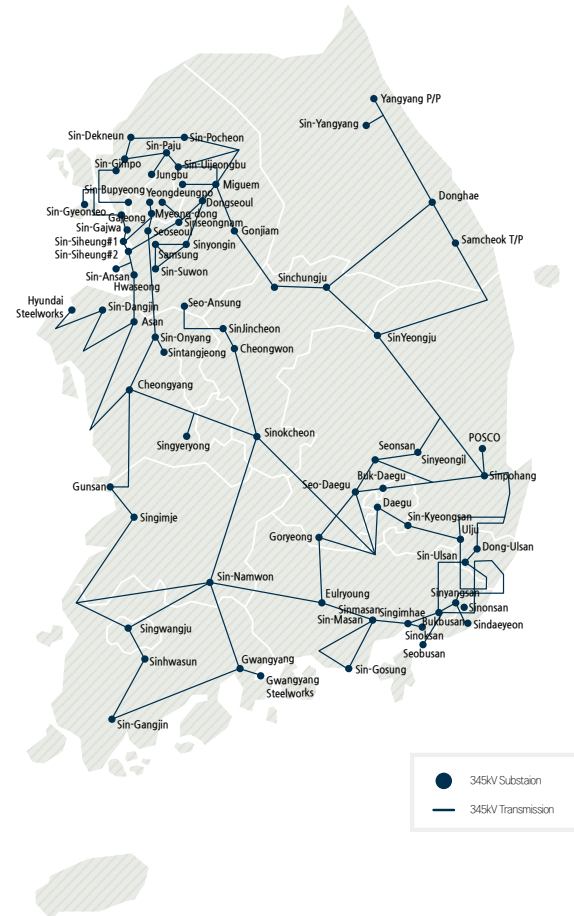
11-2. Electric Power Transmission Map



Note : Based on May 2015
 Source : Korea Power Exchange

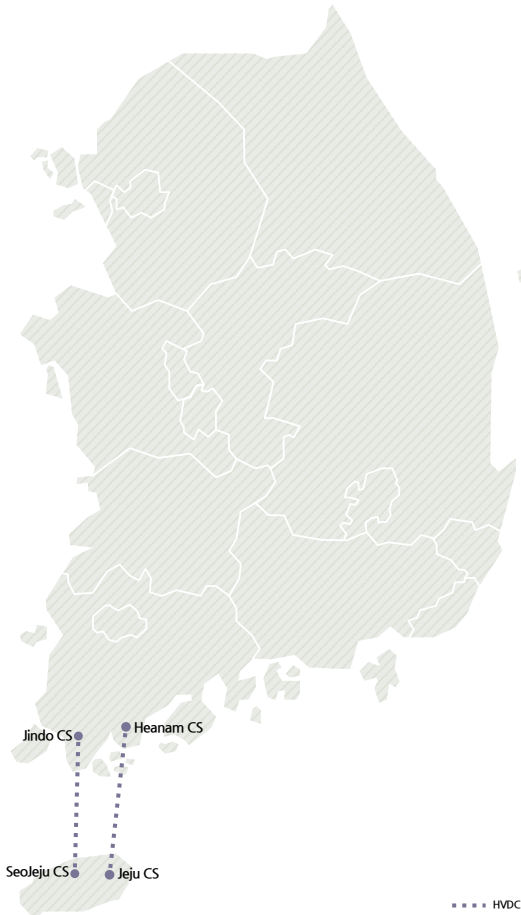
11 Reserves & Distribution Map

:: 11-3. Electric Power Transmission Map



Note : Based on May 2015
 Source : Korea Power Exchange

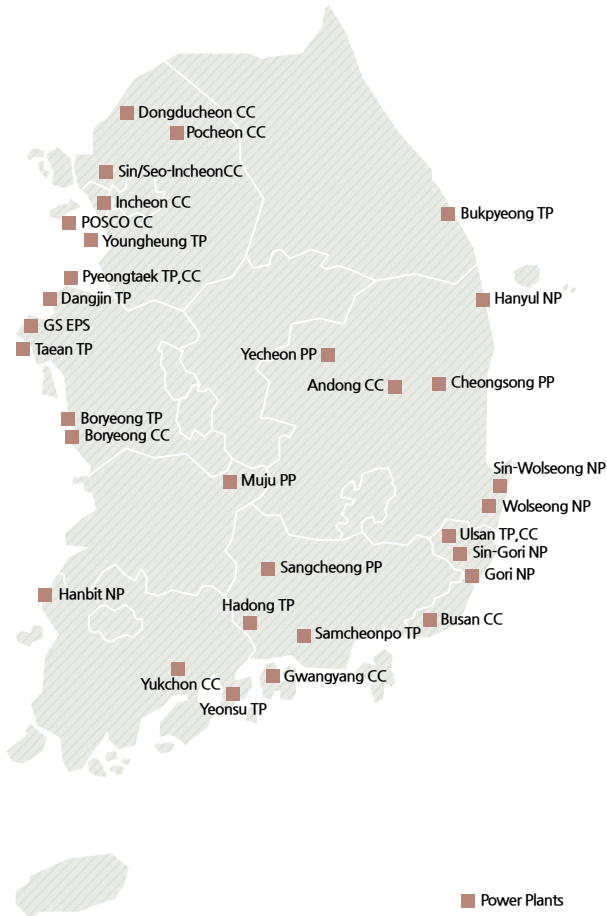
11-3. Electric Power Transmission Map



Note : Based on May 2015
Source : Korea Power Exchange

11 Reserves & Distribution Map

:: 11-3. Electric Power Transmission Map

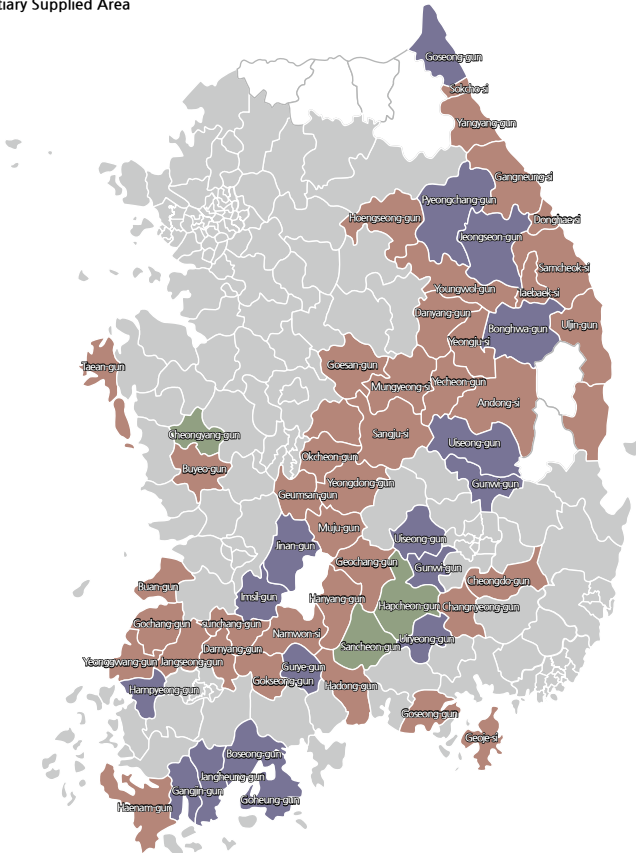


Note : Based on May 2015
Source : Korea Power Exchange

11-4. Areas of Gas Supply Expansion

Expanded Areas of City Gas Supply

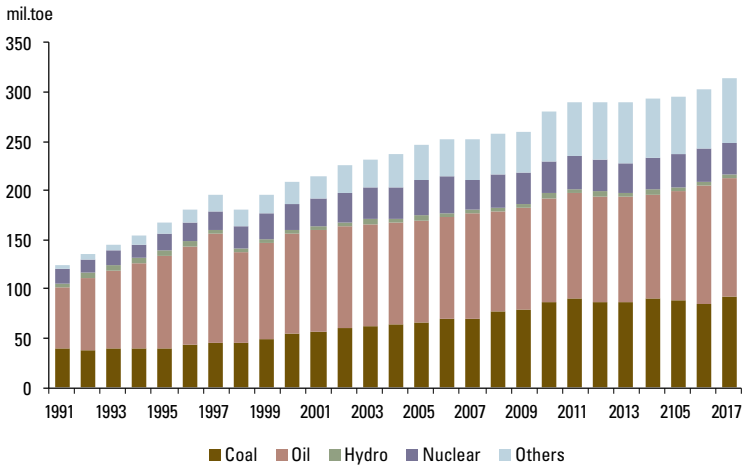
- Existing Supplied Area
- Primary Supplied Area
- Secondary Supplied Area
- Tertiary Supplied Area



Source : Korea Gas Corporation

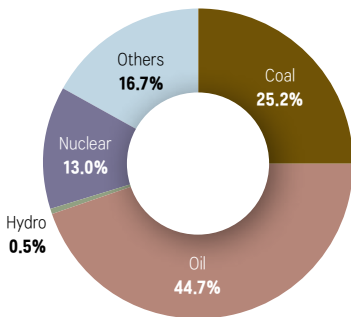
12 Energy Consumption in the Korean Peninsula

