



Data Dissemination, use, analysis and quality issues: APEC Energy Database

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APEC and the Energy Data Collection

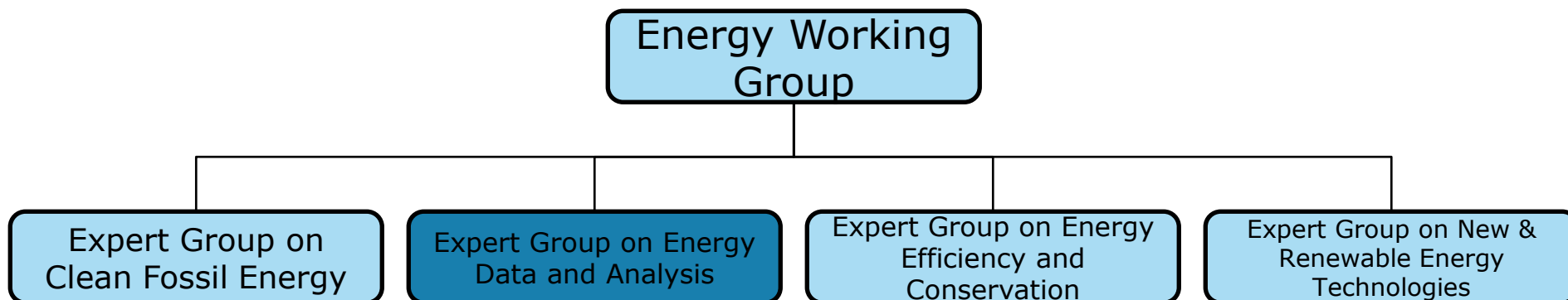
The Asia-Pacific Economic Cooperation (APEC) is a regional economic forum to leverage the growing interdependence of the Asia-Pacific. APEC's 21 members aim to create greater prosperity for the people of the region by promoting balanced, inclusive, sustainable, innovative and secure growth and by accelerating regional economic integration.



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APEC and the Energy Data Collection

- APEC's Energy Working Group (EWG), one of the 14 working groups under the APEC umbrella, was created in 1990
- EWG sought to maximize the energy sector's contribution to the region's economic and social well being, while mitigating the environmental effects of energy supply and use
- EWG recognized the importance **exchange of information and energy statistics between APEC member economies** and created an Expert's Group that would be responsible for managing and reviewing the operation of the APEC energy database



Expert Group on Energy Data and Analysis (EGEDA)

- **The Expert Group on Energy Data and Analysis (EGEDA)** is responsible for providing policy relevant energy information to APEC bodies and the wider community, through collecting energy data of the APEC region, managing the operation of the APEC Energy Data Base through the Coordinating Agency, collecting policy relevant information from member economies, and maintaining close cooperation with the Asia Pacific Energy Research Centre (APERC) related to planning and implementing APERC's activities.



Expert Group on Energy Data and Analysis (EGEDA)

1991: **2nd APEC EWG Meeting** in Jakarta agreed to establish an Expert Group within APEC responsible for managing and reviewing the operation of the APEC Energy Data Base.
Pursuant to this decision, the **Energy Data Expert Group** was established in 1991.

1993: The Expert Group has published "**APEC Energy Statistics**". The Expert Group has also developed an on-line data collection and dissemination system.

1994: Collection of **quarterly data** started.

1996: Following the 12th EWG Meeting in Hong Kong in May 1996, The name of the Expert Group was changed to the **Energy Data and Outlook Expert Group**

1999: It was approved at the 18th EWG Meeting in Wellington, to Change the name of the Group to the current **Expert Group on Energy Data and Analysis**.

2001: Collection of **monthly oil data** started.

2006: Collection of **monthly Gas data** started.

Energy Data

- **Monthly**

Oil and Gas (JODI: Joint Organisations Data Initiative)

- **Quarterly** Energy Supply

Coal, Oil, Petroleum Products, Gas and Electricity

- **Annual** Energy Supply and Demand

Coal, Oil, Petroleum Products, Gas, Electricity / Heat, New and Renewables

Other Data (Energy Related Data)

- CO2 Emission

- Energy Prices

- Oil / Gas reserve and producing / refining capacity as JODI Annual

Data Dissemination: APEC Energy Database

EGEDA under EWG-APEC - Windows Internet Explorer

http://www.ieej.or.jp/egeda/

お気に入り EGEDA under EWG-APEC

APEC
Asia-Pacific
Economic Cooperation

EGEDA
under EWG-APEC

Expert Group on Energy Data Analysis

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DATABASE
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On behalf of the Asia Pacific Energy Research Center (APERC), the Energy Data and Modelling Center of the Institute of Energy Economics, Japan maintains this web site.

