

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.

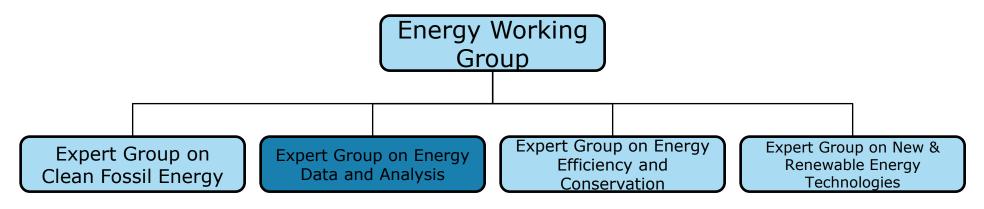


Australia Brunei Darussalam Canada Chile China Hong Kong, China Indonesia Japan Republic of Korea Malaysia Mexico New Zealand Papua New Guinea Peru The Philippines Russia Singapore Chinese Taipei Thailand United States Viet Nam



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 online 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 Collection in APEC Region

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



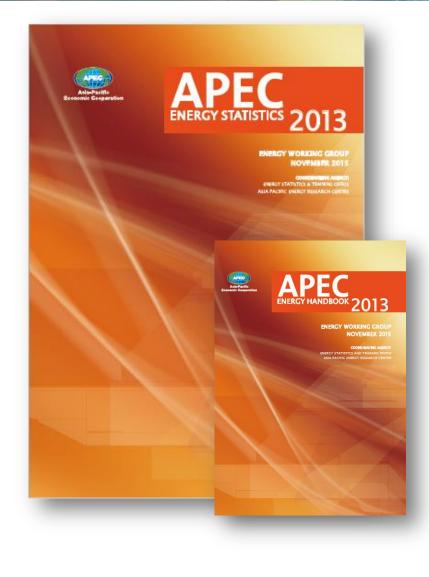
Data Dissemination: APEC Energy Database



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



Data Dissemination: Publications



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



										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 & Ow n 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	<u> </u>	29825	1149	-	-	-	-	194	-	31168
Other Sector	816	8744	12463	-	-	89	845	19652	2846	45454
Commercial	<u> </u>	2775	3351	-	-	61	743	13119	962	21012
Residential	816	2903	9106	-	-	21	69	5495	1884	20293
Others	<u> </u>	3066	6	-	-	-	33	1038	-	4149
Coal Questionnaire Oil C	Questionnai	ire C	Gas Questi	onnaire		tricity & H lestionnai		New & Ren Questio]





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

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	observed) ⁷ 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0	observed? 13 0	observed? 13 0		12		U	0	0	0	0	0	0	0	0	0	0	0	0
		Total stock on national territory - 14	Total stock on national territory - 14 14 14 Total stock on national territory - 15 15	abserved) ⁷	13		0				0	0	0	0		0	0	0	0
	Total stock on national territory.	Opening 14 Total stock on national territory -	Opening on national territory - 14			-	-			-			-	-					-
Total stock on national territory -		Opening 14 Total stock on national territory -	Opening on national territory - 14	otal stock on national territory -	T	Г		T C											
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			HS codes 16 270112 270111 270119 270220 270300 - 270400 270600 270120																
				IS codes	16		270112	270111	270119		270220	270300	-	270400	270600	270120	-	-	-
						_						270220 2	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	/
Production1	1 +	85	63	85	59	73	25	0	0	0	132,352	152,205	193,761	217,410	229,000	0	′
of which: underground2	2														229,000 -	-	/
of which: surface3	3														-	-	/
From Other Sources	4 +	0	0	0	0	0	0	0	0	0	0	0	0	0	0 -	-	/
of which: recovered slurries4	5														-	-	/
of which: from Oil5	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
- \checkmark Transformation gains and losses
- ✓ Thermal efficiencies
- ✓ Statistical discrepancies
- ✓ Completeness