:: Primary Energy Supply of Korean Peninsula

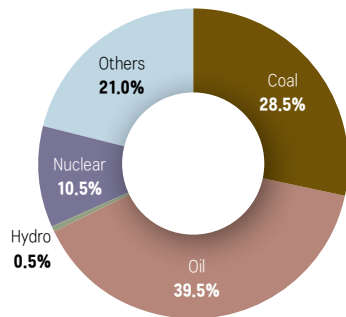


Republic of Korea

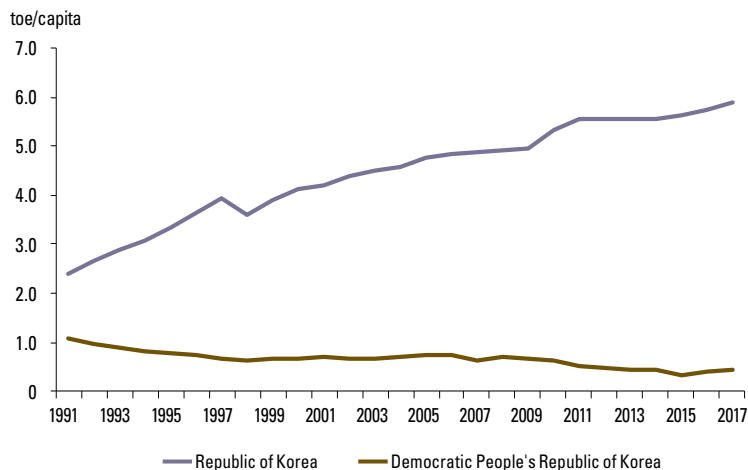
:: **2007** 236,678 thou. toe



:: **2017** 302,065 thou. toe

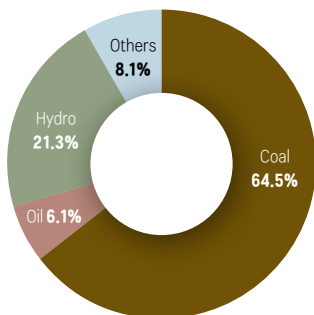


TPES/Population

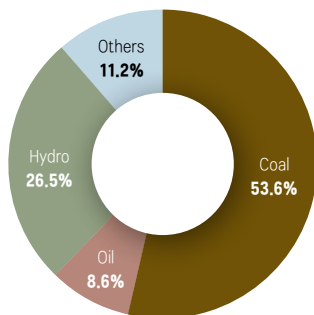


Democratic People's Republic of Korea

2007 15,594 thou. toe



2017 11,240 thou. toe



12 Energy Consumption in the Korean Peninsula

12-1. Primary Energy Supply

	Republic of Korea					
	Total	Coal	Oil	Hydro	Nuclear	Others
1980	43,911	13,199	26,830	496	869	2,517
1985	56,296	22,022	27,142	915	4,186	2,031
1990	92,931	24,124	50,175	1,590	13,222	3,820
1991	103,294	24,206	59,627	1,263	14,078	4,121
1992	115,962	23,570	71,740	1,216	14,133	5,303
1993	126,836	25,840	78,495	1,502	14,535	6,465
1994	137,108	26,532	86,364	1,025	14,663	8,524
1995	149,841	27,495	93,956	1,369	16,757	10,263
1996	165,136	32,100	99,923	1,300	18,481	13,332
1997	181,058	34,927	109,372	1,351	19,271	16,136
1998	166,265	36,051	90,904	1,525	22,422	15,364
1999	181,651	38,157	97,556	1,517	25,766	18,656
2000	193,240	42,925	100,618	1,402	27,241	21,053
2001	198,865	45,724	100,827	1,038	28,033	23,243
2002	209,290	49,131	103,034	1,327	29,776	26,022
2003	215,772	51,124	103,073	1,722	32,418	27,434
2004	220,756	53,198	101,085	1,465	32,679	32,328
2005	229,301	54,795	102,197	1,297	36,695	34,316
2006	234,062	56,652	102,555	1,305	37,187	36,363
2007	236,678	59,653	105,718	1,084	30,731	39,491
2008	240,994	66,100	100,373	1,196	32,456	40,870
2009	243,500	68,595	102,534	1,213	31,771	39,387
2010	264,053	77,142	104,499	1,391	31,948	49,073
2011	276,997	83,687	105,459	1,684	33,265	52,902
2012	278,324	80,636	106,133	1,615	31,719	58,221
2013	279,801	81,544	105,693	1,771	29,283	61,510
2014	282,481	84,399	104,701	1,650	33,002	58,729
2015	286,936	85,401	109,094	1,223	34,765	56,452
2016	293,778	81,499	117,605	1,400	34,181	59,093
2017	302,065	86,177	119,400	1,490	31,615	63,383

Note: Others includes LNG and renewables.

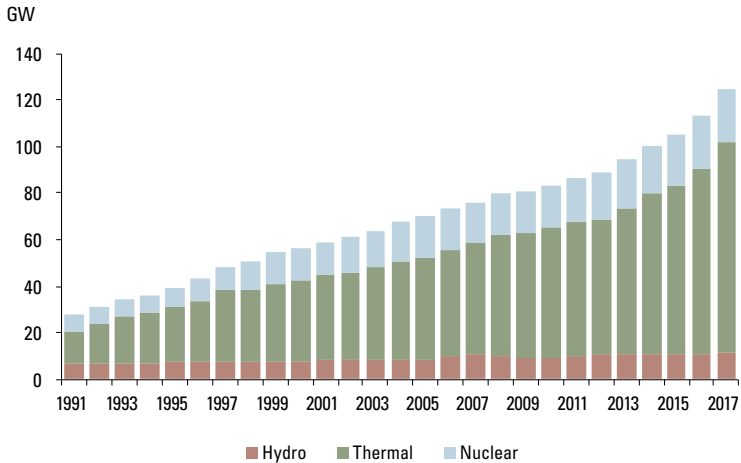
Source : Statistics Korea

Unit: 1,000 toe

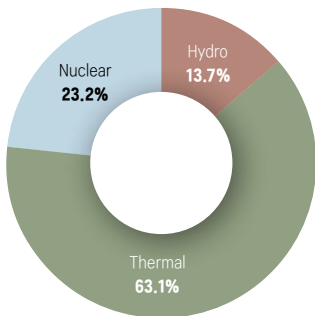
Democratic People's Republic of Korea						toe per capita		
Total	Coal	Oil	Hydro	Nuclear	Others	R.O.K	D.P.R.K	
21,013	15,135	2,100	2,658	-	1,120	1.15	1.19	1980
24,940	18,750	1,960	3,110	-	1,120	1.38	1.31	1985
23,963	16,575	2,520	3,748	-	1,120	2.17	1.19	1990
21,920	15,500	1,890	3,750	-	780	2.39	1.07	1991
20,450	14,600	1,520	3,550	-	780	2.65	0.98	1992
19,013	13,550	1,360	3,304	-	799	2.87	0.90	1993
17,870	12,700	910	3,475	-	785	3.07	0.84	1994
17,280	11,850	1,100	3,535	-	795	3.32	0.80	1995
15,836	10,500	1,436	3,109	-	791	3.63	0.73	1996
14,746	10,300	1,006	2,656	-	784	3.94	0.66	1997
14,030	9,300	1,400	2,554	-	776	3.59	0.63	1998
14,955	10,500	881	2,794	-	780	3.90	0.66	1999
15,687	11,250	1,117	2,540	-	780	4.11	0.69	2000
16,230	11,550	1,250	2,650	-	780	4.20	0.71	2001
15,638	10,950	1,253	2,655	-	780	4.39	0.68	2002
16,079	11,150	1,219	2,930	-	780	4.51	0.69	2003
16,535	11,400	1,230	3,125	-	780	4.59	0.71	2004
17,127	12,030	1,034	3,283	-	780	4.76	0.73	2005
17,955	12,340	790	3,155	-	1,670	4.83	0.76	2006
15,594	10,060	944	3,320	-	1,270	4.86	0.65	2007
16,980	11,236	967	3,517	-	1,260	4.91	0.71	2008
15,914	10,800	738	3,116	-	1,260	4.94	0.66	2009
15,662	10,347	704	3,352	-	1,260	5.33	0.65	2010
12,598	7,275	763	3,300	-	1,260	5.55	0.52	2011
12,284	6,970	684	3,370	-	1,260	5.54	0.50	2012
10,630	5,190	710	3,470	-	1,260	5.55	0.43	2013
11,050	5,810	730	3,250	-	1,260	5.57	0.45	2014
8,700	3,930	1,010	2,500	-	1,260	5.62	0.35	2015
9,910	4,280	1,170	3,200	-	1,260	5.73	0.40	2016
11,240	6,030	970	2,980	-	1,260	5.87	0.45	2017