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Monthly Oil & Gas data

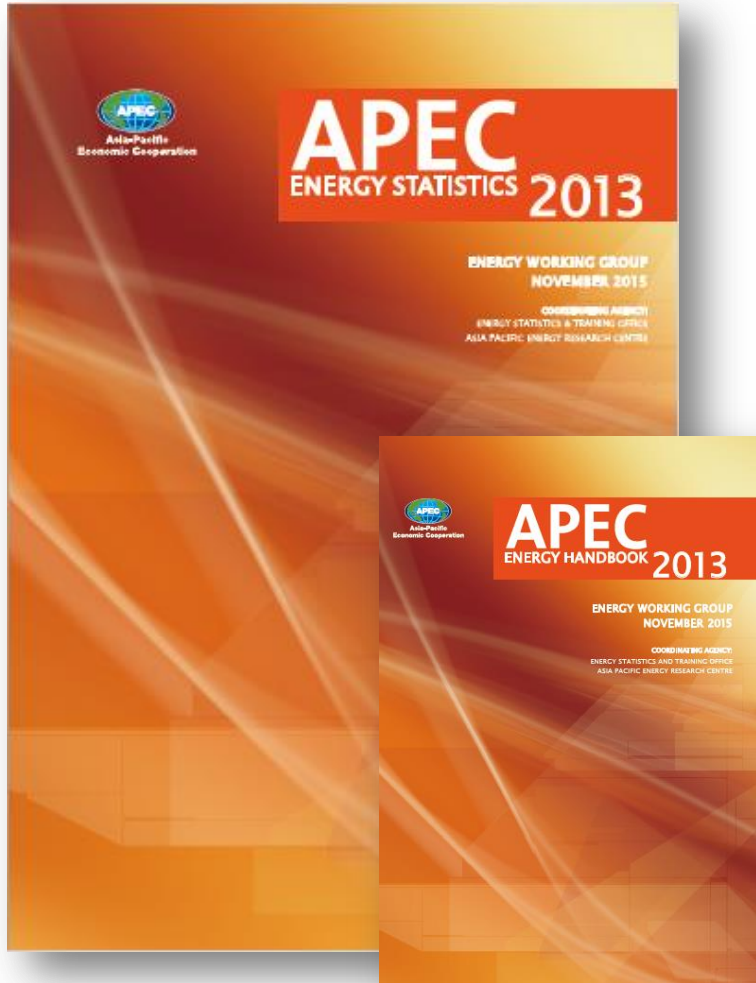
- JODI Oil

- JODI Gas

Quarterly Energy Supply Data

Annual Energy Data

<http://www.ieej.or.jp/egeda/>



APEC Energy Statistics:

Overview of the APEC Energy Situation

APEC and the World

Energy Supply

Energy Consumption

Power Generation

CO₂

Member Tables

Energy Balance Table

Major Energy Indicators

Major Economic Indicators

APEC Energy Handbook:

