



Department of Alternative Energy
Development and Efficiency
Ministry of Energy



Thailand Energy Statistics 2006



DEDE

The Department of Alternative Energy Development and Efficiency (DEDE), Ministry of Energy has the main role and functions in research development and promotion of alternative energy, as well as energy conservation. DEDE also publishes the annual publications of "Oil and Thailand", "Electric Power in Thailand" and "Thailand Energy Situation", apart from the main duties, in order to disseminate data and information on statistics of crude oil, natural gas, petroleum products, electricity, coal & lignite, renewable and related details gathered during the calendar year.

In 2004, DEDE produced a handy, pocket - sized summary of key energy data. This new report is the First Issue of Thailand Energy Summary. Key Thailand Energy Statistics contains timely data on the statistics of energy production, import, export, transformation and consumption, energy & economy and related details, which may be useful for further studies and references.

In this regard, DEDE would like to take this opportunity to express our sincere appreciation to all government agencies and state enterprises as well as energy production and distribution companies for their excellent cooperation in providing useful data and information for this publication.

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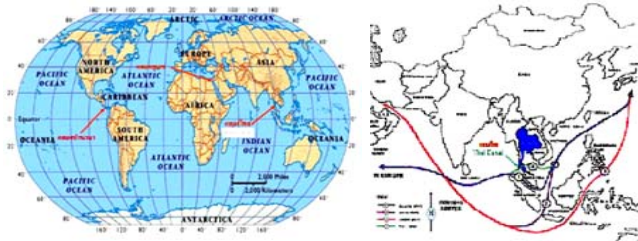
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Abbreviations

Com.	= Commercial
GDP	= Gross Domestic Product
HSD	= High Speed Diesel
LPG	= Liquefied Petroleum Gas
NG.	= Natural Gas
NGL	= Natural Gasoline
Res.	= Residential
ULG	= Unleaded Premium Gasoline

Bcf	= Billion Cubic Feet
bil	= Billion
Btu	= British Thermal Unit
e	= Estimated Data
Gcal	= Gigacalories
Gj	= Gigajoules
Gwh	= Gigawatt - Hour
kcal	= Kilocalories (10^3 Calories)
ktoe	= Kilo Ton of Oil Equivalent
mil	= Million
MMscf	= Million Standard Cubic Feet
MMscfd	= Million Standard Cubic Feet Per Day
scf	= Standard Cubic Feet
toe	= Ton of Oil Equivalent

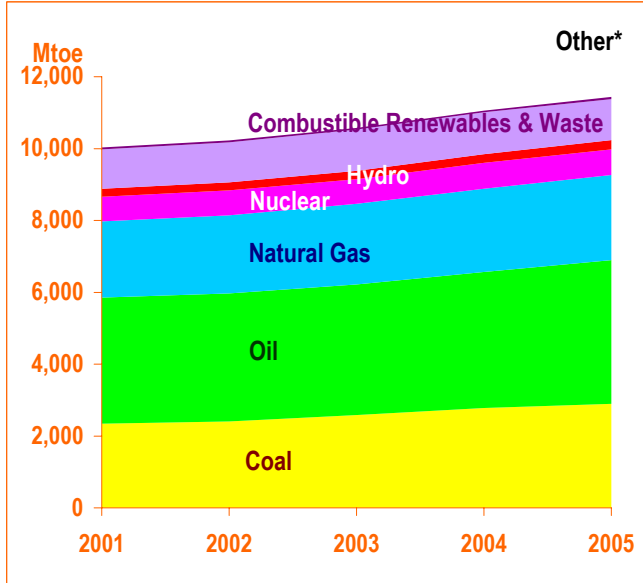
General Information on Thailand 2006



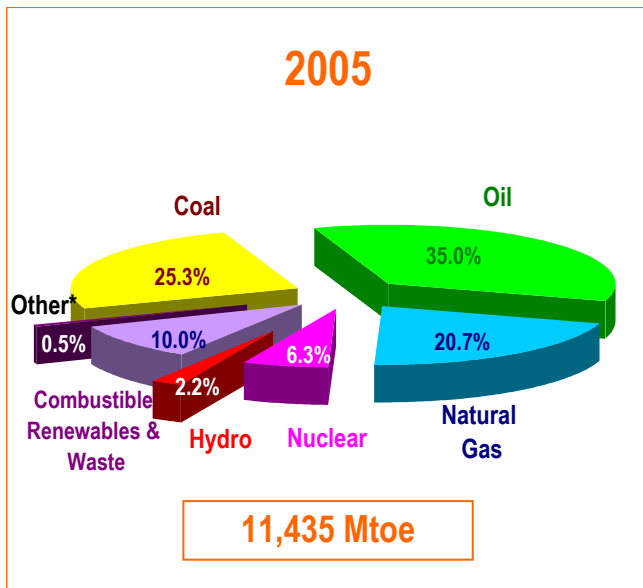
Area	:	513,115 km ²
Population	:	62,829 thousand
Number of Provinces	:	76
Number of Households	:	19,582,845
Average Size of Households	:	3.2 persons
GDP (1988 Prices)	:	4,044 10 ⁹ Baht
GDP Growth	:	5.0 %
GDP per capita	:	64,365 Baht/capita
GDP per household	:	206,507 Baht/household
Export	:	4,939 10 ⁹ Baht
Import	:	4,871 10 ⁹ Baht
Currency	:	1 USD = 38.03 Baht

World Energy

Total Primary Energy Supply by Fuel



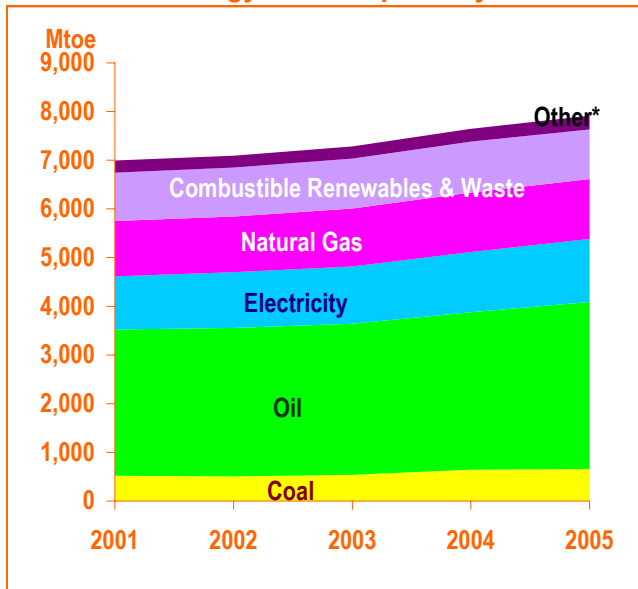
Source : IEA's Key World Energy Statistics 2007



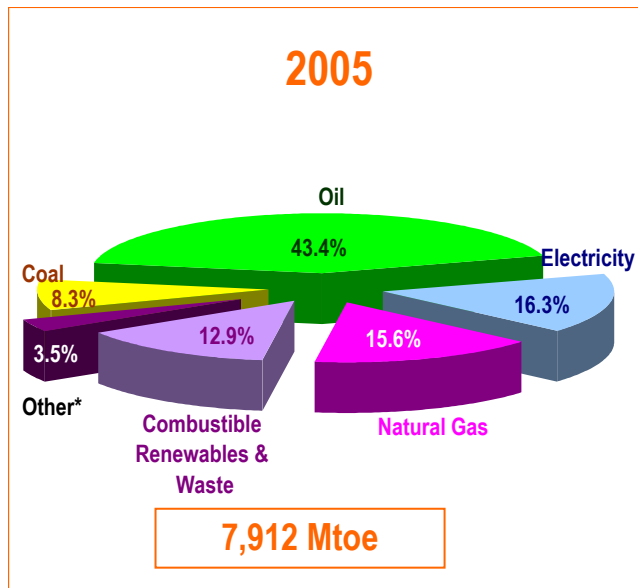
* Others include geothermal, solar, wind and heat, etc.

World Energy

Total Final Energy Consumption by Fuel



Source : IEA's Key World Energy Statistics 2007



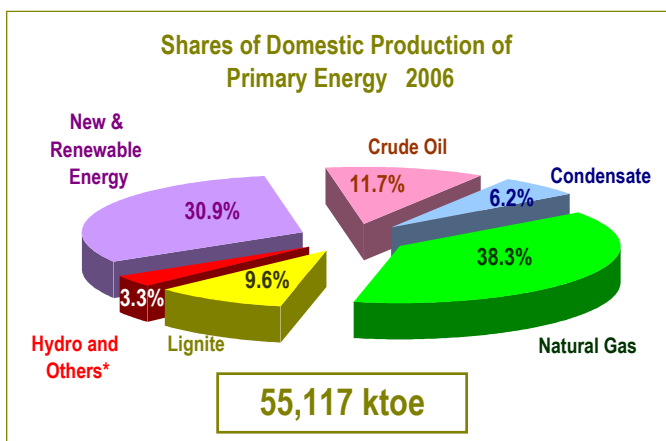
* Others include geothermal, solar, wind and heat, etc.

Production

Domestic Production of Primary Energy

Domestic Production of Primary Energy (ktoe)	2002	2003	2004	2005	2006
Total	45,227	48,149	49,838	53,319	55,117
Commercial Energy	31,413	33,345	33,808	36,662	38,090
Crude Oil	3,785	4,782	4,297	5,704	6,433
Condensate	2,437	2,882	3,115	3,156	3,418
Natural Gas	17,846	18,809	19,446	20,534	21,131
Lignite	5,689	5,254	5,610	5,983	5,307
Hydro and Others*	1,656	1,618	1,340	1,285	1,801
New & Renewable Energy	13,814	14,804	16,030	16,657	17,027

*Others include geothermal, solar cell and wind power.