12 Energy Consumption in the Korean Peninsula

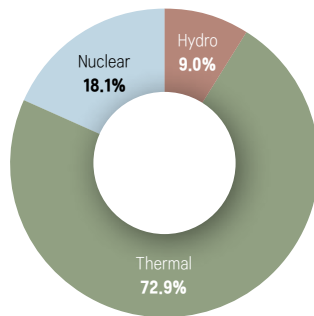
:: Electric Power Generating Facility



:: **2007** 76,220 GWh



:: **2017** 124,629 GWh



12-2. Generating Facilities

Unit : MW

	Republic of Korea				Democratic People's Republic of Korea			
	Total	Hydro	Thermal	Nuclear	Total	Hydro	Thermal	Nuclear
1980	9,391	1,157	7,647	587	5,010	2,910	2,100	-
1985	16,137	2,223	11,048	2,866	5,960	3,360	2,600	-
1990	21,021	2,340	11,065	7,616	7,142	4,292	2,850	-
1991	21,111	2,445	11,050	7,616	7,142	4,292	2,850	-
1992	24,120	2,498	14,007	7,616	7,142	4,292	2,850	-
1993	27,654	2,504	17,534	7,616	7,142	4,292	2,850	-
1994	28,750	2,493	18,641	7,616	7,237	4,337	2,900	-
1995	32,184	3,093	20,475	8,616	7,237	4,337	2,900	-
1996	35,715	3,094	23,005	9,616	7,387	4,437	2,950	-
1997	41,042	3,115	27,612	10,316	7,387	4,437	2,950	-
1998	43,406	3,131	28,259	12,016	7,387	4,437	2,950	-
1999	46,978	3,148	30,114	13,716	7,387	4,437	2,950	-
2000	48,451	3,149	31,586	13,716	7,552	4,592	2,960	-
2001	50,859	3,876	33,267	13,716	7,752	4,792	2,960	-
2002	53,801	3,876	34,209	15,716	7,772	4,812	2,960	-
2003	56,053	3,877	36,460	15,716	7,772	4,812	2,960	-
2004	59,961	3,879	39,366	16,716	7,772	4,812	2,960	-
2005	62,258	3,883	40,660	17,716	7,822	4,812	3,010	-
2006	65,514	5,485	42,314	17,716	7,822	4,812	3,010	-
2007	68,268	5,492	45,060	17,716	7,952	4,942	3,010	-
2008	72,491	5,505	49,270	17,716	7,497	4,487	3,010	-
2009	73,470	5,515	50,240	17,716	6,928	3,918	3,010	-
2010	76,078	5,525	52,838	17,716	6,968	3,958	3,010	-
2011	79,342	6,418	54,208	18,716	6,920	3,960	2,960	-
2012	81,806	6,446	54,644	20,716	7,220	4,260	2,960	-
2013	86,969	6,454	59,799	20,716	7,243	4,283	2,960	-
2014	93,216	6,467	66,033	20,716	7,253	4,293	2,960	-
2015	97,649	6,471	69,462	21,716	7,427	4,467	2,960	-
2016	105,866	6,485	76,265	23,116	7,661	4,701	2,960	-
2017	116,908	6,489	87,889	22,529	7,721	4,761	2,960	-

Note : Thermal includes alternative & group energy

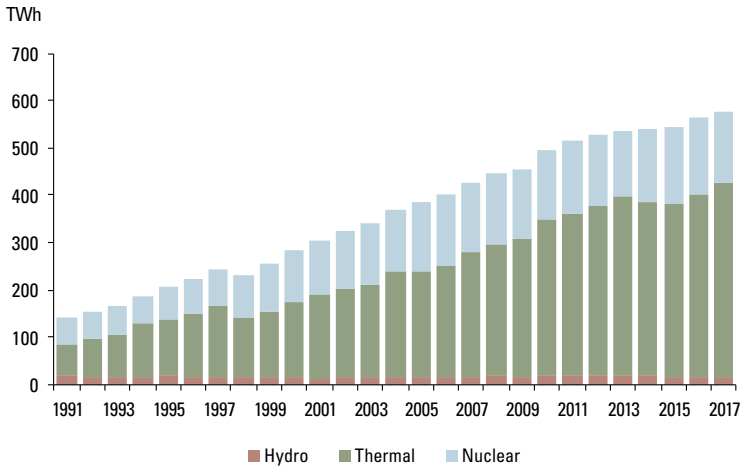
Source : Korea Electric Power Corporation, Statistics Korea(KOSIS)

12

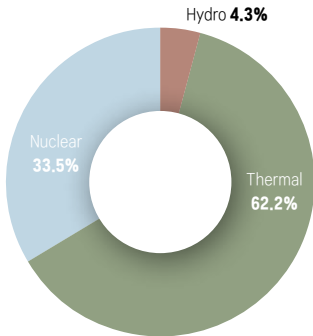
Energy Consumption
in the Korean Peninsula

12 Energy Consumption in the Korean Peninsula

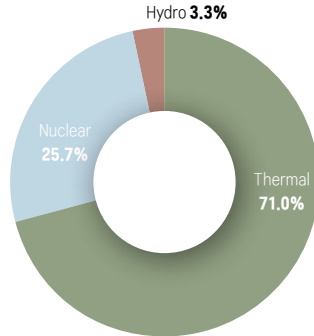
:: Electric Power Generation by Facility



:: **2007** 426,725 GWh



:: **2017** 577,030 GWh



12-3. Electric Power Generation by Facility

Unit: GWh

	Republic of Korea				Democratic People's Republic of Korea			
	Total	Hydro	Thermal	Nuclear	Total	Hydro	Thermal	Nuclear
1980	37,239	1,984	31,778	3,577	21,200	10,600	10,600	-
1985	58,007	3,659	37,603	16,745	25,100	12,300	12,800	-
1990	107,670	6,361	48,422	52,887	27,700	15,600	12,100	-
1991	118,619	5,051	57,257	56,311	26,300	15,000	11,300	-
1992	130,963	4,863	69,570	56,530	24,700	14,200	10,500	-
1993	144,437	6,006	80,293	58,138	22,100	13,300	8,800	-
1994	164,993	4,098	102,244	58,651	23,100	13,800	9,300	-
1995	184,661	5,478	112,154	67,029	23,000	14,200	8,800	-
1996	205,494	5,201	126,369	73,924	21,300	12,500	8,800	-
1997	224,445	5,404	141,955	77,086	19,300	10,700	8,600	-
1998	215,300	6,099	119,512	89,689	17,000	10,200	6,800	-
1999	239,325	6,066	130,195	103,064	18,600	10,300	8,300	-
2000	266,400	5,610	151,826	108,964	19,400	10,200	9,200	-
2001	285,224	4,151	168,940	112,133	20,200	10,600	9,600	-
2002	306,474	5,311	182,060	119,103	19,000	10,600	8,400	-
2003	322,452	6,887	185,893	129,672	19,600	11,700	7,900	-
2004	352,148	5,861	215,572	130,715	20,600	12,500	8,100	-
2005	364,639	5,189	212,671	146,779	21,500	13,100	8,400	-
2006	381,181	5,219	227,213	148,749	22,500	12,600	9,900	-
2007	403,125	5,042	255,145	142,937	23,600	13,300	10,300	-
2008	422,355	5,563	265,834	150,958	25,500	14,100	11,400	-
2009	433,604	5,641	280,192	147,771	23,500	12,500	11,000	-
2010	474,660	6,472	319,592	148,596	23,700	13,500	10,300	-
2011	496,893	7,831	334,340	154,723	21,100	13,200	7,900	-
2012	509,574	7,652	351,595	150,327	21,500	13,500	8,000	-
2013	517,148	8,394	369,970	138,784	22,100	13,900	8,200	-
2014	521,971	7,820	357,745	156,407	21,600	13,000	8,600	-
2015	528,091	5,796	357,533	164,762	19,000	10,000	9,000	-
2016	540,441	6,634	371,812	161,995	23,900	12,800	11,100	-
2017	553,530	6,995	398,108	148,427	23,500	11,900	11,600	-

Note : Thermal includes alternative & group energy.

