

Data Collection of New and Renewable Energy in APEC Energy Statistics

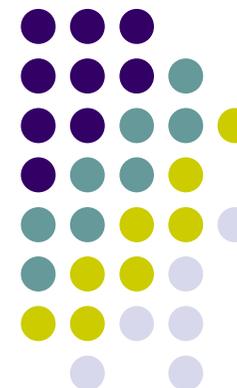
EGNRET 44 Meeting
Fort Ilocandia Resort Hotel
Laoag City
Philippines

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Recent Activity of EGEDA

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- Publishing “APEC Energy Statistics 2012” :November 2014
- EGEDA26 (Bandar Seri Begawan, Brunei) :December 2014
- APEC -ASEAN Joint Workshop (Manila, Philippines): March 2015

Recent Activity of EGEDA

□Publishing “APEC Energy Statistics 2012” :November 2014

APEC Energy Statistics 2012

- Background Information on the APEC Energy Statistics
- Overview of the APEC Energy Situation
- Member Tables
 - Energy Balance Tables (2011, 2012)
 - Major Energy Indicators
 - Major Economic Indicators
 - Energy Prices

APEC Energy Handbook 2012

- Primary Energy Supply
- Transformation
- Final Energy Consumption
- Energy Balances
- Energy Outlook
- Energy Indicators



Recent Activity of EGEDA

□EGEDA26 (Bandar Seri Begawan, Brunei) :December 2014

- Coordinating Agency (C.A.) of EGEDA reported the EWG48 meeting & EGNRET43 meeting in Chiang Mai.
- C.A. proposed the revision of “New & Renewable Energy Questionnaire”.

□APEC -ASEAN Joint Workshop (Manila, Philippines): March 2015

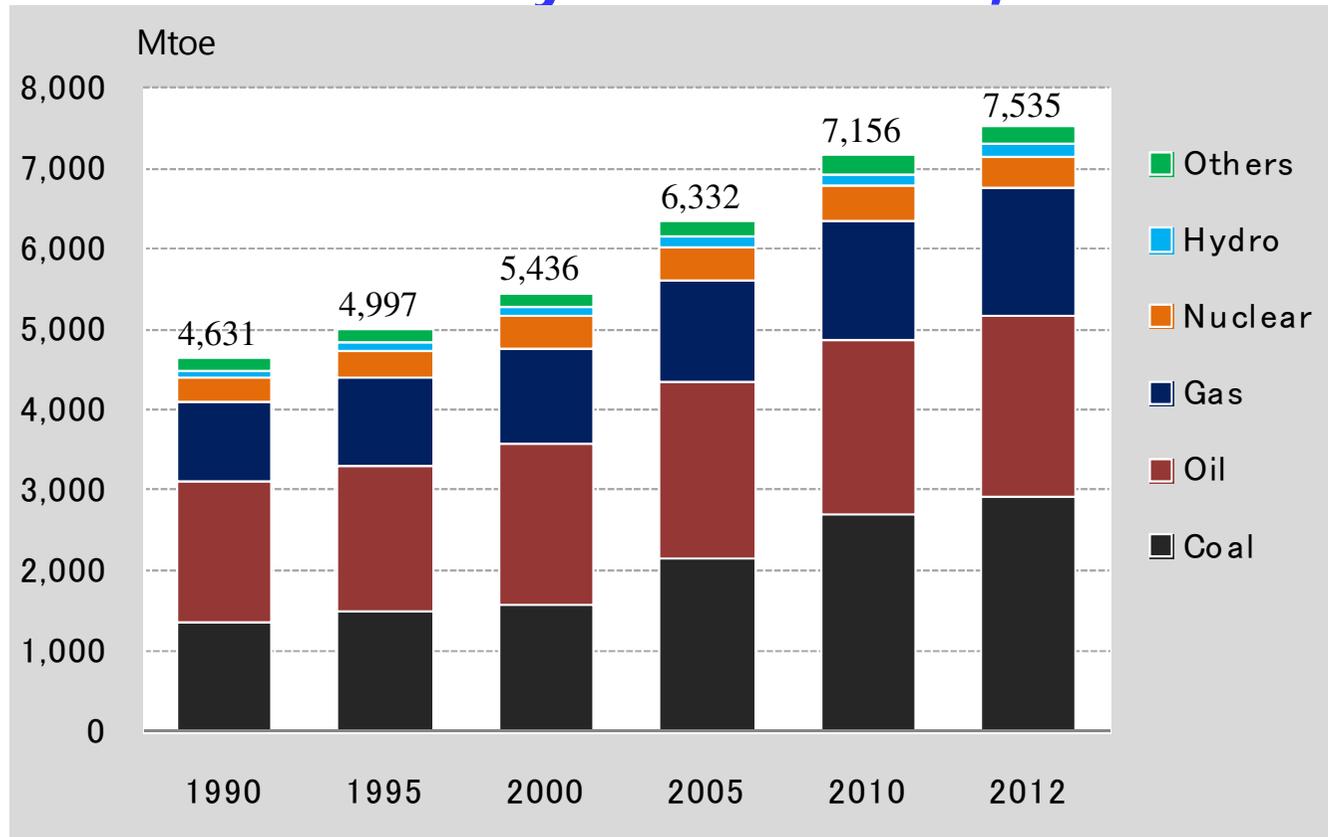
- Member Economies Presentation for collecting Renewable Energy Data.
- Invited Presentation by IEA, IRENA and OLADE for Renewable Energy Data Collection.
- C.A. proposed the revision of “New & Renewable Energy Questionnaire”.