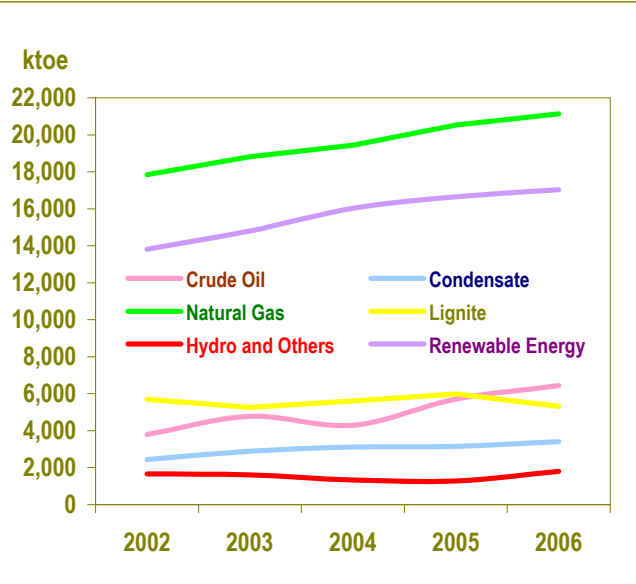
Domestic Production of Primary Energy

(Physical unit)

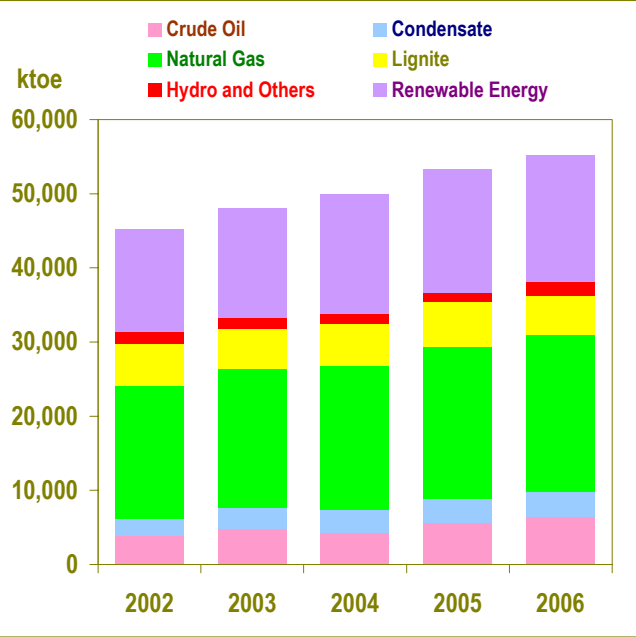
Domestic Production of Primary Energy	2002	2003	2004	2005	2006
Commercial Energy					
Crude Oil (mil. litres)	4,401	5,561	4,997	6,633	7,480
Condensate (mil. litres)	3,114	3,682	3,980	4,032	4,367
Natural Gas (MMscf)	726,349	765,510	791,470	835,743	860,026
Lignite (10 ³ ton)	19,602	18,843	20,060	20,878	19,001
Hydro and Others* (Gwh)	7,473	7,301	6,042	5,800	8,128
New & Renewable Energy (10³ ton)	41,192	45,156	49,258	54,381	55,560

Production

Trends of Domestic Production of Primary Energy 2002 - 2006



Shares of Domestic Production of Primary Energy 2002 - 2006



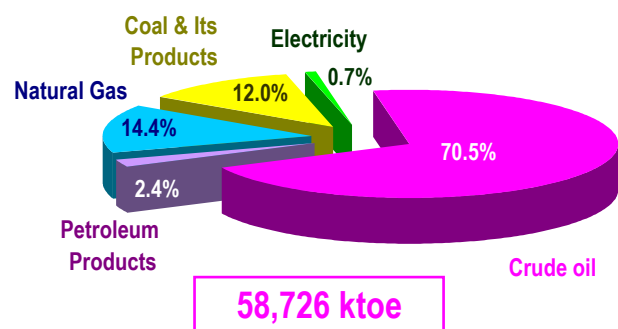
Imports & Exports

Energy Imports

Energy Imports* (ktoe)	2002	2003	2004	2005	2006
Commercial Energy	47,445	51,299	57,691	57,311	58,726
Crude Oil	36,359	38,721	43,535	41,308	41,387
Petroleum Products	818	860	1,511	1,980	1,383
Natural Gas	6,465	7,006	7,607	8,236	8,484
Coal & Its Products	3,564	4,501	4,749	5,410	7,032
Electricity	239	211	289	377	440

*Energy imports exclude renewable energy.

Shares of Energy Imports 2006



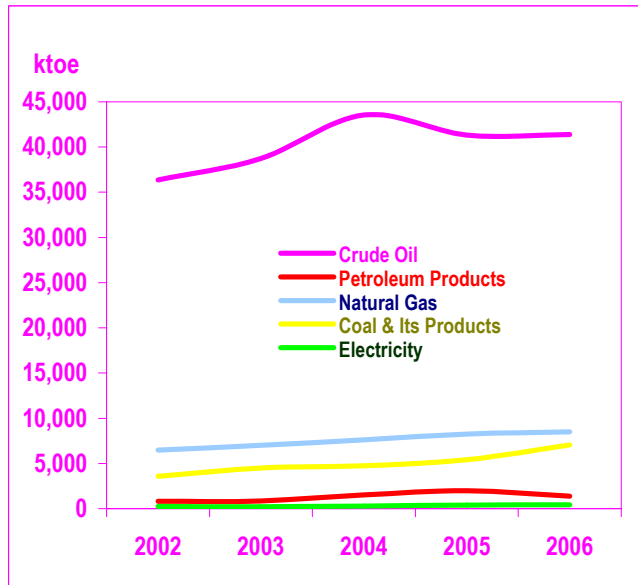
Energy Imports

(Physical unit)

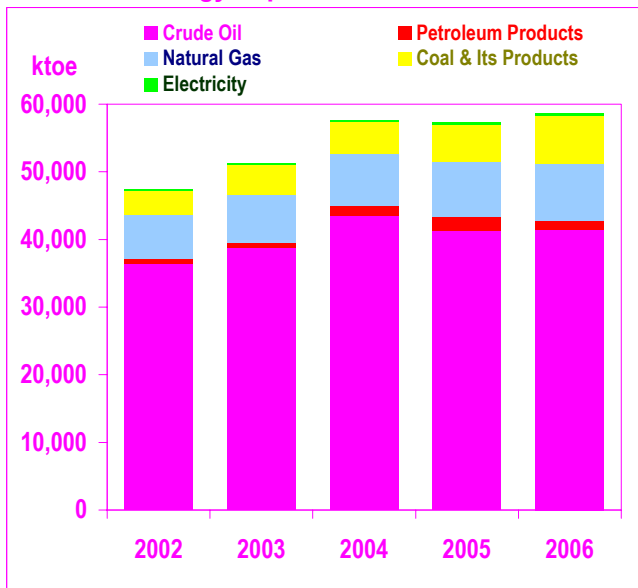
Energy Imports	2002	2003	2004	2005	2006
Commercial Energy					
Crude Oil (mil. litres)	42,278	45,025	50,622	48,033	48,126
Petroleum Products (mil. litres)	981	998	1,715	2,165	1,504
Natural Gas (MMscf)	263,120	285,125	309,587	335,188	345,292
Coal & Its Products (10 ³ ton)	5,596	7,107	7,536	8,572	11,157
Electricity (Gwh)	2,812	2,479	3,388	4,419	5,159

Imports & Exports

Trends of Energy Imports 2002 - 2006



Shares of Energy Imports 2002-2006

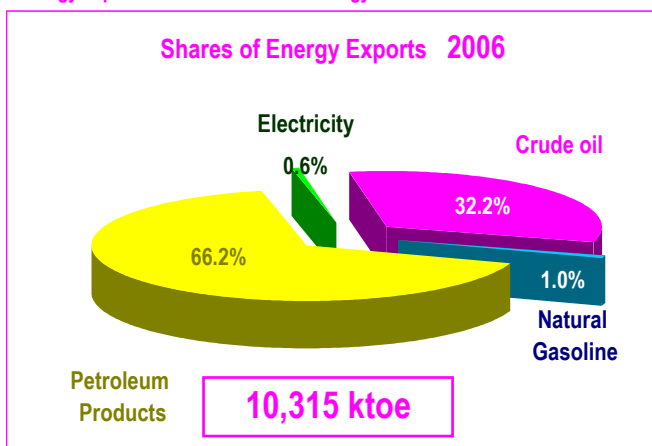


Imports & Exports

Energy Exports

Energy Exports* (ktoe)	2002	2003	2004	2005	2006
Commercial Energy	8,191	7,945	8,385	8,981	10,315
Anthracite	-	-	-	3	-
Crude Oil	2,434	3,026	2,827	3,273	3,318
Condensate	228	-	-	-	-
Natural Gasoline	44	38	59	135	99
Petroleum Products	5,462	4,856	5,467	5,515	6,834
Electricity	23	25	32	55	64

*Energy exports exclude renewable energy.



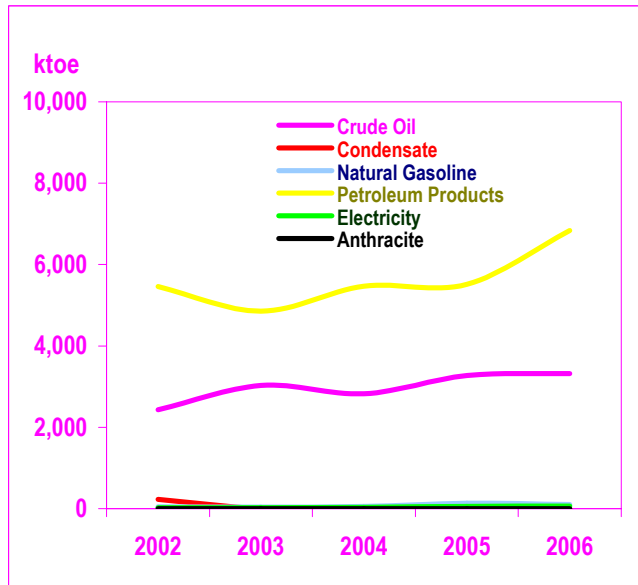
Energy Exports

(Physical unit)

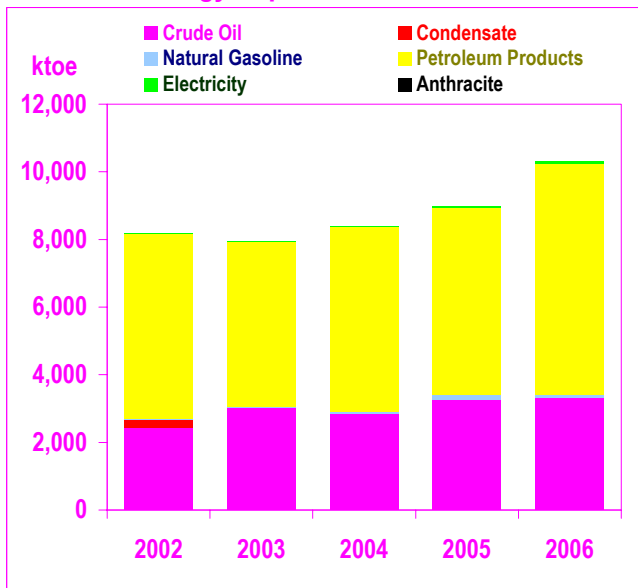
Energy Exports	2002	2003	2004	2005	2006
Commercial Energy					
Crude Oil (mil. litres)	2,830	3,519	3,287	3,806	3,858
Condensate (mil. litres)	291	-	-	-	-
Natural Gasoline (MMscf)	56	48	76	172	126
Petroleum Products (mil. litres)	6,838	6,130	6,894	7,093	8,399
Electricity (Gwh)	273	296	372	642	750