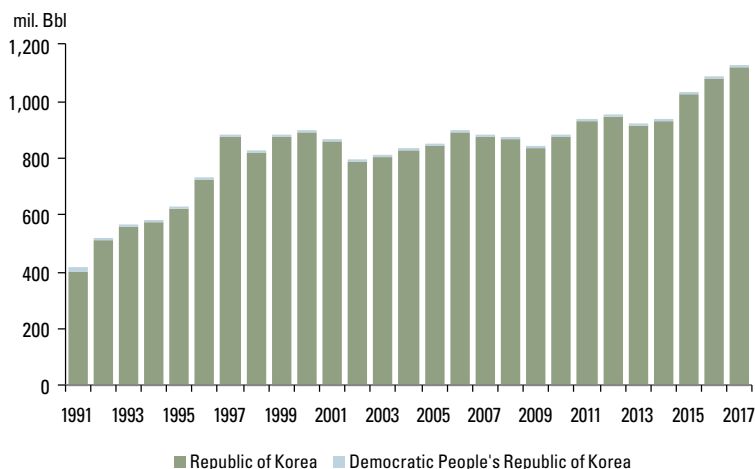
Source: Korea Electric Power Corporation, Statistics Korea(KOSIS)

12

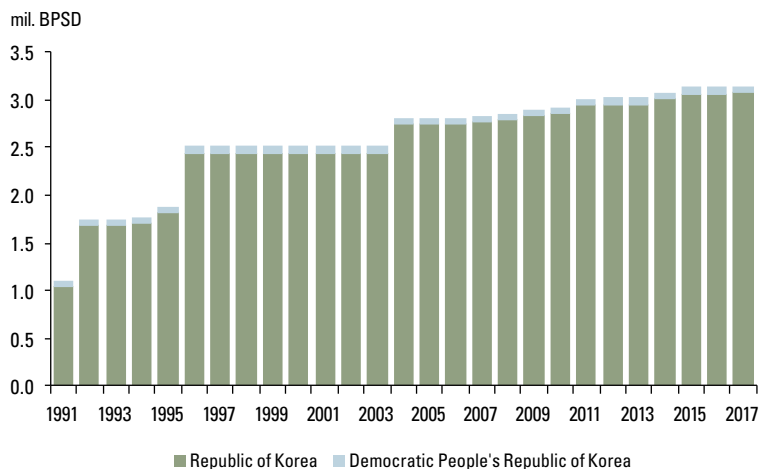
Energy Consumption
in the Korean Peninsula

12 Energy Consumption in the Korean Peninsula

:: Crude Oil Imports



:: Refinery Capacity



12-4. Refinery Capacity

	Republic of Korea			Democratic People's Republic of Korea		
	Crude oil Imports		Refining Capacity	Crude oil Imports		Refining Capacity
	(1,000 Bbl)	(1,000 kt)	(1,000BPSD)	(1,000 Bbl)	(1,000 kt)	(1,000 BPSD)
1980	182,861	29,072	640	15,393	2,447	70
1985	198,313	31,529	790	14,369	2,284	70
1990	308,368	49,026	840	18,472	2,937	70
1991	399,303	63,483	1,035	13,854	2,203	70
1992	509,378	80,983	1,675	11,142	1,771	70
1993	560,563	89,121	1,675	9,969	1,585	70
1994	573,714	91,211	1,700	6,670	1,060	70
1995	624,945	99,356	1,818	8,063	1,282	70
1996	721,927	114,775	2,438	6,861	1,091	70
1997	873,415	138,859	2,438	3,709	590	70
1998	819,094	130,223	2,438	3,694	587	70
1999	874,090	138,966	2,438	2,325	370	70
2000	893,943	142,123	2,438	2,851	453	70
2001	859,367	136,626	2,438	4,244	675	70
2002	790,992	125,755	2,438	4,376	696	70
2003	804,809	127,952	2,438	4,207	669	70
2004	825,790	131,287	2,735	3,900	620	70
2005	843,203	134,056	2,735	3,834	610	70
2006	888,794	141,304	2,735	3,841	611	70
2007	872,541	138,720	2,765	3,834	610	70
2008	864,872	137,501	2,785	3,878	617	70
2009	835,085	132,765	2,835	3,812	606	70
2010	872,415	138,700	2,845	3,870	615	70
2011	927,044	147,385	2,934	3,856	613	70
2012	947,292	150,604	2,949	3,834	610	70
2013	915,075	145,482	2,949	4,237	674	70
2014	927,524	147,461	3,009	3,885	618	70
2015	1,026,107	163,135	3,059	3,885	618	70
2016	1,078,119	171,404	3,059	3,885	618	70
2017	1,118,167	177,771	3,064	3,885	618	70

Source : Korea National Oil Corporation, Statistics Korea(KOSIS)

13 World Energy Statistics

13-1. Energy Indicators(2016)