Primary Energy Supply

Transformation

Final Energy Consumption

Energy Balances

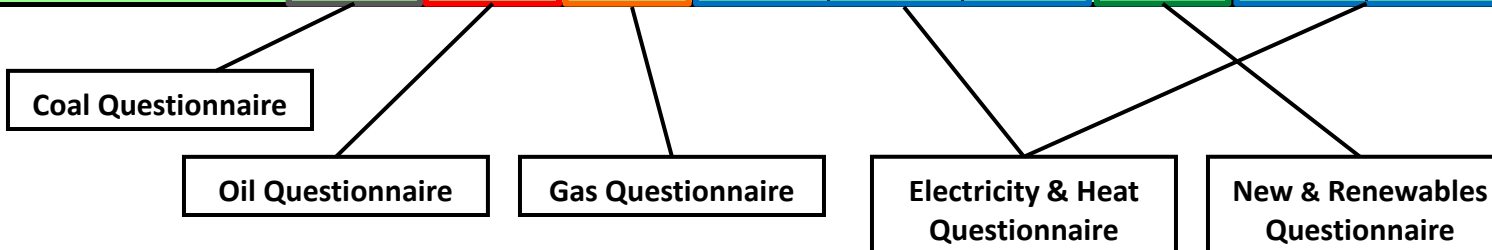
Energy Outlook

Energy Indicators

Processing the Energy Data

unit: ktoe

	Coal	Oil	Gas	Hydro	Nuclear	Geothermal etc.	Others	Electricity	Heat	Total
Indigenous Production	932	658	391	341	39175	265	4277	-	-	46040
Imports	75571	168497	42853	-	-	-	-	-	-	286922
Exports	-	-58821	-	-	-	-	-	-	-	-58820
International Bunkers	-	-12574	-	-	-	-	-	-	-	-12574
Stock Changes	59	-610	1746	-	-	-	-	-	-	1194
Total Primary Energy Supply	76562	97151	44990	341	39175	265	4277	-	-	262763
Transfers	-	-474	-	-	-	-	-	-	-	-474
Transformation Sector	-65444	-8294	-21655	-341	-39175	-174	-1590	45660	5243	-85769
Loss & Own Use	-2897	-4972	-237	-	-	-	-	-4598	-143	-12847
Discrepancy	1043	1322	-194	-	-	-	48	339	-126	2430
Total Final Consumptions	9264	84734	22904	-	-	92	2735	41401	4974	166103
Industry	8449	46164	9292	-	-	2	1890	21555	2128	89481
Transport	-	29825	1149	-	-	-	-	194	-	31168
Other Sector	816	8744	12463	-	-	89	845	19652	2846	45454
Commercial	-	2775	3351	-	-	61	743	13119	962	21012
Residential	816	2903	9106	-	-	21	69	5495	1884	20293
Others	-	3066	6	-	-	7	33	1038	-	4149



Processing the Energy Data

- **5 Questionnaires**
 - Coal, Oil, Gas, Electricity & Heat and NRE (New & Renewables)
 - Supply, Transformation, Final Consumption
 - Microsoft Excel format
- **The energy data should be filled in the questionnaires.**
 - Following the definitions
 - Minimize statistical difference
 - Check for inconsistent historical trend

**APEC-ASEAN Joint Format for Annual Coal Data
Supply Sector (Table 1)**

Update

		Primary Fuels						Secondary Fuels						
		Coking Coal	Anthracite	Other bituminous coal	Sub-bituminous Coal	Lignite	Peat	Patent Fuel	Coke	Coal Tar	BKB/PB ⁵	Gas Works Gas	Coke Oven Gas	Blast furnace Gas
		1000t	1000t	1000t	1000t	1000t	1000t	1000t	1000t	1000t	1000t	10 ¹² kcal (gross)	10 ¹² kcal (gross)	10 ¹² kcal (gross)
	A	B	C	D	E	F	G	H	I	J	K	L	M	
Production ¹	1													
of which: underground ²	2													
of which: surface ³	3													
From Other Sources	4	0	0	0	0	0	0				0			
of which: recovered slurries ⁴	5													
of which: from Oil ⁵	6													
Imports	7													
Exports	8													
International Marine Bunkers	9													
Stock Changes	10	0	0	0	0	0	0	0	0	0	0	0	0	0
GROSS INLAND DELIVERIES (calculated from 1 to 10)	11	0	0	0	0	0	0	0	0	0	0	0	0	0
Statistical Differences, 11-13	12	0	0	0	0	0	0	0	0	0	0	0	0	0
GROSS INLAND DELIVERIES (observed) ⁷	13	0	0	0	0	0	0	0	0	0	0	0	0	0
Total stock on national territory - Opening	14													
Total stock on national territory - Closing	15													
HS codes	16	270112	270111	270119		270210 270220	270300	-	270400	270600	270120	-	-	-
HS codes	16	270112	270111	270119		270220	270300	-	270400	270600	270120	-	-	-
HS codes	16	270112	270111	270119		270220	270300	-	270400	270600	270120	-	-	-

Quality Issues: Historical Trend

- Member economies can check their historical energy data in the APEC 2009 Annual Data Collection Format.