Imports & Exports

Trends of Energy Exports 2002 - 2006



Shares of Energy Exports 2002-2006

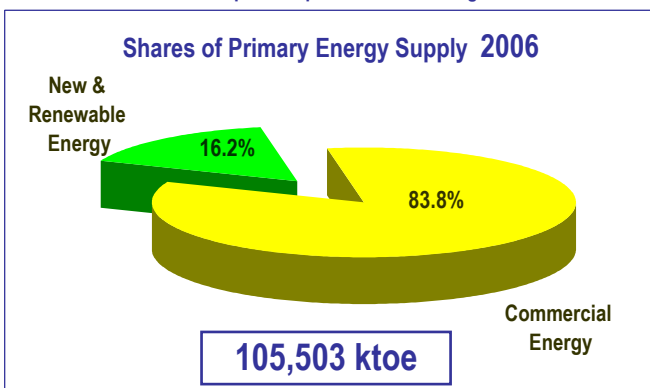


Supply

Primary Energy Supply

Primary Energy Supply (ktoe)	2002	2003	2004	2005	2006
Total*	85,854	92,491	100,193	102,981	105,503
Commercial Energy	72,033	77,673	84,143	86,303	88,449
Crude Oil	39,431	42,635	46,685	45,663	47,275
Condensate & NGL	2,079	2,618	2,712	2,674	2,963
Natural Gas	24,311	25,815	27,053	28,770	29,615
Coal & Its Products	9,219	9,405	10,575	11,457	12,263
Petroleum Products	(4,879)	(4,604)	(4,479)	(3,868)	(5,844)
Electricity	1,872	1,804	1,597	1,607	2,177
New & Renewable Energy	13,821	14,818	16,050	16,678	17,054

*Domestic Production + Import - Export +/- Stock Change



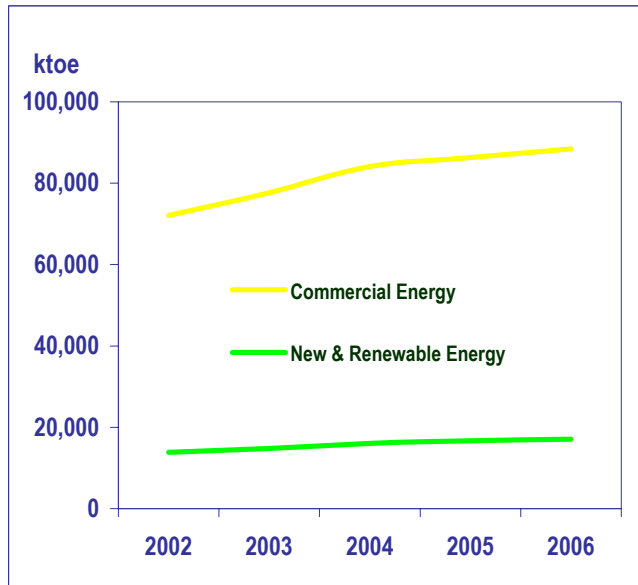
Primary Energy

(Physical unit)

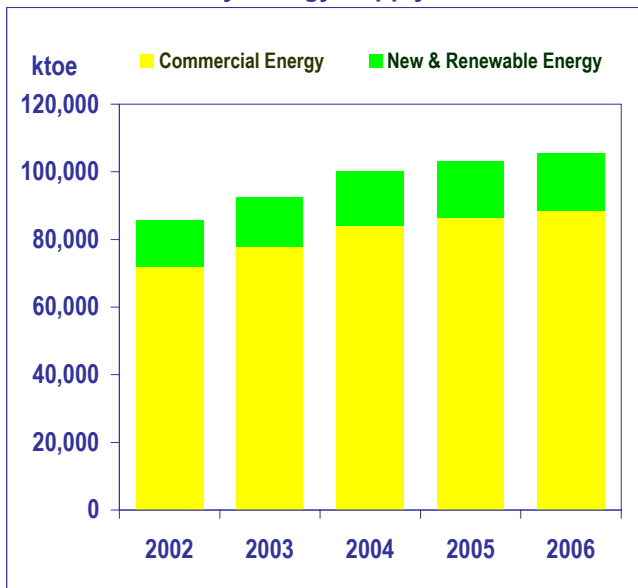
Primary Energy Supply (ktoe)	2002	2003	2004	2005	2006
Commercial Energy					
Crude Oil (mil. litres)	45,850	49,576	54,285	53,097	54,971
Condensate & NGL (mil. litres)	2,657	3,345	3,464	3,257	3,786
Natural Gas (Bcf)	989,469	1,051	1,101	1,171	1,205
Coal & Its Products (10 ³ ton)	25,136	25,071	28,084	29,614	30,009
Petroleum Products (mil. litres)	(6,103)	(5,832)	(5,869)	(5,318)	(7,447)
Electricity (Gwh)	10,012	9,484	9,058	9,577	12,537
New & Renewable Energy (10³ ton)	45,167	49,278	52,656	54,412	55,599

Supply

Trends of Primary Energy Supply 2002 - 2006



Shares of Primary Energy Supply 2002-2006



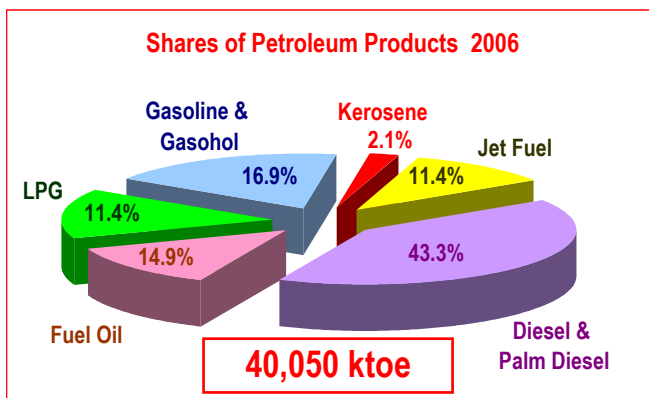
Transformation

Petroleum Products

Petroleum Products* (ktoe)	2002	2003	2004	2005	2006
Total	34,081	35,523	37,658	38,956	40,050
LPG	3,714	3,894	4,159	4,533	4,556
Gasoline & Gasohol	6,147	6,435	6,674	6,878	6,774
Kerosene	453	575	920	835	857
Jet Fuel	3,812	3,464	3,774	3,952	4,578
Diesel & Palm Diesel	14,940	16,110	17,407	16,951	17,325
Fuel Oil	5,015	5,045	4,724	5,807	5,960

*Including petroleum products from petroleum refineries & NG

processing plants



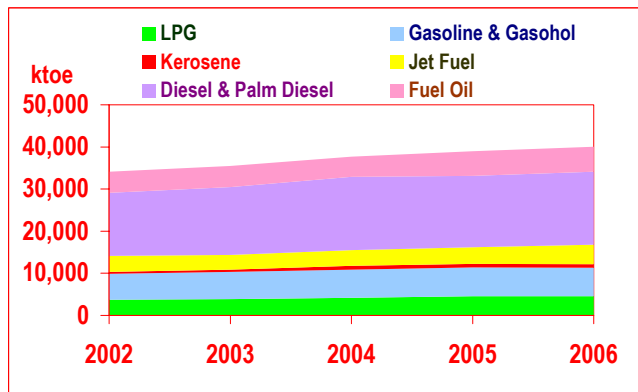
Petroleum Products

(Physical unit)

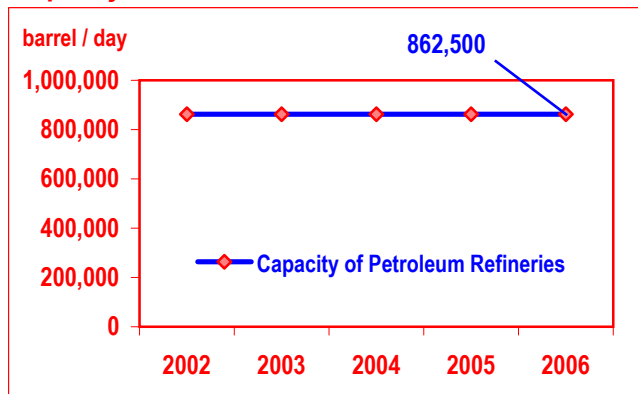
Petroleum Products* (mil.litres)	2002	2003	2004	2005	2006
Total	42,023	43,810	46,514	47,749	49,399
LPG	5,894	6,180	6,601	6,825	7,230
Gasoline & Gasohol	8,251	8,638	8,958	9,231	9,091
Kerosene	554	704	1,125	1,022	1,048
Jet Fuel	4,664	4,238	4,617	4,835	5,601
Diesel & Palm Diesel	17,332	18,690	20,194	19,666	20,097
Fuel Oil	5,328	5,360	5,019	6,170	6,332

Transformation

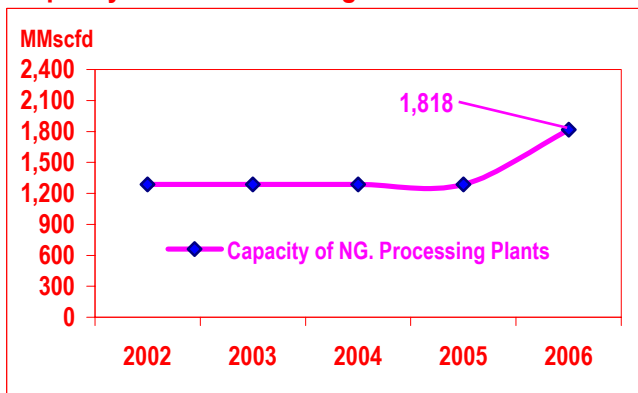
Trends of Petroleum Products 2002 - 2006



Capacity of Petroleum Refineries



Capacity of NG. Processing Plants

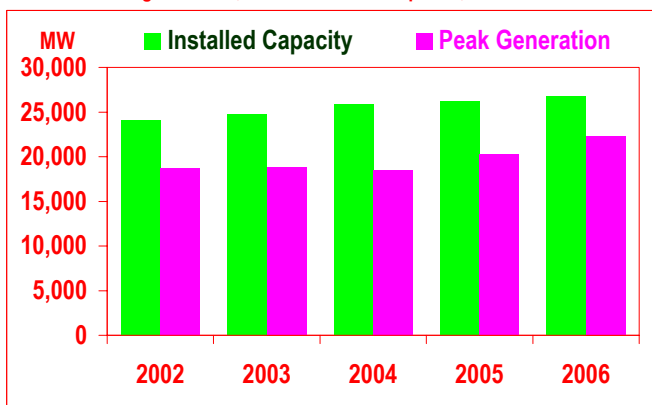


Transformation

Electricity (Installed Capacity)

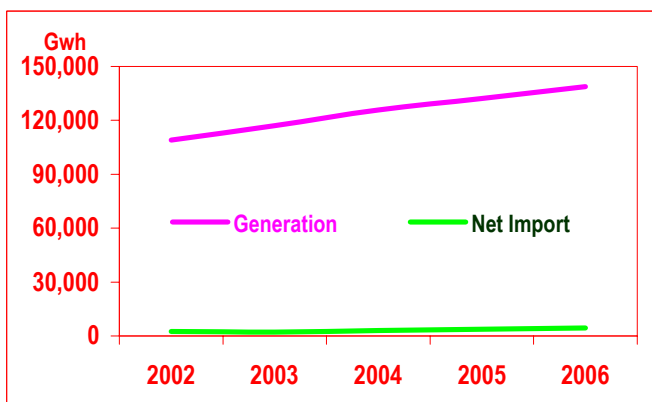
Installed Capacity (MW)	2002	2003	2004	2005	2006
Thermal Plants	21,178	21,789	22,388	22,792	23,338
Hydro Power	2,936	2,973	3,476	3,476	3,476
Other*	1	1	1	1	1

* Other include geothermal, solar cell and wind power, etc.