	Population (mil.person)	GDP	GDP(ppp)	Energy Prod.	Net Imports	TPES	Elec. Cons.	CO ₂ Emis
		(bil. USD(2010))						
Australia	24.52	1,522.35	1,105.43	390.49	-259.69	129.75	243.00	392.40
Austria	8.74	420.04	376.91	12.37	21.35	33.32	72.17	62.90
Belgium	11.30	515.10	465.32	15.34	48.85	56.52	87.85	91.60
Canada	36.27	1,828.00	1,542.12	475.71	-196.23	280.10	538.30	540.80
Chile	18.28	267.90	380.51	12.54	26.14	37.80	76.43	85.30
Czech Rep.	10.57	231.34	323.76	27.38	13.69	41.55	68.26	101.40
Denmark	5.73	347.52	257.96	15.04	2.51	16.54	33.70	33.50
Estonia	1.32	23.82	35.17	4.68	0.50	5.52	9.42	16.40
Finland	5.50	252.69	212.07	17.81	15.84	34.02	85.00	45.50
France	66.86	2,810.53	2,487.63	131.56	118.25	244.26	477.91	292.90
Germany	82.35	3,781.70	3,553.42	115.92	204.87	310.12	572.84	731.60
Greece	10.78	244.48	256.15	6.71	18.50	22.67	59.28	63.10
Hungary	9.81	147.18	242.56	11.47	14.32	25.62	41.00	43.90
Iceland	0.34	16.44	15.13	4.59	1.06	5.29	18.06	2.10
Ireland	4.68	332.36	295.67	4.20	10.33	13.93	27.57	36.90
Israel	8.54	288.99	271.97	8.27	15.09	22.94	58.89	63.70
Italy	60.63	2,080.65	2,033.80	33.77	121.26	150.98	308.04	325.70
Japan	126.96	6,052.67	4,759.75	35.42	399.68	425.61	1,012.32	1,147.10
Korea	51.25	1,305.95	1,796.11	51.43	246.51	282.41	544.13	589.20
DPR of Korea	25.37	27.14	101.86	21.29	-12.47	8.82	14.25	25.40
Latvia	1.96	28.88	44.80	2.45	2.22	4.25	6.98	6.80
Luxembourg	0.58	63.21	51.65	0.16	4.04	3.69	8.34	8.50
Mexico	122.27	1,259.04	2,074.81	180.46	9.45	185.16	280.62	445.50
Netherlands	17.03	890.14	788.41	46.14	41.78	74.54	114.65	157.10
New Zealand	4.72	176.13	163.45	16.45	5.83	21.01	40.00	30.50
Norway	5.24	472.77	312.83	208.00	-179.86	27.24	124.05	35.50
Poland	38.43	572.72	957.70	66.67	30.94	99.31	159.14	293.10
Portugal	10.33	231.75	281.06	6.00	17.76	22.12	50.31	47.40
Slovak Rep.	5.43	104.68	157.71	6.45	9.88	16.50	28.38	30.20
Slovenia	2.07	50.51	59.90	3.59	3.35	6.79	14.45	13.60
Spain	46.45	1,464.51	1,523.98	34.13	94.50	119.85	255.73	238.60
Sweden	9.93	560.39	448.38	34.89	16.88	49.23	136.65	38.00
Switzerland	8.37	642.09	457.61	11.60	14.07	23.90	62.63	37.90
Turkey	78.25	1,122.48	1,836.38	36.10	105.67	136.72	243.68	338.80
United Kingdom	65.65	2,757.62	2,543.67	120.07	67.83	178.89	330.43	371.10
United States	323.39	16,920.33	16,920.33	1,915.69	265.04	2,166.62	4,147.50	4,833.10

