

DATA COLLECTION METHODOLOGY AND MECHANISM

CONSULTATIVE COMMITTEE JOINT MEETING



DATA COLLECTION METHODOLOGY AND MECHANISM

OUTLINE

- ❑ Data Collection objectives
- ❑ Review of the Methodology
- ❑ Definition of raw data to be collected
- ❑ Scope of data to be collected
- ❑ Updating Countries data

I. Data collection objectives

- Conduct a periodic benchmarking of the regional market operators
- evaluate the technical and financial viability of operators in the regional market
- Have a database that can enable:
 - a better knowledge of the regional market participants
 - a good regulatory design for the development of the regional market

II. Review of the methodology

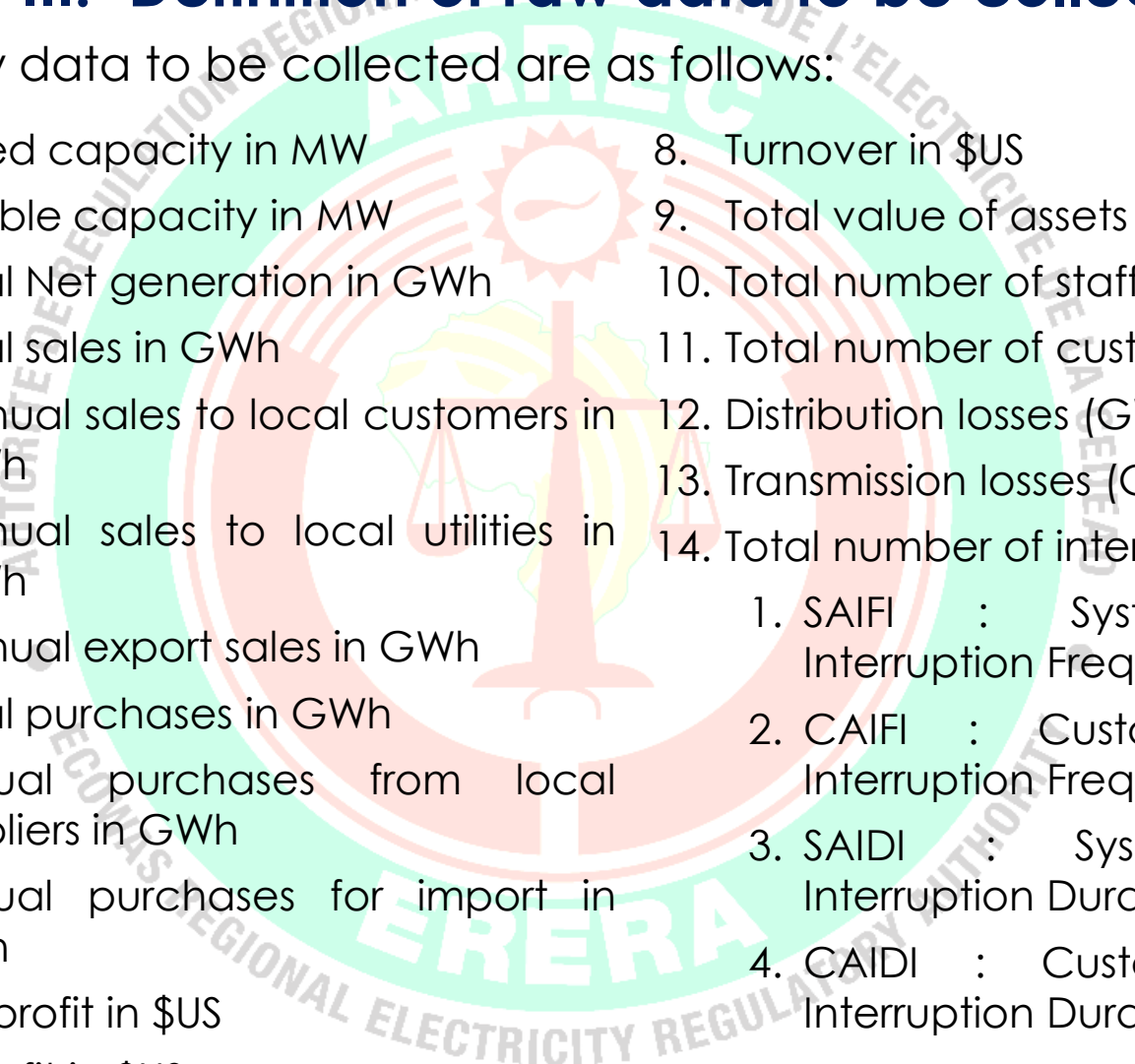
As presented at the last Consultative Committee at Lome in May 2013, the methodology is as follows:

