



**African Energy Commission  
Commission Africaine de l'Energie**



# **15th Regional JODI Training Workshop**

## **Better Understanding Africa through Energy Data Transparency**

**AFREC Annual Data Collection and Dissemination -  
linkage between annual data and monthly data**

**Mr. Abdoulaye OUEDDO**  
**AFREC**

**El Mouradi Gammarth Hotel, 11-13 April 2017  
Tunis, Tunisia**

- ❖ ***AFREC's Presentation***
- ❖ ***Data collection***
  - ✓ *Presentation of the Biomass questionnaire*
  - ✓ *Example of the Electricity questionnaire*
- ❖ ***Data Dissemination***
  - ✓ *Energy Data and Dissemination*
  - ✓ *Sources of African Energy Data*
  - ✓ *Focal Points*
- ❖ ***Linkage between Annual and Monthly data***
- ❖ ***Conclusion***

**The African Energy Commission (AFREC) is an organ of the African Union in charge of ensuring, coordinating and harmonizing development and integration of energy resources on the African continent.**

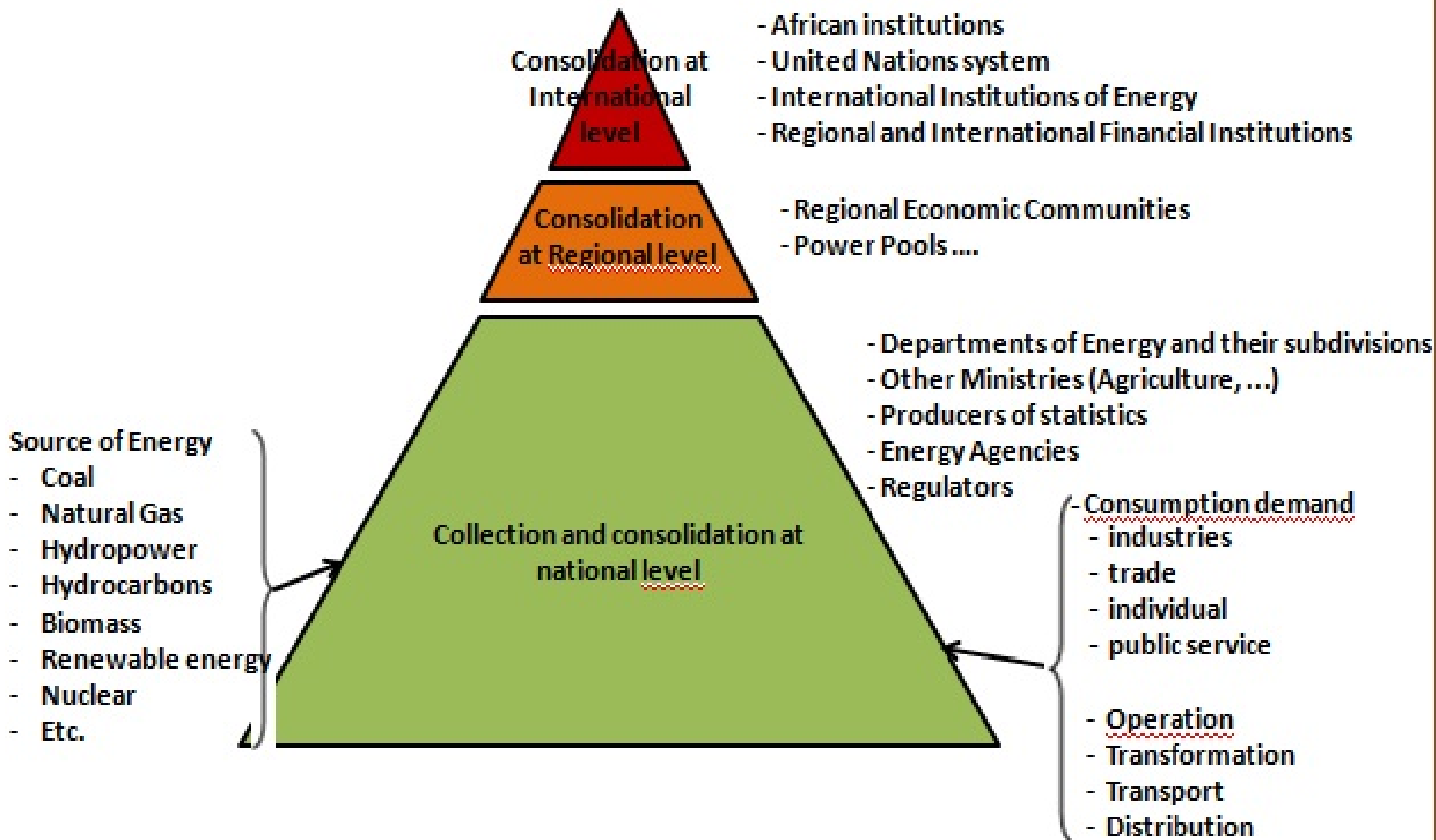
**AFREC was created in July 2001 in Lusaka by the African Presidents, and hosted by People's Democratic Republic of Algeria.**

