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Energy Info. Korea



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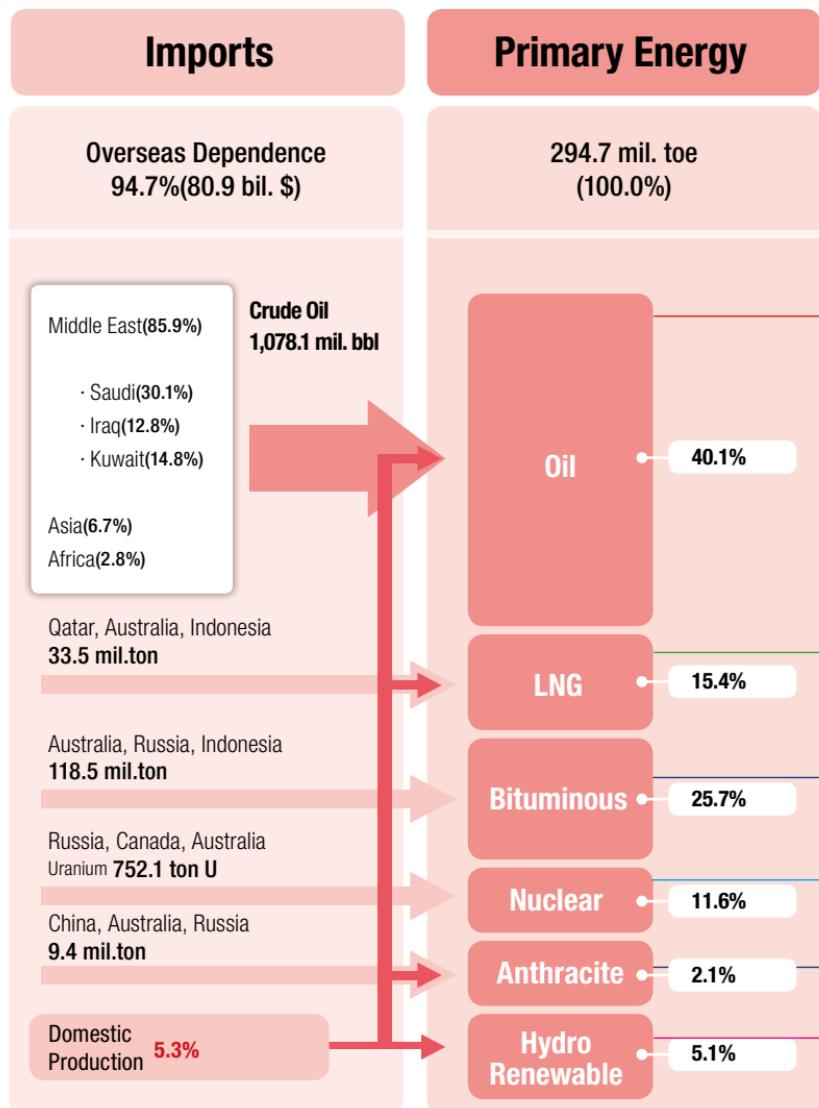


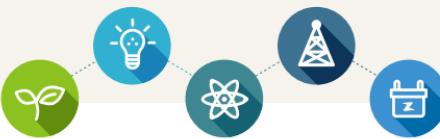
For the users



- 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 2007-2011, from 2012 figures are based on each revised calorific value.
- 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 follows
 - - Not reported
 - p Preliminary
 - e Estimate

2016 Energy Balance Flow





Transformation

69.0 mil. toe
(23.4%)

Refining

3.1 mil. b/d

City Gas

17.4 mil. ton

Heat

1,709.5 thou.toe

Electricity

5,404.4 bil. Kwh

Nuclear	30.0%
Bituminous	38.5%
LNG	22.4%
Oil	2.6%
Anthracite	1.1%
Hydro	1.2%
Renewable	4.2%

Final Energy

225.7 mil. toe
(76.6%)

Industrial
61.4%

Naphtha etc
Industrial resource
23.4%

Residential &
Commercial
17.0%

Transportation
18.9%

Public
2.8%

Electricity

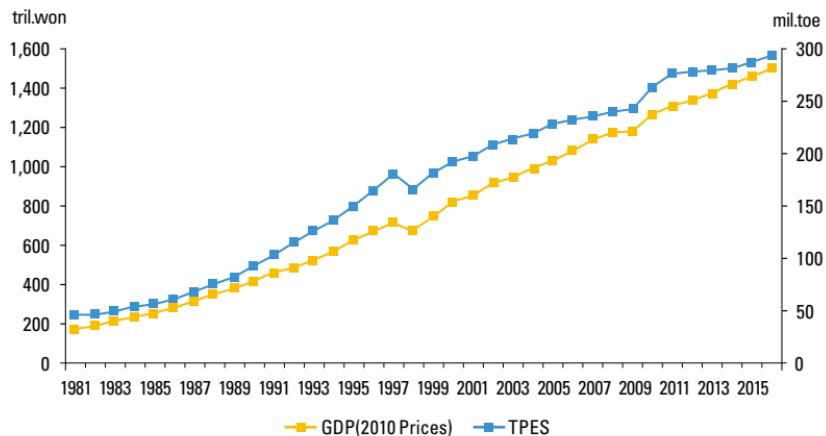
Industrial 54.3%

Residential &
Commercial 39.0%

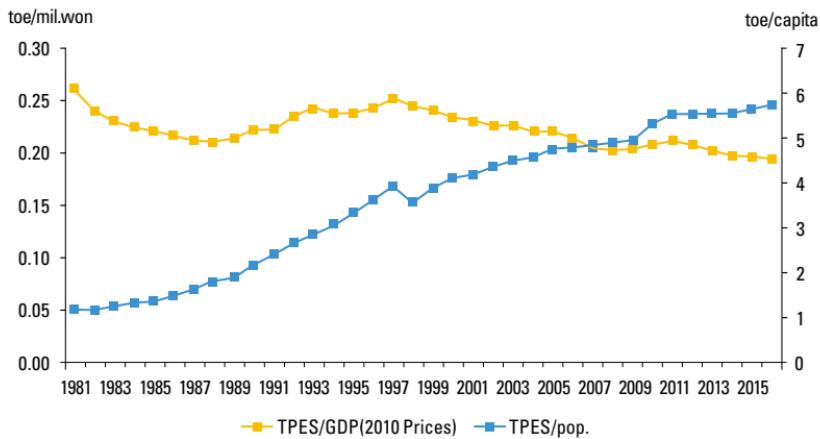
Public 6.2%

Transportation 0.5%

Trends in TPES and GDP

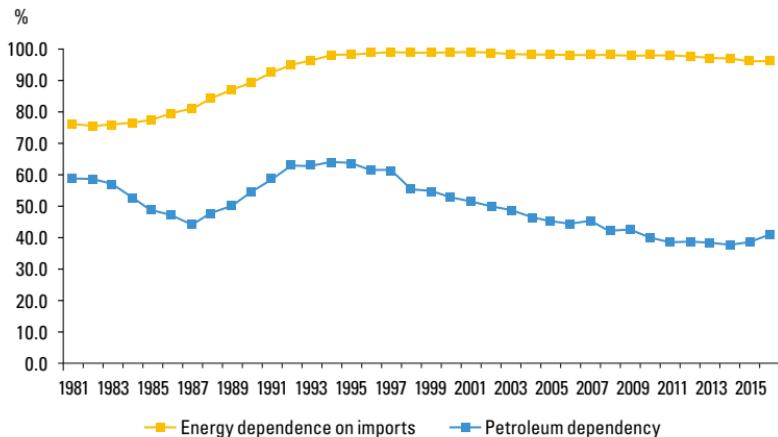


TPES per Capita and GDP

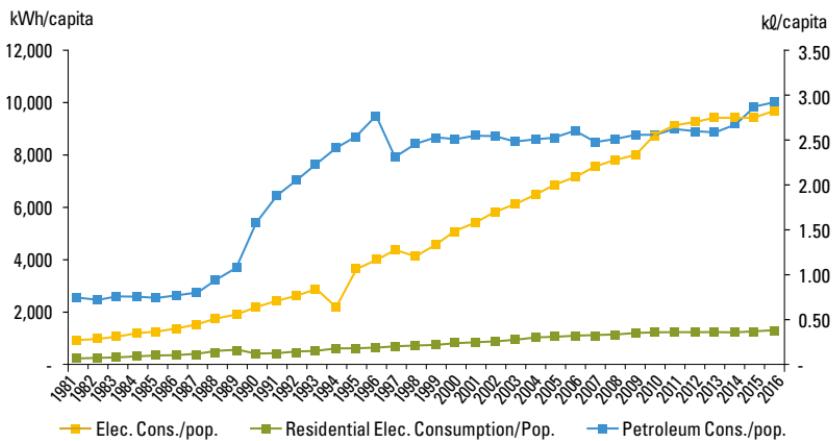




Energy Overseas Dependence and Petroleum Dependence



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) ¹		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	131.3	4.0
1982	39,326	189,219	8.3	45.6	-0.2	38.7	-0.6	131.2	-0.1
1983	39,910	214,276	13.2	49.4	8.3	41.3	6.8	139.1	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	168.3	3.9
1988	42,031	356,944	11.9	75.4	11.0	61.0	10.6	191.9	14.0
1989	42,449	382,036	7.0	81.7	8.4	65.9	7.9	203.2	5.9
1990	42,869	419,518	9.8	93.2	14.1	75.1	14.0	231.7	14.1
1991	43,296	462,955	10.4	103.6	11.2	83.8	11.6	255.7	10.4
1992	43,748	491,545	6.2	116.0	12.0	94.6	12.9	275.8	7.8
1993	44,195	525,199	6.8	126.9	9.4	104.0	10.0	302.8	9.8
1994	44,642	573,550	9.2	137.2	8.2	107.9	3.7	327.3	8.1
1995	45,093	628,442	9.6	150.4	9.6	122.0	13.0	357.1	9.1
1996	45,525	676,169	7.6	165.2	9.8	132.0	8.3	381.5	6.8
1997	45,954	716,213	5.9	180.6	9.3	144.4	9.4	402.1	5.4
1998	46,287	677,028	-5.5	165.9	-8.1	132.1	-8.5	343.5	-14.6
1999	46,617	753,590	11.3	181.4	9.3	143.1	8.3	378.0	10.0
2000	47,008	820,844	8.9	192.9	6.4	149.9	4.8	431.7	14.2
2001	47,370	857,990	4.5	198.4	2.9	153.0	2.1	445.7	3.2
2002	47,645	921,759	7.4	208.6	5.2	160.5	4.9	435.7	-2.2
2003	47,892	948,796	2.9	215.1	3.1	164.0	2.2	437.6	0.4
2004	48,083	995,286	4.9	220.2	2.4	166.0	1.2	459.6	5.0
2005	48,185	1,034,338	3.9	228.6	3.8	170.9	2.9	457.5	-0.5
2006	48,438	1,087,876	5.2	233.4	2.1	173.6	1.6	464.6	1.5
2007	48,684	1,147,311	5.5	236.5	1.3	181.5	4.5	477.3	2.7
2008	49,055	1,179,771	2.8	240.8	1.8	182.6	0.6	488.7	2.4
2009	49,308	1,188,118	0.7	243.4	1.1	182.2	-0.2	501.9	2.7
2010	49,554	1,265,308	6.5	263.9	8.4	195.7	7.4	550.8	9.7
2011	49,937	1,311,893	3.7	276.8	4.9	206.0	5.2	573.6	4.1
2012	50,200	1,341,967	2.3	278.8	0.7	208.2	1.1	575.3	0.3
2013	50,429	1,380,833	2.9	280.4	0.6	210.3	1.0	572.2	-0.5
2014	50,747	1,426,972	3.3	283.1	0.9	213.8	1.7	567.8	-0.8
2015	51,015	1,466,788	2.8	287.7	1.6	218.4	2.1	586.0	3.2
2016	51,246	1,508,265	2.8	294.7	2.4	225.7	3.4

1. mid-year estimates

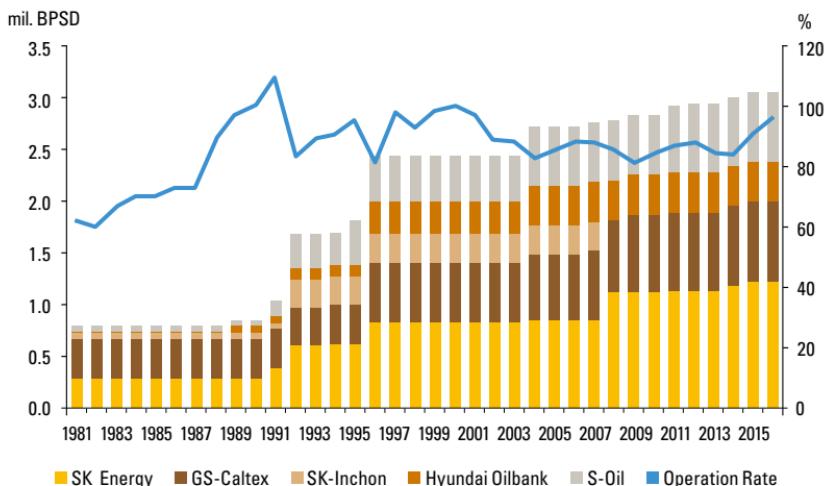
2. 2007-2011, from 2012 figures are based on each revised calorific value.



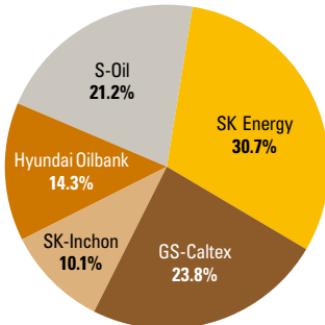
TPES /GDP		CO ₂ Emissions/ GDP (tCO ₂ /mil. won)	TPES/Population (toe/capita)	CO ₂ Emissions/ Population (tCO ₂ /capita)	Oil Consumption/ Population (k ³ /capita)	Elec. Consumption/ Population (kWh/capita)	Residential Elec. Consumption/ Population (kWh/capita)	
(toe/mil. won)	(toe/1,000\$)							
0.262	0.302	0.75	1.18	3.39	0.74	915	-	1981
0.241	0.279	0.69	1.16	3.34	0.72	963	-	1982
0.231	0.267	0.65	1.24	3.49	0.75	1,068	-	1983
0.226	0.262	0.64	1.32	3.75	0.75	1,164	-	1984
0.221	0.255	0.61	1.38	3.82	0.74	1,243	-	1985
0.217	0.251	0.57	1.49	3.93	0.77	1,366	-	1986
0.213	0.246	0.53	1.63	4.04	0.80	1,542	-	1987
0.211	0.244	0.54	1.79	4.57	0.95	1,768	-	1988
0.214	0.247	0.53	1.92	4.79	1.08	1,936	-	1989
0.222	0.257	0.55	2.17	5.41	1.57	2,202	414	1990
0.224	0.259	0.55	2.39	5.91	1.89	2,411	450	1991
0.236	0.273	0.56	2.65	6.30	2.05	2,634	498	1992
0.242	0.279	0.58	2.87	6.85	2.24	2,890	541	1993
0.239	0.277	0.57	3.07	7.33	2.41	3,283	595	1994
0.239	0.277	0.57	3.34	7.92	2.54	3,621	628	1995
0.244	0.282	0.56	3.63	8.38	2.77	4,008	673	1996
0.252	0.292	0.56	3.93	8.75	2.32	4,369	700	1997
0.245	0.283	0.51	3.58	7.42	2.47	4,180	711	1998
0.241	0.278	0.50	3.89	8.11	2.53	4,595	742	1999
0.235	0.272	0.53	4.10	9.18	2.52	5,096	789	2000
0.231	0.267	0.52	4.19	9.41	2.56	5,441	828	2001
0.226	0.262	0.47	4.38	9.15	2.55	5,844	887	2002
0.227	0.262	0.46	4.49	9.14	2.50	6,130	931	2003
0.221	0.256	0.46	4.58	9.56	2.52	6,491	1,011	2004
0.221	0.256	0.44	4.74	9.49	2.53	6,899	1,056	2005
0.215	0.248	0.43	4.82	9.59	2.61	7,199	1,084	2006
0.206	0.238	0.42	4.86	9.80	2.48	7,571	1,113	2007
0.204	0.236	0.41	4.91	9.96	2.52	7,850	1,146	2008
0.205	0.237	0.42	4.94	10.18	2.56	8,000	1,168	2009
0.209	0.241	0.44	5.33	11.12	2.57	8,761	1,235	2010
0.211	0.244	0.44	5.54	11.49	2.64	9,113	1,233	2011
0.208	0.240	0.43	5.55	11.46	2.61	9,295	1,266	2012
0.203	0.235	0.41	5.56	11.35	2.59	9,416	1,269	2013
0.198	0.229	0.40	5.58	11.19	2.68	9,411	1,235	2014
0.196	0.227	0.40	5.64	11.49	2.88	9,481	1,250	2015
0.195	0.226	...	5.75	...	2.65	9,699	1,291	2016

Source : IEA 「CO₂ Emissions from Fuel Combustion(2017)」, IEA 「World Energy Balance 2017」, Statistics Korea, Bank of Korea