1. Each year ERERA request from the operators and the national regulator the raw data for the previous year.
2. An updated Model collection "Excel" file is sent by ERERA to the focal point of ERERA with the operator and the focal point of ERERA with the national regulator.
3. The completed form is sent to ERERA via the national regulator. But an operator which is a market participant will directly send the completed form to ERERA with a copy to the national regulator.
4. The focal point must send with the completed form the annual report of its institution. If the report is not available then upon its publication.

Deadline for data collection : 30 June

III. Definition of raw data to be collected

The raw data to be collected are as follows:

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1. Installed capacity in MW
 2. Available capacity in MW
 3. Annual Net generation in GWh
 4. Annual sales in GWh
 1. Annual sales to local customers in GWh
 2. Annual sales to local utilities in GWh
 3. Annual export sales in GWh
 5. Annual purchases in GWh
 1. Annual purchases from local suppliers in GWh
 2. Annual purchases for import in GWh
 6. Gross profit in \$US
 7. Net profit in \$US
 8. Turnover in \$US
 9. Total value of assets in \$US
 10. Total number of staff
 11. Total number of customers
 12. Distribution losses (GWh)
 13. Transmission losses (GWh)
 14. Total number of interruptions/year
 1. SAIFI : System Average Interruption Frequency Index.
 2. CAIFI : Customer Average Interruption Frequency Index.
 3. SAIDI : System Average Interruption Duration Index.
 4. CAIDI : Customer Average Interruption Duration Index.

III. Definition of raw data to be collected

1. The installed capacity (MW)

It is the sum of the installed capacity of all the generating units connected or not to the grid.

2. The Available Capacity (MW)

The available capacity (P_d) is related to the real generation capacity, which is able to produce electricity taking into account unavailability and maintenance.

$$P_d = \sum_{u=1}^N P_{I_u} \times f_d$$

Where

P_d = the Available Capacity of a given year

P_{I_u} = the Installed Capacity of a generating unit

f_d = the availability factor of a generating unit for the given year . It is the Percentage of time in the year during which the generating unit remains available for operation.

III. Definition of raw data to be collected

3. Annual Net Generation in GWh

It is the annual net generation of generators whose the operator owns, grid-connected or not. The net generation is defined at the exit of the plant as the amount of gross generation the generators produce less the electricity used to operate the plant .

4. Annual Sales in GWh

It is the total amount of energy sold to the customers in one year. It is then by definition the energy billed in one year from 1st January to 31st December.

This data where appropriate, will include the following details:

- 1 Annual sales to local customers in GWh
- 2 Annual sales to local utilities in GWh
- 3 Annual export sales in GWh

III. Definition of raw data to be collected

5. Annual Purchases in GWh

This is the total annual amount of energy purchased by the operator. It is therefore by definition all of the energy that was charged to the operator by its energy suppliers between January 1st and December 31st.

This data, where appropriate, will include the following details:

- 1 Annual purchases from local suppliers in GWh
- 2 Annual purchases from import in GWh

6. Gross Profit in \$US

Measures profit over a year, before taxes. The figure of local currency rate to dollar at 31st December should be used. .

7. Net Profit in \$US

Measures profit over a year, after taxes. The figure of local currency rate to dollar at 31st December should be used.

8. Turnover in \$US

It equals the total revenues during a year, expressed in \$US. The figure of local currency rate to dollar at 31st December should be used.

III. Definition of raw data to be collected

9. Total value of assets in \$US

It is the total value of assets owned by the operator at the end of the period considered. The figure of local currency rate to dollar at 31st December should be used .