Sub-bituminous Coal supply		growth rate															
Quantity		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	08/07	
Production ¹	1 +	85	63	85	59	73	25	0	0	0	132,352	152,205	193,761	217,410	229,000	0	
of which: underground ²	2														229,000	-	
of which: surface ³	3															-	
From Other Sources	4 +	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	
of which: recovered slurries ⁴	5															-	
of which: from OI ⁵	6															-	
Imports	7 +	0	0	0	0	0	0	0	0	0		98	111	68	107	1	
Exports	8 -	0	0	0	0	0	0	0	0	0	93,759	106,207	143,633	160,484	160,000	-0	
International Marine Bunkers	9 -															-	
Stock Changes	10 +	0	0	0	0	0	0	0	0	0	0	-2,428	0	4,477	0	-1	
GROSS INLAND DELIVERIES (calculated from 1 to 10)	11	85	63	85	59	73	25	0	0	0	38,593	43,668	50,239	61,470	69,107	0	
Statistical Differences, 11-13	12	-9	-41	-29	-32	-13	-7	0	0	0	2,492	2,362	1,246	0	0	-	
GROSS INLAND DELIVERIES (observed) ⁷	13	94	104	114	91	86	32	0	0	0	36,101	41,306	48,993	61,470	69,107	0	
Total stock on national territory - Opening	14	0	0	0	0	0	0	0	0	0		1,696		4,477		-	
Total stock on national territory - Closing	15	0	0	0	0	0	0	0	0	0		4,124			0	-	
HS codes	16																-

Review of Energy Balances

- ✓ Growth rates of TPES and TFEC and all other flows
- ✓ Transformation gains and losses
- ✓ Thermal efficiencies
- ✓ Statistical discrepancies
- ✓ Completeness

Quality Issues: Energy Balances

Unit:KTOE

	Coal	Coal Products	Crude Oil, NGL and Condensate	Petroleum Products	Gas	Hydro	Nuclear	Geothermal, Solar, etc.	Others	Electricity	Heat	Total
Indigenous Production	354	0	175	0	1,929	2,254	0	0	4,599	0	0	9,310
Imports	2,651	0	11,097	3,935	5,280	0	0	0	0	185	0	23,149
Exports	0	-28	0	-1,836	0	0	0	0	0	0	0	-1,864
International Marine Bunkers	0	0	0	0	0	0	0	0	0	0	0	0
International Aviation Bunkers	0	0	0	-689	0	0	0	0	0	0	0	-689
Stock Changes	-79	49	27	-461	-160	0	0	0	0	0	0	-624
Total Primary Energy Supply	2,926	21	11,299	949	7,048	2,254	0	0	4,599	185	0	29,282
Transfers	0	0	0	0	0	0	0	0	0	0	0	0
Total Transformation Sector	-2,471	432	-11,037	10,249	-4,957	-2,254	0	0	-571	4,514	0	-6,096
Main Activity Producer	-1,957	0	0	-820	-2,335	-2,206	0	0	-20	4,209	0	-3,129
Autoproducers	-8	0	0	-117	-377	-48	0	0	-551	305	0	-796
Gas Processing	0	-21	0	0	-2,245	0	0	0	0	0	0	-2,266
Refineries	0	0	-11,037	11,186	0	0	0	0	0	0	0	149
Coal Transformation	-506	453	0	0	0	0	0	0	0	0	0	-53
Petrochemical Industry	0	0	0	0	0	0	0	0	0	0	0	0
Biofuel Processing	0	0	0	0	0	0	0	0	0	0	0	0
Charcoal Processing	0	0	0	0	0	0	0	0	0	0	0	0
Non-specified Transformation	0	0	0	0	0	0	0	0	0	0	0	0
Loss & Own Use	0	0	0	-452	-748	0	0	0	0	-544	0	-1,745
Discrepancy	0	-4	-263	0	-66	0	0	0	0	0	0	-333
Total Final Energy Consumptions	455	449	0	10,747	1,277	0	0	0	4,028	4,154	0	21,109
Industry Sector	439	449	0	2,061	750	0	0	0	1,121	2,800	0	7,628
Iron and Steel	0	449	0	29	20	0	0	0	0	49	0	547
Chemical (incl. Petro-Chemical)	0	0	0	5	9	0	0	0	0	78	0	92
Non Ferrous Metals	0	0	0	0	0	0	0	0	0	0	0	0
Non Metallic Mineral Products	129	0	0	74	26	0	0	0	0	42	0	271
Transportation Equipment	0	0	0	0	0	0	0	0	0	0	0	0
Machinery	0	0	0	0	0	0	0	0	0	0	0	0
Mining and Quarrying	56	0	0	1,171	228	0	0	0	0	1,556	0	3,012
Food, Beverages and Tobacco	80	0	0	14	0	0	0	0	0	9	0	103
Pulp, Paper and Printing	0	0	0	0	0	0	0	0	736	0	0	736
Wood and Wood Products	0	0	0	144	75	0	0	0	0	374	0	593
Construction	0	0	0	0	0	0	0	0	0	0	0	0
Textiles and Leather	0	0	0	0	0	0	0	0	0	0	0	0
Non-specified Industry	173	0	0	624	400	0	0	0	385	692	0	2,273
Transport Sector	0	0	0	7,407	31	0	0	0	0	22	0	7,460
Domestic Air Transport	0	0	0	30	0	0	0	0	0	0	0	30
Road	0	0	0	5,534	31	0	0	0	0	0	0	5,565
Rail	0	0	0	18	0	0	0	0	0	22	0	40
Inland Waterways	0	0	0	1,693	0	0	0	0	0	0	0	1,693
Pipeline Transport	0	0	0	0	0	0	0	0	0	0	0	0
Non-specified Transport	0	0	0	132	0	0	0	0	0	0	0	132
Other Sector	16	0	0	1,279	488	0	0	0	2,907	1,332	0	6,022
Residential & Commercial	4	0	0	1,173	442	0	0	0	2,907	1,322	0	5,847
Commerce and Public Services	4	0	0	237	87	0	0	0	0	609	0	937
Residential	0	0	0	936	355	0	0	0	2,907	712	0	4,910
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0
Fishing	13	0	0	105	46	0	0	0	0	11	0	175
Non-specified Others	0	0	0	0	0	0	0	0	0	0	0	0
of which Non-Energy Use*	0	213	0	0	2,264	0	0	0	0	0	0	2,478
Electricity Output in GWh	8,397	0	0	1,872	13,137	26,214	0	2,864	0	0	0	52,484