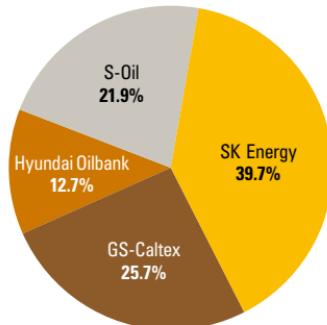
Refinery Capacities



2006 2,735 thou. BPSD



2016 3,059 thou. BPSD



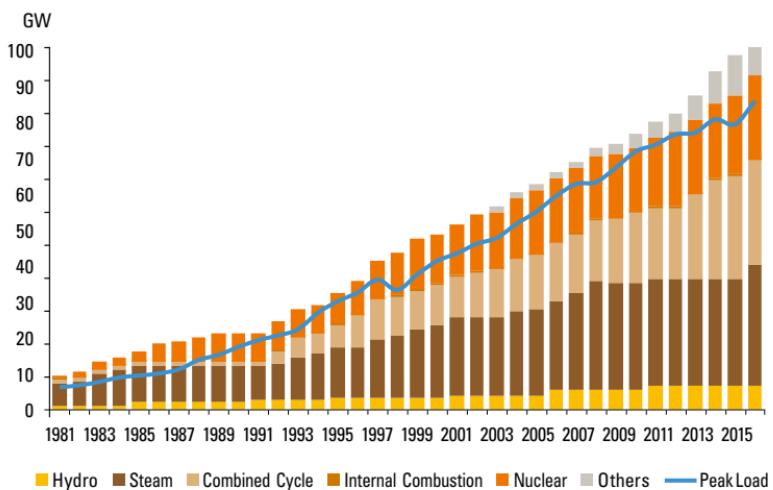


2-1. Refinery Capacities

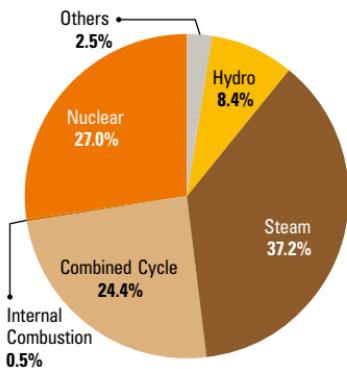
	Crude Oil refinery inputs (1,000Bbl)	Product Production (1,000Bbl)	Operation Rate (%)	Refining Capacity(1,000BPSD)					
				Total	SK Energy	GS-Caltex	SK-Inchon	Hyundai Oilbank	S-Oil
1981	178,322	173,793	61.90	790	280	380	60	10	60
1982	173,044	170,595	60.00	790	280	380	60	10	60
1983	190,643	188,667	66.08	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

Source : Korea National Oil Corporation

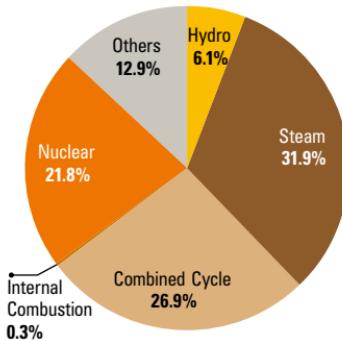
Generating Facilities



2006 65,514 MW



2016 105,866 MW





2-2. Generating Facilities

(Unit: MW)

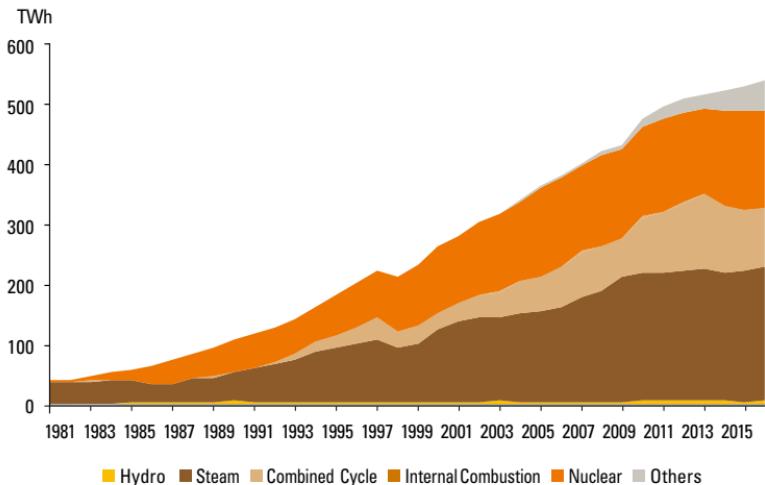
	Total	Hydro	Steam	Combined Cycle	Internal Combustion	Nuclear	Others	Peak Load
1981	9,835	1,202	6,088	920	314	587	-	6,144
1982	10,304	1,202	6,722	920	194	1,266	-	6,661
1983	13,115	1,202	8,882	920	196	1,916	-	7,602
1984	14,190	1,202	9,942	920	211	1,916	-	8,811
1985	16,137	2,223	9,912	920	216	2,866	-	9,349
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

Note 1) Excludes non-utility in common use

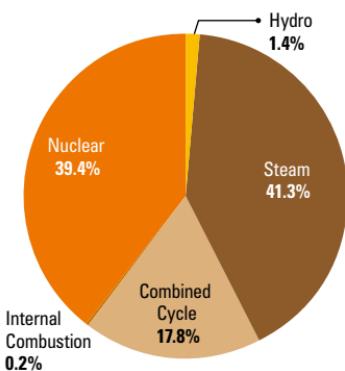
2) Others includes Group & Alternative Energy

Source : Korea Electric Power Corporation

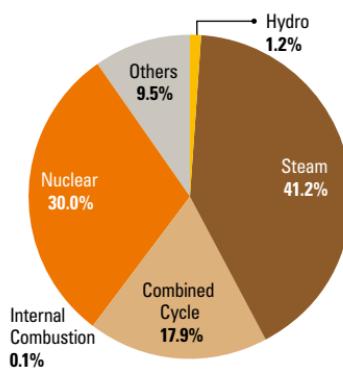
Electric Power Generation by Facilities



2006 381,181 GWh



2016 540,441 GWh





2-3. Electric Power Generation by Facilities

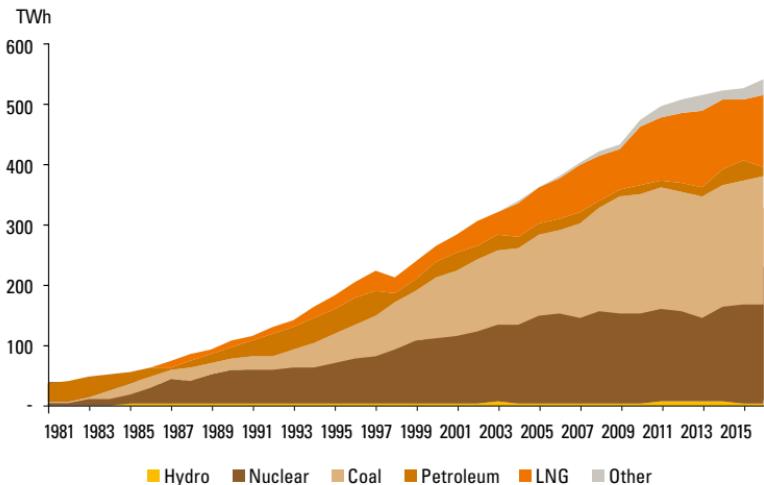
	Total	Hydro	Steam	Combined Cycle	Internal Combustion	Nuclear	Others
1981	40,207	2,709	34,305	258	38	2,897	-
1982	43,122	2,005	36,961	332	45	3,777	-
1983	48,850	2,723	36,897	214	42	8,965	-
1984	53,808	2,399	39,461	99	41	11,792	-
1985	58,007	3,659	37,411	58	61	16,745	-
1986	64,695	4,019	32,107	53	122	28,311	-
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	7,695	216,336	110,882	752	150,327	21,531
2013	517,148	8,543	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

Note 1) Total includes the purchased power

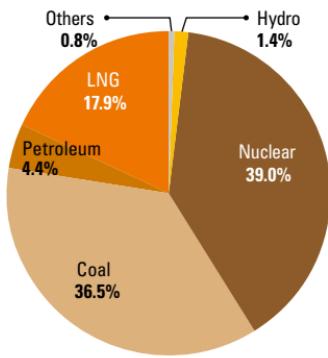
2) Others includes Group & Alternative Energy

Source : Korea Electric Power Corporation

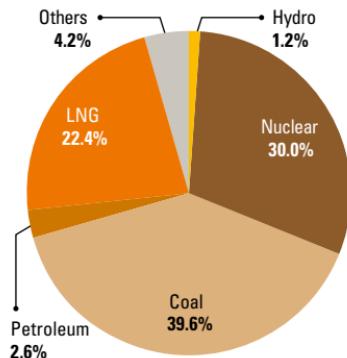
Electric Power Generation by Energy Source



2006 381,181 GWh



2016 540,441 GWh





2-4. Electric Power Generation by Energy Source

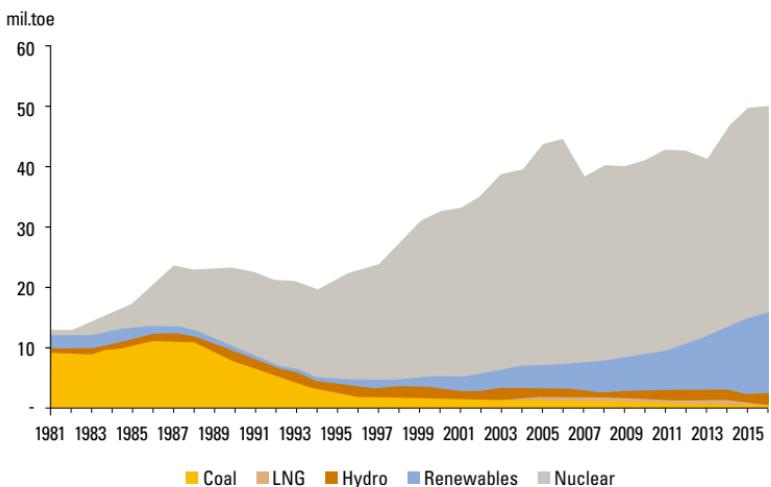
(Unit : GWh)

	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

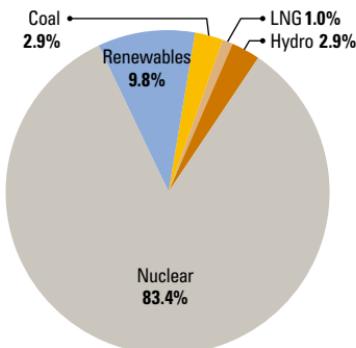
Note : Others includes Group & Alternative Energy

Source : Korea Electric Power Corporation

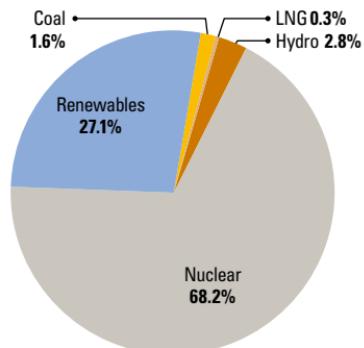
Energy Production



2006 44,582 thousand toe



2016 50,087 thousand toe





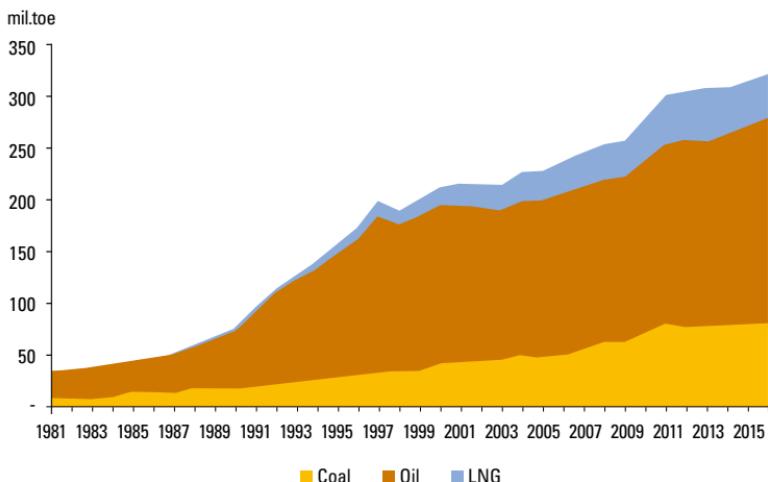
3-1. Energy Production

(Unit : 1,000toe)

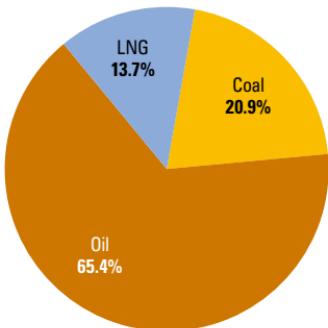
	Total	Coal	LNG	Hydro	Nuclear	Renewables
1981	13,031	9,138	-	677	724	2,492
1982	13,116	9,253	-	501	944	2,417
1983	14,436	9,136	-	681	2,241	2,378
1984	15,870	9,830	-	600	2,948	2,492
1985	17,502	10,370	-	915	4,186	2,031
1986	20,719	11,156	-	1,005	7,078	1,480
1987	23,649	11,166	-	1,336	9,829	1,319
1988	23,013	10,933	-	892	10,025	1,164
1989	23,367	9,353	-	1,140	11,841	1,033
1990	23,356	7,748	-	1,590	13,222	797
1991	22,734	6,776	-	1,263	14,078	617
1992	21,457	5,387	-	1,216	14,133	723
1993	21,027	4,249	-	1,502	14,535	742
1994	19,940	3,347	-	1,025	14,663	906
1995	21,751	2,574	-	1,369	16,757	1,051
1996	23,170	2,228	-	1,301	18,481	1,161
1997	23,998	2,031	-	1,351	19,272	1,344
1998	27,435	1,962	-	1,525	22,422	1,526
1999	30,978	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	38,861	1,484	-	1,722	32,415	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

Note : 2007-2011, from 2012 figures are based on each revised calorific value.

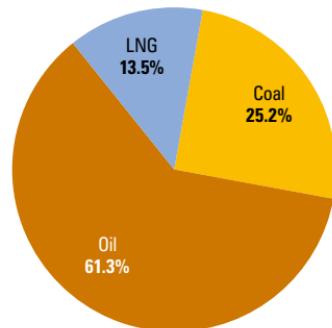
Energy Imports



2006 238,702 thousand toe



2016 323,145 thousand toe





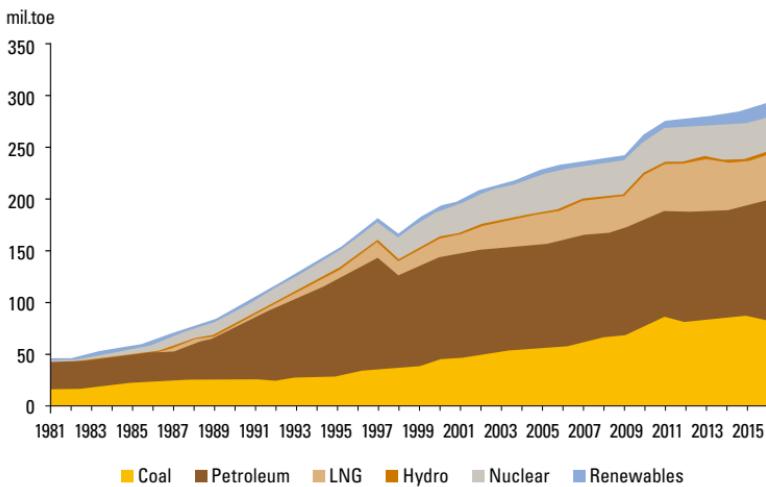
3-2. Energy Imports & Exports

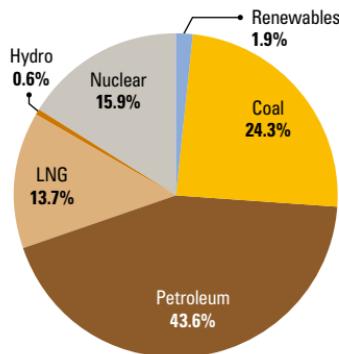
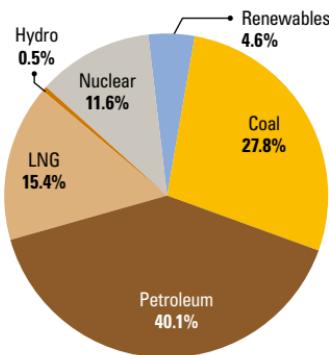
(Unit : 1,000 toe)

	Energy 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	76,072	15,752	57,345	2,974	3,997
1991	96,596	19,321	73,689	3,586	10,418
1992	115,001	19,816	90,732	4,453	13,769
1993	129,274	23,696	99,788	5,790	15,385
1994	140,503	25,966	106,830	7,707	13,788
1995	157,094	28,956	118,959	9,178	17,744
1996	174,286	30,327	131,486	12,473	22,686
1997	199,007	32,850	151,040	15,118	33,046
1998	189,711	33,847	142,084	13,780	42,049
1999	200,966	34,410	149,691	16,865	42,362
2000	213,810	40,559	154,300	18,951	43,577
2001	215,372	42,691	151,668	21,013	41,991
2002	214,833	44,990	147,133	22,711	33,770
2003	214,866	45,894	143,708	25,264	29,873
2004	226,558	50,139	147,620	28,799	33,644
2005	228,340	48,498	150,798	29,044	37,886
2006	238,702	49,854	156,060	32,788	41,574
2007	246,773	54,237	159,298	33,239	41,709
2008	255,509	61,665	158,407	35,436	47,472
2009	257,143	63,431	160,144	33,568	46,758
2010	279,649	72,576	164,689	42,384	48,224
2011	301,425	79,861	173,875	47,690	57,541
2012	304,116	77,546	179,387	47,184	61,454
2013	308,806	79,230	177,578	51,998	59,665
2014	309,511	80,460	180,663	48,388	62,301
2015	314,779	81,688	189,583	43,509	65,981
2016	323,145	81,311	198,211	43,623	67,481

Note : 2007-2011, from 2012 figures are based on each revised calorific value.

