Chapter 1: Economic and Social Indicators Comparison of BRICS Countries
Chapter 2: General
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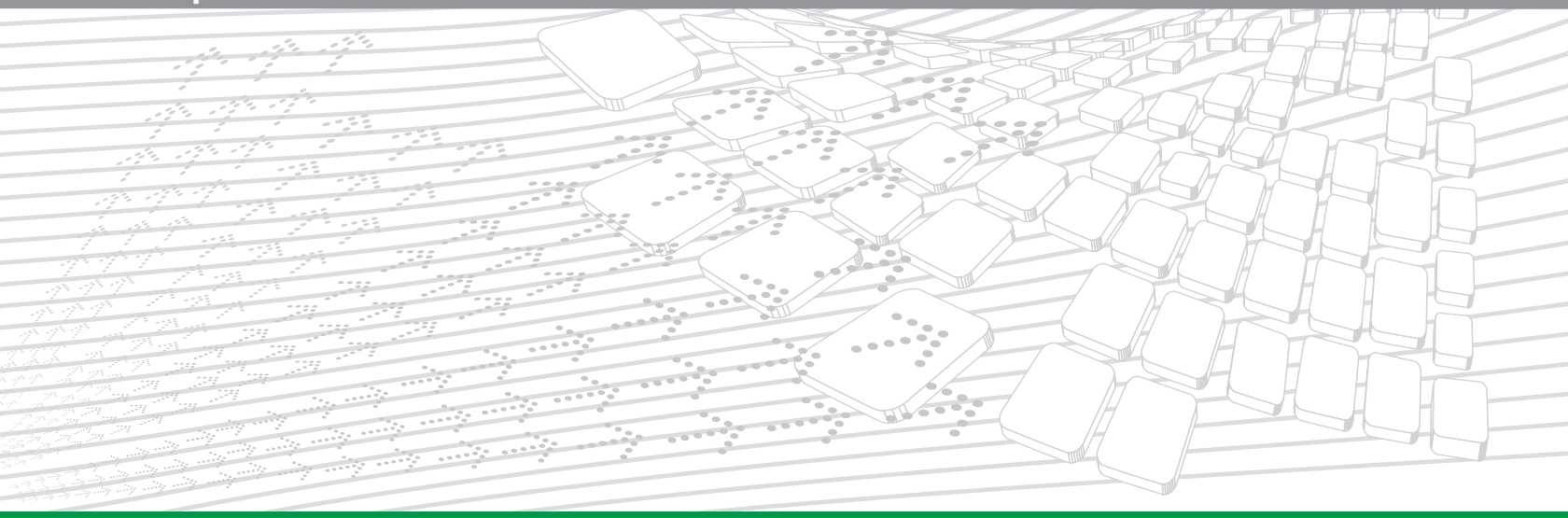
Chapter 5: National Accounts
Chapter 6: Price Indices
Chapter 7: Population living standard
Chapter 8: Resources and Environment
Chapter 9: Industry

Chapter 10: Energy

Chapter 11: Agriculture, Forestry
Chapter 12: Transport
Chapter 13: Information Society
Chapter 14: Finance
Chapter 15: External Economic relations
Chapter 16: Tourism



Graph 10.1 Energy Production and Consumption (mtoe)