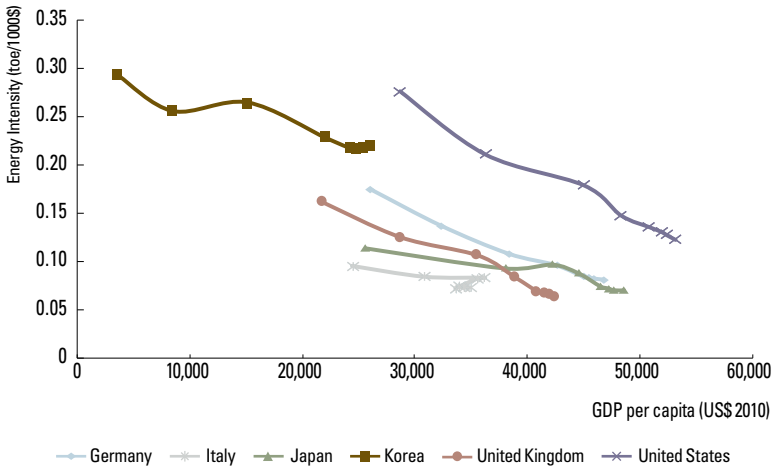
Note : CO₂ emissions from fuel combustion only. Emissions are calculated using the IEA's energy balances and the Revised 1966 IPCC Guidelines.

Source : IEA, Key World Energy Statistics 2018

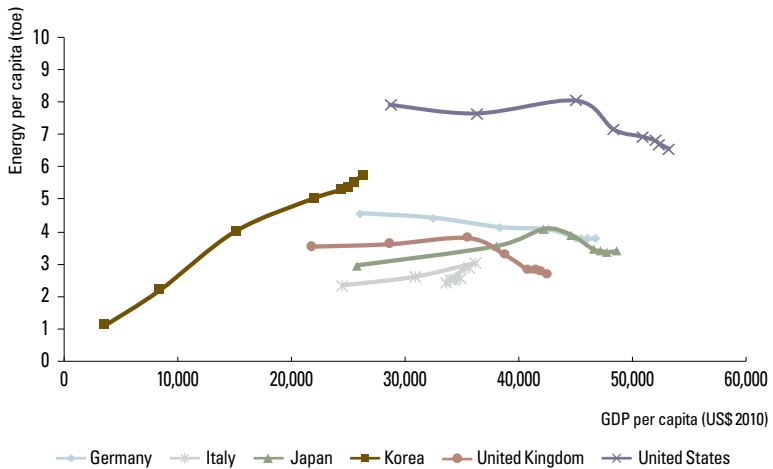
TPES/Pop.	TPES/GDP	TPES/GDP	Elec. Cons./Pop.	CO ₂ /TPES	CO ₂ /Pop.	CO ₂ /GDP	CO ₂ /GDP(ppp)	
(toe/capita)	(toe/1,000USD)	(toe/1,000USD)	(kWh/capita)	(tCO ₂ /toe)	(tCO ₂ /capita)	(kgCO ₂ /USD)	(kgCO ₂ /USD)	
5.29	0.09	0.12	9,911	3.02	16.00	0.26	0.35	Australia
3.81	0.08	0.09	8,258	1.89	7.20	0.15	0.17	Austria
5.00	0.11	0.12	7,778	1.62	8.11	0.18	0.20	Belgium
7.72	0.15	0.18	14,844	1.93	14.91	0.30	0.35	Canada
2.07	0.14	0.10	4,182	2.26	4.67	0.32	0.22	Chile
3.93	0.18	0.13	6,461	2.44	9.59	0.44	0.31	Czech Rep.
2.89	0.05	0.06	5,882	2.03	5.85	0.10	0.13	Denmark
4.19	0.23	0.16	7,155	2.97	12.42	0.69	0.47	Estonia
6.19	0.14	0.16	15,468	1.34	8.27	0.18	0.21	Finland
3.65	0.09	0.10	7,148	1.20	4.38	0.10	0.12	France
3.77	0.08	0.09	6,956	2.36	8.88	0.19	0.21	Germany
2.10	0.09	0.09	5,501	2.78	5.85	0.26	0.25	Greece
2.61	0.17	0.11	4,178	1.71	4.48	0.30	0.18	Hungary
15.78	0.32	0.35	53,913	0.40	6.18	0.13	0.14	Iceland
2.97	0.04	0.05	5,887	2.65	7.88	0.11	0.12	Ireland
2.69	0.08	0.08	6,893	2.78	7.46	0.22	0.23	Israel
2.49	0.07	0.07	5,081	2.16	5.37	0.16	0.16	Italy
3.35	0.07	0.09	7,974	2.70	9.04	0.19	0.24	Japan
5.51	0.22	0.16	10,618	2.09	11.50	0.45	0.33	Korea
0.35	0.33	0.09	562	2.88	1.000	0.94	0.25	DPR of Korea
2.17	0.15	0.10	3,564	1.60	3.47	0.24	0.15	Latvia
6.32	0.06	0.07	14,274	2.30	14.66	0.13	0.16	Luxembourg
1.51	0.15	0.09	2,295	2.41	3.64	0.35	0.21	Mexico
4.38	0.08	0.10	6,734	2.11	9.22	0.18	0.20	Netherlands
4.45	0.12	0.13	8,474	1.45	6.46	0.17	0.19	New Zealand
5.20	0.06	0.09	23,692	1.30	6.77	0.08	0.11	Norway
2.58	0.17	0.10	4,141	2.95	7.63	0.51	0.31	Poland
2.14	0.10	0.08	4,873	2.14	4.59	0.20	0.17	Portugal
3.04	0.16	0.11	5,226	1.83	5.56	0.29	0.19	Slovak Rep.
3.29	0.13	0.11	6,997	2.00	6.57	0.27	0.23	Slovenia
2.58	0.08	0.08	5,505	1.99	5.14	0.16	0.16	Spain
4.96	0.09	0.11	13,756	0.77	3.83	0.07	0.08	Sweden
2.86	0.04	0.05	7,481	1.59	4.53	0.06	0.08	Switzerland
1.75	0.12	0.07	3,114	2.48	4.33	0.30	0.18	Turkey
2.73	0.07	0.07	5,033	2.07	5.65	0.13	0.15	United Kingdom
6.70	0.13	0.13	12,825	2.23	14.95	0.29	0.29	United States