Primary Energy Supply



**2006** 233,374 thousand toe**2016** 294,654 thousand toe

Primary Energy Supply

	Total	Coal			Sub-Total	Energy Use
		Growth Rate(%)	Sub-Total	Anthracite		
1981	45,718	4.1	15,244	10,338	4,906	23,110
1982	45,625	-0.2	15,451	9,839	5,612	22,649
1983	49,420	8.3	16,491	10,133	6,358	23,250
1984	53,535	8.3	19,867	11,455	8,412	22,663
1985	56,296	5.2	22,022	12,322	9,700	21,836
1986	61,462	9.2	23,330	13,239	10,091	22,408
1987	67,878	10.4	23,639	12,935	10,704	22,958
1988	75,351	11.0	25,162	12,441	12,721	27,869
1989	81,660	8.4	24,493	10,984	13,509	32,506
1990	93,192	14.1	24,385	9,947	14,438	39,653
1991	103,619	11.2	24,535	8,144	16,391	45,773
1992	116,010	12.0	23,618	6,315	17,303	52,311
1993	126,879	9.4	25,882	5,058	20,824	57,139
1994	137,234	8.2	26,680	3,507	23,173	62,680
1995	150,437	9.6	28,091	2,953	25,139	68,949
1996	165,212	9.8	32,200	2,561	29,639	73,264
1997	180,638	9.3	34,799	1,989	32,810	74,144
1998	165,932	-8.1	36,039	2,207	33,832	53,952
1999	181,363	9.3	38,155	2,425	35,731	59,007
2000	192,899	6.4	42,923	3,094	39,829	59,743
2001	198,418	2.9	45,720	3,678	42,042	59,049
2002	208,640	5.2	49,102	4,041	45,061	58,601
2003	215,073	3.1	51,123	4,560	46,563	57,605
2004	220,242	2.4	53,131	4,302	48,829	54,100
2005	228,628	3.8	54,794	4,768	50,025	53,416
2006	233,374	2.1	56,688	5,208	51,480	51,800
2007	236,459	1.3	59,658	5,585	54,073	50,738
2008	240,771	1.8	66,079	5,906	60,173	45,705
2009	243,428	1.1	68,720	5,812	62,908	45,607
2010	263,941	8.4	77,228	6,141	71,087	46,420
2011	276,755	4.9	83,759	6,898	76,860	44,296
2012	278,825	0.7	81,105	5,850	75,254	44,327
2013	280,442	0.6	82,067	6,022	76,044	43,719
2014	283,092	0.9	84,766	5,593	79,173	41,671
2015	287,705	1.6	85,699	5,891	79,808	44,946
2016	294,654	2.4	81,872	6,060	75,813	48,906

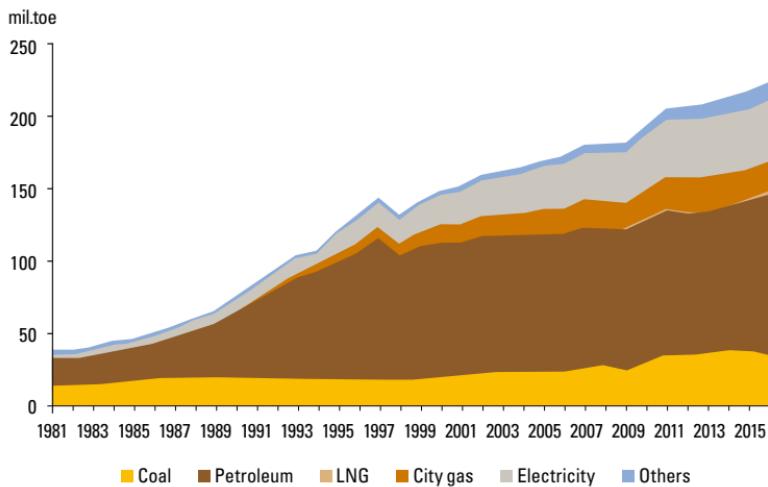
Note : 2007-2011, from 2012 figures are based on each revised calorific value.



(Unit : 1,000toe)

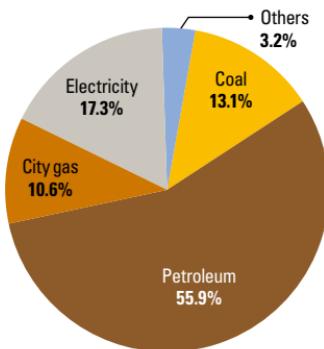
Petroleum		LNG	Hydro	Nuclear	Renewables	
LPG	Non-Energy Use					
511	2,959	-	677	724	2,492	1981
750	2,913	-	501	944	2,417	1982
1,031	3,347	-	681	2,241	2,378	1983
1,262	3,703	-	600	2,948	2,492	1984
1,467	3,839	-	915	4,186	2,031	1985
1,799	4,292	71	1,005	7,078	1,480	1986
2,161	4,533	2,104	1,336	9,829	1,319	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	617	1991
5,441	13,988	4,581	1,216	14,133	723	1992
5,990	15,366	5,723	1,502	14,535	742	1993
6,398	17,264	7,618	1,025	14,663	906	1994
6,675	18,331	9,213	1,369	16,757	1,051	1995
6,874	19,760	12,172	1,301	18,481	1,161	1996
7,201	27,735	14,792	1,351	19,272	1,344	1997
6,877	29,753	13,838	1,525	22,422	1,526	1998
7,808	30,455	16,849	1,517	25,766	1,806	1999
8,644	31,893	18,924	1,402	27,241	2,130	2000
8,676	32,660	20,787	1,038	28,033	2,456	2001
9,398	34,415	23,099	1,327	29,776	2,925	2002
9,140	35,634	24,194	1,722	32,415	3,241	2003
9,153	37,385	28,351	1,465	32,679	3,977	2004
9,484	38,626	30,355	1,297	36,695	3,961	2005
9,689	40,342	32,004	1,305	37,187	4,358	2006
10,127	44,629	34,663	1,084	30,731	4,828	2007
10,647	43,819	35,671	1,196	32,456	5,198	2008
11,079	45,651	33,908	1,213	31,771	5,480	2009
10,924	46,956	43,008	1,391	31,948	6,064	2010
10,303	50,547	46,284	1,684	33,265	6,618	2011
9,912	51,926	50,185	1,615	31,719	8,036	2012
9,701	52,391	52,523	1,771	29,283	8,987	2013
9,343	53,930	47,773	1,650	33,002	10,956	2014
9,303	55,317	43,613	1,223	34,765	12,839	2015
11,166	58,037	45,518	1,400	34,181	13,575	2016

Final Energy Consumption

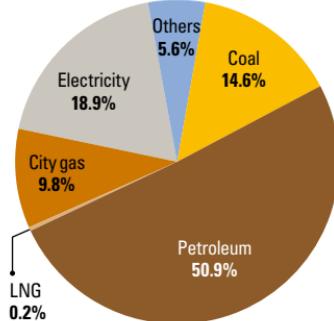




2006 173,586 thousand toe



2016 225,681 thousand toe



05

Final Energy Consumption

Final Energy Consumption

	Total	Growth Rate(%)	Coal			Sub-Total
			Sub-Total	Anthracite	Bituminous	
1981	38,952	3.6	14,478	9,571	4,906	18,912
1982	38,711	-0.6	14,548	8,937	5,612	18,460
1983	41,337	6.8	15,336	9,338	5,997	19,921
1984	44,998	8.9	16,806	10,600	6,206	21,602
1985	46,998	4.4	17,940	11,632	6,308	22,580
1986	50,524	7.5	18,887	12,336	6,552	25,181
1987	55,197	9.2	19,778	12,006	7,772	28,372
1988	61,033	10.6	20,565	11,527	9,039	32,511
1989	65,875	7.9	20,116	10,057	10,059	36,967
1990	75,107	14.0	19,855	9,194	10,661	45,252
1991	83,803	11.6	19,915	7,336	12,579	52,675
1992	94,623	12.9	18,688	5,558	13,131	62,939
1993	104,048	10.0	19,058	4,179	14,879	69,876
1994	107,928	3.7	17,670	2,665	15,005	76,511
1995	121,962	13.0	17,758	2,011	15,748	82,876
1996	132,033	8.3	18,718	1,585	17,133	88,714
1997	144,432	9.4	18,918	1,099	17,819	97,901
1998	132,128	-8.5	18,151	1,269	16,882	86,526
1999	143,060	8.3	18,498	1,444	17,055	92,821
2000	149,864	4.8	19,859	2,012	17,848	93,596
2001	152,959	2.1	20,541	2,656	17,885	93,356
2002	160,456	4.9	21,635	3,069	18,566	96,159
2003	164,001	2.2	22,616	3,530	19,086	96,155
2004	166,013	1.2	22,198	3,407	18,791	95,513
2005	170,859	2.9	22,316	3,874	18,443	96,718
2006	173,586	1.6	22,662	4,313	18,349	97,037
2007	181,459	4.5	24,254	4,583	19,671	100,622
2008	182,594	0.6	26,237	4,994	21,243	97,217
2009	182,182	-0.2	24,011	5,180	18,832	98,369
2010	195,723	7.4	29,300	5,751	23,549	100,381
2011	205,982	5.2	33,663	6,646	27,017	101,976
2012	208,247	1.1	32,091	5,584	26,507	101,710
2013	210,296	1.0	32,831	5,877	26,954	101,809
2014	213,843	1.7	35,566	4,580	30,985	102,957
2015	218,361	2.1	35,147	4,836	30,310	107,322
2016	225,681	3.4	32,840	4,928	27,912	114,760

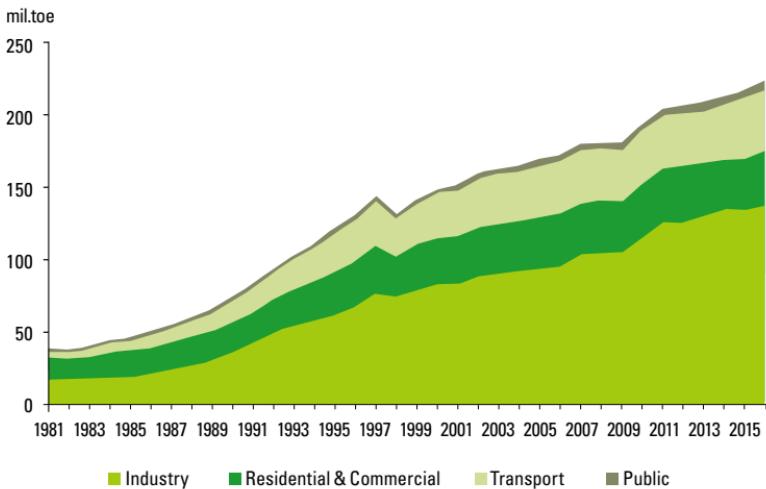
Note : 2007-2011, from 2012 figures are based on each revised calorific value.



(Unit : 1,000toe)

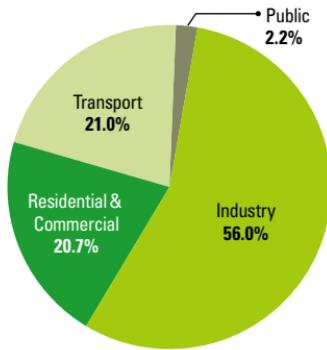
Petroleum			LNG	City gas	Electricity	Others	
Energy Use	LPG	Non-Energy Use					
15,471	500	2,942	-	23	3,046	2,492	1981
14,835	735	2,890	-	28	3,258	2,417	1982
15,589	1,010	3,322	-	37	3,665	2,378	1983
16,690	1,242	3,670	-	52	4,046	2,492	1984
17,360	1,424	3,795	-	84	4,363	2,031	1985
19,211	1,736	4,235	-	132	4,843	1,480	1986
21,767	2,110	4,495	-	199	5,519	1,329	1987
25,083	2,561	4,866	-	339	6,391	1,226	1988
29,106	2,947	4,914	-	619	7,069	1,104	1989
34,991	3,368	6,893	-	1,011	8,117	872	1990
39,266	3,894	9,515	-	1,540	8,976	697	1991
44,139	4,812	13,988	-	2,219	9,911	865	1992
49,369	5,141	15,366	-	3,027	10,985	1,102	1993
53,833	5,414	17,264	-	4,057	8,324	1,366	1994
59,100	5,445	18,331	-	5,594	14,041	1,692	1995
63,221	5,733	19,760	-	6,937	15,692	1,971	1996
63,724	6,442	27,735	-	8,093	17,267	2,253	1997
50,300	6,472	29,753	-	8,425	16,638	2,387	1998
54,995	7,371	30,455	-	10,513	18,422	2,806	1999
53,369	8,333	31,893	-	12,561	20,600	3,248	2000
52,203	8,493	32,660	-	13,290	22,165	3,606	2001
52,509	9,235	34,415	-	14,567	23,947	4,149	2002
51,471	9,050	35,634	-	15,470	25,250	4,511	2003
49,067	9,061	37,385	-	16,191	26,840	5,271	2004
48,744	9,348	38,626	-	17,811	28,588	5,426	2005
47,088	9,608	40,342	-	18,379	29,990	5,517	2006
45,946	10,052	44,623	-	18,955	31,700	5,929	2007
42,971	10,432	43,814	-	19,765	33,116	6,259	2008
41,893	10,840	45,636	-	19,459	33,925	6,418	2009
43,002	10,448	46,931	559	21,081	37,338	7,064	2010
41,799	9,670	50,507	801	22,871	39,136	7,535	2011
40,639	9,194	51,876	717	24,728	40,127	8,875	2012
39,972	9,536	52,301	467	24,878	40,837	9,474	2013
39,876	9,271	53,810	460	23,041	41,073	10,746	2014
42,934	9,214	55,175	437	21,678	41,594	12,182	2015
45,814	11,059	57,887	504	22,186	42,745	12,646	2016

Final Energy Consumption by Sector

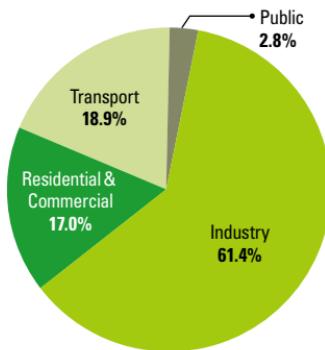




2006 173,586 thousand toe



2016 225,681 thousand toe



6. Final Energy Consumption by Sector

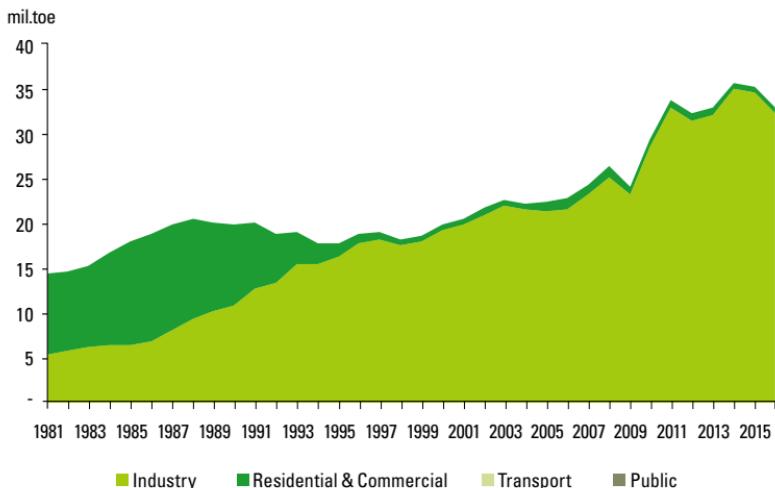
	Final Energy Consumption(1,000toe)				
	Total	Industry	Residential & Commercial	Transport	Public
1981	38,952	17,506	15,836	3,721	1,888
1982	38,711	17,354	15,197	4,216	1,945
1983	41,337	18,346	15,438	5,434	2,118
1984	44,998	19,508	17,342	6,007	2,141
1985	46,998	20,015	18,180	6,707	2,096
1986	50,524	21,865	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	75,107	36,150	21,971	14,173	2,812
1991	83,803	42,914	21,919	16,156	2,813
1992	94,623	50,825	23,008	18,531	2,259
1993	104,048	55,591	25,042	21,119	2,296
1994	107,928	59,937	25,941	23,860	2,467
1995	121,962	62,946	29,451	27,148	2,416
1996	132,033	67,868	31,713	29,792	2,659
1997	144,432	77,908	33,071	30,738	2,715
1998	132,128	76,039	27,418	26,184	2,487
1999	143,060	79,858	31,929	28,625	2,648
2000	149,864	83,925	32,370	30,945	2,625
2001	152,959	85,167	32,893	31,909	2,989
2002	160,456	89,203	34,299	33,763	3,191
2003	164,001	90,811	34,964	34,632	3,593
2004	166,013	92,996	34,807	34,615	3,595
2005	170,859	94,370	36,861	35,559	4,068
2006	173,586	97,237	35,987	36,527	3,836
2007	181,459	104,332	35,916	37,068	4,143
2008	182,594	106,477	36,225	35,793	4,100
2009	182,182	106,235	35,722	35,930	4,295
2010	195,723	117,046	37,256	36,938	4,483
2011	205,982	127,005	37,542	36,875	4,560
2012	208,247	128,451	37,884	37,143	4,769
2013	210,296	130,379	37,408	37,330	5,178
2014	213,843	135,331	35,539	37,636	5,336
2015	218,361	135,713	36,603	40,292	5,753
2016	225,681	138,469	38,261	42,714	6,237

Note : 2007-2011, from 2012 figures are based on each revised calorific value.