Energy Supply and Demand in APEC Region

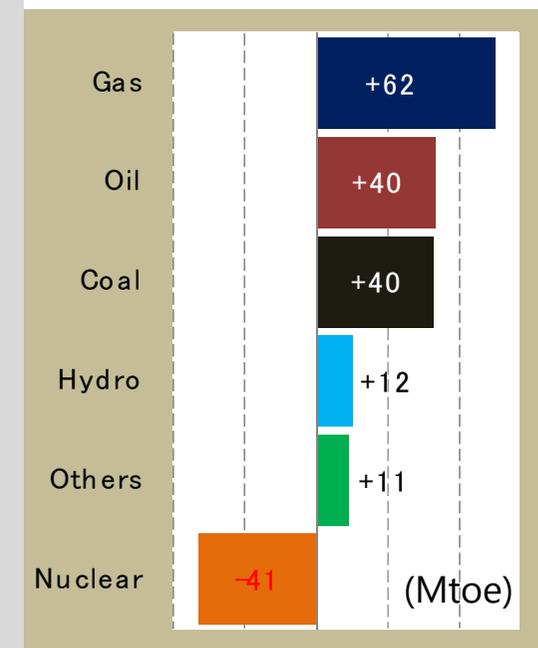
Energy Supply and Demand in APEC: Total Primary Energy Supply by Fuel