**AFREC officially launched in February 17th, 2008 in Algiers at the end of a conference of African Energy Ministers in charge of Energy**

## **AFREC Convention:**

- **AFREC mandated to « Design, create and set up an energy continental data base and facilitate rapid dissemination of information and exchange of information among Member States, as well as among the Regional Economic Communities (RECs) and Regional Power Pools (RPPs) around Africa ».**

# Architecture of the AED



# Data Collection

(Originally developed by WEC and updated by IEA and AFREC in 2011)

## AFREC Energy Reporting Format

country **Country:**

Year **Year:**

**Instructions**

**Background Information**

**Comments**

**Exit**

Same structure as the Eurostat/IEA/UNECE questionnaires with one module for each energy form

**Oil**

**Gas**

**Coal**

**Biomass**

**Electricity**

**Unit Converter**

**Extended Balance**

**Balance**

A built-in module allows the user to have its energy balance automatically prepared when all forms are completed

AFREC Energy Information Forum Questionnaires

# Presentation of the Biomass questionnaire

Thousand tonnes (kt)

	Commercial Firewood	Non Commercial Firewood	Charcoal	Biogas (TJ net)	Agro Residues and Waste	Others
SUPPLY						
	0	0	0	0	0	0
	0	0	0	0	0	0
Charcoal Production: - Input (Observed)						
- Output						
TRANSFORMATION	0	0	0	0	0	0
Total Final Consumption	0	0	0	0	0	0
CONSUMPTION						
Default Net Calorific Values (GJ/tonne)	14.00	14.00	30.80		16	16

Same basic approach as in the Eurostat/IEA/UNECE questionnaires

# Presentation of the Biomass questionnaire

Thousand tonnes (kt)

	Commercial Firewood	Non Commercial Firewood	Charcoal	Biogas (TJ net)	Agro Residues and Waste	Others
Production						
Imports						
Exports (-)						
<b>Total Supply</b>	0	0	0	0	0	0
Statistical Difference	0	0	0	0	0	0
Charcoal Production: - Input (Observed)						
- Output						
<b>Transformation (excluding charcoal plants)</b>	0	0	0	0	0	0
Input to Electricity Production						
Input to Other Transformation Processes						
<b>Energy Sector Own Use</b>						
<b>Distribution Losses</b>						
<b>Total Final Consumption</b>	0	0	0	0	0	0
Industry						
Transport						
Households						
Com. & Public						
<b>Vérification des écarts statistiques</b>						
<b>Default Net Calorific Values (GJ/tonne)</b>	14.00	14.00	30.80		16	16

Vérification de l'efficacité des usines de fabrication de charbon de bois

Référence %

Pas de production de charbon de bois

15 40

Various built-in checks on, for, instance, efficiency or statistical differences

Pas d'approvisionnement totale	Pas d'approvisionnement totale	Pas d'approvisionnement totale ou de production	Pas d'approvisionnement totale	Pas d'approvisionnement totale	Pas d'approvisionnement totale
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# Example of the Electricity questionnaire

Mozambique 2014

	Primary or Secondary Fuels used to Produce		Gross Electricity Produced	
	Quantity	Unit	MWh	
PRODUCTION			Total	of which Autoproduc
1) Fossil Fuel Plants			1568714	189355
Oil			1	0
Fuel Oil	0	kt		
Gas / Diesel Oil	0	kt	1	
Others	0	kt		
Natural Gas	411,98	Mm <sup>3</sup>	1568 713	189355
Coal	0	kt		
2) Nuclear				
3) Hydro			16 169 148	276 998
4) Geothermal				
5) Wind				
6) Solar PV			1195	1195
7) Biomass	0	kt		
8) Others	0	kt		
<b>Total Production</b>			<b>17739057</b>	<b>467548</b>