13 World Energy Statistics

Energy Intensity by Country



Energy Consumption per capita by Country



13-2. Energy Indicators of Major Countries

		1980	1990	2000	2010	2012	2013	2014	2015	2016	2017
Germany											
Population	millions	78.30	79.36	81.46	80.28	80.65	80.98	81.69	82.35	82.68	82.68
GDP	bil. 2010 US\$	2,040.54	2,568.63	3,123.91	3,417.10	3,577.02	3,646.04	3,709.60	3,781.70	3,865.76	3,865.76
GDP/Pop.	2010 US\$	26,060.5	32,366.8	38,349.0	42,564.8	44,352.4	45,024.0	45,410.7	45,922.3	46,755.7	46,755.7
TPES	Mtoe	357.19	351.23	336.60	326.36	317.98	306.06	308.17	310.12	313.54	313.54
TPES/Pop.	toe/capita	4.56	4.43	4.13	4.07	3.94	3.78	3.77	3.77	3.79	3.79
TPES/GDP	toe/thou. US\$	0.18	0.14	0.11	0.10	0.09	0.08	0.08	0.08	0.08	0.08
Italy											
Population	millions	56.43	56.72	56.94	59.83	60.34	60.65	60.79	60.73	60.63	60.54
GDP	bil. 2010 US\$	1,379.82	1,749.18	2,060.21	2,125.06	2,077.06	2,041.17	2,043.49	2,059.49	2,080.65	2,111.90
GDP/Pop.	2010 US\$	24,451.9	30,838.9	36,182.1	35,518.3	34,422.6	33,654.9	33,615.6	33,912.2	34,317.2	34,884.4
TPES	Mtoe	130.84	146.56	171.52	173.72	161.32	155.37	146.77	152.60	150.98	153.50
TPES/Pop.	toe/capita	2.32	2.58	3.01	2.90	2.67	2.56	2.41	2.51	2.49	2.54
TPES/GDP	toe/thou. US\$	0.10	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07
Japan											
Population	millions	117.06	123.61	126.83	128.04	127.55	127.33	127.12	126.98	126.76	126.73
GDP	bil. 2010 US\$	2,894.23	4,553.11	5,093.20	5,498.72	5,778.64	5,894.24	5,914.02	5,986.14	6,045.91	6,156.33
GDP/Pop.	2010 US\$	24,724.3	36,834.5	40,157.7	42,945.3	45,304.9	46,291.1	46,523.1	47,142.4	47,695.7	48,578.3
TPES	Mtoe	344.52	438.70	518.01	498.61	451.38	454.61	439.23	429.79	423.76	429.12
TPES/Pop.	toe/capita	2.94	3.55	4.08	3.89	3.54	3.57	3.46	3.46	3.34	3.39
TPES/GDP	toe/thou. US\$	0.12	0.10	0.10	0.09	0.08	0.08	0.07	0.07	0.07	0.07
Korea											
Population	millions	38.12	42.87	47.01	49.41	50.00	50.22	50.42	50.62	50.85	51.45
GDP	bil. 2010 US\$	141.05	362.89	710.04	1,094.50	1,160.81	1,194.43	1,234.34	1,266.58	1,302.40	1,345.95
GDP/Pop.	2010 US\$	3,700.2	8,464.9	15,104.0	22,151.4	23,216.2	23,784.0	24,481.2	25,021.3	25,612.6	26,160.3
TPES	Mtoe	41.26	92.91	188.16	250.02	263.47	263.83	268.43	272.69	284.32	294.79
TPES/Pop.	toe/capita	1.08	2.17	4.00	5.06	5.27	5.25	5.32	5.39	5.59	5.73
TPES/GDP	toe/thou. US\$	0.29	0.26	0.27	0.23	0.23	0.22	0.22	0.22	0.22	0.22
United Kingdom											
Population	millions	56.33	57.24	58.89	62.76	63.71	64.11	64.60	65.11	65.57	66.05
GDP	bil. 2010 US\$	1,208.50	1,613.57	2,051.58	2,403.58	2,498.73	2,546.48	2,624.67	2,682.26	2,730.71	2,806.90
GDP/Pop.	2010 US\$	21,453.9	28,189.6	34,837.5	38,298.0	39,220.4	39,720.5	40,629.6	41,195.8	41,645.7	42,496.6
TPES	Mtoe	198.43	205.92	222.95	202.77	193.96	190.99	179.89	180.75	177.68	176.18
TPES/Pop.	toe/capita	3.52	3.60	3.79	3.23	3.05	2.98	2.79	2.78	2.71	2.67
TPES/GDP	toe/thou. US\$	0.16	0.13	0.11	0.08	0.08	0.08	0.07	0.07	0.07	0.06
United States											
Population	millions	227.73	250.18	282.40	309.81	314.49	316.80	319.23	321.70	324.24	325.70
GDP	bil. 2010 US\$	6,529.17	9,064.41	12,713.06	14,964.37	15,542.16	15,802.86	16,177.46	16,597.45	16,865.60	17,304.98
GDP/Pop.	2010 US\$	28,670.7	36,231.6	45,017.9	48,301.8	49,420.2	49,882.8	50,676.5	51,592.9	52,015.8	53,131.7
TPES	Mtoe	1,804.68	1,915.05	2,273.34	2,215.22	2,156.52	2,179.31	2,216.81	2,188.28	2,158.99	2,136.79
TPES/Pop.	toe/capita	7.92	7.65	8.05	7.15	6.86	6.88	6.94	6.80	6.66	6.56
TPES/GDP	toe/thou. US\$	0.28	0.21	0.18	0.15	0.14	0.14	0.14	0.13	0.13	0.12