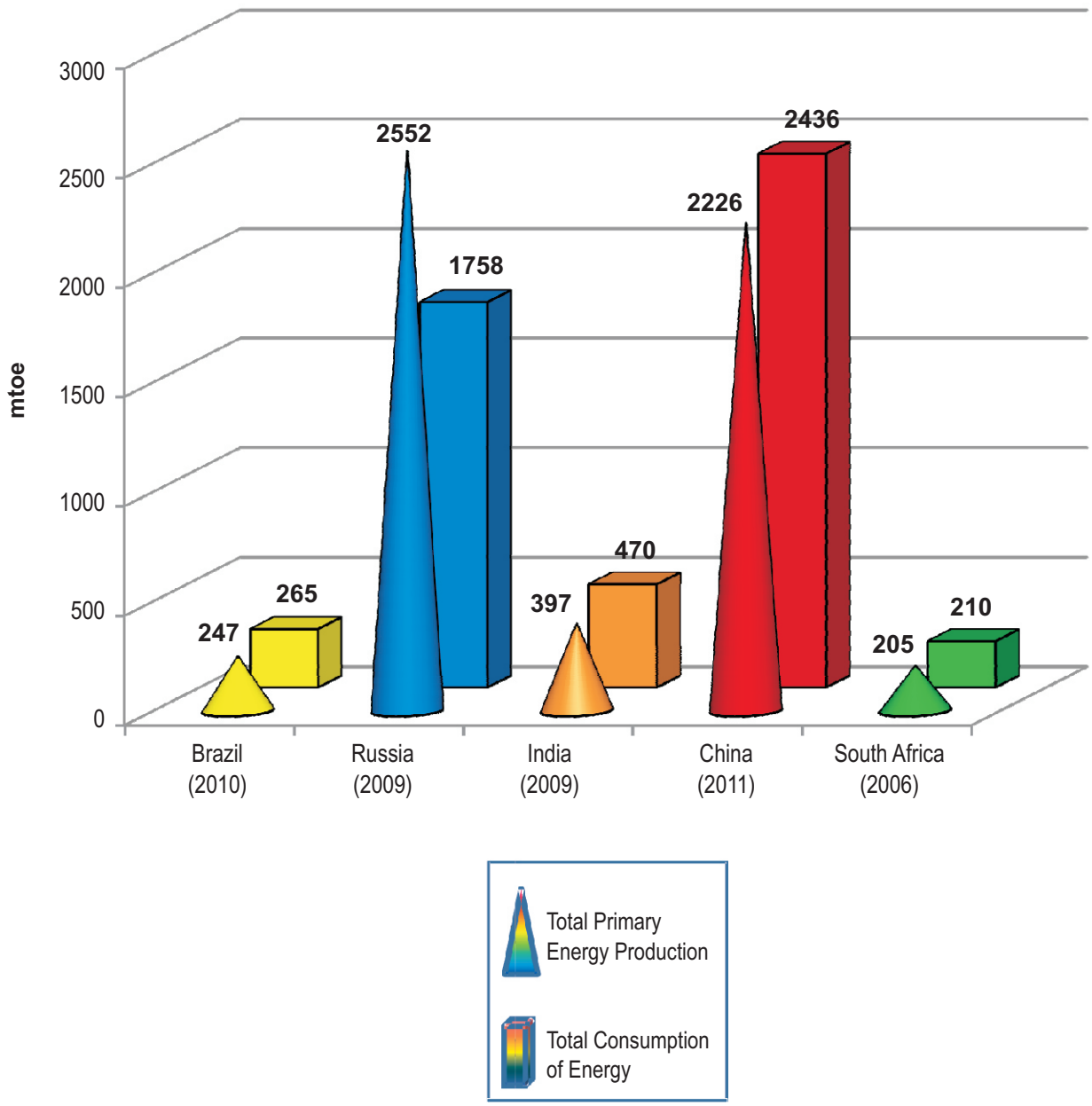


Table 10.1 - Summary of Energy

	Unit	2000	2005	2006	2007	2008	2009	2010	2011
Total Primary Energy Production									
Brazil	mtoe	146	193	205	216	228	231	247	
Russia (4)	mtoe	2156	2530	2604	2628	2658	2552(3)		
India	mtoe	204	331	355	369	383	397		
China(1)	mtoe	945	1514	1625	1731	1824	1922	2078	2226(P)
South Africa	mtoe								
Total Consumption of Energy									
Brazil	mtoe	189	216	224	236	250	241	265	
Russia (4)	mtoe	1625	1727	1775	1791	1820	1758(3)		
India	mtoe	271	336	363	388	417	470		
China(1)	mtoe	1019	1652	1811	1964	2040	2147	2275	2436(P)
South Africa	mtoe								
Energy Consumption per Capita									
Brazil	kilograms of oil equivalent	1101	1179	1206	1258	1317	1258	1371	
Russia	kilograms of oil equivalent(5)	11	12	13	13	13	12(3)		
India	kilograms of oil equivalent	262	301	320	338	359	400		
China(2)	kilograms of oil equivalent	807	1267	1381	1490	1540	1612	1700	
South Africa									
Share of Net Imports of Energy to									
Total Consumption									
Brazil	%	22.4	10.7	8.5	8.5	8.6	4.2	9.6	
Russia	%	2.9	1.9	1.8	1.8	2.1	2.0(3)		
India	%								
China	%	3.2	6.6	7.8	8.9	9.2	12.7	14.4	
South Africa	%								
Electricity Export									
Brazil	million kilowatt hours	7	160	283	2034	689	1080	1257	
Russia	million kilowatt hours	22850	22520	20927	18468	20738	17923(3)		
India									
China	million kilowatt hours	9880	11190	12270	14570	16640	17390	19060	
South Africa (6)	million kilowatt hours	4007	12884	13766	14496	14168	14052	14645	
Electricity Import									
Brazil	million kilowatt hours	44345	39202	41447	40866	42901	41064	43697	
Russia	million kilowatt hours	8795	10139	5115	5670	3105	3066(3)		
India									
China	million kilowatt hours	1550	5010	5390	4250	3840	6010	5550	
South Africa (7)	million kilowatt hours	4719	9199	9782	11348	10572	12295	12193	
Electricity Consumption									
Brazil									
Russia	billion kilowatt hours	864	941	980	1002	1022.7	977	1021	
India									
China	million kilowatt hours	1347240	2494030	2858800	3271180	3454140	3703220	4193450	
South Africa	million kilowatt hours	195660	223255	231323	241170	235924	229599	238272	

(P) - Preliminary

Sources:

Brazil	Ministry of Mines and Energy.
Russia	Federal State Statistics Service of the Russian Federation, Short Energy Balance for 2009.