Efficiency checks	Reference %	
No power generation	25	50
Missing input to generation	25	50
No power generation	15	35
39 % acceptable	35	55
No power generation	25	50



Validation with FPs

SUPPLY & DEMAND BALANCE	MWh
<b>Total Production</b>	<b>17739057</b>
Imports	7 655 852
Exports (-)	-10 199 065
<b>Total Supply</b>	<b>15195843,7</b>
Statistical Difference	-2122,9586
<b>Energy Sector Own Use</b>	<b>237 914</b>
<b>Distribution &amp; Transmission</b>	<b>2 612 386</b>
<b>Total Final Consumption</b>	<b>12343420,8</b>
Industry	8 764 407
Transport	
Households	1629 496
Com. & Public	59 751
Agriculture/Forestry	2 322,00
Others (Non Specified)	1887 445

Acceptable as < 5% of total



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H.E DR. ELHAM MAHMOUD AHMED IBRAHIM (MRS)  
COMMISSIONER FOR INFRASTRUCTURE AND ENERGY  
AFRICAN UNION COMMISSION



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Home

Presentation

EIS Presentation

African Energy

Statistics

Indicator

Achieved Activities

Databases

Photo Gallery

>>Home



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Cairo, Egypt, 28-30 March 2017, AFREC Regional Workshop  
Training in Data Collection and Creation of the African Energy  
Efficiency Indicators Database



Atef MARZOUK (MR)  
Interim Executive Director  
African Energy Commission  
(AFREC)



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AFRICAN ENERGY EFFICIENCY  
INDICATORS DATABASE

BASE DE DONNEES AFRICAINES SUR LES  
INDICATEURS DE L'EFFICACITE ENERGIE TIQUE

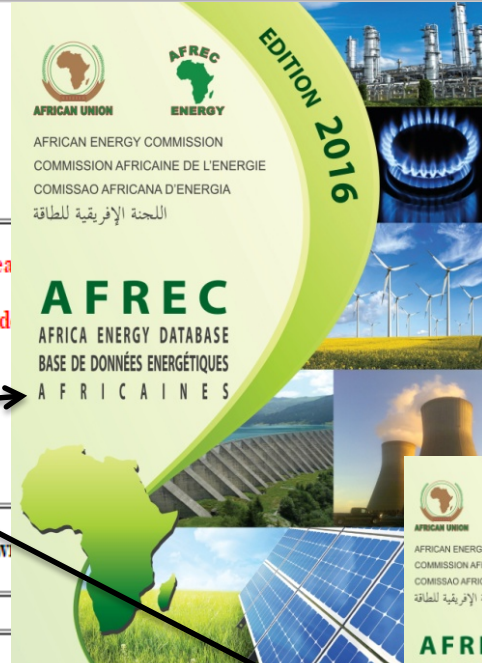
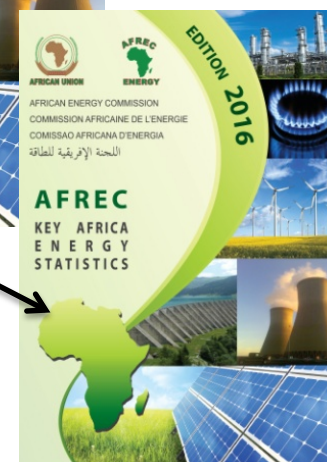
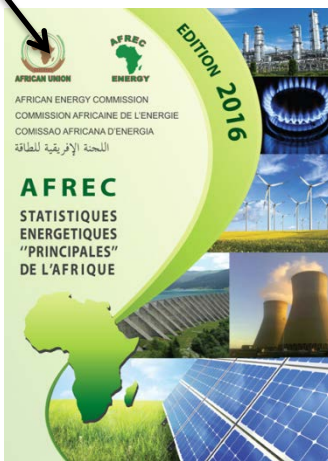