Quality Issues: Energy Balances

												Unit:KTOE
			Crude Oil,									
		Coal	NGL and	Petroleum				Geothermal,				
	Coal	Products	Condensate		Gas		Nuclear	Solar, etc.		Electricity	Heat	Total
Indigenous Production	354	0	175	0	1,929	2,254	0	0	4,599		0	
Imports	2,651	0		3,935	5,280	0	0	0	0	185		,
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		-461	-160	0	0	0	0	0	0	02.
Total Primary Energy Supply	2,926	21		949	7,048	2,254	0			185		
Transfers	0	0	-	0	0	0	0			-		0
Total Transformation Sector	-2,471	432	-11,037	10,249	-4,957	-2,254	0	-	-	4,514		
Main Activity Producer	-1,957	0	0	-820	-2,335	-2,206	0		-20			
Autoproducers	-8	0	0	-117	-377	-48	0	-	-551	305		
Gas Processing	0	-21		0	-2,245	0	0	0	0	-		
Refineries	0	0	-11,037	11,186	0	0	0	0	0	0		
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		-
Loss & Own Use	0	0	0	-452	-748	0	0	0	0	-544		
Discrepancy	0	-4		0	-66	0	0			0	0	
Total Final Energy Consumptions	455				1,277	0						
Industry Sector	439	449		2,061	750	0	0		1,121	2,800	0	
Iron and Steel	0	449		29	20	0	0		-			
Chemical (incl. Petro-Chemical)	0	0	0	5	9	0	0		0			
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		271
Transportation Equipment	0			0	0	0	0	0	0	-		-
Machinery	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	-		
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		
Transport Sector	0	0	0	7,407	31	0	0	0	0	22		
Domestic Air Transport	0	0	0	30	0	0	0	0	0	0		
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		
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	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		609		
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					_,	v		2,864		v	U	52,484



Quality Issues: Energy Balances

								7 D 43				Unit:KTOE
			Crude Oil,									
		Coal	NGL and	Petroleum	-			Geothermal,				
	Coal	Products	Condensate	Products	Gas	Hydro	Nuclear	Solar, etc.	Others	Electricity		Total
Indigenous Production	354	0	175		/	2,254	0	0	4,599	0	0	9,310
Imports	2,651	0	,		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
Total Transformation Sector	-2,471	432		10,249	-4,957	-2,254	0	0	-571	4,514		-6.096
Main Activity Producer	-1,957	0		-820		-2,206	0	-	-20			-3,129
Autoproducers	-8	-	0		-377	-48	0	0	-551	305		-796
Gas Processing	0	-21	0				0			0	0 0	-2,266
Oil Refineries	0	-21	Ŭ Ŭ	U U		0	0	0		0	0	-2,200
	500			11,180	0	0	0	0	0	0	0	-53
Coal Transformation	-506			0	0	0	0	0	0	0	0	-53
Petrochemical Industry	0	0	-	-	0	0	0	0	0	0	0	0
Other Transformation	0	Ŭ	-		0	0	0	0	0	0	0	0
Loss & Own Use	0	0	0		-748	0	0	-	0	-544	0	-1,745
Discrepancy	0	-4	-263		-66	0	0	-	-	0	0	-333
Total Final Energy Consumptions	455				1,277	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
Non Metallic Mineral Products	129	l ő	0	-	26	0	0	0	Ő	42	-	271
Transportation Equipment	125		0			0	0		0			2/1
Machinery	0	-	0	-	-	0	0	0	0	Ŭ	0	0
	-	-	0	-		0	0	0	0	-		2 012
Mining and Quarrying	56				228	Ű	0	0	-	.,		3,012
Food, Beverages and Tobacco	80	-	0		-	0	0	0	0	-	0	103
Pulp, Paper and Printing	0	0	0	-		0	0	0	736	0	0	736
Wood and Wood Products	0	0	0		75	0	0	0	0	374	0	593
Construction	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
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			0	0	0	0	0	0	30
Road	0	0	0		31	0	0	0	0	0		5,565
Rail	0	Ö	0		-	0	0	0	Ő	22		40
Inland Waterways	0		0	-		0	0	0		0		1,693
Pipeline Transport	0		0	.,000	0	0	0	0		0	0	1,093
	0			-	-	0	0	0	0	0		100
Non-specified Transport	0	Ŭ	0	-	-	0	0	0	0	0	0	132
Other Sectors	16	0	0	, .	488	0	0	0	2,907	1,332	0	6,022
Residential & Commercial	4	0	0			0	0	0	2,907	1,322	0	5,847
Commerce and Public Services	4	0	0	201	87	0	0	0	0	609		937
Residential	0	0	0	000		0	0	0	2,907	712		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
of which Non-Energy Use*		213			2,264	0	0	0	Ő	0	ő	2,478
Electricity Output in GWh	8,397			1,872	13,137	26,214	0	v	-	0		52,484
						20,214	0	2,004	0	0	0	02,704
Thermal Efficiency	36.8%			17.2%	41.7%							