Quality Issues: Energy Balances

Unit:KTOE

	Coal	Coal Products	Crude Oil, NGL and Condensate	Petroleum Products	Gas	Hydro	Nuclear	Geothermal, Solar, etc.	Others	Electricity	Heat	Total
Indigenous Production	354	0	175	0	1,929	2,254	0	0	4,599	0	0	9,310
Imports	2,651	0	11,097	3,935	5,280	0	0	0	0	185	0	23,149
Exports	0	-28	0	-1,836	0	0	0	0	0	0	0	-1,864
International Marine Bunkers	0	0	0	0	0	0	0	0	0	0	0	0
International Aviation Bunkers	0	0	0	-689	0	0	0	0	0	0	0	-689
Stock Changes	-79	49	27	-461	-160	0	0	0	0	0	0	-624
Total Primary Energy Supply	2,926	21	11,299	949	7,048	2,254	0	0	4,599	185	0	29,282
Transfers	0	0	0	0	0	0	0	0	0	0	0	0
Total Transformation Sector	-2,471	432	-11,037	10,249	-4,957	-2,254	0	0	-571	4,514	0	-6,096
Main Activity Producer	-1,957	0	0	-820	-2,335	-2,206	0	0	-20	4,209	0	-3,129
Autoproducers	-8	0	0	-117	-377	-48	0	0	-551	305	0	-796
Gas Processing	0	-21	0	0	-2,245	0	0	0	0	0	0	-2,266
Oil Refineries	0	0	-11,037	11,186	0	0	0	0	0	0	0	149
Coal Transformation	-506	453	0	0	0	0	0	0	0	0	0	-53
Petrochemical Industry	0	0	0	0	0	0	0	0	0	0	0	0
Other Transformation	0	0	0	0	0	0	0	0	0	0	0	0
Loss & Own Use	0	0	0	-452	-748	0	0	0	0	-544	0	-1,745
Discrepancy	0	-4	-263	0	-66	0	0	0	0	0	0	-333
Total Final Energy Consumptions	455	449	0	10,747	1,277	0	0	0	4,028	4,154	0	21,109
Industry Sector	439	449	0	2,061	758	0	0	0	1,121	2,800	0	7,628
Iron and Steel	0	449	0	29	20	0	0	0	0	49	0	547
Chemical (incl. Petro-Chemical)	0	0	0	5	9	0	0	0	0	78	0	92
Non Ferrous Metals	0	0	0	0	0	0	0	0	0	0	0	0
Non Metallic Mineral Products	129	0	0	74	26	0	0	0	0	42	0	271
Transportation Equipment	0	0	0	0	0	0	0	0	0	0	0	0
Machinery	0	0	0	0	0	0	0	0	0	0	0	0
Mining and Quarrying	56	0	0	1,171	228	0	0	0	0	1,556	0	3,012
Food, Beverages and Tobacco	80	0	0	14	0	0	0	0	0	9	0	103
Pulp, Paper and Printing	0	0	0	0	0	0	0	0	736	0	0	736
Wood and Wood Products	0	0	0	144	75	0	0	0	0	374	0	593
Construction	0	0	0	0	0	0	0	0	0	0	0	0
Textiles and Leather	0	0	0	0	0	0	0	0	0	0	0	0
Non-specified Industry	173	0	0	624	400	0	0	0	385	692	0	2,273
Transport Sector	0	0	0	7,407	31	0	0	0	0	22	0	7,460
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Road	0	0	0	5,534	31	0	0	0	0	0	0	5,565
Rail	0	0	0	18	0	0	0	0	0	22	0	40
Inland Waterways	0	0	0	1,693	0	0	0	0	0	0	0	1,693
Pipeline Transport	0	0	0	0	0	0	0	0	0	0	0	0
Non-specified Transport	0	0	0	132	0	0	0	0	0	0	0	132
Other Sectors	16	0	0	1,279	488	0	0	0	2,907	1,332	0	6,022
Residential & Commercial	4	0	0	1,173	442	0	0	0	2,907	1,322	0	5,847
Commerce and Public Services	4	0	0	237	87	0	0	0	0	609	0	937
Residential	0	0	0	936	355	0	0	0	2,907	712	0	4,910
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0
Fishing	13	0	0	105	46	0	0	0	0	11	0	175
Non-specified Others	0	0	0	0	0	0	0	0	0	0	0	0
of which Non-Energy Use*	0	213	0	0	2,264	0	0	0	0	0	0	2,478
Electricity Output in GWh	8,397	0	0	1,872	13,137	26,214	0	2,864	0	0	0	52,484
Thermal Efficiency	36.8%			17.2%	41.7%							