India	Energy Statistics 2008 & 2010, CSO, Government of India.
China	a) National Bureau of Statistics of China, China Energy Statistical Yearbook 2000-2011.
	b) Statistical Communique of the People's Republic of China on the 2011 National Economic and Social Development.
	c) National Bureau of Statistics of China.. Annual Industrial Statistics Report, 2005-2011.
South Africa	Statistics South Africa: Statistical release P4141: January 2011 and Energy accounts 2011.

Footnotes :

China

(1) Electric power and heat in Total Primary Energy Production and Total Consumption of Energy are converted on the basis of equal caloric value.

(2) Energy consumption per capita is calculated by annual average population.

Russia

(3) Preliminary data.

(4) In million tons of standard fuel (we mean under the standard fuel the volumes of the natural fuels – oil, coal, gas, oil products etc., which are recalculated for their own corresponding calorific equivalent).

(5) Tons of standard fuel.

South Africa

(6) Physical energy flowing out of South Africa as measured by the metering system at the South African borders.

(7) Physical energy flowing into South Africa as measured by the metering system at the South African borders.

Table 10.2.1- Energy Balance (2010) - Brazil, Russia, China

unit: mtoe

	Primary Energy Production(6)					Changes in stock	Imports	Exports
	Total	Solids	Liquids	Gas	Electricity			
Brazil	247	89	109	14	34		63	38
Russia(1)	2683	200 (2)	1173 (3)	749	561(4)	-16.2	30.5	853
China	2078	1591	203	88	196	-114	391(7)	62(7)

	Bunkers		Balance	Consumption per Capita(Kg)	Consumption				
	Air	Sea			Total	Solids	Liquids	Gas	Electricity
Brazil	2	4	1		265	100	102	25	37
Russia(1)(2)		2(8)		12(9)	1758	136	582	501	539(4)
China			18	1700	2275	1551	432	99	193

Sources:

Brazil Ministry of Mines and Energy.
Russia Short Energy Balance for 2009.
China National Bureau of Statistics of China.

Footnotes:

Russia

(1) In million tons of standard fuel (we mean under the standard fuel the volumes of the natural fuels – oil, coal, gas, oil products etc. which are recalculated for their own corresponding calorific coal equivalent.)

(2) Coal, shale oils, fuel peat (conditional humidity), firewood.

(3) Oil extracted including NGL, products of fuel processing, combustible (fuel) supplementary energy resources.