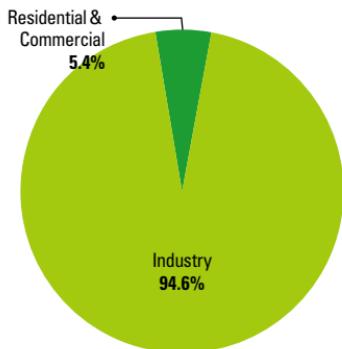


Final Energy Consumption(%)					
Total	Industry	Residential & Commercial	Transport	Public	
100.0	44.9	40.7	9.6	4.8	1981
100.0	44.8	39.3	10.9	5.0	1982
100.0	44.4	37.3	13.1	5.1	1983
100.0	43.4	38.5	13.3	4.8	1984
100.0	42.6	38.7	14.3	4.5	1985
100.0	43.3	36.8	15.2	4.7	1986
100.0	44.7	34.2	16.8	4.3	1987
100.0	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	55.5	24.0	22.1	2.5	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

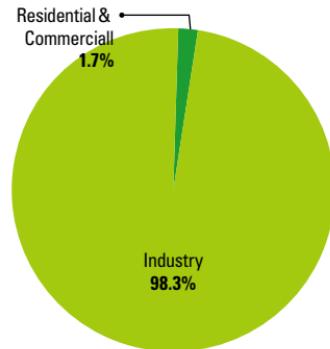
Coal



2006 22,662 thousand toe



2016 32,840 thousand toe





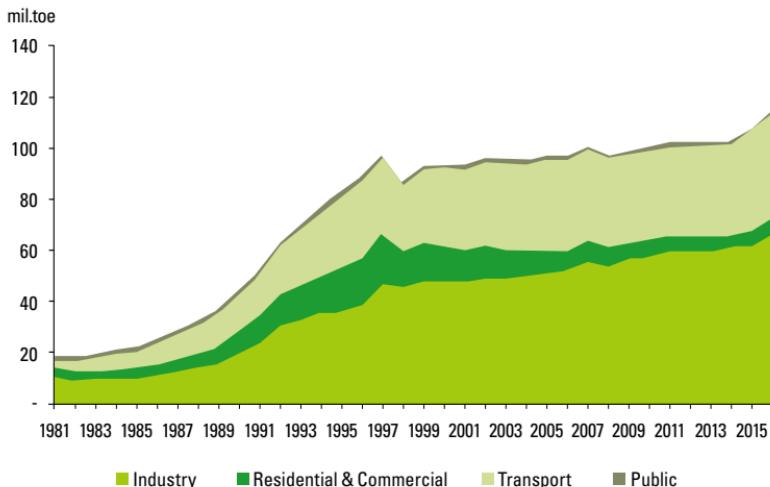
(Unit : 1,000toe)

7-1. Coal

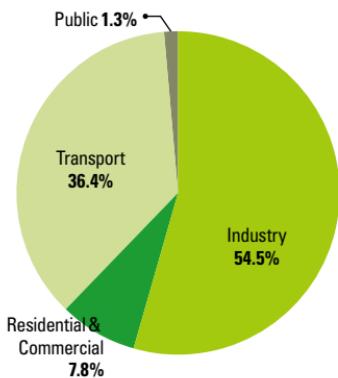
	TFEC	%	Coal				
			Industry	Residential & Commercial	Transport	Public	
1981	38,952	37.2	14,478	5,276	9,105	2	95
1982	38,711	37.6	14,548	5,844	8,629	2	74
1983	41,337	37.1	15,336	6,240	9,040	-	55
1984	44,998	37.3	16,806	6,412	10,323	-	71
1985	46,998	38.2	17,940	6,490	11,399	-	50
1986	50,524	37.4	18,887	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	75,107	26.4	19,855	10,806	9,027	-	21
1991	83,803	23.8	19,915	12,745	7,170	-	-
1992	94,623	19.8	18,688	13,388	5,288	-	12
1993	104,048	18.3	19,058	15,327	3,731	-	-
1994	107,928	16.4	17,670	15,403	2,267	-	-
1995	121,962	14.6	17,758	16,244	1,514	-	-
1996	132,033	14.2	18,718	17,668	1,050	-	-
1997	144,432	13.1	18,918	18,139	779	-	-
1998	132,128	13.7	18,151	17,448	703	-	-
1999	143,060	12.9	18,498	17,845	653	-	-
2000	149,864	13.3	19,859	19,141	718	-	-
2001	152,959	13.4	20,541	19,814	727	-	-
2002	160,456	13.5	21,635	20,938	697	-	-
2003	164,001	13.8	22,616	21,894	722	-	-
2004	166,013	13.4	22,198	21,423	775	-	-
2005	170,859	13.1	22,316	21,242	1,075	-	-
2006	173,586	13.1	22,662	21,435	1,227	-	-
2007	181,459	13.4	24,254	23,240	1,014	-	-
2008	182,594	14.4	26,237	25,149	1,088	-	-
2009	182,182	13.2	24,011	23,072	940	-	-
2010	195,723	15.0	29,300	28,400	901	-	-
2011	205,982	16.4	33,663	32,791	871	-	-
2012	208,247	15.4	32,091	31,259	832	-	-
2013	210,296	15.6	32,831	31,959	872	-	-
2014	213,843	16.6	35,566	34,820	745	-	-
2015	218,361	16.1	35,147	34,474	672	-	-
2016	225,681	14.6	32,840	32,269	571	-	-

Note : 2007-2011, from 2012 figures are based on each revised calorific value.

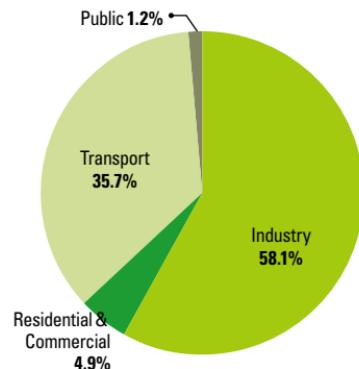
Petroleum



2006 97,037 thousand toe



2016 114,760 thousand toe





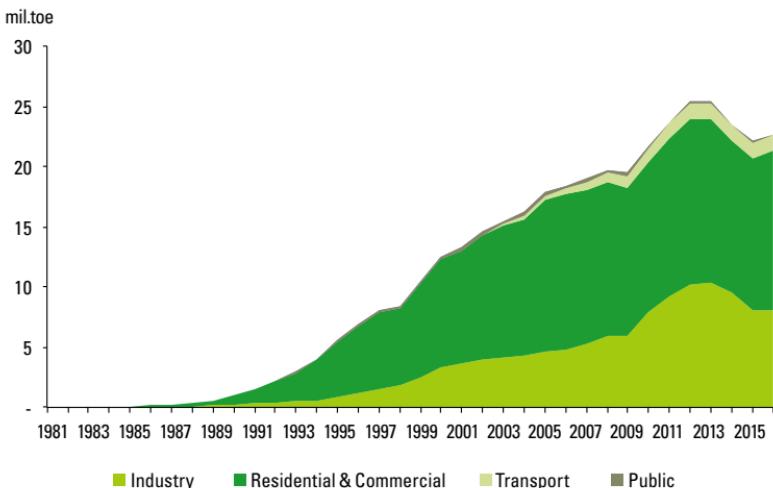
(Unit : 1,000toe)

7-2. Petroleum

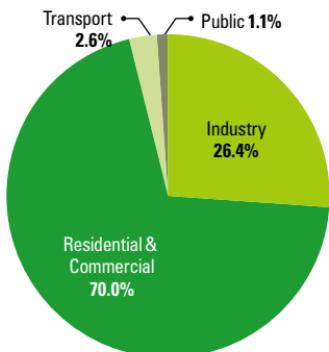
	TFEC	%	Petroleum			
			Industry	Residential & Commercial	Transport	Public
1981	38,952	48.6	18,912	10,141	3,525	3,680
1982	38,711	47.7	18,460	9,322	3,344	4,173
1983	41,337	48.2	19,921	9,671	3,073	5,390
1984	44,998	48.0	21,602	10,444	3,438	5,955
1985	46,998	48.0	22,580	10,697	3,525	6,645
1986	50,524	49.8	25,181	11,857	3,747	7,624
1987	55,197	51.4	28,372	12,915	4,284	9,201
1988	61,033	53.3	32,511	14,600	5,331	10,667
1989	65,875	56.1	36,967	15,936	6,694	12,187
1990	75,107	60.3	45,252	20,014	8,876	14,086
1991	83,803	62.9	52,675	24,251	10,161	16,062
1992	94,623	66.5	62,939	30,514	12,405	18,430
1993	104,048	67.2	69,876	32,654	14,669	21,011
1994	107,928	70.9	76,511	35,881	15,375	23,736
1995	121,962	68.0	82,876	36,810	17,632	27,010
1996	132,033	67.2	88,714	38,913	18,623	29,648
1997	144,432	67.8	97,901	47,141	18,719	30,587
1998	132,128	65.5	86,526	46,133	13,130	26,048
1999	143,060	64.9	92,821	47,521	15,554	28,476
2000	149,864	62.5	93,596	48,193	13,492	30,770
2001	152,959	61.0	93,356	47,848	12,474	31,708
2002	160,456	59.9	96,159	49,499	11,955	33,488
2003	164,001	58.6	96,155	49,304	11,156	34,286
2004	166,013	57.5	95,513	50,236	9,773	34,160
2005	170,859	56.6	96,718	50,905	9,437	34,982
2006	173,586	55.9	97,037	52,474	7,513	35,780
2007	181,459	55.5	100,622	56,150	7,049	36,149
2008	182,594	53.2	97,217	54,745	6,654	34,642
2009	182,182	54.0	98,369	56,391	6,187	34,529
2010	195,723	51.3	100,381	57,351	6,450	35,282
2011	205,982	49.5	101,976	59,635	5,929	35,172
2012	208,247	48.9	101,710	59,748	5,363	35,341
2013	210,296	48.4	101,809	60,114	4,992	35,476
2014	213,843	48.1	102,957	61,188	4,701	35,761
2015	218,361	49.1	107,322	62,186	5,313	38,373
2016	225,681	50.9	114,760	66,879	5,679	40,771

Note : 2007-2011, from 2012 figures are based on each revised calorific value.

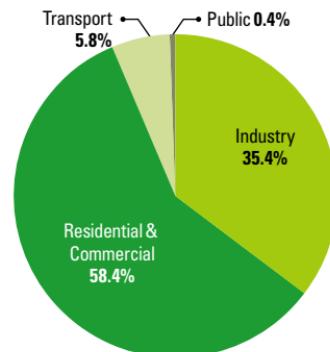
LNG & City gas



2006 18,379 thousand toe



2016 22,689 thousand toe





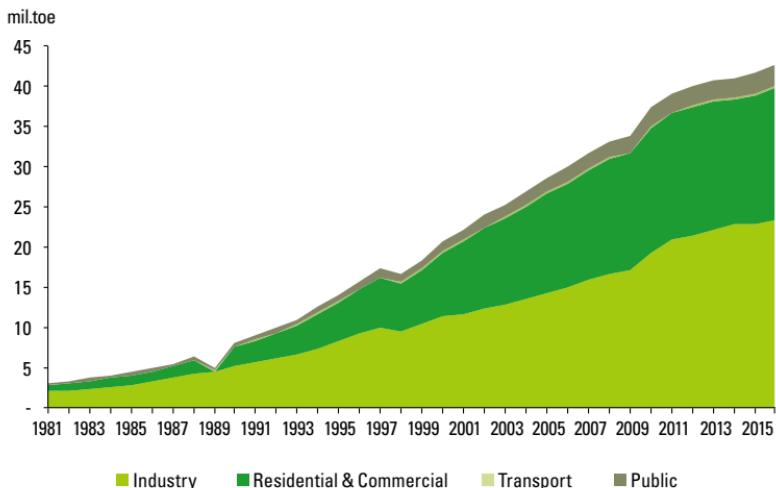
(Unit : 1,000toe)

7-3. LNG & City gas

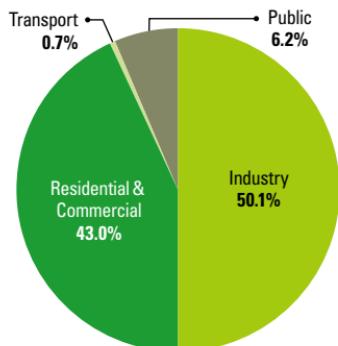
	TFEC	%		LNG & City gas			
				Industry	Residential & Commercial	Transport	Public
1981	38,952	0.1	23	-	23	-	-
1982	38,711	0.1	28	-	28	-	-
1983	41,337	0.1	37	-	37	-	-
1984	44,998	0.1	52	1	51	-	-
1985	46,998	0.2	84	15	69	-	-
1986	50,524	0.3	132	40	92	-	-
1987	55,197	0.4	199	75	124	-	-
1988	61,033	0.6	339	110	229	-	-
1989	65,875	0.9	619	158	461	-	-
1990	75,107	1.3	1,011	235	777	-	-
1991	83,803	1.8	1,540	313	1,160	-	68
1992	94,623	2.3	2,219	377	1,760	-	82
1993	104,048	2.9	3,027	460	2,450	-	117
1994	107,928	3.8	4,057	600	3,313	-	143
1995	121,962	4.6	5,594	863	4,607	-	125
1996	132,033	5.3	6,937	1,196	5,588	-	153
1997	144,432	5.6	8,093	1,496	6,436	-	161
1998	132,128	6.4	8,425	1,812	6,454	-	160
1999	143,060	7.3	10,513	2,530	7,784	-	199
2000	149,864	8.4	12,561	3,308	9,024	-	229
2001	152,959	8.7	13,290	3,612	9,412	7	259
2002	160,456	9.1	14,567	3,984	10,241	80	262
2003	164,001	9.4	15,470	4,177	10,889	146	259
2004	166,013	9.8	16,191	4,382	11,293	237	279
2005	170,859	10.4	17,811	4,656	12,503	339	313
2006	173,586	10.6	18,379	4,847	12,858	475	199
2007	181,459	10.4	18,955	5,225	12,831	615	285
2008	182,594	10.8	19,765	5,933	12,763	777	292
2009	182,182	10.7	19,459	5,891	12,332	960	277
2010	195,723	11.1	21,640	7,888	12,489	1,112	152
2011	205,982	11.5	23,672	9,184	13,201	1,174	112
2012	208,247	12.2	25,445	10,218	13,797	1,248	181
2013	210,296	12.1	25,345	10,370	13,578	1,299	98
2014	213,843	11.0	23,501	9,510	12,599	1,307	85
2015	218,361	10.1	22,115	8,081	12,661	1,288	85
2016	225,681	10.1	22,689	8,040	13,292	1,270	88

Note : 2007-2011, from 2012 figures are based on each revised calorific value.

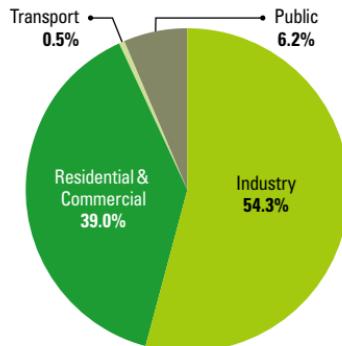
Electricity



2006 29,990 thousand toe



2016 42,745 thousand toe





(Unit : 1,000toe)

7-4. Electricity

	TPEC	%	Electricity			
			Industry	Residential & Commercial	Transport	Public
1981	38,952	7.8	3,046	2,089	691	40
1982	38,711	8.4	3,258	2,188	779	40
1983	41,337	8.9	3,665	2,435	910	44
1984	44,998	9.0	4,046	2,651	1,038	52
1985	46,998	9.3	4,363	2,812	1,155	62
1986	50,524	9.6	4,843	3,168	1,253	76
1987	55,197	10.0	5,519	3,643	1,435	74
1988	61,033	10.5	6,391	4,175	1,710	80
1989	65,875	10.7	7,069	4,514	2,011	83
1990	75,107	10.8	8,117	5,095	2,421	87
1991	83,803	10.7	8,976	5,606	2,732	94
1992	94,623	10.5	9,911	6,063	3,174	101
1993	104,048	10.6	10,985	6,581	3,663	108
1994	107,928	11.7	12,602	7,426	4,294	124
1995	121,962	11.5	14,041	8,293	4,801	138
1996	132,033	11.9	15,692	9,179	5,464	145
1997	144,432	12.0	17,267	10,009	6,090	151
1998	132,128	12.6	16,638	9,359	6,122	136
1999	143,060	12.9	18,422	10,394	6,793	149
2000	149,864	13.7	20,600	11,374	7,891	175
2001	152,959	14.5	22,165	11,678	9,005	194
2002	160,456	14.9	23,947	12,423	9,859	195
2003	164,001	15.4	25,250	12,933	10,585	200
2004	166,013	16.2	26,840	13,617	11,352	213
2005	170,859	16.7	28,588	14,346	12,233	224
2006	173,586	17.3	29,990	15,021	12,883	218
2007	181,459	17.5	31,700	16,018	13,513	209
2008	182,594	18.1	33,116	16,738	14,143	196
2009	182,182	18.6	33,925	17,006	14,594	187
2010	195,723	19.1	37,338	19,193	15,636	188
2011	205,982	19.0	39,136	20,830	15,758	193
2012	208,247	19.3	40,127	21,426	16,049	194
2013	210,296	19.4	40,837	22,088	16,077	186
2014	213,843	19.2	41,073	22,757	15,706	172
2015	218,361	19.0	41,594	22,844	16,020	191
2016	225,681	18.9	42,745	23,218	16,650	231

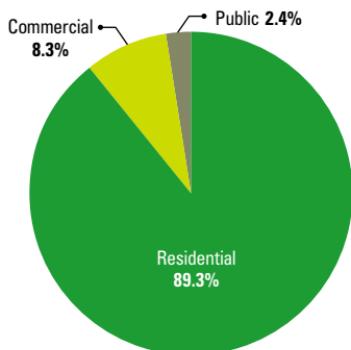
Note : 2007-2011, from 2012 figures are based on each revised calorific value.