## Access to publications

		
Publications 2016		
<a href="#">Africa Energy Statistics 2016 Edition / Les Statistiques Energétiques Africaines Edition 2016;</a>	FR / EN	PDF 9.21 Mo
<a href="#">Key Africa Energy Statistics 2016 Edition</a>	EN	PDF 1.58 Mo
<a href="#">Statistiques Energétique "Principales" 2016 de l'Afrique</a>	FR	PDF 2.29 Mo
Publications 2015		
<a href="#">Africa Energy Statistics 2015 Edition / Les Statistiques Energétiques Africaines Edition 2015;</a>	FR / EN	PDF 2.95 Mo
<a href="#">Key Africa Energy Statistics 2015 Edition</a>	EN	PDF 857 Ko
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H.E. DR. ELHAM MAHMOUD AHMED IBRAHIM (MRS)

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>> Home

Home

Presentation

EIS Presentation

African Energy

Statistics

Indicator

Achieved Activities

Databases

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Mot de passe :	<input type="password"/>
Pays :	Africa ▼
Région :	Central Africa Region ▼
Année de l'enregistrement :	2015 ▼
<input type="button" value="Valider"/>	<input type="button" value="Annuler"/>

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## Access to the database

Cairo, Egypt, 28-30 March 2017, AFREC Regional Workshop  
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# Data Dissemination

ENERGY BALANCE OF : Africa 2013												
Thousand Tonnes of Oil Equivalent (ktoe)					Africa	2015	Validé					
PRIMARY SUPPLY	Production	382235.14		136517.84	168057	Algeria	2015		Wind & Geothermal & Solar PV	Biofuels & Waste	Electricity	Total
	Imports	37588.04	85970.92	3849.87	8751.78	Angola	2014					
	Exports (-)	-307152.75	-34751.95	-40045.71	-71473.71	Benin	2013					
	International Marine Bunkers (-)		15294.29			Burkina Faso	2012					
	International Aviation Bunkers (-)		-6733.42			Burundi	2011	2118.27	327245.05			1028085.33
	Stock Changes (+ draw, - build)	4184.1	-846.98	-1411.08	-4.21	Burkina Faso	2010					
	TPES	116834.53	59132.88	98910.92	101330.88	Burundi	2009			0	3199.33	137359.94
	Transfers	-11280.34	16914.17			Cameroon	2008					
TRANSFORMATION	Statistical Difference	-134.07	-32946.9	5447.92	2183.46	Cape Verde	2007			0	-2458.56	-455882.68
	Transformation	-104447.62	86045.11	-80231.92	-52993.7	Central Africa Republic	2006					
	Electricity Producers	-886.65	-19407.67	-67865.79	-50583.88	Chad	2005					15294.29
	Petroleum Refineries	-103580.97	105452.78			Comoros	2004					
	Charcoal Plants					Congo	2003					-6733.42
	Gas-To-Liquids	0			-23.58	Cote d'Ivoire	2002					
	Coal-To-Liquids	0		0		Democratic Republic of Congo	2001					2101.85
	Blast Furnaces			0		Djibouti	2000					
	Other Transformation	0	0	-12366.13	-2386.24	Egypt		8.58	2118.27	327245.05	740.77	720225.31
	Energy Industry Own Use	-329.41	-514.95	-10545.31	-11704.21	Equatorial Guinea						
	Total	100000	100000	100000	100000	Eritrea						
						Ethiopia						5853.83
											</	