TPES increased by 124Mtoe to 7,535Mtoe in 2012

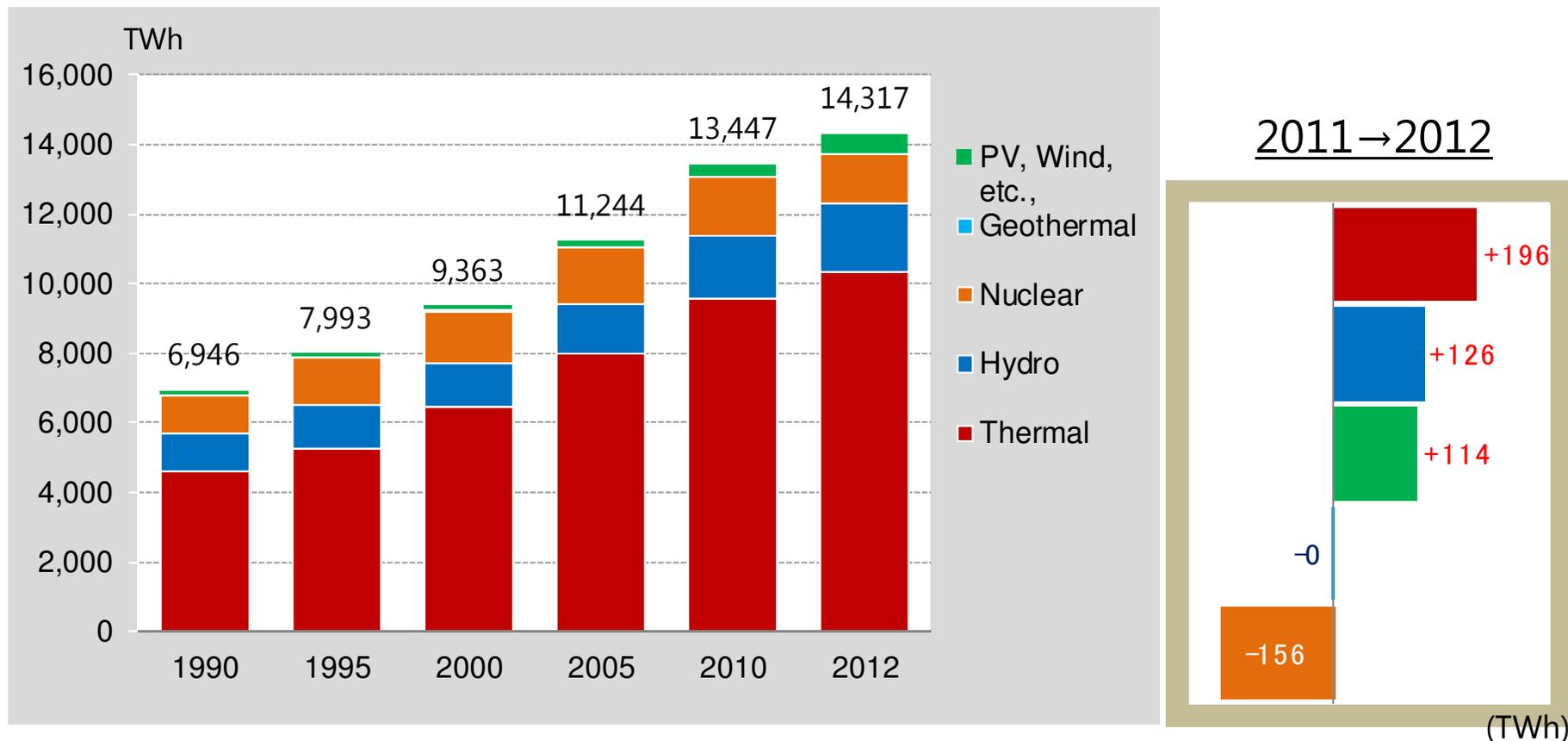


2011→2012
APEC: +124 Mtoe



Energy Supply and Demand in APEC: Power Generation

Generated Power increased by 281TWh to 14,317TWh in 2012



Revised Questionnaires for APEC Annual Energy Data Collection

Revised Questionnaires for APEC Annual Energy Data Collection



- ❑ To Capture more accurate & detailed information for NRE
- ❑ To Harmonize with International Statistical Activities (IRENA, IEA, UN, etc.)

IRES	IEA	IRENA	APEC	APEC (draft proposal)
Geothermal heat	Geothermal energy (for heat)	Geothermal Energy (for heat)	Geothermal Heat	Geothermal Heat
Heat from concentrating solar thermal	Solar thermal	Solar Thermal (for heat)	Solar Thermal Heat	Solar Thermal Heat
	Solar thermal electricity	Solar Thermal for Electricity Generation	Solar (Thermal Electricity)	Solar (Thermal Electricity)
Municipal waste (renewable)	Municipal Waste - Renewable	Renewable Municipal Waste	Municipal Solid Waste	Municipal Waste - Renewable
Municipal waste (non-renewable)	Municipal waste (non-renewable)	other (non-renewable)		Municipal waste (non-renewable)
Wood pellets	Solid biofuels excluding charcoal	Wood and straw pellets/briquettes	Firewood & Wood waste	Wood and straw pellets/briquettes
Other Fuelwood, wood residues and by-products		Fuelwood		Fuelwood
Other vegetal material and residues		Wood waste		Wood waste
		Rice husks	Other Biomass	Rice husks
				Straw
		Other vegetal and agricultural waste	Other vegetal and agricultural waste	
Other primary solid biomass		Other primary solid biomass		
Animal waste		Black liquor	Black liquor	Black liquor
Black liquor				
Bagasse		Bagasse	Bagasse	Bagasse
Charcoal	Charcoal	Charcoal	Charcoal	Charcoal