7-5. Heat Energy

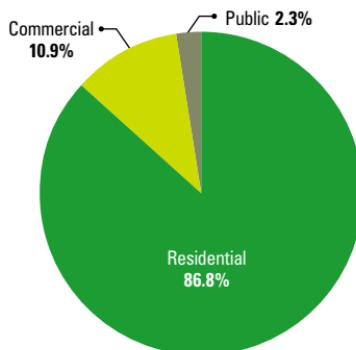
(Unit : 1,000toe)

	Production		Sales		
			Residential	Commercial	Public
1987	10	10	10	0	-
1988	63	55	51	3	1
1989	71	71	65	5	1
1990	75	75	69	6	1
1991	80	80	72	7	1
1992	143	143	135	7	1
1993	360	360	354	2	4
1994	460	460	440	14	6
1995	641	641	610	21	10
1996	811	811	762	34	15
1997	909	893	835	42	16
1998	861	861	807	42	13
1999	1,000	1,002	931	54	18
2000	1,119	1,119	1,030	67	22
2001	1,150	1,150	1,049	75	25
2002	1,223	1,223	1,118	78	27
2003	1,300	1,300	1,180	89	32
2004	1,343	1,343	1,204	108	31
2005	1,530	1,530	1,358	133	39
2006	1,425	1,425	1,272	118	34
2007	1,438	1,438	1,285	116	37
2008	1,512	1,512	1,351	125	36
2009	1,551	1,551	1,388	120	42
2010	1,718	1,718	1,531	145	42
2011	1,702	1,702	1,512	149	41
2012	1,751	1,751	1,553	159	40
2013	1,695	1,695	1,499	158	38
2014	1,567	1,567	1,373	155	38
2015	1,559	1,559	1,357	163	39
2016	1,710	1,710	1,484	187	39

2006 1,425 thousand toe



2016 1,710 thousand toe





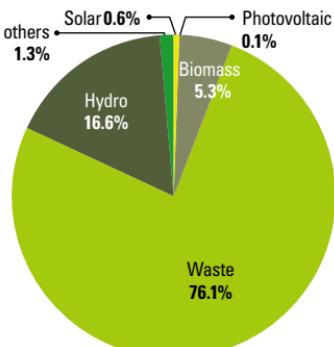
7-6. Renewables

(Unit : 1,000toe)

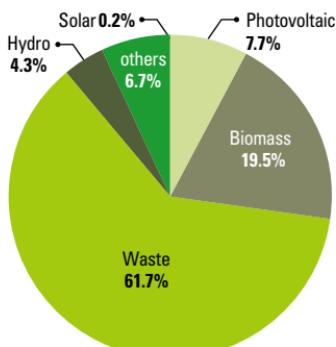
	Total	Solar	Photovoltaic	Biomass	Waste	Hydro	Others ¹
1991	411.6	-	-	-	-	-	-
1992	552.4	12.6	1.8	57.3	461.2	19.5	0.1
1993	648.1	14.1	0.5	58.8	545.6	28.8	0.3
1994	776.3	16.8	0.5	57.2	678.8	22.5	0.3
1995	906.9	22.1	0.6	59.2	804.5	20.4	0.1
1996	1,160.0	32.0	0.6	50.4	1,056.4	20.4	0.1
1997	1,419.0	45.5	0.8	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	660.2	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

1. Include wind, fuel cells, geothermal and tidal

2006 5,225 thousand toe



2016 14,178 thousand toe



2006

	Coal (1,000ton)	Petroleum (1,000Bbl)	LNG (1,000ton)	City gas (10 ⁶ m ³)
Domestic Production	2,824	-	355	-
Imports	76,001	1,141,543	25,222	-
Exports	-	-289,070	-	-
Intl' Bunkers	-	-53,849	-	-
Stock Changes(+/-)	1,837	-4,138	-977	-
Staistical Difference	7,168	-28,966	19	-
Primary Energy Supply	87,830	765,520	24,619	-
Transformation	-52,555	-30,921	-24,619	17,504
Electric Generation	-52,555	-27,174	-9,860	-19
District Heating	-	-2,917	-619	-91
Gas Manufacturing	-	-830	-13,957	17,092
Own Use & Loss	-	-	-183	523
Final Consumption	35,275	734,599	-	17,504
Industry	32,948	403,696	-	4,616
Agri. Fishery	-	18,032	-	26
Mining	-	627	-	-
Manufacturing	32,948	367,967	-	4,590
Food. Tabacco	46	4,326	-	241
Textile & Apparel	157	4,936	-	367
Wood & Wood Prod.	-	264	-	15
Pulp & Publications	-	5,599	-	87
Petro. Chemical	178	323,678	-	379
Non-Metallic	4,738	6,890	-	488
Iron & Steel	23,774	3,744	-	983
Non-Ferrous	166	955	-	-
Fabricated Metal	-	4,370	-	902
Other Manufact.	3,887	8,116	-	1,127
Other Energy	-	5,088	-	-
Construction	-	17,070	-	0
Transportation	-	261,140	-	452
Rail	-	1,751	-	-
Land	-	208,999	-	452
Water	-	28,497	-	-
Air	-	21,892	-	-
Residential	2,327	36,091	-	9,224
Commercial	-	24,585	-	3,021
Public	-	9,087	-	190

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



Hydro (GWh)	Nuclear (GWh)	Electricity (GWh)	Heat (1,000toe)	Renewables (1,000toe)	Total (1,000toe)
5,219	148,749	-	-	4,358	44,582
-	-	-	-	-	238,702
-	-	-	-	-	-41,574
-	-	-	-	-	-8,270
-	-	-	-	-	-1,052
-	-	-	-	-	985
5,219	148,749	-	-	4,358	233,374
-5,219	-148,749	348,720	1,425	-266	-59,788
-5,219	-148,749	381,181	843	-266	-56,254
-	-	-	736	-	-621
-	-	-	-	-	-278
-	-	-32,461	-154	-	-2,635
-	-	348,720	1,425	4,092	173,586
-	-	174,661	-	3,459	97,237
-	-	7,296	-	-	3,256
-	-	1,393	-	-	209
-	-	165,972	-	3,459	91,145
-	-	7,636	-	-	1,567
-	-	12,243	-	-	2,302
-	-	1,505	-	-	185
-	-	9,776	-	-	1,803
-	-	34,937	-	-	44,358
-	-	10,319	-	-	5,559
-	-	24,380	-	-	19,177
-	-	5,277	-	-	699
-	-	57,694	-	-	6,513
-	-	2,204	-	3,459	8,255
-	-	-	-	-	727
-	-	-	-	-	2,627
-	-	2,534	-	53	36,527
-	-	2,534	-	-	474
-	-	-	-	53	28,588
-	-	-	-	-	4,437
-	-	-	-	-	3,028
-	-	52,522	1,272	79	21,436
-	-	97,277	119	37	14,551
-	-	21,725	34	464	3,836

2006

	Coal	Petroleum	LNG	City gas
Domestic Production	1,271	-	461	-
Imports	49,854	156,060	32,788	-
Exports	-	-41,574	-	-
Intl' Bunkers	-	-8,270	-	-
Stock Changes(+/-)	836	-618	-1,270	-
Statistical Difference	4,728	-3,767	25	-
Primary Energy Supply	56,688	101,831	32,004	-
Transformation	-34,027	-4,793	-32,004	18,379
Electric Generation	-34,027	-4,256	-12,817	-20
District Heating	-	-457	-805	-96
Gas Manufacturing	-	-81	-18,144	17,947
Own Use & Loss	-	0	-238	549
Final Consumption	22,662	97,037	-	18,379
Industry	21,435	52,474	-	4,847
Agri. Fishery	-	2,601	-	28
Mining	-	89	-	-
Manufacturing	21,435	47,157	-	4,819
Food. Tabacco	31	627	-	253
Textile & Apparel	104	759	-	386
Wood & Wood Prod.	-	40	-	16
Pulp & Publications	-	871	-	92
Petro. Chemical	118	40,837	-	398
Non-Metallic	3,127	1,032	-	513
Iron & Steel	15,507	542	-	1,032
Non-Ferrous	110	135	-	-
Fabricated Metal	-	604	-	947
Other Manufact.	2,439	983	-	1,184
Other Energy	-	727	-	-
Construction	-	2,627	-	0
Transportation	-	35,780	-	475
Rail	-	256	-	-
Land	-	28,059	-	475
Water	-	4,437	-	-
Air	-	3,028	-	-
Residential	1,227	4,657	-	9,685
Commercial	-	2,857	-	3,173
Public	-	1,270	-	199

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



(Unit : 1,000toe)

Hydro	Nuclear	Electricity	Heat	Renewables	Total
1,305	37,187	-	-	4,358	44,582
-	-	-	-	-	238,702
-	-	-	-	-	-41,574
-	-	-	-	-	-8,270
-	-	-	-	-	-1,052
-	-	-	-	-	985
1,305	37,187	-	-	4,358	233,374
-1,305	-37,187	29,990	1,425	-266	-59,788
-1,305	-37,187	32,782	843	-266	-56,254
-	-	-	736	-	-621
-	-	-	-	-	-278
-	-	-2,792	-154	-	-2,635
-	-	29,990	1,425	4,092	173,586
-	-	15,021	-	3,459	97,237
-	-	627	-	-	3,256
-	-	120	-	-	209
-	-	14,274	-	3,459	91,145
-	-	657	-	-	1,567
-	-	1,053	-	-	2,302
-	-	129	-	-	185
-	-	841	-	-	1,803
-	-	3,005	-	-	44,358
-	-	887	-	-	5,559
-	-	2,097	-	-	19,177
-	-	454	-	-	699
-	-	4,962	-	-	6,513
-	-	190	-	3,459	8,255
-	-	-	-	-	727
-	-	-	-	-	2,627
-	-	218	-	53	36,527
-	-	218	-	-	474
-	-	-	-	53	28,588
-	-	-	-	-	4,437
-	-	-	-	-	3,028
-	-	4,517	1,272	79	21,436
-	-	8,366	119	37	14,551
-	-	1,868	34	464	3,836

2016

	Coal (1,000ton)	Petroleum (1,000Bbl)	LNG (1,000ton)	City gas (10 ⁹ m ³)
Domestic Production	1,726	-	118	-
Imports	127,892	1,492,220	33,453	-
Exports	-	-487,716	-	-
Intl' Bunkers	-	-62,494	-	-
Stock Changes(+/-)	-286	2,625	1,339	-
Statistical Difference	97	-20,462	-5	-
Primary Energy Supply	129,428	924,173	34,906	-
Transformation	-80,039	-21,774	-34,520	21,271
Electric Generation	-80,039	-19,307	-15,507	-280
District Heating	-	-1,251	-1,556	-253
Gas Manufacturing	-	-1,217	-17,384	21,770
Own Use & Loss	-	-	-74	34
Final Consumption	49,389	902,399	386	21,271
Industry	48,134	542,566	386	7,226
Agri. Fishery	-	9,843	-	3
Mining	-	437	-	-
Manufacturing	40,748	514,457	386	7,222
Food. Tabacco	52	614	-	681
Textile & Apparel	159	549	-	310
Wood & Wood Prod.	-	33	-	28
Pulp & Publications	-	298	-	247
Petro. Chemical	223	490,876	60	1,047
Non-Metallic	4,591	3,820	-	502
Iron & Steel	33,460	730	326	1,142
Non-Ferrous	554	254	-	291
Fabricated Metal	-	2,620	-	1,627
Other Manufact.	1,709	9,251	-	1,347
Other Energy	-	5,412	-	-
Construction	-	17,829	-	1
Transportation	-	303,578	-	1,217
Rail	-	725	-	-
Land	-	247,715	-	1,217
Water	-	21,569	-	-
Air	-	33,569	-	-
Residential	1,255	28,068	-	9,249
Commercial	-	17,934	-	3,494
Public	-	10,253	-	84

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



Hydro (GWh)	Nuclear (GWh)	Electricity (GWh)	Heat (1,000toe)	Renewables (1,000toe)	Total (1,000toe)
6,634	161,995	-	-	13,575	50,087
-	-	-	-	-	323,145
-	-	-	-	-	-67,481
-	-	-	-	-	-9,566
-	-	-	-	-	2,027
-	-	-	-	-	-3,557
6,634	161,995	-	-	13,575	294,654
-6,634	-161,995	497,039	1,710	-2,639	-68,973
-6,634	-161,995	540,441	1,126	-2,639	-63,185
-	-	-	593	-	-1,897
-	-	-	-	-	-88
-	-	-43,402	-9	-	-3,802
-	-	497,039	1,710	10,936	225,681
-	-	269,975	-	8,063	138,469
-	-	15,397	-	-	2,719
-	-	1,755	-	-	212
-	-	252,824	-	-	120,372
-	-	10,999	-	-	1,768
-	-	11,426	-	-	1,487
-	-	1,918	-	-	199
-	-	10,014	-	-	1,160
-	-	58,483	-	-	65,927
-	-	12,575	-	-	5,013
-	-	35,159	-	-	28,143
-	-	9,846	-	-	1,523
-	-	99,313	-	-	10,594
-	-	3,091	-	-	3,778
-	-	-	-	-	779
-	-	-	-	-	2,746
-	-	2,689	-	443	42,714
-	-	2,689	-	-	335
-	-	-	-	443	34,369
-	-	-	-	-	3,351
-	-	-	-	-	4,659
-	-	66,173	1,484	231	21,256
-	-	127,435	187	167	17,005
-	-	30,767	39	2,032	6,237

2016

	Coal	Petroleum	LNG	City gas
Domestic Production	777	-	154	-
Imports	81,311	198,211	43,623	-
Exports	-	-67,481	-	-
Intl' Bunkers	-	-9,566	-	-
Stock Changes(+/-)	-128	408	1,747	-
Staistical Difference	-87	-3,464	-6	-
Primary Energy Supply	81,872	118,108	45,518	0
Transformation	-49,032	-3,348	-45,014	22,186
Electric Generation	-49,032	-3,025	-20,221	-292
District Heating	-	-198	-2,029	-263
Gas Manufacturing	-	-125	-22,669	22,706
Own Use & Loss	-	0	-96	36
Final Consumption	32,840	114,760	504	22,186
Industry	32,269	66,879	504	7,537
Agri. Fishery	-	1,392	0	3
Mining	-	61	0	0
Manufacturing	27,912	62,681	504	7,532
Food. Tabacco	32	79	0	711
Textile & Apparel	98	83	0	323
Wood & Wood Prod.	-	5	0	29
Pulp & Publications	-	42	0	257
Petro. Chemical	137	59,589	78	1,092
Non-Metallic	2,828	580	0	523
Iron & Steel	23,422	80	425	1,191
Non-Ferrous	341	32	-	303
Fabricated Metal	-	356	-	1,697
Other Manufact.	1,053	1,055	0	1,405
Other Energy	-	779	-	-
Construction	-	2,745	-	1
Transportation	-	40,771	-	1,270
Rail	-	104	-	-
Land	-	32,656	-	1,270
Water	-	3,351	-	-
Air	-	4,659	-	-
Residential	571	3,632	-	9,647
Commercial	-	2,047	-	3,645
Public	-	1,432	-	88

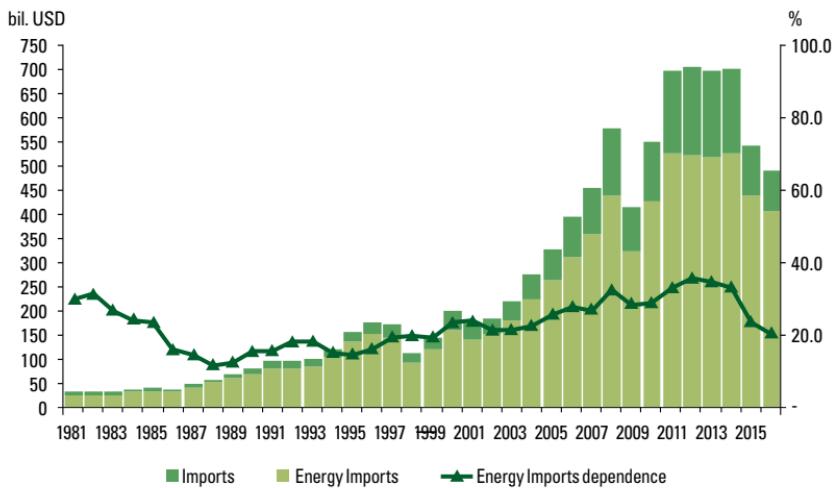
Note : Domestic anthracite consumption for the commercial sector is included in the residential sector.



(Unit : 1,000toe)

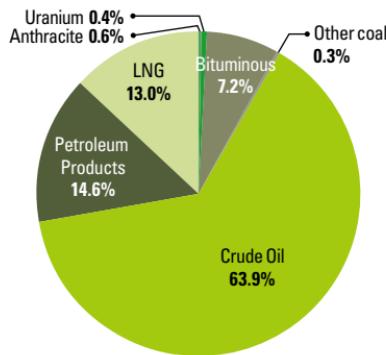
Hydro	Nuclear	Electricity	Heat	Renewables	Total
1,400	34,181	-	-	13,575	50,087
-	-	-	-	-	323,145
-	-	-	-	-	-67,481
-	-	-	-	-	-9,566
-	-	-	-	-	2,027
-	-	-	-	-	-3,557
1,400	34,181	0	0	13,575	294,654
-1,400	-34,181	42,745	1,710	-2,639	-68,973
-1,400	-34,181	46,478	1,126	-2,639	-63,185
0	0	0	593	0	-1,897
0	0	0	0	0	-88
0	0	-3,733	-9	0	-3,802
0	0	42,745	1,710	10,936	225,681
0	0	23,218	0	8,063	138,469
0	0	1,324	0	0	2,719
0	0	151	0	0	212
0	0	21,743	0	0	120,372
0	0	946	0	0	1,768
0	0	983	0	0	1,487
0	0	165	0	0	199
0	0	861	0	0	1,160
0	0	5,030	0	0	65,927
0	0	1,081	0	0	5,013
0	0	3,024	0	0	28,143
-	-	847	-	-	1,523
-	-	8,541	-	-	10,594
0	0	266	0	0	3,778
-	-	-	-	-	779
-	-	-	-	-	2,746
-	-	231	-	443	42,714
-	-	231	-	-	335
-	-	-	-	443	34,369
-	-	-	-	-	3,351
-	-	-	-	-	4,659
-	-	5,691	1,484	231	21,256
-	-	10,959	187	167	17,005
-	-	2,646	39	2,032	6,237

Energy Imports





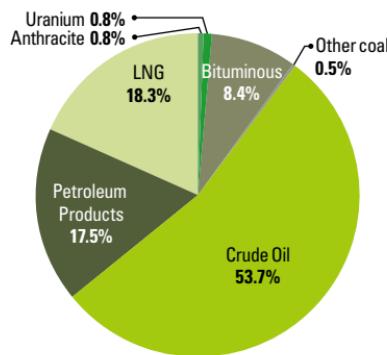
2006 85,566 million USD



09

Energy Imports

2016 80,942 million USD



9-1. Energy Imports

	Total Imports (CIF) (A)	Energy Imports			
		Total (B)	Coal		
			Anthracite	Bituminous	Others
1981	26,131	7,762	302	484	31
1982	24,251	7,581	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

Source : Korea International Trade Association



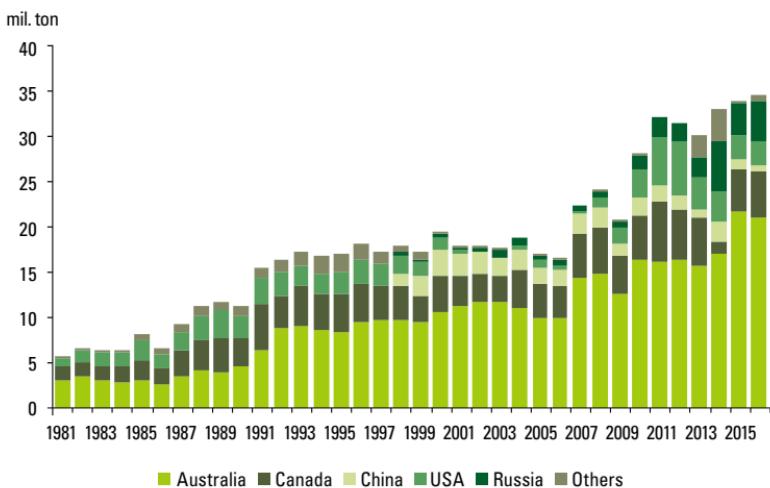
(Unit : Million USD)