(4) Electricity and heat.

(5) Tons of standard fuel.

China

(6) Solids refer to coal, liquids refer to petroleum, gas refer to natural gas, electricity refers to hydro power, nuclear power and electricity generated by other means such as wind power and geothermal power.

(7) Data on imports and exports are from Customs statistics. The refueling by Chinese ships and airplanes abroad is included in imports. The refueling by foreign ships and airplanes in China is included in exports.

Table 10.2.3- Energy Commodity Balance for the years 2007/08 and 2008/09-India

(continued)

	2007-08	2008-09	2009-10	2007-08	2008-09	2009-10	2007-08	2008-09	2009-10	2007-08	2008-09	2009-10
		Coal (1000 tonnes)			Lignite (1000 tonnes)			LPG & Ethane (1000 tonnes)			Naphtha (1000 tonnes)	
Supply and Consumption												
Production	457 082	492 757	532062	33 980	32 421	34071	6 732	6 996		16 440	14 826	
From Other Sources							2 060	2 162				
Imports	49 794	59 003	73260				2 832	2 360		5 983	5 023	
Exports	1 627	1 655	2450				99	109		9 297	7 601	
Stock Changes	2 431	-538	16804	-674	-575	748		1 487				
Domestic Supply	**502 818**	**549 567**	**586068**	**34 654**	**32996**	**34819**	**11 723**	**11 627**		**13 126**	**12 248**	
Statistical Difference	-350	2197	-1162	-3	576	589	142	665		-168	2 374	
Transformation	**400 731**	**381060**	**411061**	**26 985**	**27542**	27920						
Electricity Plants	360 735	381060	411061	26 834	27542	27920						
Blast Furnaces/ Gas Works	979			151								
Coke/Pat.Fuel/BKB (1) Plants	39 017	15 767										
Energy Sector	**508**									753	1 417	
Fuel Mining and Extraction	508											
Final Consumption	**503 168**	**547370**	**587230**	**34 657**	**32420**	**34430**	**11 581**	**10 962**		**13 294**	**9 874**	
Industry Sector	**100 283**	**165465**	**175409**	**7 672**	**4878**	**6510**	**92**	**92**		**7 791**	**3 202**	
Iron and Steel	20 196	38850	41117			270				54	71	
Chemical and Petroleum	2 942	3 085	2630	916	700	110	6	6		6 048	1 328	
Non-Ferrous Metals	656	871										
Non-Metallic Minerals	21 351	21 351		956	956	1053						
Machinery		1 195										
Mining & Quarrying		468										
Paper, Pulp and Print	2 642	2 158		346	365	469						
Cement				13 116	342	480	342					
Textile and Leather	366	2 534		768	2 463	2559						
Non-Specified	52 130	29 574		4 686	447	1569	86	86		1 689	1 803	
Other Sectors	**1 646**	**845**					**11 489**	**10 870**		**4 750**	**5 255**	
Residential	418	377					11 173	10 637				
Non-Specified	1 228	468					316	233		4 750	5 255	