Source : World Energy Balance, IEA, 2018

Appendices

1. Energy Conversion Factors/Oil Equivalent

Energy by Source		Unit	Gross Calorific Values(kcal)						
			1980	1981	1987	1990	2007	2012	2017
Petroleum	Crude Oil	kg	10,000	10,000	10,000	10,000	10,750	10,730	10,750
	Gasoline	ℓ	8,300	8,300	8,300	8,300	8,000	7,780	7,810
	Kerosene	ℓ	8,700	8,700	8,700	8,700	8,800	8,790	8,770
							8,950		
	Diesel	ℓ	9,200	9,200	9,200	9,200	9,050	9,010	9,030
	Bunker-A	ℓ	9,500	9,400	9,400	9,400	9,300	9,290	9,310
	Bunker-B	ℓ	9,200	9,700	9,700	9,700	9,650	9,670	9,670
	Bunker-C	ℓ	9,900	9,900	9,900	9,900	9,900	9,950	9,960
	Propane	kg	12,000	12,000	12,000	12,000	12,050	12,050	12,040
	Butane	kg	11,800	11,800	11,800	11,800	11,850	11,850	11,820
	Naphtha	ℓ	8,000	8,000	8,000	8,000	8,050	7,710	7,710
	Solvent	ℓ	-	-	-	(8,200)	7,950	7,950	7,830
	Jet-Oil(JA-1)	ℓ	-	8,700	8,700	8,700	8,750	8,730	8,720
	Jet-Oil(JA-4)	ℓ	-	8,500	8,500	8,500			
	Jet-Oil(AVI-G)	ℓ	-	8,700	8,700	8,700			
Asphalt	kg	-	-	-	(10,000)	9,900	9,910	9,890	
Lubricants	ℓ	-	-	-	(9,400)	9,250	9,500	9,550	
Pet. Coke	kg	-	-	-	(10,800)	8,100	8,000	8,360	
Gas	LNG	kg	-	9,500	12,980	13,000	13,000	13,040	13,060
	City Gas(LNG)	Nm ³	7,000	7,000	7,000	10,500	10,550	10,430	10,290
	City Gas(LPG)	Nm ³	-	-	-	15,000	15,000	15,000	15,190
Coal	Domestic Anthracite	kg	4,600	4,600	4,500	4,500	4,650	4,500	4,730
	Import Anthracite(Steam)	kg	-	-	-	6,000	6,550	5,020	5,060
	Import Anthracite(Coking)	kg	-	-	-	-		5,900	6,020
	Bituminous(Steam)	kg	-	-	-	-	6,200	5,020	5,920
	Bituminous(Coking)	kg	6,600	6,600	6,600	6,600	7,000	7,000	6,970
	Sub-bituminous Coal	kg	-	-	-	-	5,350	5,420	5,110
	Cokes	kg	6,500	6,500	6,500	6,500	7,050	6,960	6,930
Electricity	Electricity(Generation)	kWh	2,500	2,500	2,500	2,500	2,150	2,110	2,130
	Electricity(Consumption)	kWh	-	-	-	-	-	2,300	2,290

Note : Electricity conversion factor for final consumption : 1kWh=860kcal

2. Unit Conversion Factors

Energy

Units	TJ	Gcal	Mtoe	MBtu	GWh
TJ	1	238.8	2.388×10^{-5}	947.8	0.2778
Gcal	4.1868×10^{-3}	1	10^{-7}	3.968	1.163×10^{-3}
Mtoe	4.1868×10^{-4}	107	1	3.968×10^{-7}	1.163
MBtu	1.0551×10^{-3}	0.252	2.52×10^{-8}	1	2.931×10^{-4}
GWh	3.6	860	8.6×10^{-5}	3412	1

Mass

Units	kg	tonne	Long ton(lt)	Short ton(st)	pound(lb)
kg	1	0.001	9.84×10^{-4}	1.102×10^{-3}	2.2046
tonne	1000	1	0.984	1.1023	2204.6
Long ton(lt)	1016	1.016	1	1.12	2240
Short ton(st)	907.2	0.9072	0.893	1	2000
pound(lb)	0.454	4.54×10^{-4}	4.46×10^{-4}	5.0×10^{-4}	1

Volume

Units	m ³	liter	ft ³	gal(U.S)	gal(U.K)	bbl
m ³	1	10 ³	35.3146	264.1721	219.969	6.2892
liter	10 ⁻³	1	0.0353	0.2641	0.2199	6.2892×10^{-3}
ft ³	2.8316×10^{-2}	28.3168	1	7.4805	6.2288	0.178
gal(U.S)	3.7854×10^{-3}	3.7854	0.1336	1	0.8326	0.0238
gal(U.K)	0.004561	4.5461	0.1605	1.2009	1	0.0285
bbl	0.1589	158.988	5.6146	42	34.9726	1