Electricity (National Grid Generation)

Electricity (Gwh)	2002	2003	2004	2005	2006
Total	111,552	119,166	128,743	135,974	143,151
Generation	109,013	116,983	125,727	132,197	138,742
Net Import	2,539	2,183	3,016	3,777	4,409

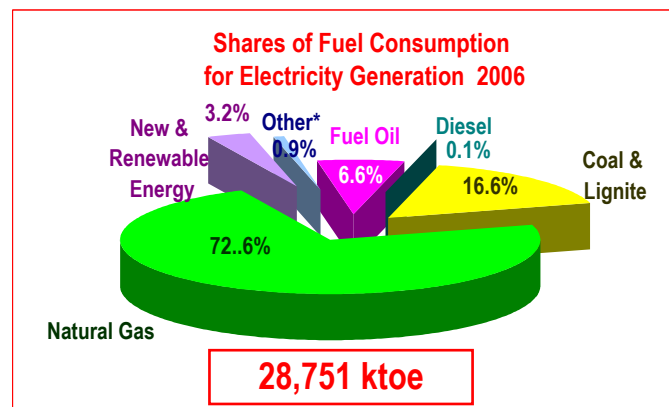


Transformation

Fuel Consumption for Electricity Generation

Fuel Consumption (ktoe)	2002	2003	2004	2005	2006
Total	24,072	25,543	27,316	28,777	28,751
Fuel Oil	617	664	1,611	1,895	1,911
Diesel	40	45	104	72	35
Coal & Lignite	4,335	4,418	4,657	4,700	4,774
Natural Gas	18,526	19,465	19,912	20,901	20,860
New & Renewable Energy	499	712	730	889	916
Other*	55	239	302	320	255

*Others include black liquor and residual gas from production processes, etc.



Electricity (Fuel Consumption)

(Physical unit)

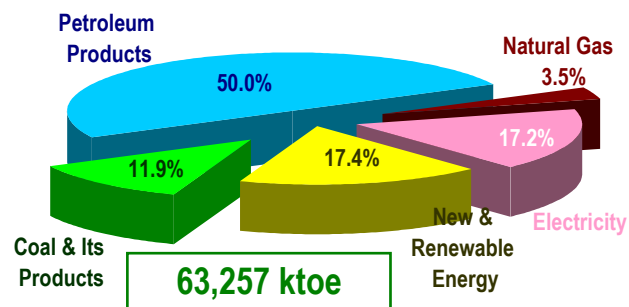
Fuel Consumption	2002	2003	2004	2005	2006
Fuel Oil (mil.litres)	656	705	1,711	2,013	2,030
Diesel (mil.litres)	47	52	121	84	41
Coal & Lignite (10 ³ ton)	15,954	16,353	17,426	17,488	17,166
Natural Gas (MMscf)	758,169	796,614	818,264	858,959	857,103
New & Renewable Energy (10 ³ ton)	2,248	3,067	3,076	3,839	3,916
Other* (TJ)	2,318	10,104	12,776	13,539	10,766

Consumption

Final Energy Consumption by Fuel

Final Energy Consumption (ktoe)	2002	2003	2004	2005	2006
Total	52,979	56,289	61,262	62,397	63,257
Coal & Its Products	4,884	4,987	5,918	6,757	7,489
Petroleum Products	28,765	30,447	32,684	32,460	31,650
Natural Gas	1,751	1,990	2,341	2,026	2,234
Electricity	8,536	9,114	9,803	10,330	10,891
New & Renewable Energy	9,043	9,751	10,516	10,824	10,993

Shares of Final Energy Consumption
by Fuel 2006



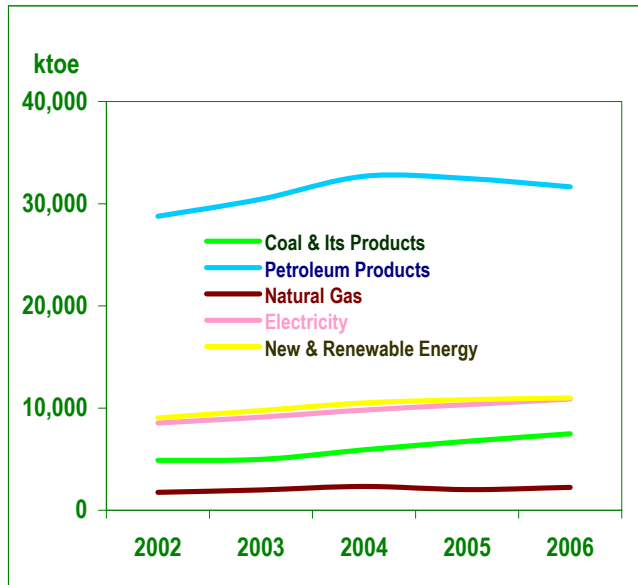
Final Energy Consumption by Fuel

(Physical unit)

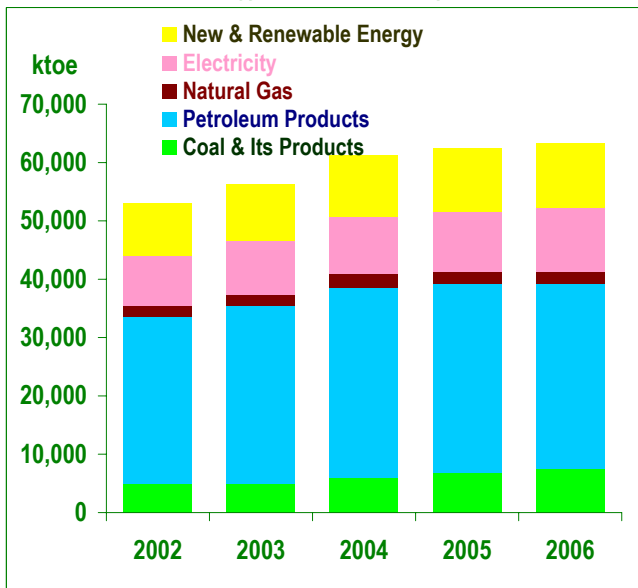
Final Energy Consumption	2002	2003	2004	2005	2006
Coal & Its Products (10 ³ ton)	9,182	8,718	10,658	12,126	12,843
Petroleum Products (mil. Litres)	35,227	37,129	39,859	39,653	38,916
Natural Gas (MMscf)	72,414	82,280	96,825	83,814	92,416
Electricity (Gwh)	100,173	106,959	115,044	121,229	127,811
New & Renewable Energy (10 ³ ton)	28,840	31,888	33,769	34,231	34,744

Consumption

Trends of Final Energy Consumption by Fuel 2002 - 2006



Shares of Final Energy Consumption by Fuel 2002-2006



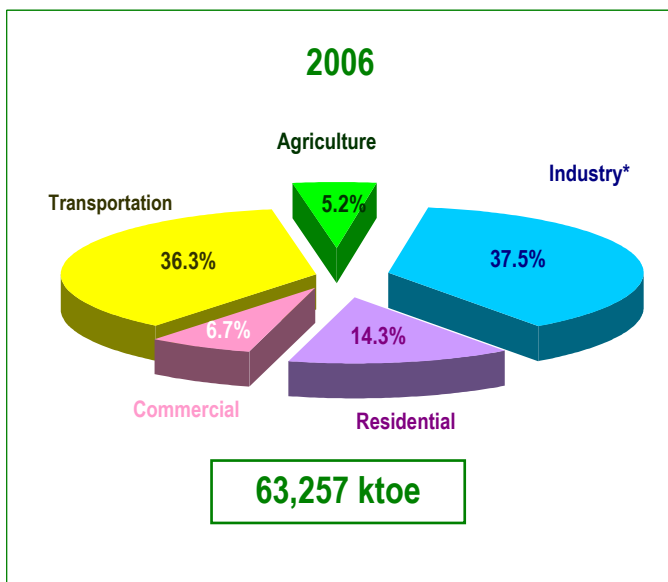
Consumption

Final Energy Consumption by Economic Sector

Final Energy Consumption (ktoe)	2002	2003	2004	2005	2006
Total	52,979	56,289	61,262	62,397	63,257
Agriculture	3,032	3,308	3,520	3,207	3,312
Industry*	18,934	20,255	22,263	22,920	23,711
Residential	7,909	8,173	8,801	8,933	9,034
Commercial	3,468	3,626	3,866	3,846	4,215
Transportation	19,636	20,927	22,812	23,491	22,985

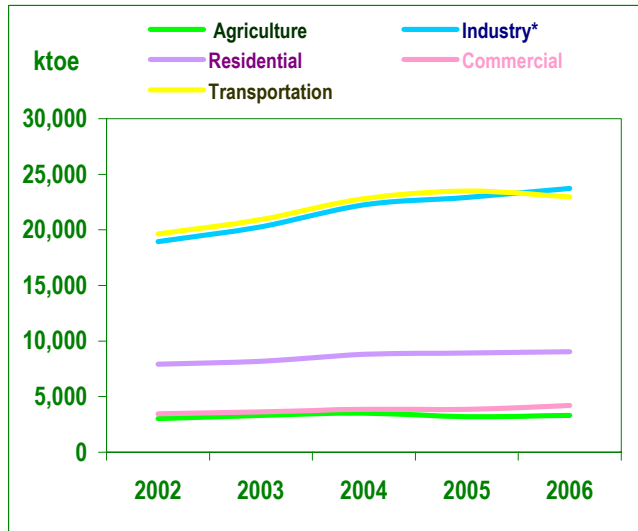
*Industry = Manufacturing + Mining + Construction