60

Energy Imports

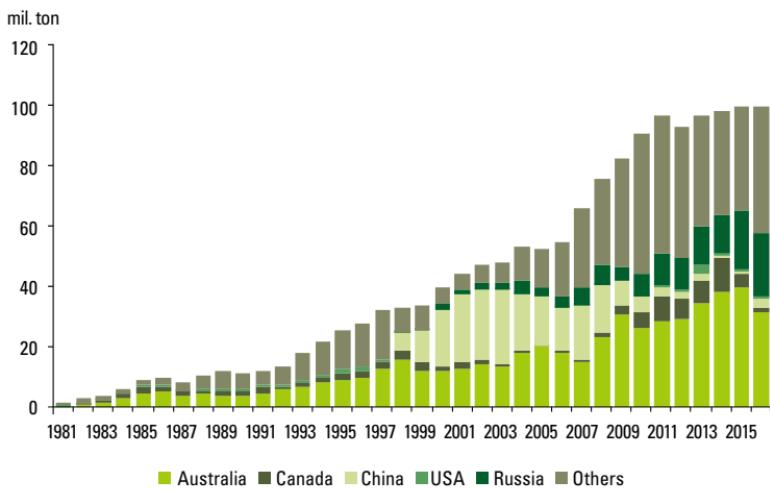
Petroleum		LNG	Uranium	Energy/Imports B/A(%)	Growth Rate (%)	
Crude Oil	Petroleum Products					
6,371	551	0	23	29.7	17.9	1981
6,097	684	0	14	31.3	-2.3	1982
5,572	701	0	8	26.5	-8.5	1983
5,771	747	0	19	23.7	4.7	1984
5,572	685	0	22	23.5	0.8	1985
3,346	585	13	24	15.8	-31.8	1986
3,702	949	284	0	14.4	18.6	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

Imports of Coking Coal by Country





Imports of Steaming Coal by Country



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	34,803	21,150	5,046	773	2,706	4,293	835

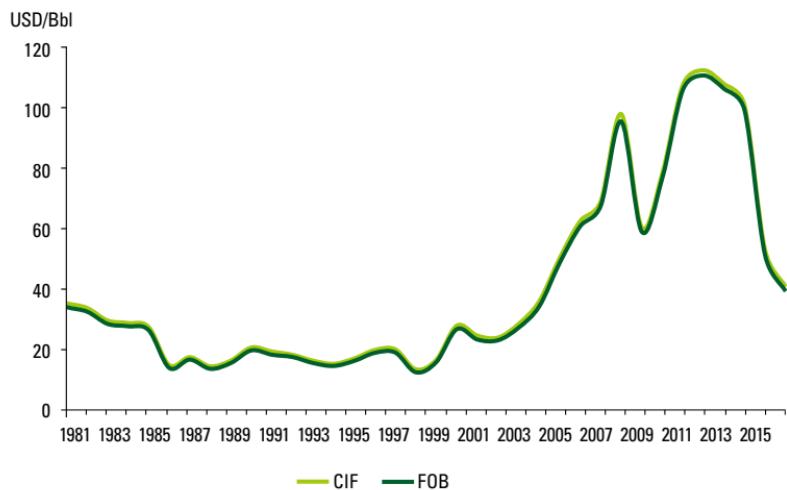
Source : IEA, 「Oil, Gas, Coal and Electricity(2017, 20)」



(Unit : 1,000ton)

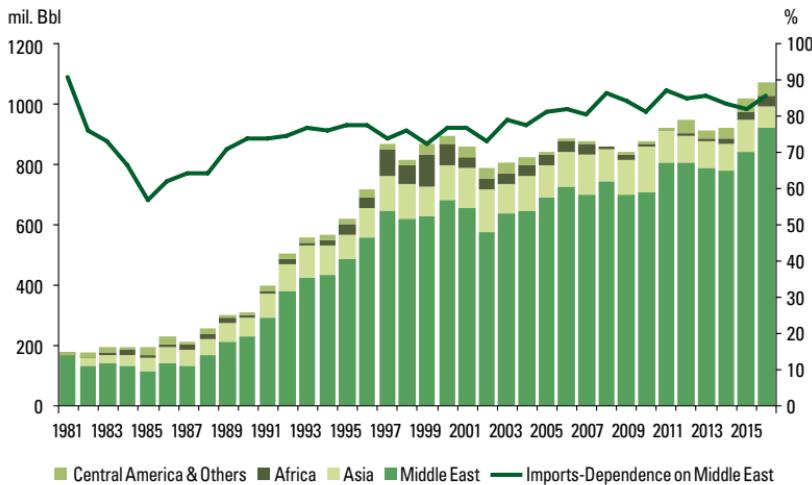
Steaming coal							
Total	Australia	Canada	China	USA	Russia	Others	
1,421	51	37	-	544	-	789	1981
2,600	445	590	-	52	-	1,513	1982
3,757	1,523	440	-	40	-	1,754	1983
5,873	3,067	1,157	-	55	-	1,594	1984
9,006	4,800	1,664	-	634	-	1,908	1985
9,862	5,281	1,453	-	627	-	2,501	1986
8,587	3,916	1,071	-	495	-	3,105	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
99,658	31,163	1,498	2,918	1,059	21,155	41,865	2016

Crude Oil Price





Crude Oil Imports by Region



9-3. Crude Oil Imports by Region and Prices

	Region(1,000bbl)			
	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

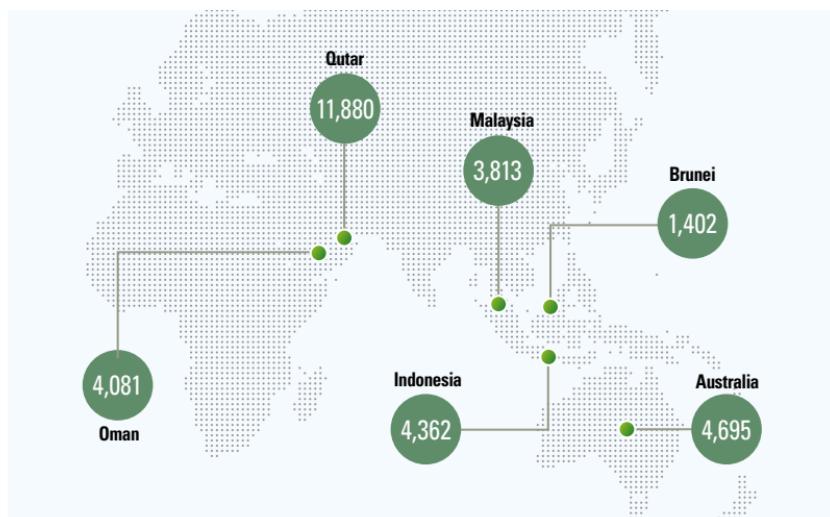
Source : Korea National Oil Corporation



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

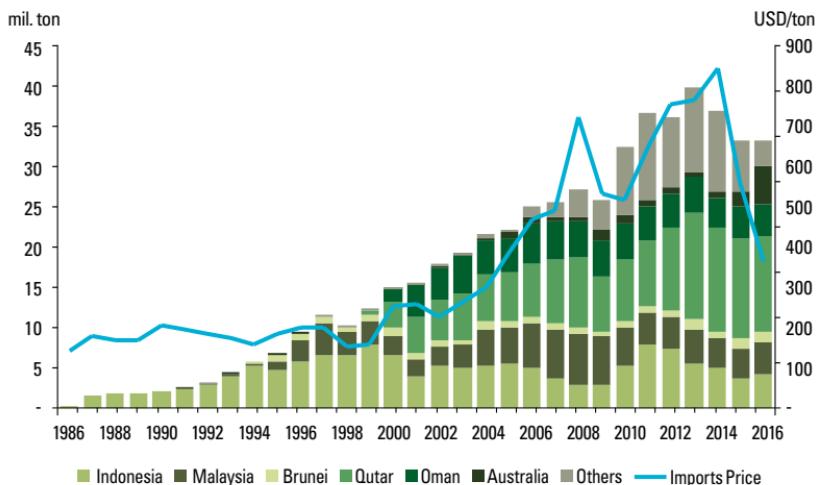
LNG Imports by Region 2016

(Unit : 1,000ton)





LNG Imports & Prices



9-4. LNG Imports by Region and Prices

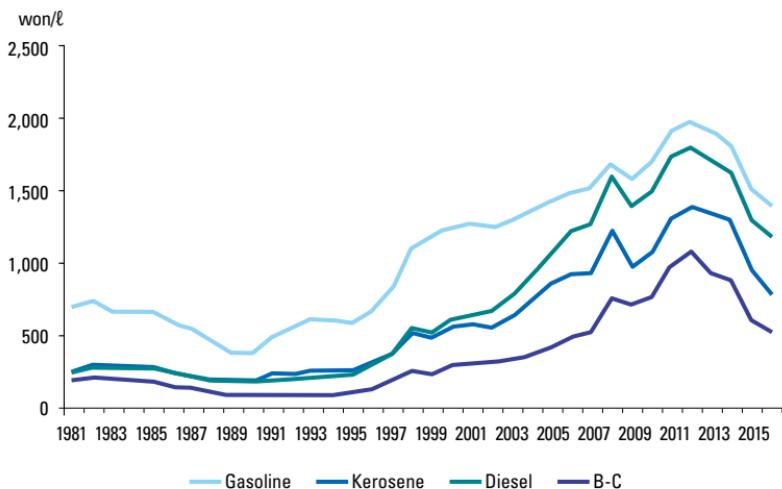
	Imports Price (USD/ton)	Region(1,000ton)		
		Total	Indonesia	Malaysia
1986	143	117	117	-
1987	179	1,682	1,682	-
1988	170	1,898	1,898	-
1989	172	2,015	2,015	-
1990	206	2,237	2,237	-
1991	194	2,494	2,436	58
1992	188	2,994	2,935	58
1993	175	4,459	4,112	290
1994	160	5,996	5,433	292
1995	189	6,756	4,892	1,040
1996	203	9,258	5,975	2,573
1997	200	11,471	6,730	3,928
1998	152	10,189	6,736	2,851
1999	161	12,284	7,943	3,046
2000	255	15,239	6,633	2,529
2001	260	15,318	4,055	2,175
2002	229	17,993	5,256	2,400
2003	263	19,308	5,200	2,798
2004	301	21,781	5,290	4,638
2005	387	22,317	5,502	4,688
2006	472	25,256	5,060	5,546
2007	495	25,569	3,755	6,161
2008	727	27,259	3,053	6,247
2009	537	25,822	3,084	5,874
2010	522	32,603	5,451	4,745
2011	650	36,685	7,894	4,144
2012	756	36,184	7,445	4,082
2013	769	39,876	5,627	4,314
2014	846	37,107	5,176	3,673
2015	563	33,366	3,776	3,698
2016	364	33,453	4,362	3,813

Source : Korea International Trade Association

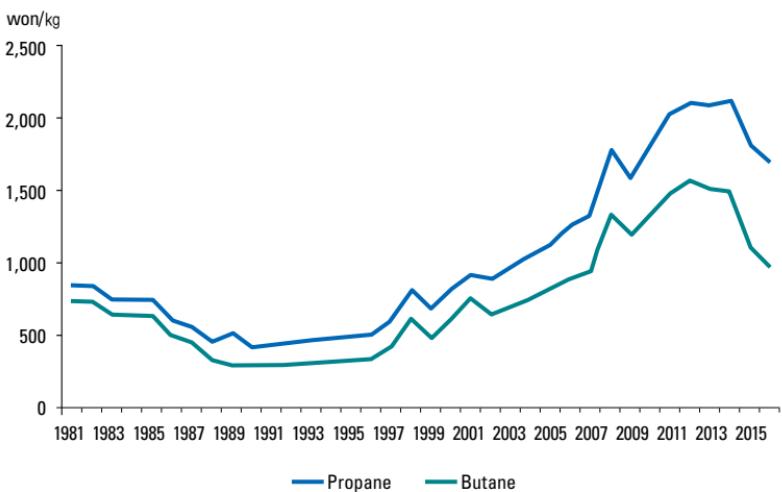


Region(1,000ton)					
Brunei	Qatar	Oman	Australia	Others	
-	-	-	-	-	1986
-	-	-	-	-	1987
-	-	-	-	-	1988
-	-	-	-	-	1989
-	-	-	-	-	1990
-	-	-	-	-	1991
-	-	-	-	1	1992
-	-	-	57	-	1993
271	-	-	-	-	1994
710	-	-	114	-	1995
654	-	-	56	-	1996
757	-	-	-	56	1997
541	-	-	-	61	1998
698	480	-	-	117	1999
849	3,251	1,619	54	304	2000
591	4,655	3,784	57	1	2001
769	5,123	3,970	176	299	2002
610	5,694	4,714	123	169	2003
838	5,818	4,411	285	501	2004
594	6,211	4,244	748	330	2005
850	6,458	5,221	701	1,420	2006
590	8,031	4,792	422	1,818	2007
738	8,744	4,544	398	3,535	2008
530	6,973	4,551	1,314	3,496	2009
787	7,449	4,557	1,030	8,584	2010
756	8,153	4,195	787	10,756	2011
773	10,278	4,127	832	8,647	2012
1,141	13,354	4,331	620	10,489	2013
717	12,853	3,726	836	10,126	2014
1,228	12,442	3,990	1,952	6,280	2015
1,402	11,880	4,081	4,695	3,220	2016

Petroleum Products



LPG





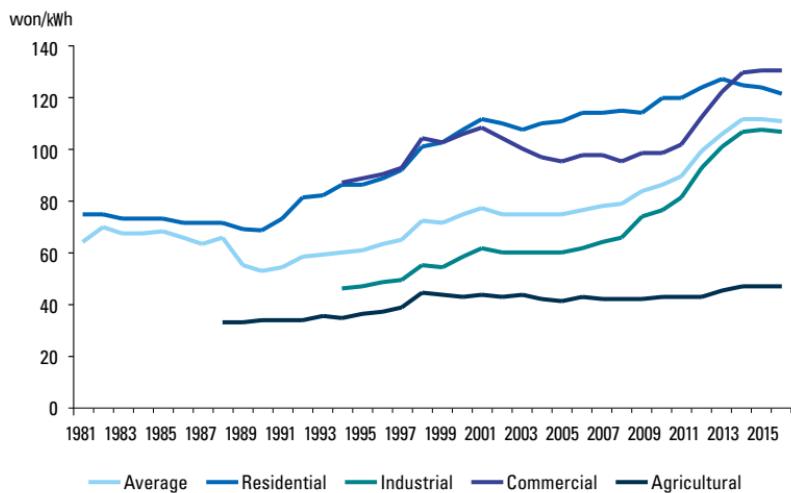
10-1. Prices of Major Petroleum Products

	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	87.4	415.0	293.0
1991	482.2	226.9	179.0	82.4	430.4	286.3
1992	546.0	231.1	195.1	83.4	449.4	293.9
1993	610.0	254.0	210.0	86.7	460.0	304.0
1994	611.0	252.3	219.5	81.9	475.0	304.0
1995	598.0	261.6	231.5	105.6	489.7	314.9
1996	675.9	314.3	294.1	129.9	510.0	330.0
1997	838.7	373.5	376.2	196.1	599.0	417.8
1998	1,122.6	524.2	553.5	262.7	815.0	620.0
1999	1,191.9	491.2	521.8	232.5	678.3	483.3
2000	1,248.4	559.6	612.8	294.3	809.3	614.3
2001	1,280.0	580.2	644.6	309.7	919.0	755.1
2002	1,269.1	554.4	677.6	322.8	887.3	639.3
2003	1,294.8	638.8	772.0	339.2	980.0	698.5
2004	1,365.3	752.2	907.9	367.0	1,050.2	750.6
2005	1,432.3	871.0	1,079.7	420.2	1,131.5	807.1
2006	1,492.4	931.9	1,228.2	489.4	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

Note : Butane is for residential and commercial

10 Prices

Average Revenues per kWh Sold





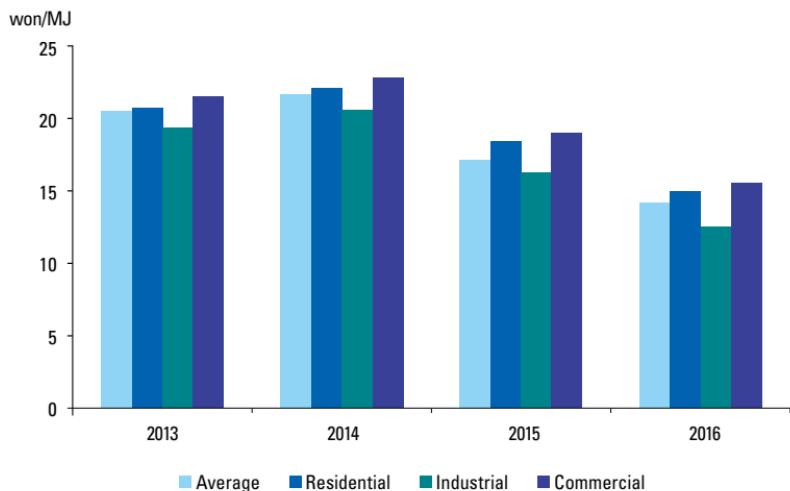
(Unit : won/kWh)

10-2. Average Revenues per kWh Sold

	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

10 Prices

City gas per m³



10-3. City gas per m³(Unit : 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

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

2) The Price is retail prices in Seoul.