IRES: International Recommendations for Energy Statistics (United Nations Statistics Division)

Revised Questionnaires for APEC Annual Energy Data Collection



IRES	IEA	IRENA	APEC	APEC (draft proposal)
Landfill gas	Biogases	Landfill gas	Biogas	Landfill gas
Sew age sludge gas		Sew age sludge gas		Sew age sludge gas
Other biogases from anaerobic fermentation		Other biogases from anaerobic fermentation		Other biogases from anaerobic fermentation
Biogases from thermal processes		Biogases from thermal processes		Biogases from thermal processes
Biogasoline	Biogasoline	Conventional bioethanol	Biogasoline	Biogasoline
	Bioethanol	Advanced bioethanol	Bioethanol	Bioethanol
Biodiesels	Biodiesels	Advanced biodiesel	Biodiesels	Biodiesels
		Conventional biodiesel		
Bio jet kerosene	Bio jet kerosenes		Bio jet kerosenes	Bio jet kerosenes
Other liquid biofuels	Other liquid biofuels	Vegetable oil	Liquid biofuels	Liquid biofuels
Hydro electricity	Hydro	Hydro	Hydro	Hydro
	Hydro-1 MW	Hydro-1 MW		Hydro-1 MW
	Hydro 1-10 MW	Hydro 1-10 MW		Hydro 1-10 MW
	Hydro 10+ MW	Hydro 10+ MW		Hydro 10+ MW
	Pumped hydro	Pumped Hydro		Pumped Hydro

Revised Questionnaires for APEC Annual Energy Data Collection



IRES	IEA	IRENA	APEC	APEC (draft proposal)
Electricity from Geothermal	Geothermal (electricity)	Geothermal (electricity)	Geothermal Electricity	Geothermal Electricity
Electricity from solar photovoltaics	Solar photovoltaic	Solar Photovoltaic	Solar (Photovoltaic)	Solar (Photovoltaic)
Tidal electricity	Tide, Wave & Ocean	Tide, Wave & Ocean	Tide, Wave & Ocean	Tide, Wave & Ocean
Wave electricity				
Other marine electricity				
Wind electricity	Wind	Onshore Wind	Wind	Onshore Wind
		Offshore Wind		Offshore Wind
Industrial Waste (non-renew able)	Industrial waste (non-renew able)		Industrial Waste	Industrial Waste

Revised Questionnaires for APEC Annual Energy Data Collection



Update

		FuelWood & Woodwaste	of which			Bagasse	Rice husks	Straw	Charcoal ²	Other vegetal and agricultural waste	Other primary solid biomass
			Wood and straw pellets / briquettes	Fuelwood	Wood waste						
		1000t	1000t	1000t	1000t	1000t	1000t	1000t	1000t	1000t	
		A	B	C	D	E	F	G	H	I	J
Production ¹	(+) 1										
Imports	(+) 2										
Exports	(-) 3										
Stock Changes (+ or -)	(+) 4	0				0			0	0	
Gross Inland Deliveries (calculated)	(=) 5	0				0			0	0	
Statistical Differences	6	0				0			0	0	
Gross Inland Deliveries (observed)	7	0				0			0	0	
TOTAL STOCKS on NATIONAL TERRITORY											
Opening	8										
Total stocks on national territory - closing	9										