Shares of Final Energy Consumption by Economic Sector 2006

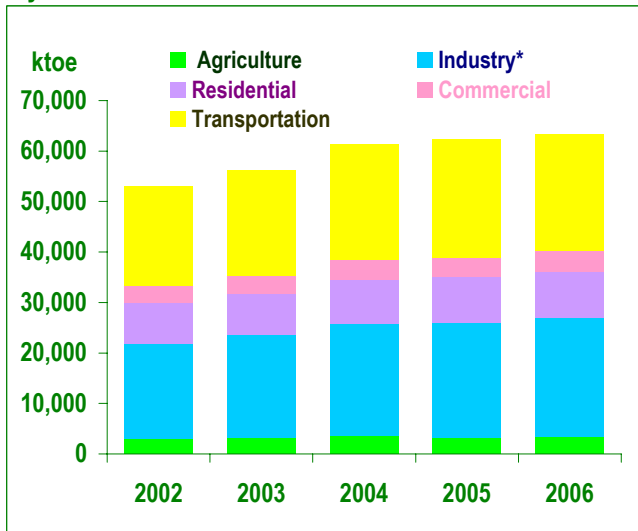


Consumption

Trends of Final Energy Consumption by Economic Sector 2002 - 2006



Shares of Final Energy Consumption by Economic Sector 2002 - 2006



*Industry = Manufacturing + Mining + Construction

Consumption

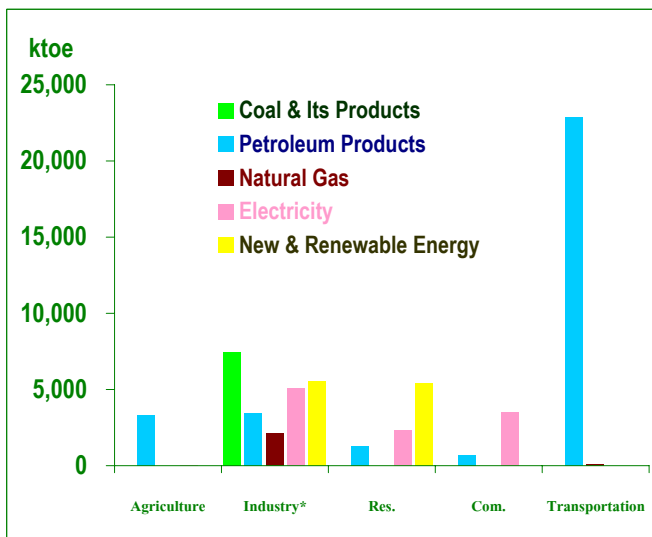
Final Energy Consumption for Economic Sector

by Fuel 2006

Final Energy Consumption (ktoe)	Agriculture	Industry*	Res.	Com.	Transportation	Total
Coal & Its Products	-	7,489	-	-	-	7,489
Petroleum Products	3,291	3,446	1,310	705	22,898	31,650
Natural Gas	-	2,152	-	-	82	2,234
Electricity	21	5,054	2,301	3,510	5	10,891
New & Renewable Energy	-	5,570	5,423	-	-	10,993
Total	3,312	23,711	9,034	4,215	22,985	63,257

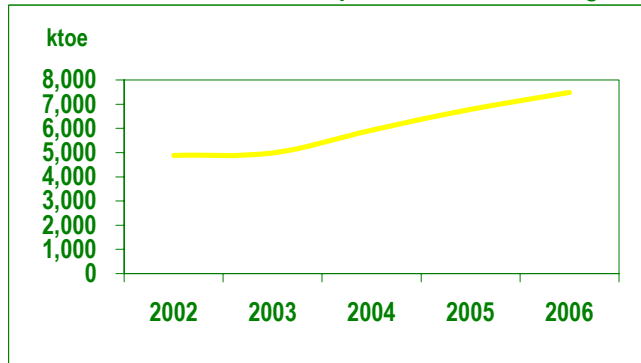
*Industry = Manufacturing + Mining + Construction

Shares of Final Energy Consumption for Economic Sector by Fuel 2006

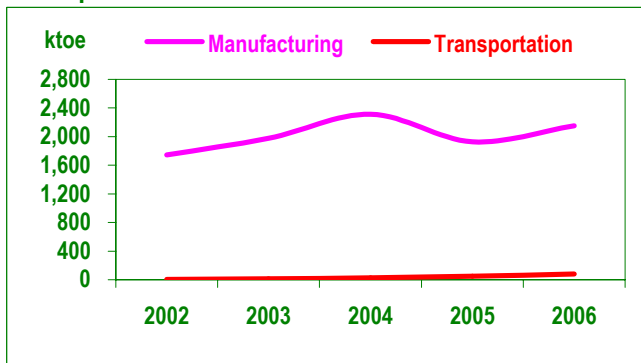


Consumption

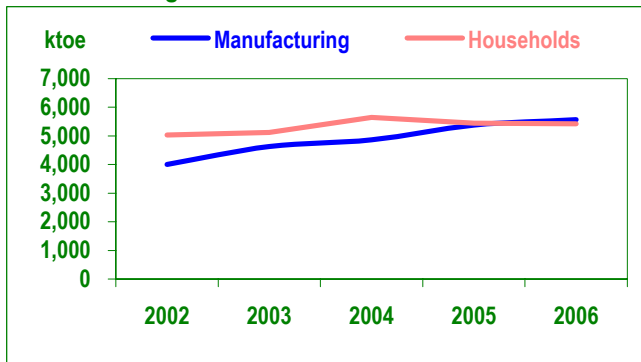
Coal & Its Products Consumption in Manufacturing



Natural Gas Consumption in Manufacturing and Transportation



New & Renewable Energy Consumption in Manufacturing and Households

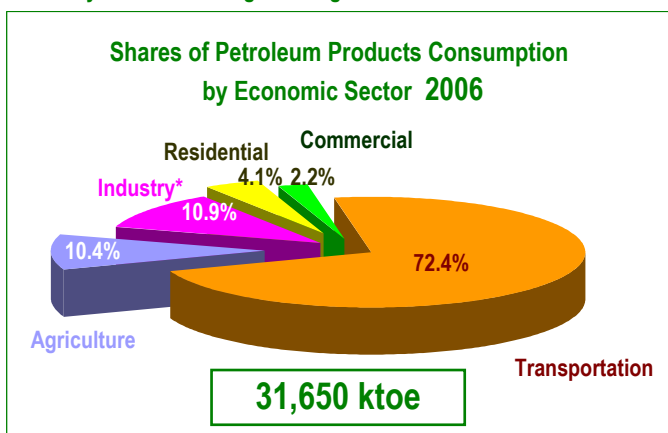


Consumption

Petroleum Products Consumption by Economic Sector

Petroleum Products (ktoe)	2002	2003	2004	2005	2006
Total	28,765	30,447	32,684	32,460	31,650
Agriculture	3,015	3,289	3,501	3,186	3,291
Industry*	4,401	4,485	4,626	3,957	3,446
Residential	989	1,045	1,046	1,309	1,310
Commercial	733	717	730	571	705
Transportation	19,627	20,911	22,781	23,437	22,898

*Industry = Manufacturing + Mining + Construction



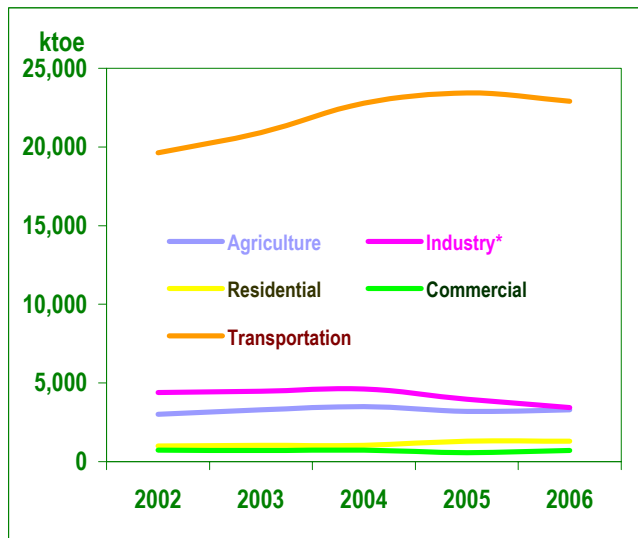
Petroleum Products Consumption by Economic Sector

(Physical unit)

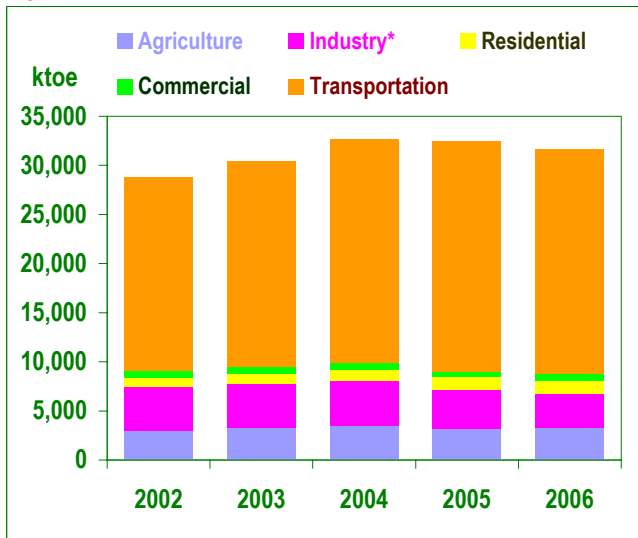
Petroleum Products (million litres)	2002	2003	2004	2005	2006
Total	35,227	37,229	39,859	39,653	38,916
Agriculture	3,509	3,827	3,982	3,707	3,827
Industry*	5,009	5,135	5,300	4,587	4,060
Residential	1,557	1,657	1,659	2,075	2,077
Commercial	1,172	1,135	1,154	904	1,118
Transportation	23,980	25,475	27,764	28,380	27,834

Consumption

Trends of Petroleum Products Consumption by Economic Sector 2002 - 2006



Shares of Petroleum Products Consumption by Economic Sector 2002 - 2006



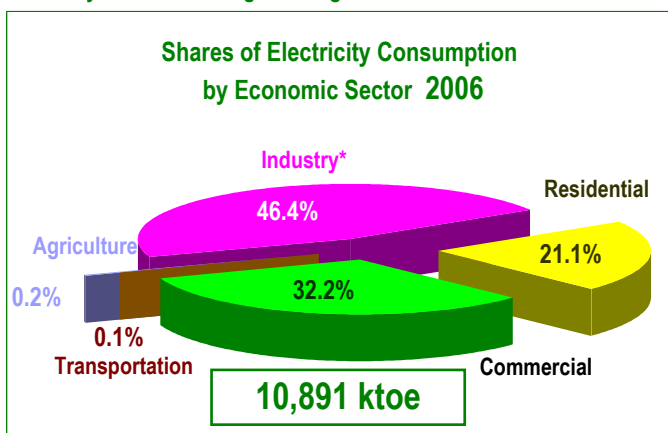
*Industry = Manufacturing + Mining + Construction

Consumption

Electricity Consumption by Economic Sector

Electricity Consumption (ktoe)	2002	2003	2004	2005	2006
Total	8,536	9,114	9,803	10,330	10,891
Agriculture	17	19	19	21	21
Industry*	3,897	4,181	4,536	4,847	5,054
Residential	1,884	2,002	2,108	2,182	2,301
Commercial	2,735	2,909	3,136	3,275	3,510
Transportation	3	3	4	5	5