Table 10.2.3- Energy Commodity Balance for the years 2007/08 and 2008/09-India

	2007-08	2008-09	2009-10	2007-08	2008-09	2009-10	2007-08	2008-09	2009-10	2007-08	2008-09	2009-10
		Kerosene (1000 tonnes)			Gas/Diesel (1000 tonnes)			Heavy Fuel Oil (1000 tonnes)			Electricity (GWH)	
Supply and Consumption												
Production	7794	8 223	8545	59032	63495	77605	15804	17684	17535	722626	746626	796281
From Other Sources										90 476	95905	109693
Imports	2489	1 423	985	2 951	2 788	2531	1 187	1 637	762	5 230	5 899	5359
Exports	137	77	46	14 308	14 690	18460	4 718	6 118	5173	290	37577	41339
Intl. Marine Bunkers					15			34				
Stock Changes					-9600	-9600			-9568		-	
Domestic Supply	**10146**	**9 569**	**9484**	**47660**	**61193**	**71276**	**12239**	**13203**	**22692**	**818 042**	**810853**	**869994**
Statistical Difference	781	266	180	-564	-3852	1681	361	1 529	-504	7 039	257581	260537
Transformation				**3 097**	**3513**	**3857**	**625**	**4535**	**4572**	**45531**	**47573**	**49706**
Electricity Plants				3 097	3513	3857	625	4535	4572			49706
Energy Sector				**371**	**953**	**1375**					**17180**	**31568**
Fuel Mining and Extraction				371	953	1375						
Other Energy Sector											-	
Distribution Losses										187 513	180322	219866
Final Consumption	**9365**	**9 303**	**9304**	**48224**	**63477**	**69595**	**11878**	**24349**	**23196**	**623 490**	**553272**	**609457**
Industry Sector	**185**	**43**	**43**	**2 171**	**14421**	**16979**	**2 939**	**9377**	**9497**	**265 406**	**209474**	**230445**
Iron and Steel				193	217	491	885	2316	2354			
Chemical and Petroleum				75	133	393	1 989	3175	3291			
Transport Equipment					11 947	13328						
Mining & Quarrying				369	1 030	1187		998	1009			
Textile and Leather					94	149		176	98			
Non-Specified	185	43	43	1 534	1 000	1431	65	2712	2745	265406	209474	230445
Transport Sector				**24076**	**30681**	**32124**	**315**	**2360**	**1576**	**11108**	**60356**	**89725**
Domestic Aviation				1	2	10						
Road				23 547	27 753	28 753	55	500	521			
Rail				353	2 168	2 713		27	36	11 108	11425	12569
Domestic Navigation				175	758	648	260	847	658			
Non-Specified								986	361		48931	77156
Other Sectors	**9180**	**9 260**	**9261**	**18509**	**13909**	**15260**	**7 999**	**8077**	**7551**	**301 445**	**399011**	**427880**
Residential	9163	9 131	9131							120918	131720	144907
Comm. and Public Services										6 131	54189	59614
Agriculture/Forestry				9 014	10 144	11245		529	674	104182	109610	120583
Non-Specified	17	129	130	9 495	3 765	4015	7 999	7548	6877	70214	103492	102776

Source:

Energy Statistics 2008 & 2010, Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India.

Footnote:

(1) BKB- Brown Coal/ Peat Briquettes.

Table 10.2.4 - Summary of Energy - China

	Unit	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Consumption of crude petroleum	1000 tons	213427	225441	249220	287493	300862	322452	340316	354982	381286	428746	
Consumption of petrol	1000 tons	35976	37493	40720	46957	48549	52425	55191	61455	61727	68862	
Electricity Consumption	million kwh	1472350	1646550	1903160	2197140	2494032	2858797	3271181	3454135	3703215	4193450	
Energy production from thermal	million kwh	1176753	1327377	1580361	1795588	2047336	2369603	2722933	2707230	2982776	3331928	
Energy production from hydro	million kwh	277432	287974	283681	353544	397017	435786	485264	636960	615644	722172	694044
Energy production from nuclear	million kwh	17472	25127	43342	50469	53088	54843	62130	68402	70134	73880	86350

Sources:

National Bureau of Statistics of China, China Energy Statistical Yearbook 2011.

National Bureau of Statistics of China, Annual Report, 2001-2010.

Table 10.2.5- Energy Supply, Use and Flow Diagrams-South Africa (2006)

(continues)