Source : Korea City Gas Association

11-1. Major Coal Fields



Source : Korea Resources Corporation

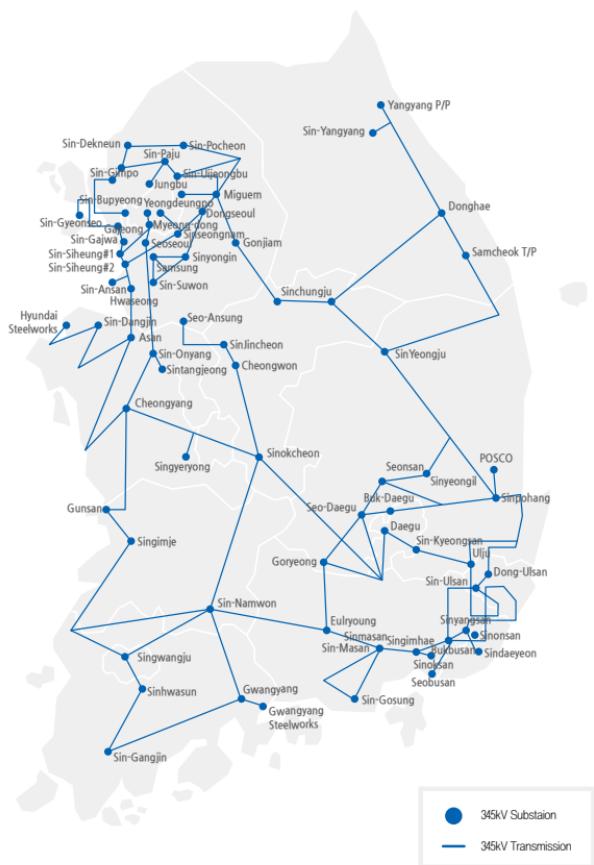


11-2. Electric Power Transmission Map



Note : Based on May 2015
Source : Korea Power Exchange

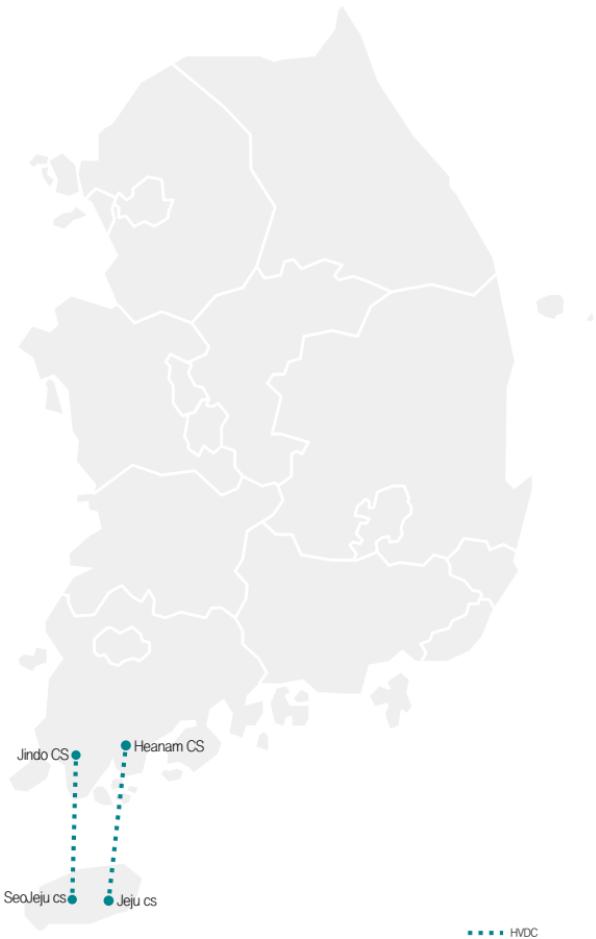
11-3. Electric Power Transmission Map



Note : Based on May 2015
 Source : Korea Power Exchange



11-3. Electric Power Transmission Map



11

Reserves & Distribution Map

Note : Based on May 2015
Source : Korea Power Exchange

11-3. Electric Power Transmission Map



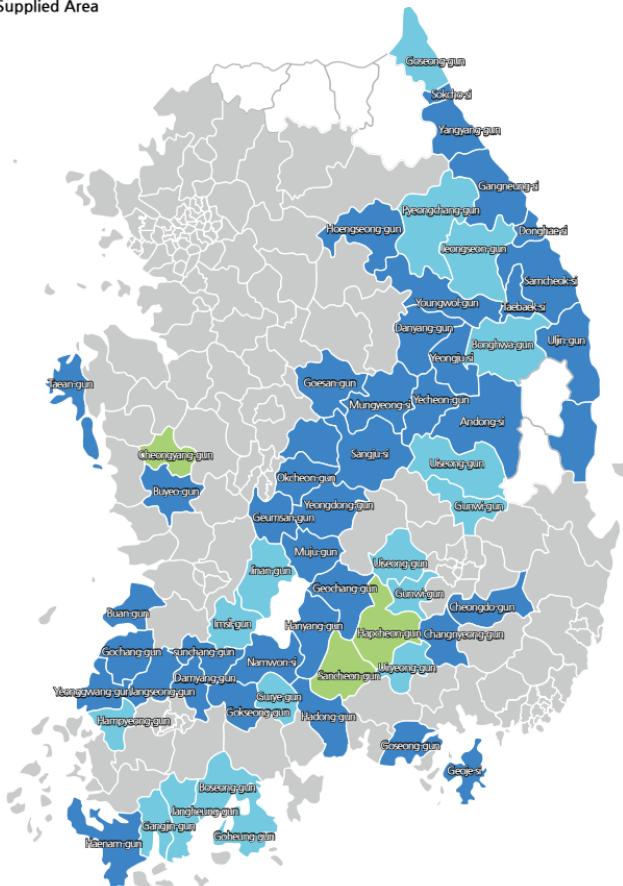
Note : Based on May 2015
Source : Korea Power Exchange



11-4. Areas of gas supply expansion

Expanded Areas of City Gas Supply

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

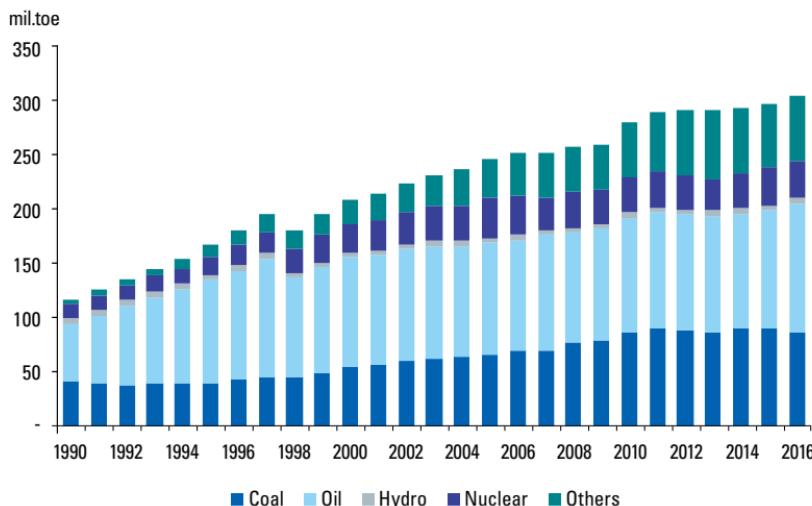


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Reserves & Distribution Map

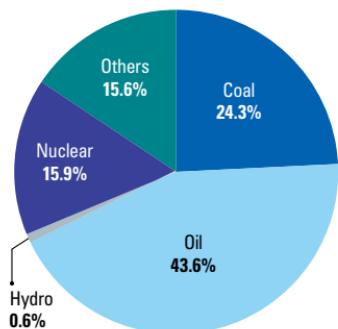
Source : Korea Gas Corporation

Primary Energy Supply of Korean Peninsula

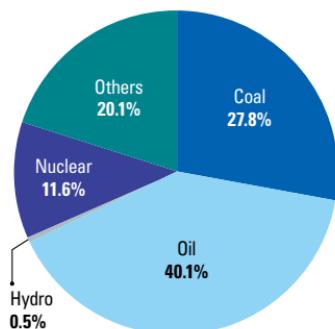


Republic of Korea

2006 233,374 thou. toe

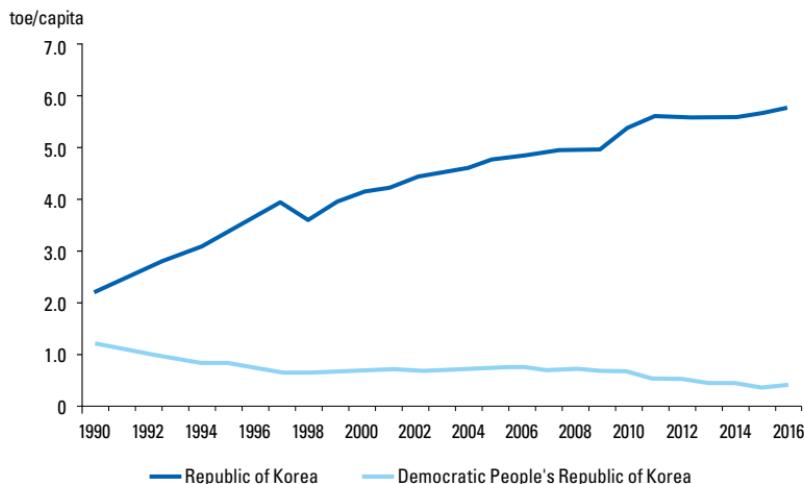


2016 294,654 thou. toe



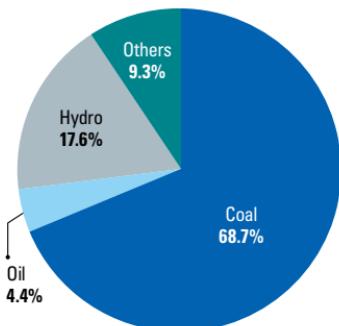


TPES/Population

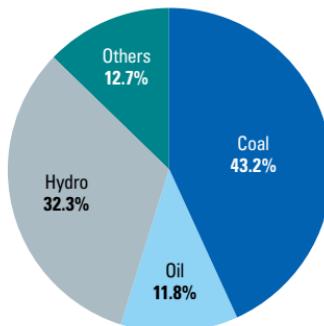


Democratic People's Republic of Korea

2006 17,955 thou. toe



2016 9,910 thou. toe



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	93,192	24,385	50,175	1,590	13,222	3,820
1991	103,619	24,535	59,627	1,263	14,078	4,120
1992	116,010	23,618	71,740	1,216	14,133	5,304
1993	126,879	25,882	78,495	1,502	14,535	6,465
1994	137,234	26,680	86,343	1,025	14,663	8,524
1995	150,437	28,091	93,955	1,369	16,757	10,264
1996	165,212	32,200	99,898	1,301	18,481	13,333
1997	180,638	34,799	109,080	1,351	19,272	16,136
1998	165,932	36,039	90,582	1,525	22,422	15,364
1999	181,363	38,155	97,270	1,517	25,766	18,655
2000	192,899	42,911	100,279	1,402	27,241	21,054
2001	198,418	45,711	100,385	1,038	28,033	23,243
2002	208,640	49,096	102,414	1,327	29,776	26,024
2003	215,073	51,116	102,380	1,722	32,415	27,435
2004	220,242	53,127	100,638	1,465	32,679	32,328
2005	228,628	54,788	101,526	1,297	36,695	34,316
2006	233,374	56,687	101,831	1,305	37,187	36,362
2007	236,459	59,654	105,494	1,084	30,731	39,491
2008	240,771	66,060	100,170	1,196	32,456	40,869
2009	243,428	68,604	102,336	1,213	31,771	39,388
2010	263,941	77,092	104,301	1,391	31,948	49,072
2011	276,755	83,640	105,146	1,684	33,265	52,902
2012	278,825	80,978	106,165	1,615	31,719	58,221
2013	280,442	82,067	105,811	1,771	29,283	61,510
2014	283,092	84,766	104,944	1,650	33,002	58,729
2015	287,705	85,699	109,566	1,223	34,765	56,452
2016	294,654	81,872	118,108	1,400	34,181	59,093

Note : Others includes LNG and renewables.

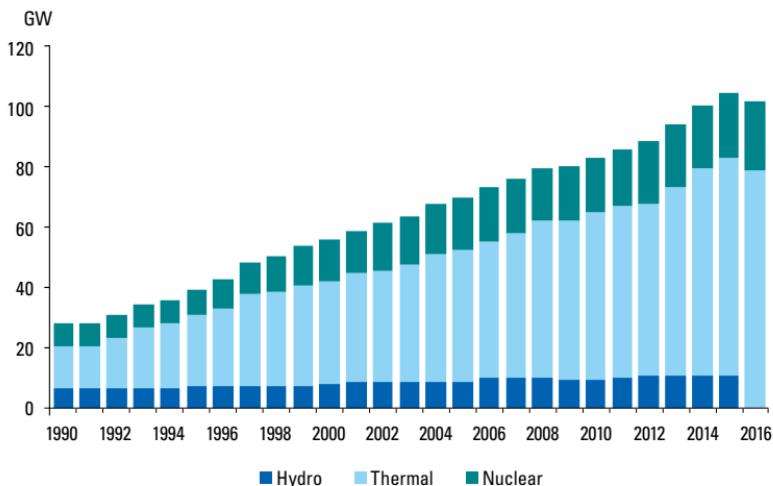
Source : Statistics Korea



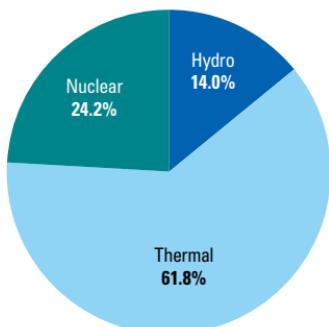
(Unit : 1,000 toe)

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	3.34	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	3.93	0.66	1997
14,030	9,300	1,400	2,554	-	776	3.58	0.63	1998
14,955	10,500	881	2,794	-	780	3.89	0.66	1999
15,687	11,250	1,117	2,540	-	780	4.10	0.69	2000
16,230	11,550	1,250	2,650	-	780	4.19	0.71	2001
15,638	10,950	1,253	2,655	-	780	4.38	0.68	2002
16,079	11,150	1,219	2,930	-	780	4.49	0.69	2003
16,535	11,400	1,230	3,125	-	780	4.58	0.71	2004
17,127	12,030	1,034	3,283	-	780	4.74	0.73	2005
17,955	12,340	790	3,155	-	1,670	4.82	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	5.54	0.52	2011
12,284	6,970	684	3,370	-	1,260	5.55	0.50	2012
10,630	5,190	710	3,470	-	1,260	5.56	0.43	2013
11,050	5,810	730	3,250	-	1,260	5.58	0.45	2014
8,700	3,930	1,010	2,500	-	1,260	5.64	0.35	2015
9,910	4,280	1,170	3,200	-	1,260	5.75	0.40	2016

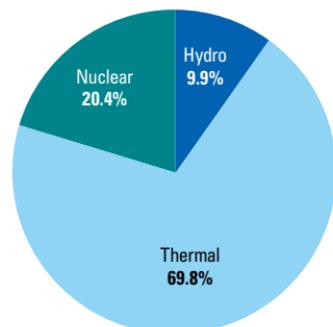
Electric Power Generation by Facility



2006 73,336 GWh



2016 113,527 GWh





12-2. Generating Facilities

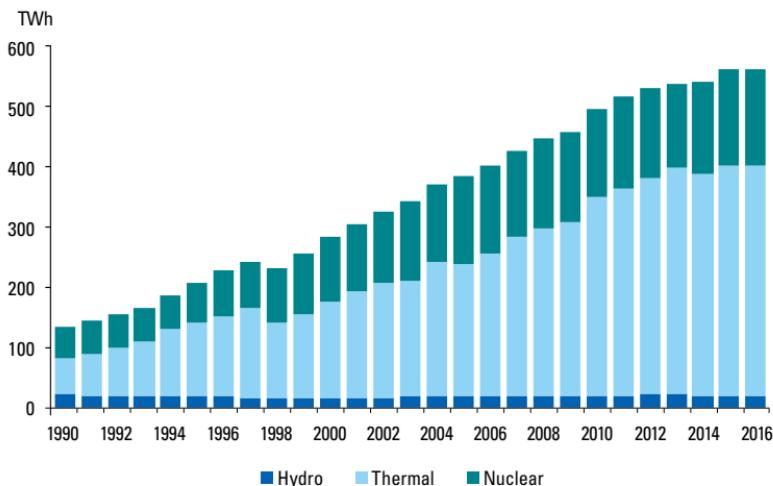
(Unit : MW)

	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	-

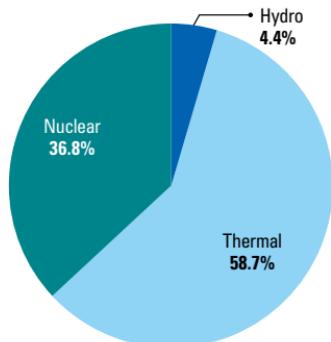
Note : Thermal includes alternative & group energy

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

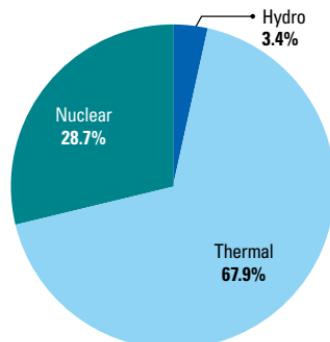
Electric Power Generation by Facility



2006 403,681 GWh



2016 564,341 GWh





12-3. Electric Power Generation by Facility

(Unit : GWh)

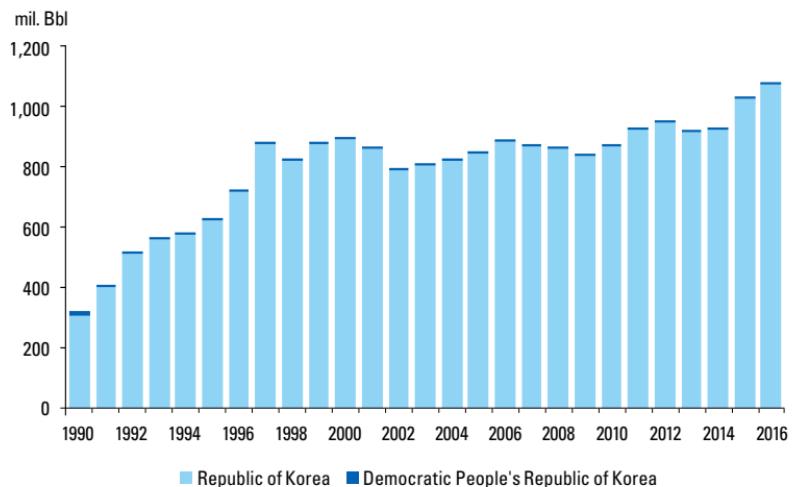
	Republic of Korea				Democratic People's Republic of Korea			
	Total	Hydro	Thermal	Nuclear	Total	Hydro	Thermal	Nuclear
1980	37,239	1,984	31,778	3,577	21,200	10,600	10,600	-
1985	58,007	3,659	37,603	16,745	25,100	12,300	12,800	-
1990	107,670	6,361	48,422	52,887	27,700	15,600	12,100	-
1991	118,619	5,051	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	255,146	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	7,695	351,552	150,327	21,500	13,500	8,000	-
2013	517,148	8,543	369,820	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	371,812	164,762	19,000	10,000	9,000	-
2016	540,441	6,634	371,812	161,995	23,900	12,800	11,100	-

Note : Thermal includes alternative & group energy.