*Industry = Manufacturing + Mining + Construction



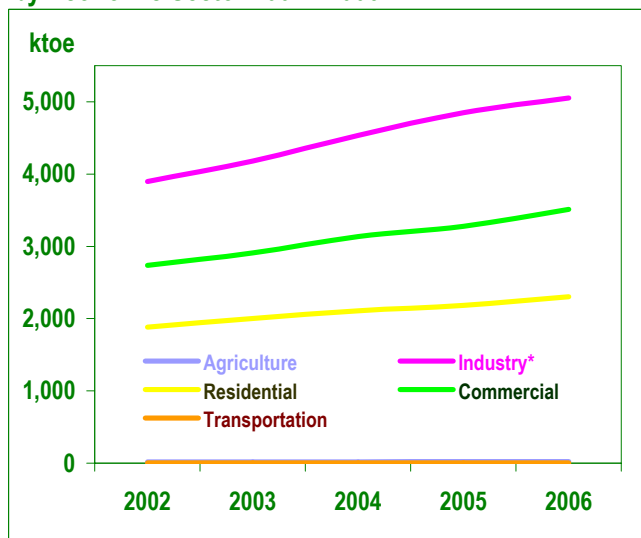
Electricity Consumption by Economic Sector

(Physical unit)

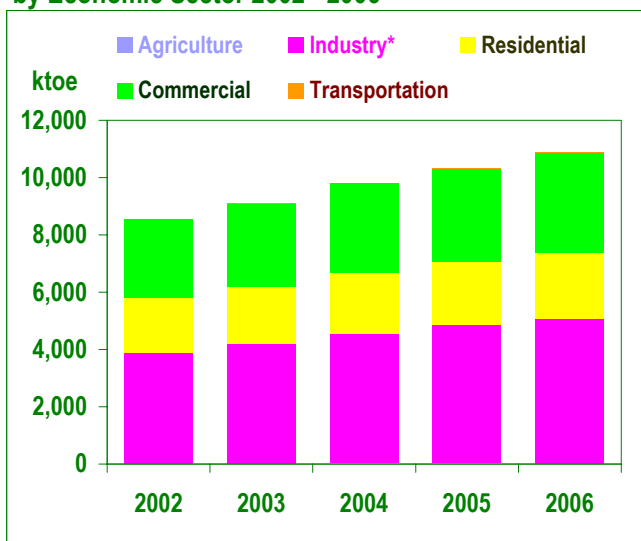
Electricity Consumption (Gwh)	2002	2003	2004	2005	2006
Total	100,173	106,959	115,044	121,229	127,811
Agriculture	196	223	224	245	240
Industry*	45,732	49,062	53,232	56,885	59,315
Residential	22,112	23,499	24,734	25,613	27,005
Commercial	32,099	34,141	36,808	38,430	41,193
Transportation	34	34	46	56	58

Consumption

Trends of Electricity Consumption by Economic Sector 2002 - 2006



Shares of Electricity Consumption by Economic Sector 2002 - 2006



*Industry = Manufacturing + Mining + Construction

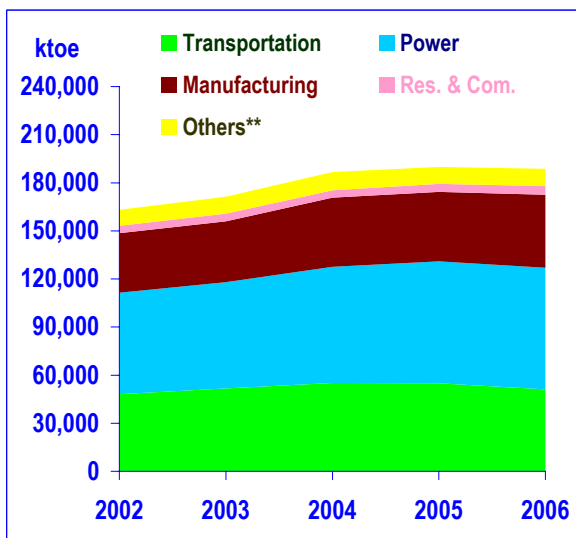
Emissions

CO₂ Emissions*

CO ₂ Emissions (10 ³ ton)	2002	2003	2004	2005	2006
Total	163,039	171,370	186,593	189,803	188,663
Transportation	48,026	51,626	55,029	54,986	51,212
Power	63,458	66,299	72,637	75,956	75,839
Manufacturing	37,135	38,043	42,973	43,450	45,555
Res. & Com.	4,569	4,675	4,713	4,988	5,345
Others**	9,851	10,727	11,241	10,423	10,712

* CO₂ emission exclude emission from renewable energy and international bunker oil, diesel and jet fuel.

**Others include agriculture, construction and mining.



Energy Balances

Thailand Energy Commodity Account 2005

Unit : physical - unit

SUPPLY AND CONSUMPTION	Coal & Its Products	Crude Oil	Natural Gas	Condensate & NGL	Petroleum Products	Hydro	Electricity	New & Renewable and Waste*	Others**	Black Liquor	Total
	(10 ³ ton)	(10 ⁶ litre)	(MMscf)	(10 ⁶ litre)	(10 ⁶ litre)	(Gwh)	(Gwh)	(10 ³ ton)	(Gwh)	(GJ)	
Domestic Production	20,878	6,633	835,743	4,032	-	5,798	-	54,381	2	13,538,531	
Imports	8,572	48,033	335,188	-	2,165	-	4,419	33	-	-	
Exports	(4)	(3,806)	-	(172)	(7,093)	-	(642)	(2)	-	-	
Stock Changes/Statistical Differences	168	2,237	-	(444)	(390)	-	-	-	-	-	
Total Primary Energy Supply	29,614	53,097	1,170,931	3,416	(5,318)	5,798	3,777	54,412	2	13,538,531	
Petroleum Refineries	-	(52,926)	-	(639)	43,852	-	-	-	-	-	
NG. Processing Plants	-	-	-	732	3,897	-	-	-	-	-	
Power Plants	(17,488)	-	(858,959)	-	(2,097)	(5,798)	132,197	(3,839)	(2)	(13,538,531)	
Other Transformation	-	-	-	-	368	-	-	(16,342)	-	-	
Total Transformation	(17,488)	(52,926)	(858,959)	93	46,020	(5,798)	132,197	(20,181)	(2)	(13,538,531)	
Own Uses	-	-	(228,158)	-	-	-	(4,030)	-	-	-	
Losses	-	(171)	-	-	-	-	(10,715)	-	-	-	
Total Final Energy Consumption	12,126	-	83,814	3,509	40,702	-	121,229	34,231	-	-	
Non - Energy Uses	-	-	-	3,509	1,049	-	-	-	-	-	
Final Energy Consumption	12,126	-	83,814	-	39,653	-	121,229	34,231	-	-	
Agriculture	-	-	-	-	3,707	-	245	-	-	-	
Industry ***	12,126	-	81,782	-	4,587	-	56,885	23,023	-	-	
Residential	-	-	-	-	2,075	-	25,613	11,208	-	-	
Commercial	-	-	-	-	904	-	38,430	-	-	-	
Transportation	-	-	2,032	-	28,380	-	56	-	-	-	
CO ₂ emission (unit : Mt)											190

* New & Renewable and Waste excludes biogas.

** Others include geothermal, solar cell and wind power, etc.

*** Industry includes manufacturing, mining and construction.

Energy Balances

Thailand Energy Balance 2005

Unit : ktoe

SUPPLY AND CONSUMPTION	Coal & Its Products	Crude Oil	Natural Gas	Condensate & NGL	Petroleum Products	Hydro	Electricity	New & Renewable and Waste*	Others**	Black Liquor	Total
Domestic Production	5,983	5,704	20,534	3,156	-	1,283	-	16,657	2	320	53,639
Imports	5,410	41,308	8,236	-	1,980	-	377	22	-	-	57,333
Exports	(3)	(3,273)	-	(135)	(5,515)	-	(55)	(1)	-	-	(8,982)
Stock Changes/Statistical Differences	67	1,924	-	(347)	(333)	-	-	-	-	-	1,311
Total Primary Energy Supply	11,457	45,663	28,770	2,674	(3,868)	1,283	322	16,678	2	320	103,301
Petroleum Refineries	-	(45,516)	-	(500)	36,268	-	-	-	-	-	(9,748)
NG. Processing Plants	-	-	(286) ***	573	2,456	-	-	-	-	-	2,743
Power Plants	(4,700)	-	(20,901)	-	(1,967)	(1,283)	11,264	(889)	(2)	(320)	(18,798)
Other Transformation	-	-	-	-	232	-	-	(4,965)	-	-	(4,733)
Total Transformation	(4,700)	(45,516)	(21,187)	73	36,989	(1,283)	11,264	(5,854)	(2)	(320)	(30,536)
Own Uses	-	-	(5,557)	-	-	-	(343)	-	-	-	(5,900)
Losses	-	(147)	-	-	-	-	(913)	-	-	-	(1,060)
Total Final Energy Consumption	6,757	-	2,026	2,747	33,121	-	10,330	10,824	-	-	65,805
Non - Energy Uses	-	-	-	2,747	661	-	-	-	-	-	3,408
Final Energy Consumption	6,757	-	2,026	-	32,460	-	10,330	10,824	-	-	62,397
Agriculture	-	-	-	-	3,186	-	21	-	-	-	3,207
Industry ****	6,757	-	1,977	-	3,957	-	4,847	5,382	-	-	22,920
Residential	-	-	-	-	1,309	-	2,182	5,442	-	-	8,933
Commercial	-	-	-	-	571	-	3,275	-	-	-	3,846
Transportation	-	-	49	-	23,437	-	5	-	-	-	23,491
CO₂ emission (unit : Mt)											190

* New & Renewable and Waste excludes biogas.