	Unit	Coal	Crude Oil	Electricity	Gas to Users	Hydro
Energy Supply						
a.Domestic Production	trillion joules	5 788 411	287 766	856 008	125 797	9 895
b.Imports	trillion joules	57 428	926 356	38 246	52 202	
c.Total Supply (a+b)	trillion joules	5 845 839	1 214 122	894 255	177 998	9 895
Energy Use						
a.Intermediate Consumption by Industries	trillion joules	3 568 553	1 193 284	601 218	177 998	9 895
Agriculture & Fishing	trillion joules	763		21 029		
Commercial Sector	trillion joules	76 399		103 798	864	
Construction	trillion joules			194		
Electricity, Gas & Steam Production	trillion joules	2 032 129		14 766	72 314	9 895
Manufacturing	trillion joules	1 405 978	1 193 284	335 491	101 920	
Mining & Quarrying	trillion joules	53 282		113 412	2 900	
Transport, Storage and Communication	trillion joules			12 527		
b.Inventory Changes	trillion joules	197 741		0		
c.Private Consumption, Total	trillion joules	152 604		219 435		
Heating, Use of Electricity etc.	trillion joules	152 604		219 435		
d.Exports	trillion joules	1 926 942	20 838	48 920		
e.Losses in Distribution	trillion joules					
f.Total Use (a+b+c+d+e)	trillion joules	5 845 839	1 214 122	894 255	177 998	9 895
Energy Flow Diagrams						
Total	%	100.0	100.0	100.0	100.0	100.0
Agriculture & Fishing	%			2.4		
Commercial Sector	%	1.3		11.6	0.5	
Construction	%	0.0		0		
Electricity, Gas & Steam Production	%	34.8		1.7	40.6	100.0
Manufacturing	%	24.1	98.3	37.5	57.3	
Mining & Quarrying	%	0.9		12.7	1.6	
Transport, Storage and Communication	%			1.4		
Domestic	%	2.6		24.5		
Exports	%	33.0	1.7	5.5		
Stock Changes	%	3.4		2.8		
Imports	%	1	76.3	4.3	29.3	

Table 10.2.5- Energy Supply, Use and Flow Diagrams-South Africa (2006)

	Unit	Nuclear	Petroleum Products	Renewable & Waste	Total Energy Supply or Use
Energy Supply	trillion joules	109 375	991 004	430 427	8 598 682
a.Domestic Production	trillion joules		135 264		1 209 496
b.Imports	trillion joules	109 375	1 126 267	430 427	9 808 178
c.Total Supply (a+b)					
Energy Use	trillion joules	109 375	853 589	240 027	6 753 938
a.Intermediate Consumption by Industries	trillion joules		48 592		70 385
Agriculture & Fishing	trillion joules		43 071		224 133
Commercial Sector	trillion joules		15 470		15 665
Construction	trillion joules	109 375		240 027	2 478 506
Electricity, Gas & Steam Production	trillion joules				3 036 673
Manufacturing	trillion joules		32 388		201 982
Mining & Quarrying	trillion joules		714 069		726 596
Transport, Storage and Communication	trillion joules		424		198 165
b.Inventory Changes	trillion joules		38 867	190 400	601 305
c.Private Consumption, Total	trillion joules		38 867	190 400	601 305
Heating, Use of Electricity etc.	trillion joules		233 387		2 230 088
d.Exports	trillion joules				24 682
e.Losses in Distribution	trillion joules	109 375	1 126 267	430 427	9 808 178
f.Total Use (a+b+c+d+e)					
Energy Flow Diagrams	%	100.0	100	100.0	
Total	%		4.31		
Agriculture & Fishing	%		3.82		
Commercial Sector	%		1.37		
Construction	%	100.0		55.76	
Electricity, Gas & Steam Production	%				
Manufacturing	%		2.88		
Mining & Quarrying	%		63.4		
Transport, Storage and Communication	%		3.45	44.24	
Domestic	%		20.72		
Exports	%		0.04		
Stock Changes	%		12.01		
Imports					

Source: Statistics South Africa.

Explanatory Notes:

China

Total Primary Energy Production refers to the total production of primary energy by all energy producing enterprises in the country in a given period of time. It is a comprehensive indicator to show the level, scale, composition and pace of development of energy production of the country. The production of primary energy includes that of coal, crude oil, natural gas, hydro-power and electricity generated by nuclear energy and other means such as wind power and geothermal power. However, it does not include the production of fuels of low calorific value, bio-energy, solar energy and secondary energy converted from primary energy.

Total Consumption of Energy refers to the total consumption of energy of various kinds by the production sectors and the households in the country in a given period of time. It is a comprehensive indicator to show the scale, composition and pace of increase of energy consumption. Total energy consumption includes that of coal, crude oil and their products, natural gas and electricity. However, it does not include the consumption of fuel of low calorific value, bio-energy and solar energy. Total energy consumption can be divided into three parts: end-use energy consumption; loss during the process of energy conversion; and energy loss.