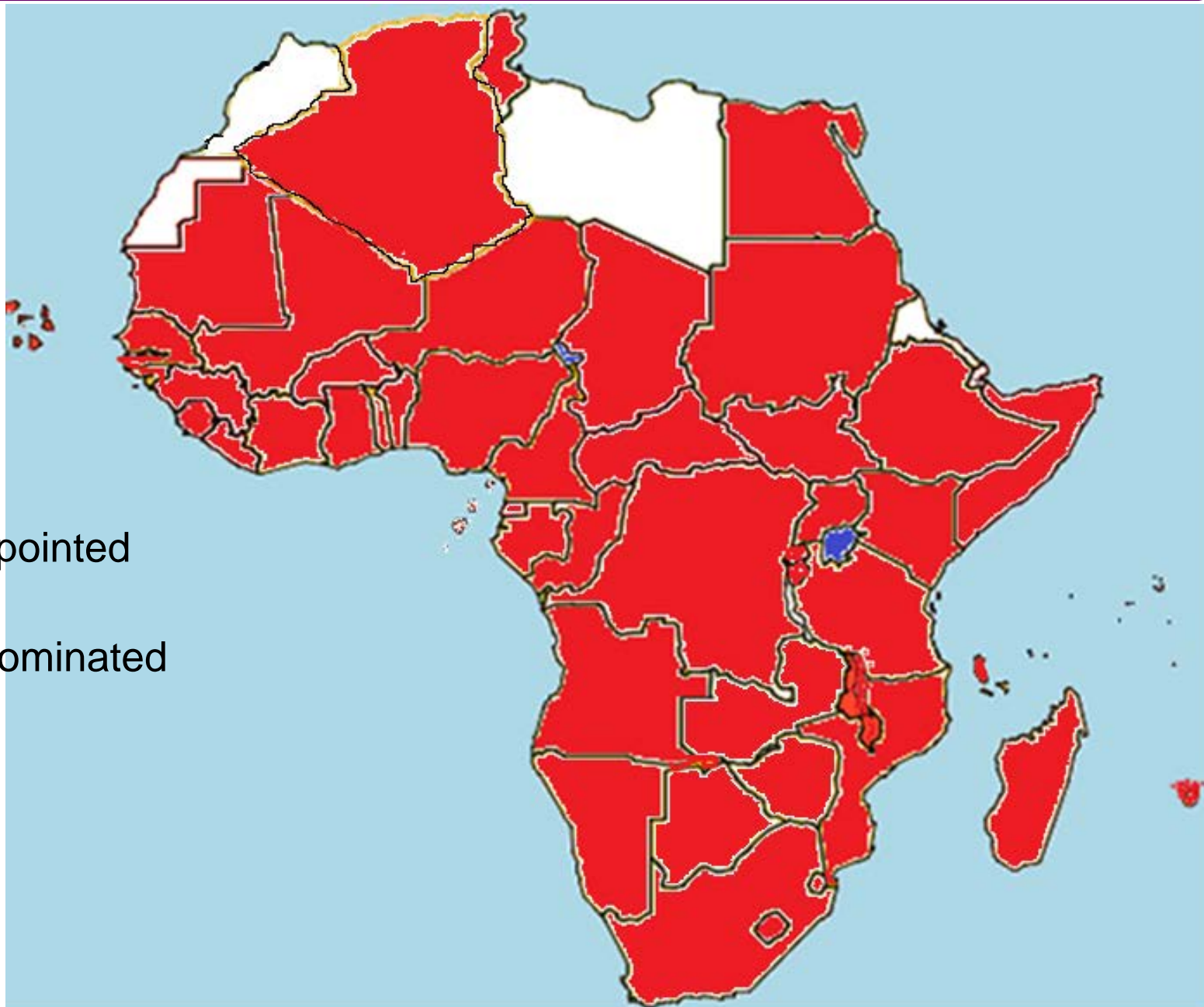
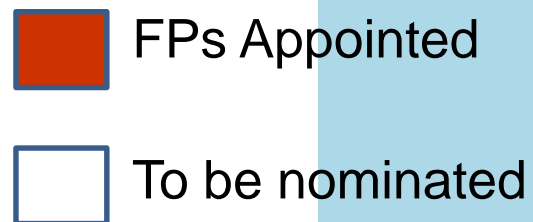
## Primary Sources:

- Member States
- African Specialized Institutions

## Secondary Sources:

- International Energy Database Providers (IEA, FAO, WB, UN, OPEC, IRENA, etc.)

# Focal Points of Energy Statistics



## Linkage between Annual and Monthly data

- **AFREC Collect Annual Data but we can collect Monthly Data (Oil, Natural Gas, Coal and Electricity) ;**
- **Biomass will be very difficult to collect monthly ;**
- **The JODI Data Collected Monthly can be used by AFREC if we have the 12 Monthly Data.**



## Conclusion

- **Appropriate short and long-terms training sessions are essential to improve and maintain high quality standards for the African energy experts.**
- **A comprehensive Energy Information System and Database for Africa requires a collective effort of a networking partnership among various African Member States, RECs, RPPs, specialized institutions and international organization.**
- **Appointment of competent National Focal Points and provision of adequate funding are essential for the management and development of the database system.**
- **Finance African Countries to build their own National Energy Information System**



Thank !      Merci !      Choukran !      Obrigado !



**Tel: 213 21 69 48 68 - Fax: 213 21 69 20 83**

**Address: 02 Rue Chenoua, BP791, Hydra, Algiers, Algeria**

**Email: [oueddoa@africa-union.org](mailto:oueddoa@africa-union.org) - Websit: [www.afrec-energy.org](http://www.afrec-energy.org)**