** Others include geothermal, solar cell and wind power, etc.

*** Statistical Differences from wet and dry of NG.

**** Industry includes manufacturing, mining and construction.

Energy Balances

Thailand Energy Commodity Account 2006

Unit : physical - unit

SUPPLY AND CONSUMPTION	Coal & Its Products (10 ³ ton)	Crude Oil (10 ⁶ litre)	Natural Gas MMscf	Condensate & NGL (10 ⁶ litre)	Petroleum Products (10 ⁶ litre)	Hydro (Gwh)	Electricity (Gwh)	New & Renewable and Waste* (10 ³ ton)	Others** (Gwh)	Black Liquor (GJ)	Total
Domestic Production	19,001	7,480	860,026	4,367	-	8,125	-	55,560	3	10,765,858	
Imports	11,157	48,126	345,292	-	1,504	-	5,159	41	-	-	
Exports	-	(3,858)	-	(126)	(8,399)	-	(750)	(2)	-	-	
Stock Changes/Statistical Differences	(149)	3,223	-	(455)	(552)	-	-	-	-	-	
Total Primary Energy Supply	30,009	54,971	1,205,318	3,786	(7,447)	8,125	4,409	55,599	3	10,765,858	
Petroleum Refineries	-	(54,756)	-	(705)	45,104	-	-	-	-	-	
NG. Processing Plants	-	-	-	743	3,892	-	-	-	-	-	
Power Plants	(17,166)	-	(857,103)	-	(2,071)	(8,125)	138,742	(3,916)	(3)	(10,765,858)	
Other Transformation	-	-	-	-	403	-	-	(16,939)	-	-	
Total Transformation	(17,166)	(54,756)	(857,103)	38	47,328	(8,125)	138,742	(20,855)	(3)	(10,765,858)	
Own Uses	-	-	(255,799)	-	-	-	(4,160)	-	-	-	
Losses	-	(215)	-	-	-	-	(11,180)	-	-	-	
Total Final Energy Consumption	12,843	-	92,416	3,824	39,881	-	127,811	34,744	-	-	
Non - Energy Uses	-	-	-	3,824	965	-	-	-	-	-	
Final Energy Consumption	12,843	-	92,416	-	38,916	-	127,811	34,744	-	-	
Agriculture	-	-	-	-	3,827	-	240	-	-	-	
Industry ***	12,843	-	88,999	-	4,060	-	59,315	23,716	-	-	
Residential	-	-	-	-	2,077	-	27,005	11,028	-	-	
Commercial	-	-	-	-	1,118	-	41,193	-	-	-	
Transportation	-	-	3,417	-	27,834	-	58	-	-	-	
CO ₂ emission (unit : Mt)											187

* New & Renewable and Waste excludes biogas.

** Others include geothermal, solar cell and wind power, etc.

*** Industry includes manufacturing, mining and construction.

Energy Balances

Thailand Energy Balance 2006

Unit : ktoe

SUPPLY AND CONSUMPTION	Coal & Its Products	Crude Oil	Natural Gas	Condensate & NGL	Petroleum Products	Hydro	Electricity	New & Renewable and Waste*	Others**	Black Liquor	Total
Domestic Production	5,307	6,433	21,131	3,418	-	1,799	-	17,027	2	255	55,372
Imports	7,032	41,387	8,484	-	1,383	-	440	28	-	-	58,754
Exports	-	(3,318)	-	(99)	(6,834)	-	(64)	(1)	-	-	(10,316)
Stock Changes/Statistical Differences	(76)	2,773	-	(356)	(393)	-	-	-	-	-	1,948
Total Primary Energy Supply	12,263	47,275	29,615	2,963	(5,844)	1,799	376	17,054	2	255	105,758
Petroleum Refineries	-	(47,090)	-	(552)	37,341	-	-	-	-	-	(10,301)
NG. Processing Plants	-	-	(289) ***	582	2,453	-	-	-	-	-	2,746
Power Plants	(4,774)	-	(20,860)	-	(1,946)	(1,799)	11,822	(916)	(2)	(255)	(18,730)
Other Transformation	-	-	-	-	254	-	-	(5,145)	-	-	(4,891)
Total Transformation	(4,774)	(47,090)	(21,149)	30	38,102	(1,799)	11,822	(6,061)	(2)	(255)	(31,176)
Own Uses	-	-	(6,232)	-	-	-	(354)	-	-	-	(6,586)
Losses	-	(185)	-	-	-	-	(953)	-	-	-	(1,138)
Total Final Energy Consumption	7,489	-	2,234	2,993	32,258	-	10,891	10,993	-	-	66,858
Non - Energy Uses	-	-	-	2,993	608	-	-	-	-	-	3,601
Final Energy Consumption	7,489	-	2,234	-	31,650	-	10,891	10,993	-	-	63,257
Agriculture	-	-	-	-	3,291	-	21	-	-	-	3,312
Industry ****	7,489	-	2,152	-	3,446	-	5,054	5,570	-	-	23,711
Residential	-	-	-	-	1,310	-	2,301	5,423	-	-	9,034
Commercial	-	-	-	-	705	-	3,510	-	-	-	4,215
Transportation	-	-	82	-	22,898	-	5	-	-	-	22,985
CO ₂ emission (unit : Mt)											187

* New Renewable and Waste excludes biogas.

** Others include geothermal, solar cell and wind power, etc.

*** Statistical Differences from wet and dry of NG.

**** Industry includes manufacturing, mining and construction.

Imported Prices

Average Prices of Energy Imports

TYPE	2002	2003	2004	2005	2006
Crude Oil					
1,000 Baht / toe	7.82	8.93	11.18	15.61	18.19
US.\$ / toe	181.29	214.41	276.93	386.79	478.41
US.\$ / bbl	24.79	29.32	37.86	52.89	65.41
Natural Gas					
1,000 Baht / toe	5.06	5.66	5.32	6.91	8.24
US.\$ / toe	117.35	136.04	131.74	171.32	216.61
US.\$ / 1,000 scf	2.88	3.34	3.24	4.21	5.32
Petroleum Products					
1,000 Baht / toe	9.38	10.36	10.40	14.83	17.01
US.\$ / toe	217.64	248.95	257.58	367.39	447.33
US.\$ / bbl	27.72	34.06	36.10	53.43	65.38
Coal & Its Products*					
1,000 Baht / toe	2.14	2.07	2.57	2.84	2.66
US.\$ / toe	49.65	49.63	63.54	70.48	70.03
US.\$ / ton	31.62	31.44	40.05	44.49	44.13
Electricity					
1,000 Baht / toe	18.75	18.47	19.53	19.18	19.01
US.\$ / toe	434.91	443.68	483.78	475.30	499.82
US.\$ / kWh	1.59	1.57	1.66	1.63	1.62

*Average from anthracite, bituminous, coke, briquettes, and other coal.

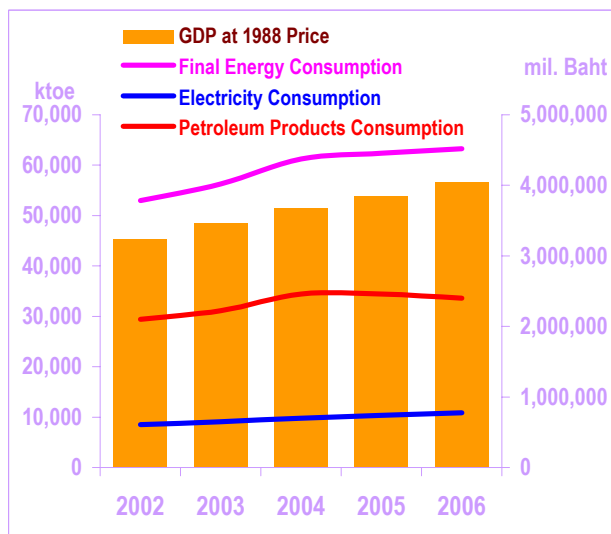
Energy and Economy

Final Energy Consumption, Electricity Consumption,

Petroleum Products Consumption and GDP

Year	Final Energy Consump- tion (ktoe)	Electricity Consump- tion (ktoe)	Petroleum Products Consumption (ktoe)	GDP at 1988 Prices (mil. Baht)
2002	52,979	8,536	29,422	3,237,042
2003	56,289	9,114	31,156	3,468,166
2004	61,262	9,803	34,399	3,685,944
2005	62,397	10,330	34,427	3,851,295 ^p
2006	63,257	10,891	33,596	4,043,552 ^p

Relations of Energy and Economy

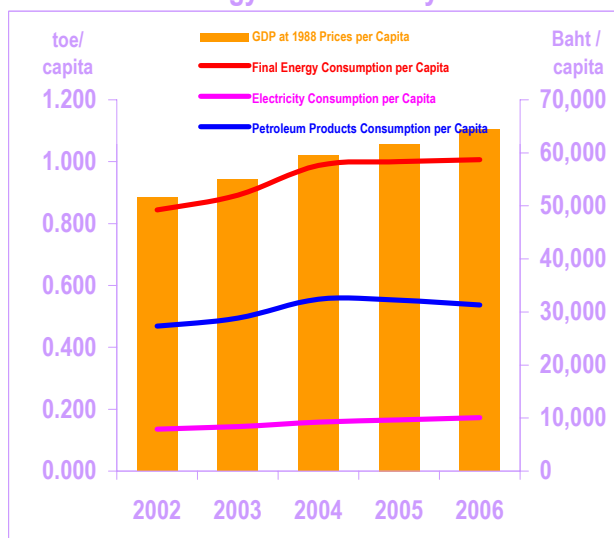


Energy and Economy

Energy Consumption Per Capita

Year	GDP at 1988 Prices per Capita (Baht/capita)	Final Energy Consumption per Capita (toe/capita)	Electricity Consumption per Capita (toe/capita)	Petroleum Products Consumption per Capita (toe/capita)
2002	51,545	0.844	0.136	0.469
2003	54,980	0.892	0.144	0.494
2004	59,477	0.988	0.158	0.555
2005	61,702	1.000	0.165	0.552
2006	64,358	1.007	0.173	0.537

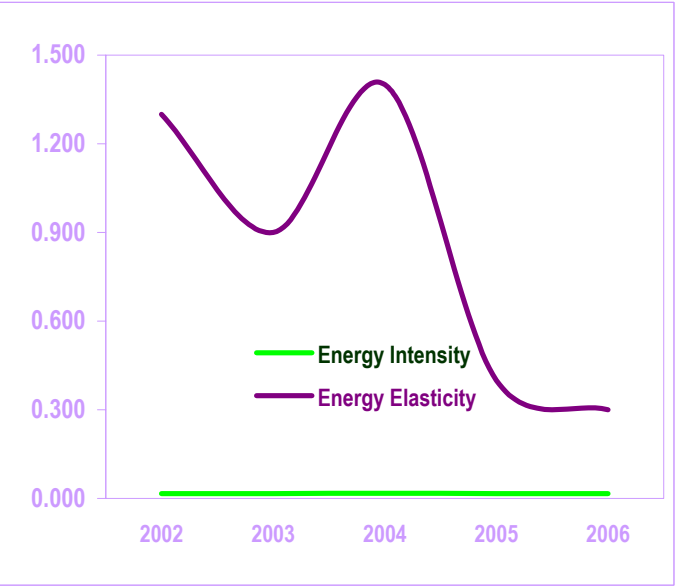
Relations of Energy and Economy



Energy and Economy

Energy Intensity & Elasticity

Year	GDP at 1988 Prices (million Baht)	Final Energy Consump- tion (ktoe)	Energy Intensity (ktoe / million Baht)	Energy Elasticity	% Change of GDP	% Change of Consump- tion
2002	3,237,042	52,979	0.016	1.3	5.4	6.9
2003	3,468,166	56,289	0.016	0.9	7.1	6.2
2004	3,685,944	61,262	0.017	1.4	6.3	8.8
2005	3,851,295 ^P	62,397	0.016	0.4	4.5	1.9
2006	4,043,552 ^P	63,257	0.016	0.3	5.0	1.4