Revised Questionnaires for APEC Annual Energy Data Collection



Update

		Biogas	of which				Industrial Waste	Municipal Solid Waste		Black liquor
			Landfill gas	Sewage sludge gas	Other biogases from anaerobic fermentation	Biogases from thermal processes		renewable	non-renewable	
								10 ¹⁰ kcal (net)	10 ¹⁰ kcal (net)	
		K	L	M	N	O	P	Q	R	S
Production ¹	(+) 1									
Imports	(+) 2									
Exports	(-) 3									
Stock Changes (+ or -)	(+) 4	0					0	0	0	
Gross Inland Deliveries (calculated)	(=) 5	0					0	0	0	
Statistical Differences	6	0					0	0	0	
Gross Inland Deliveries (observed)	7	0					0	0	0	
TOTAL STOCKS on NATIONAL TERRITORY										
Opening	8									
Total stocks on national territory - closing	9									

Revised Questionnaires for APEC Annual Energy Data Collection



Update

		Liquid Biofuels: of which				Hydro				
		Biogasoline	of which Bioethanol	Bio-jet	biodiesels	Total	of which			
							- 1MW	1-10 MW	10+ MW	Pumped Hydro
		1000t	1000t	1000t	1000t	GWh	GWh	GWh	GWh	GWh
		U	V	W	X	Y	Z	AA	AB	AC
Production ¹	(+) 1									
Imports	(+) 2									
Exports	(-) 3									
Stock Changes (+ or -)	(+) 4	0	0	0	0					
Gross Inland Deliveries (calculated)	(=) 5	0	0	0	0	0	0	0	0	0
Statistical Differences	6	0	0	0	0	0	0	0	0	0
Gross Inland Deliveries (observed)	7	0	0	0	0	0	0	0	0	0
TOTAL STOCKS on NATIONAL TERRITORY										
Opening	8									
Total stocks on national territory - closing	9									

Revised Questionnaires for APEC Annual Energy Data Collection



Update

		Geothermal		Solar			Tide, Wave & Ocean	Wind		
		Electricity	Heat	Photovoltaic	Thermal			Total	of which	
					Electricity	Heat			On-shore	Off-shore
		GWh	10 ¹⁰ kcal (gross)	GWh	GWh	10 ¹⁰ kcal (gross)		GWh		
		AD	AE	AF	AG	AH	AI	AJ	AK	AL
Production ¹	(+) 1									
Imports	(+) 2									
Exports	(-) 3									
Stock Changes (+ or -)	(+) 4									
Gross Inland Deliveries (calculated)	(=) 5	0	0	0	0	0	0	0	0	0
Statistical Differences	6	0	0	0	0	0	0	0	0	0
Gross Inland Deliveries (observed)	7	0	0	0	0	0	0	0	0	0
TOTAL STOCKS on NATIONAL TERRITORY										
Opening	8									
Total stocks on national territory - closing	9									

Data Issues on APEC Energy Data Collection

Data Gaps in APEC Energy Statistics

- Biomass:
 - China – only the amounts used for electricity generation; no data on household use
 - Papua New Guinea – no data

- Fossil Fuel Consumption:
 - International Aviation Bunkers
 - International Marine Bunkers
 - Non-Energy Use of Petroleum Products

- The coordinating agency, is trying to address the gaps but will be successful only with the cooperation of the concerned economies

How Could EGEDA Improve Data Completeness and Accuracy?



- Capacity Building to enhance capacity of people collecting data in developing APEC member economies and to improve the quality and completeness of energy data
 - Annual **Workshop** on Energy Statistics
 - **Capacity Building** on Energy Statistics in Requesting Economies (1 week course)
 - **Short-term Course** on Energy Statistics (3-weeks course in Japan)
 - **Middle-term Course** (8-weeks internship at the Energy Data and Modeling Center in Japan)
 - **Long-term Course** (1 year on-the-job-training at APERC in Japan)
- Continuous communication/consultation with concerned economies
- Cooperation with EGNRET, IEA and IRENA

Summary

- EGEDA needs to improve energy data to be able to:
 - Measure the correct share of RE
 - Help policy makers strategize on how to achieve the RE goal
- Continuous capacity building of energy statisticians will be necessary in cooperation with EGNRET, IEA, and IRENA and other concerned organizations

**THANK YOU FOR YOUR
ATTENTION.**

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