Quality Issues: Energy Balances

	Coal	Coal Products	Crude Oil, NGL and Condensate	Petroleum Products								Unit:KTOE
												Total
Indigenous Production	354	0	175									9,310
Imports	2,651	0	11,097									23,149
Exports	0	-28	0									-1,864
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International Aviation Bunkers	0	0	0									-689
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Transfers	0	0	0									0
Total Transformation Sector	-2,471	432	-11,037	10,249	-4,957	-2,254	0	-571	4,514	0	0	-6,096
Main Activity Producer	-1,957	0	0									-3,129
Autoproducers	-8	0	0									-796
Gas Processing	0	-21	0									-2,266
Refineries	0	0	-11,037									149
Coal Transformation	-506	453	0									-53
Petrochemical Industry	0	0	0									0
Biofuel Processing	0	0	0									0
Charcoal Processing	0	0	0									0
Non-specified Transformation	0	0	0									0
Loss & Own Use	0	0	0									-1,745
Discrepancy	0	-4	-263									-333
Total Final Energy Consumptions	455	449	0	10,747	1,277	0	0	4,028	4,154	0	0	21,109
Industry Sector	439	449	0	2,061	758	0	0	1,121	2,800	0	0	7,628
Iron and Steel	0	449	0									547
Chemical (incl. Petro-Chemical)	0	0	0									92
Non Ferrous Metals	0	0	0									0
Non Metallic Mineral Products	129	0	0									271
Transportation Equipment	0	0	0									0
Machinery	0	0	0									0
Mining and Quarrying	56	0	0									3,012
Food, Beverages and Tobacco	80	0	0									103
Pulp, Paper and Printing	0	0	0									736
Wood and Wood Products	0	0	0									593
Construction	0	0	0									0
Textiles and Leather	0	0	0									0
Non-specified Industry	173	0	0									2,273
Transport Sector	0	0	0	7,407	31	0	0	0	22	0	0	7,460
Domestic Air Transport	0	0	0									30
Road	0	0	0									5,565
Rail	0	0	0									40
Inland Waterways	0	0	0									1,693
Pipeline Transport	0	0	0									0
Non-specified Transport	0	0	0									132
Other Sector	16	0	0	1,279	488	0	0	2,907	1,332	0	0	6,022
Residential & Commercial	4	0	0									5,847
Commerce and Public Services	4	0	0									937
Residential	0	0	0									4,910
Agriculture	0	0	0									0
Fishing	13	0	0									175
Non-specified Others	0	0	0									0
of which Non-Energy Use*	0	213	0									2,478
Electricity Output in GWh	8,397	0	0									52,484

Divide this number with GDP, you get **Energy Intensity**

Divide this number with population, you get **per Capita Final Energy Consumption**

Divide by steel production, you get **Energy Consumption per unit of steel output**



Thank you for your kind attention

<http://aperc.ieej.or.jp/>