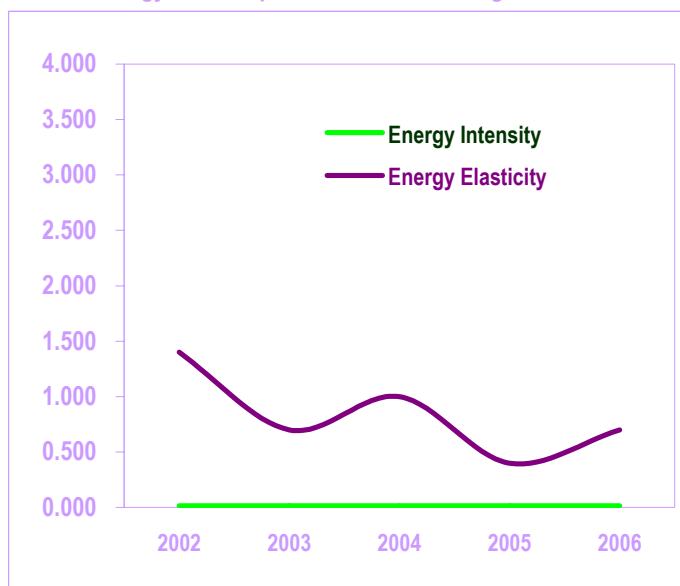
Energy and Economy

Energy Intensity & Elasticity (Manufacturing)

Year	GDP at 1988 Prices* (million Baht)	Final Energy Consump- tion** (ktoe)	Energy Intensity (ktoe / million Baht)	Energy Elasticity	% Change of GDP*	% Change of Consump- tion**
2002	1,190,807	18,934	0.014	1.5	7.1	10.4
2003	1,318,279	20,255	0.014	0.7	10.7	7.0
2004	1,426,090	21,961	0.014	1.0	8.2	8.4
2005	1,500,103 ^P	22,525	0.013	0.4	5.2	2.6
2006	1,591,935 ^P	23,442	0.015	0.7	6.1	4.1

*GDP at 1988 prices for Manufacturing

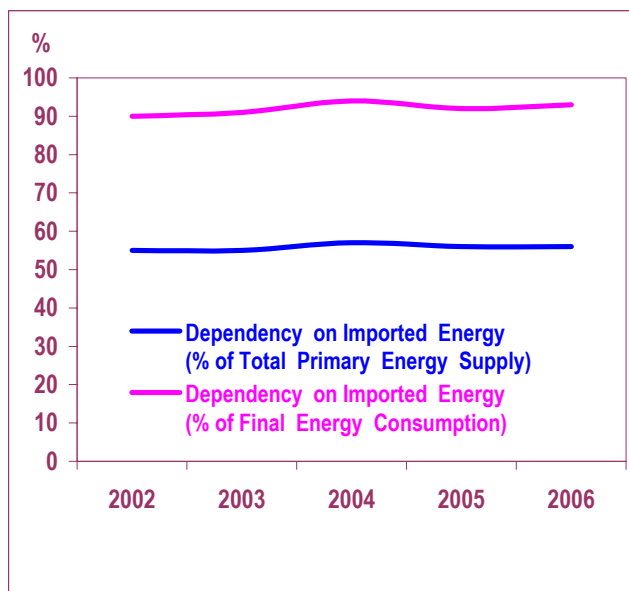
** Final Energy Consumption for Manufacturing



Energy Indicators

Proportion of Imported Energy Dependency

Year	Total Primary Energy Supply (ktoe)	Final Energy Consumption (ktoe)	Energy Imports (ktoe)	Dependency on Imported Energy (% of Total Primary Energy Supply) (%)	Dependency on Imported Energy (% of Final Energy Consumption) (%)
2002	85,913	52,979	47,455	55	90
2003	92,491	56,289	51,316	55	91
2004	100,495	61,262	57,714	57	94
2005	103,301	62,397	57,333	56	92
2006	105,758	63,257	58,754	56	93



Energy Indicators

Energy Values

Energy Values (thousand mil. Baht)	2002	2003	2004	2005	2006
1. Energy Imports	336	407	561	753	873
Petroleum	324	394	543	731	846
Coal & It Products	8	9	12	15	19
Electricity	4	4	6	7	8
New & Renewable Energy	0	0	0	0	0
2. Energy Exports	70	78	110	154	197
Petroleum	69	77	109	153	195
Electricity	1	1	1	1	2
New & Renewable Energy	0	0	0	0	0
3. Net Energy Imports	266	329	451	599	676
4. Commodity Imports	2,775	3,139	3,801	4,755	4,871
5. Commodity Exports	2,924	3,326	3,875	4,439	4,939
6. GDP (at Current Market Prices)*	5,451	5,917	6,490	7,088	7,813
7. Energy Import Value as a Percentage of					
GDP	6.2	6.9	8.6	10.6	11.2
Commodity Import	12.1	13.0	14.8	15.8	17.9
Commodity Export	11.5	12.2	14.5	17.0	17.7
8. Final Energy Consumption Value	759	849	972	1,194	1,375

Note : Data shown as "0" means figure is less than 0.5.

Energy Indicators

Key Energy Indicators

	2002	2003	2004	2005	2006
1. Primary Energy Supply (ktoe)	85,913	92,491	100,495	103,301	105,758
Growth(%)	7.0	7.7	8.7	2.8	2.4
Per capita(toe/capita)	1.4	1.5	1.6	1.7	1.7
2. Final Energy Consumption (ktoe)	52,979	56,289	61,262	62,397	63,257
Growth(%)	6.9	6.2	8.8	1.9	1.4
Per capita(toe/capita)	0.8	0.9	1.0	1.0	1.0
3. GDP at 1988 prices (thousand mil. Baht)	3,237	3,468	3,686	3,851	4,044
Growth(%)	5.3	7.1	6.3	4.5	5.0
Per capita(Baht/capita)	51,545	54,978	59,478	61,697	64,365
4. Petroleum Products (million litres)	35,227	37,229	39,859	39,653	38,916
Growth(%)	5.3	5.7	7.1	(0.5)	(1.9)
Per capita(litres/capita)	561	590	643	635	619
5. Electricity (Gwh)	100,173	106,959	115,044	121,229	127,811
Growth(%)	8.5	6.8	7.6	5.4	5.4
Per capita(kwh/capita)	1,595	1,696	1,856	1,942	2,034
6. Value of Net Energy Imports(mil. Baht)	266,584	329,298	451,182	599,705	676,869
Growth(%)	-0.1	23.5	37.0	32.9	12.9
Per capita(Baht/capita)	4,239	5,221	7,280	9,607	10,773
7. Value of Final Energy Consumption(mil. Baht)	758,791	848,669	972,111	1,192,057	1,351,664
Growth(%)	5.2	11.8	14.5	22.6	13.4
Per capita(Baht/capita)	12,083	13,454	15,686	19,098	21,513
8. Energy Intensity (ktoe / mil. Baht)	0.016	0.016	0.017	0.016	0.016
9. Energy Elasticity	1.278	0.912	1.419	0.422	0.280
10. Populations(mil. inhabitants)	62,800	63,080	61,973	62,418	62,829

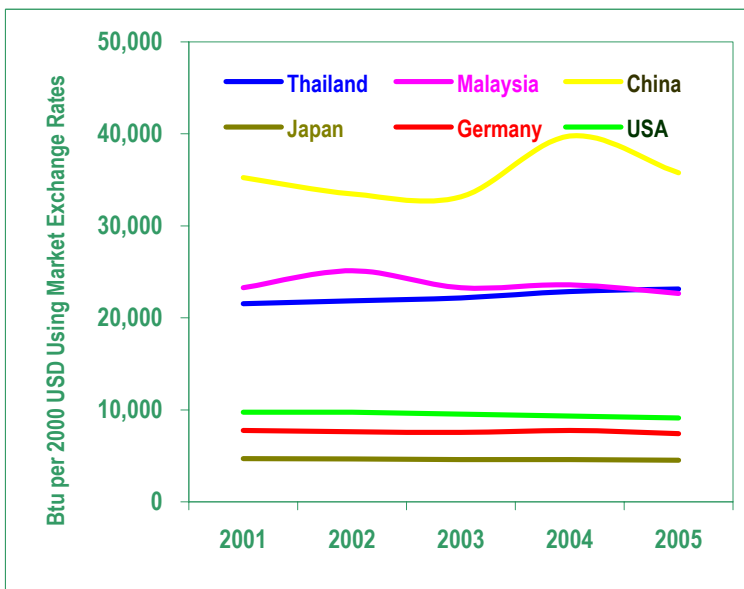
International Comparisons

International Comparisons 2005

	Thailand	Malaysia	China	Japan	Germany	USA
Population mil. Inhabitants	64.2	23.9	1,306.3	127.5	82.4	295.7
Gross Domestic Products (GDP) in bil 2000 USD	155.7	110.4	1,876.1	5,001.1	1,960.5	11,050.1
Primary Energy Consumption 10^{15} Btu	3.6	2.5	67.1	22.6	14.5	100.7
Primary Energy Consumption/GDP Btu/2000 USD	23,128	22,641	35,766	4,519	7,396	9,113
Primary Energy Consumption 10^6 Btu/capita	56.5	106.3	51.4	177.0	176.0	340.5
Electricity Consumption kwh/capita	1,832.8	3,286.8	1,681.9	7,638.3	6,617.6	12,902.5
CO ₂ Emission tons/capita	3.7	6.5	4.1	9.7	10.2	20.1

Source : <http://www.eia.doe.gov>

Primary Energy Consumption per USD of GDP



Conversion Factors

TYPE OF ENERGY AND FUEL		UNIT	toe/ 10 ⁶ unit
COMMERCIAL ENERGY			
1.	Crude Oil	litre	860.00
2.	Condensate	litre	782.72
3.	Natural Gas	scf.	24.18
4.	Petroleum Products		
4.1	LPG	litre	630.14
4.2	Gasoline	litre	745.07
4.3	Kerosene	litre	817.40
4.4	Aviation Fuel	litre	817.40
4.5	Diesel	litre	861.98
4.6	Fuel Oil	litre	941.24
4.7	Bitumen	litre	974.93
5.	Electricity	kwh	85.21
6.	Coal (Import)	kg.	624.19
7.	Coke	kg.	653.92
8.	Anthracite	kg.	743.09
9.	Lignite	kg.	247.70
RENEWABLE ENERGY			
1.	Fuel Wood	kg.	378.48
2.	Charcoal	kg.	683.64
3.	Paddy Husk	kg.	340.83
4.	Bagasse	kg.	178.34
5.	Garbage	kg.	114.93
6.	Saw Dust	kg.	257.60
7.	Agricultural Waste	kg.	300.21
General			
1 kcal	=	4186	Joules
	=	3.968	Btu
1 toe	=	10.093	Gcal
	=	42.244	GJ
	=	40.047 x 10 ⁶	Btu
1 barrel	=	158.99	Litres

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