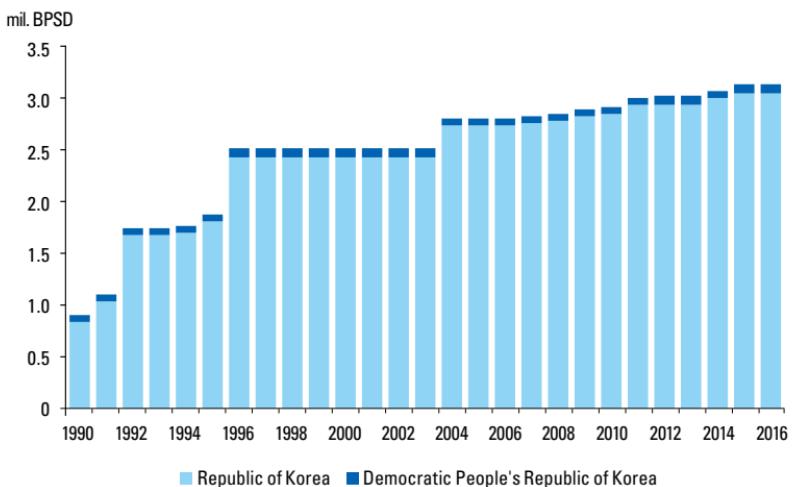
Source : Korea Electric Power Corporation, Statistics Korea(KOSIS)

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
	(1,000Bbl)	(1,000kD)	(1,000BPSD)	(1,000Bbl)	(1,000kD)	(1,000BPSD)
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

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

13-1. Energy Indicators(2015)

	Population (mil.person)	GDP	GDP(ppp)	Energy Prod.	Net Imports	TPES	Elec. Cons.	CO ₂ Emis
		(bil. USD(2010))		(mil. toe)		(TWh)	(Mt of CO ₂)	
Australia	24.07	1,485.31	1,077.54	381.33	-249.56	125.30	238.07	380.90
Austria	8.63	411.20	369.33	11.96	20.43	32.79	72.03	62.10
Belgium	11.21	508.10	459.56	10.68	50.81	53.27	87.83	30.80
Canada	35.85	1,796.37	1,515.44	471.33	-199.17	270.19	544.52	549.20
Chile	18.05	263.13	375.59	12.91	23.99	36.11	71.68	81.60
Czech Rep.	10.54	223.84	313.25	29.06	13.48	42.15	67.31	99.60
Denmark	5.68	341.01	253.13	15.95	2.27	16.10	33.02	32.00
Estonia	1.31	23.15	34.18	5.55	0.55	5.42	8.80	15.50
Finland	5.48	247.74	208.11	17.75	15.72	32.49	82.49	42.10
France	66.50	2,777.54	2,455.87	15.91	-10.58	5.07	468.40	290.50
Germany	81.69	3,696.61	3,473.47	119.57	198.31	307.79	573.00	729.80
Greece	10.86	244.31	255.98	8.47	18.38	23.19	56.59	64.60
Hungary	9.84	142.91	235.52	11.30	13.58	25.21	40.33	42.50
Iceland	0.33	15.16	13.98	4.92	0.95	5.58	18.22	2.10
Ireland	4.64	302.99	269.79	1.91	12.66	13.26	26.98	35.30
Israel	8.38	277.53	261.19	7.35	16.87	22.98	56.56	62.30
Italy	60.73	2,059.49	2,015.05	36.09	121.47	152.60	309.66	330.70
Japan	126.98	5,986.14	4,462.32	30.28	409.09	429.79	998.68	1,141.60
Korea	50.62	1,266.58	1,741.97	51.42	237.01	272.69	534.41	586.00
DPR of Korea	25.16	26.87	100.85	18.83	-11.00	7.84	11.57	22.50
Luxembourg	0.57	62.11	50.76	0.15	4.02	3.73	8.20	8.80
Mexico	121.01	1,207.71	1,990.23	191.79	-1.57	187.37	269.83	442.30
Netherlands	16.93	868.26	769.03	47.62	47.47	73.83	113.55	156.00
New Zealand	4.62	167.41	155.35	16.54	4.87	20.63	41.36	31.20
Norway	5.19	465.00	307.69	208.11	-177.31	29.62	121.48	36.70
Poland	38.46	556.18	931.80	67.68	28.83	94.93	154.08	282.40
Portugal	10.36	227.54	276.23	5.31	18.51	21.97	49.79	47.00
Slovak Rep.	5.42	101.12	152.34	6.59	9.75	16.39	27.93	29.40
Slovenia	2.06	49.07	58.19	3.41	3.24	6.57	14.19	12.80
Spain	46.41	1,414.86	1,472.32	33.60	95.38	118.92	254.38	247.00
Sweden	9.80	540.56	432.52	34.00	14.61	45.45	133.21	37.10
Switzerland	8.28	625.92	446.09	12.22	13.57	24.53	62.11	37.30
Turkey	77.45	1,087.55	1,779.24	31.65	103.62	128.81	229.20	317.20
United Kingdom	65.11	2,682.26	2,476.52	119.00	72.31	180.75	330.90	389.80
United States	321.70	16,597.45	16,597.45	2,018.53	257.74	2,188.28	4,128.51	4,997.50

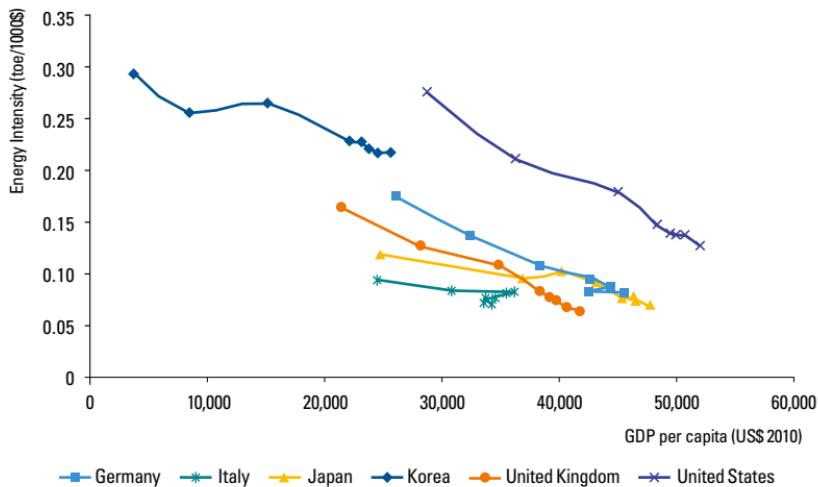
Note : CO₂ emissions from fuel combustion only. Emission are calculated using the IEA's energy balances and the Revised 1966 IPCC Guidelines.

Source : IEA, Key World Energy Statistics 2017

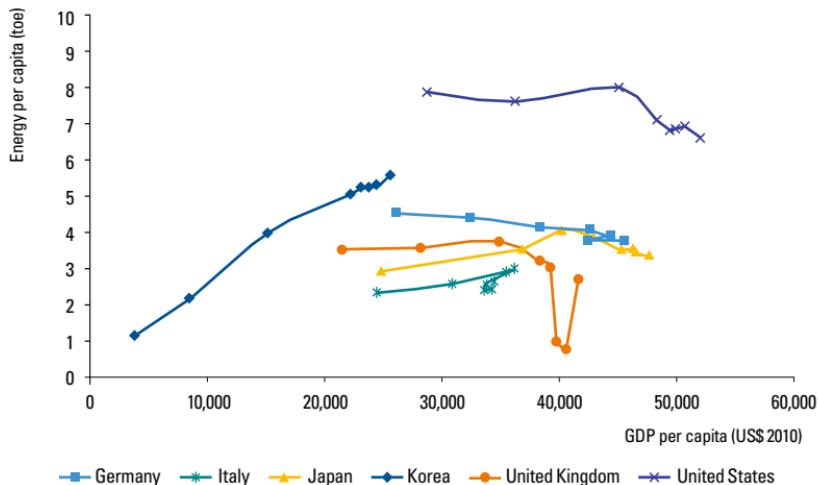


TPES/Pop.	TPES/GDP	TPES/GDP	Elec. Cons./ Pop.	CO ₂ /TPES	CO ₂ /Pop.	CO ₂ /GDP	CO ₂ /GDP(ppp)	
(toe/capita)	(toe/1,000USD)	(kWh/capita)	(tCO ₂ /toe)	(tCO ₂ /capita)	(kgCO ₂ /USD)			
5.21	0.08	0.12	9,893	3.04	15.82	0.26	0.35	Australia
3.80	0.08	0.09	8,347	1.89	7.20	0.15	0.17	Austria
4.75	0.11	0.12	7,834	1.74	8.25	0.18	0.20	Belgium
7.54	0.15	0.18	15,188	2.03	15.32	0.31	0.36	Canada
2.00	0.14	0.10	3,972	2.26	4.52	0.31	0.22	Chile
4.00	0.19	0.14	6,384	2.36	9.45	0.44	0.32	Czech Rep.
2.83	0.05	0.06	5,812	1.99	5.63	0.09	0.13	Denmark
4.13	0.23	0.16	6,698	2.86	11.83	0.67	0.45	Estonia
5.93	0.13	0.16	15,050	1.30	7.68	0.17	0.20	Finland
3.71	0.09	0.10	7,043	57.30	4.37	0.10	0.12	France
3.77	0.08	0.09	7,015	2.37	8.93	0.20	0.21	Germany
2.14	0.10	0.09	5,212	2.79	5.95	0.26	0.25	Greece
2.56	0.18	0.11	4,099	1.69	4.32	0.30	0.18	Hungary
16.87	0.37	0.40	55,054	0.38	6.36	0.14	0.15	Iceland
2.86	0.04	0.05	5,811	2.66	7.61	0.12	0.13	Ireland
2.74	0.08	0.09	6,752	2.71	7.43	0.22	0.24	Israel
2.51	0.07	0.08	5,099	2.17	5.45	0.16	0.16	Italy
3.38	0.07	0.10	7,865	2.66	8.99	0.19	0.26	Japan
5.39	0.22	0.16	10,558	2.15	11.58	0.46	0.34	Korea
0.31	0.29	0.08	460	2.87	0.89	0.84	0.22	DPR of Korea
6.55	0.06	0.07	14,418	2.36	15.44	0.14	0.17	Luxembourg
1.55	0.16	0.09	2,230	2.36	3.66	0.37	0.22	Mexico
4.36	0.09	0.10	6,707	2.11	9.21	0.18	0.20	Netherlands
4.46	0.12	0.13	8,947	1.51	6.75	0.19	0.20	New Zealand
5.71	0.06	0.10	23,403	1.24	7.07	0.08	0.12	Norway
2.47	0.17	0.10	4,007	2.97	7.34	0.51	0.30	Poland
2.12	0.10	0.08	4,807	2.14	4.54	0.21	0.17	Portugal
3.02	0.16	0.11	5,151	1.79	5.42	0.29	0.19	Slovak Rep.
3.19	0.13	0.11	6,877	1.95	6.21	0.26	0.22	Slovenia
2.56	0.08	0.08	5,482	2.08	5.32	0.17	0.17	Spain
4.64	0.08	0.11	13,594	0.82	3.79	0.07	0.09	Sweden
2.96	0.04	0.06	7,499	1.52	4.50	0.06	0.08	Switzerland
1.66	0.12	0.07	2,959	2.46	4.10	0.29	0.18	Turkey
2.78	0.07	0.07	5,082	2.16	5.99	0.15	0.16	United Kingdom
6.80	0.13	0.13	12,833	2.28	15.53	0.30	0.30	United States

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*
Germany										
Population	millions	78.30	79.36	81.46	80.28	80.43	80.65	80.98	81.69	82.73
GDP	bil. 2010 US\$	2,040.54	2,568.63	3,123.91	3,417.10	3,559.59	3,577.02	3,434.08	3,696.61	3,765.64
GDP/Pop.	2010 US\$	26,060.5	32,366.8	38,349.0	42,564.8	44,257.0	44,352.4	42,406.5	45,251.7	45,517.2
TPES	Mtoe	357.18	351.20	336.58	325.97	310.81	317.60	305.72	307.79	311.53
TPES/Pop.	toe/capita	4.56	4.43	4.13	4.07	3.87	3.94	3.78	3.77	3.77
TPES/GDP	toe/thou. US\$	0.18	0.14	0.11	0.10	0.09	0.09	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	60.62
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	2,077.61
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	34,272.7
TPES	Mtoe	130.84	146.56	171.52	173.72	161.32	155.37	146.77	152.60	149.04
TPES/Pop.	toe/capita	2.32	2.58	3.01	2.90	2.67	2.56	2.41	2.51	2.46
TPES/GDP	toe/thou. US\$	0.10	0.08	0.08	0.08	0.08	0.08	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
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
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
TPES	Mtoe	344.52	438.70	518.01	498.61	451.38	454.61	439.23	429.79	423.76
TPES/Pop.	toe/capita	2.94	3.55	4.08	3.89	3.54	3.57	3.46	20,274.00	3.34
TPES/GDP	toe/thou. US\$	0.12	0.10	0.10	0.09	0.08	0.08	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
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
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
TPES	Mtoe	41.26	92.91	188.16	250.02	263.47	263.83	268.43	272.69	284.32
TPES/Pop.	toe/capita	1.08	2.17	4.00	5.06	5.27	5.25	5.32	5.39	5.59
TPES/GDP	toe/thou. US\$	0.29	0.26	0.27	0.23	0.23	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
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
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
TPES	Mtoe	198.43	205.92	222.95	202.77	193.96	190.99	179.89	180.75	177.68
TPES/Pop.	toe/capita	3.52	3.60	3.79	3.23	3.05	0.98	0.79	0.78	2.71
TPES/GDP	toe/thou. US\$	0.16	0.13	0.11	0.08	0.08	0.08	0.07	0.07	0.07
United States										
Population	millions	227.73	250.18	282.40	309.81	314.49	316.80	319.23	321.70	324.24
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
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
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
TPES/Pop.	toe/capita	7.92	7.65	8.05	7.15	6.86	6.88	6.94	6.80	6.66
TPES/GDP	toe/thou. US\$	0.28	0.21	0.18	0.15	0.14	0.14	0.14	0.13	0.13

Source : World Energy Balance, IEA, 2017

Appendices

1. Energy Conversion Factors/Oil Equivalent

Energy by Source		Unit	Gross Calorific Values(kcal)					
			1980	1981	1987	1990	2007	2012
Petroleum	Crude Oil	kg	10,000	10,000	10,000	10,000	10,750	10,730
	Gasoline	ℓ	8,300	8,300	8,300	8,300	8,000	7,780
	Kerosene	ℓ	8,700	8,700	8,700	8,700	8,800	8,790
	Diesel	ℓ	9,200	9,200	9,200	9,200	9,050	9,010
	Bunker-A	ℓ	9,500	9,400	9,400	9,400	9,300	9,290
	Bunker-B	ℓ	9,200	9,700	9,700	9,700	9,650	9,670
	Bunker-C	ℓ	9,900	9,900	9,900	9,900	9,900	9,950
	Propane	kg	12,000	12,000	12,000	12,000	12,050	12,050
	Butane	kg	11,800	11,800	11,800	11,800	11,850	11,850
	Naphtha	ℓ	8,000	8,000	8,000	8,000	8,050	7,710
	Solvent	ℓ	-	-	-	(8,200)	7,950	7,950
	Jet-Oil(JA-1)	ℓ	-	8,700	8,700	8,700		
	Jet-Oil(JA-4)	ℓ	-	8,500	8,500	8,500	8,750	8,730
	Jet-Oil(AVI-G)	ℓ	-	8,700	8,700	8,700		
	Asphalt	kg	-	-	-	(10,000)	9,900	9,910
Gas	Lubricants	ℓ	-	-	-	(9,400)	9,250	9,500
	Pet. Coke	kg	-	-	-	(10,800)	8,100	8,000
	LNG	kg	-	9,500	12,980	13,000	13,000	13,040
City Gas(LNG)	Nm³	7,000	7,000	7,000	10,500	10,550	10,430	
	City Gas(LPG)	Nm³	-	-	-	15,000	15,000	15,000
Coal	Domestic Anthracite	kg	4,600	4,600	4,500	4,500	4,650	4,500
	Import Anthracite(Steam)	kg	-	-	-	6,000	6,550	5,020
	Import Anthracite(Coking)	kg	-	-	-			5,900
	Bituminous(Steam)	kg	6,600	6,600	6,600	6,600	6,200	5,020
	Bituminous(Coking)	kg	-	-	-	-	7,000	7,000
	Sub-bituminous Coal	kg	-	-	-	-	5,350	5,420
	Cokes	kg	6,500	6,500	6,500	6,500	7,050	6,960
	Electricity(Generation)	kWh	2,500	2,500	2,500	2,500	2,150	2,110
Electricity	Electricity(Consumption)	kWh	-	-	-	-	-	2,300

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}	10^7	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	m³	liter	ft³	gal(U.S)	gal(U.K)	bbl
m³	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}
ft³	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