Quality Issues: Energy Balances

	1		Crude Oil		Divis	J				CDD	Unit:KTOE
		Coal	Crude Oil, NGL and	Petrol	DIVIC	le this	s nur	nber v	with	GDP,	
	Coal		Condensate	Produ						and the second sec	Total
Indigenous Production	354		175		VOI	get I	Enor	av Tr	nton	city	0 9,310
Imports	2,65		11,097		yuu	i yet i	LIICI	99 11	ILCII	isity	0 23,149
Exports	2,00	-28									0 -1,864
International Marine Bunkers				1,0		0	0	0	_		0 1,004
International Aviation Bunkers		n n		-6	39 0	0	õ	ő	0		0 -689
Stock Changes	-79	49	27	-4		0	õ	ő	0	0	-624
Total Primary Energy Supply	2,920				19 7.048	2,254	ő	0	4,599	185	0 29,282
Transfers	_,		,		0 0	0	0	0	0	0	0 0
Total Transformation Sector	-2,471			10,2	49 -4,957	-2,254	0	0	-571	4,514	0 -6,096
Main Activity Producer	-1,957		0	-8	· · · · ·	-2,206	0	0	-20	4.209	0 -3,129
Autoproducers	-8				2,000	2,200		<u> </u>		.,200	-796
Gas Processing		-21			D	i: da l				:14	-2,266
Refineries				823	D	ivide t	inis r	numb	er w	ITN	149
Coal Transformation	-506	,			100 C 100 C	ind c		Torrito .		100 C 100	-53
Petrochemical Industry					nonul	ation	MOLL	ant m	OF (Conito	
Biofuel Processing) õ			DODUI	alion,	you	yet p	регч	Capita	
Charcoal Processing) õ									
Non-specified Transformation) õ			Eina	I Ene	FAN	Conc	IIm	ntion	
Loss & Own Use					1 1110	I LIIC	I YY	CONS	un	JUUII	-1,745
Discrepancy		-4	-263		01 -661	01	0		100	-01	-333
Total Final Energy Consumptions	455	-			47 1,277	0	0	0	4,028	4,154	21,109
Industry Sector	439					0	ő	0	1,121	2,800	0 7,628
Iron and Steel	400		-	· · ·	29 20	o	ő	0	1,121	49	
Chemical (incl. Petro-Chemical)					5 9	0	0	0	0	40	0 92
Non Ferrous Metals						0	0	0	0	- /	0 0
Non Metallic Mineral Products	129					0	0	100 St. 100 St.			271
Transportation Equipment				1000000	ST 2003 81	A 47 2 65	1.195.2				the second second second
Machinery			Divide	hv o	stool 1	aradu	ction	VOU	not	Enora	V
Mining and Quarrying	56		Diviue	E Dy S	DLEEL	Jiouuu	CLIUII	, you	yet	Energ	Y 3,012
Food, Beverages and Tobacco	80							-	_		- 0,012
Pulp, Paper and Printing			Con	sum	ntion	ner	unit	ot st	PPI	output	736
Wood and Wood Products			CON	Juin	Priori	PCI (ame	UI St	cui	output	593
Construction				1	0 0	01	0	0	0	0	
Textiles and Leather					0 0	0	0	0	0	0	0 0
Non-specified Industry	173	-	-	6	24 400	0	0	0	385	692	0 2,273
Transport Sector		-		7.40		ő		0	000	22	0 7,460
Domestic Air Transport					30 0	0	0	0	0	22	0 7,480
•						0	0	0	0	0	
Road Rail				5,5		0	0	0	0	22	0 5,565
				1,6		0	0	0	0	22	0 40
Inland Waterways				1,6	0 0	0	0	0	0	0	0 1,693
Pipeline Transport Non-specified Transport					0 0 32 0	0	0	0	0	0	0 132
Other Sector	16			1,2		0		0	2,907	1,332	0 132 0 6.022
	70		0	· · ·		0	ő	0		· · ·	
Residential & Commercial	2	+ 0		1,1		0	0	0	2,907	1,322	,
Commerce and Public Services		+ 0		2		0	0	0	2 007	609 71 2	0 937
Residential		0		9	36 355	0	0	0	2,907	712	0 4,910
Agriculture		0	0		0 0	0	0	0	0	0	
Fishing	13	5 0		1	05 46	0	0	0	U	11	0 175
Name and additional Other and						0	0		~	0	
Non-specified Others	0	0 0	C		0 0	0	0	0	0	0	0 0
Non-specified Others of which Non-Energy Use* Electricity Output in GWh	8,397	0 0 213		1,8	0 0 0 2,264 72 13,137	0 0 26,214	0	0 0 2,864	0	0	0 0 0 2,478 0 52,484





Thank you for your kind attention

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