10. Total number of Staff

It is the total number of staff allocated to the electricity sector, all types of contracts included, all positions included .

11. Total number of customers

It is the total number of residential, commercial and industrial customers, late payment or not. This only includes (already) grid-connected customers.

12. Distribution Losses in GWh

It is the total of losses on the distribution network, so between the entry to the substations (HV bus bar) lowering the voltage to a level inferior to 132kV and the customer's meter. They therefore include transformation losses between a level above 132kV and a level below 132kV. They include technical and non-technical losses. .

III. Definition of raw data to be collected

13. Transmission Losses in GWh

It is the total of losses on the transmission network, so between the exit of plants and the entry (HV bus bar) of substations lowering the voltage to a level below 132Kv. They include technical and non-technical losses. .

14. • Total number of interruption per year

We only consider interruptions longer than 3 minutes.

- 1 **SAIFI** : System Average Interruption Frequency Index. SAIFI is the average number of time (frequency) that a system customer experiences an outage during the year
- 2 **CAIFI** : Customer Average Interruption Frequency Index. CAIFI measures the average number of interruptions per customer interrupted per year. It is simply the number of interruptions that occurred divided by the number of customers affected by the interruptions
- 3 **SAIDI** : System Average Interruption Duration Index. This index measures the total duration of an interruption for the average customer during a year.
- 4 **CAIDI** : Customer Average Interruption Duration Index. This index measures the average time to restore service Once an outage occurs.

IV. Scope of data to be collected

SCOPE OF RAW DATA ASK TO OPERATORS

		PRODUCTION	TRANSMISSION	DISTRIBUTION
1	Installed capacity in MW	X		
2	Available capacity in MW	X		
3	Annual Net generation in GWh	X		
4	Annual sales in GWh	X		X
4.1	Annual sales to local customers in GWh	X		X
4.2	Annual sales to local utilities in GWh	X		X
4.3	Annual export sales in GWh	X		X
5	Annual purchases in GWh	X		X
5.1	Annual purchases from local suppliers in GWh	X		X
5.2	Annual purchases for import in GWh	X		X
6	Gross profit in \$US	X	X	X
7	Net profit in \$US	X	X	X
8	Turnover in \$US	X	X	X
9	Total value of assets in \$US	X	X	X
10	Total number of staff	X	X	X
11	Total number of customers	X		X
12	Distribution losses (GWh)			X
13	Transmission losses (GWh)		X	X
14	Total number of interruptions/year		X	X
14.1	(SAIFI) : System Average Interruption Frequency Index		X	X
14.2	(CAIFI) : Customer Average Interruption Frequency Index		X	X
14.3	(SAIDI) : System Average Interruption Duration Index		X	X
14.4	(CAIDI) : Customer Average Interruption Duration Index		X	X

V. UPDATING COUNTRIES DATA

◆ Data to be collected from operators

OPERATORS RAW DATA TABLE

COUNTRY			
OPERATOR			
YEAR	2010	2011	2012
1	Installed capacity in MW		
2	Available capacity in MW		
3	Annual Net generation in GWh		
4	Annual sales in GWh		
4.1	Annual sales to local customers in GWh		
4.2	Annual sales to local utilities in GWh		
4.3	Annual export sales in GWh		
5	Annual purchases in GWh		
5.1	Annual purchases from local suppliers in GWh		
5.2	Annual purchases for import in GWh		
6	Gross profit in \$US		
7	Net profit in \$US		
8	Turnover in \$US		
9	Total value of assets in \$US		
10	Total number of staff		
11	Total number of customers		
12	Distribution losses (GWh)		
13	Transmission losses (GWh)		
14	Total number of interruptions/year		
14.1	(SAIFI) : System Average Interruption Frequency Index		
14.2	(CAIFI) : Customer Average Interruption Frequency Index		
14.3	(SAIFI) : System Average Interruption Duration Index		
14.4	(CAIDI) : Customer Average Interruption Duration Index		

V. UPDATING COUNTRIES DATA

◆ Data to be collected from National Regulator

COUNTRY'S RAW DATA ASKED TO REGULATOR

COUNTRY				
REGULATOR				
YEAR		2010	2011	2012
1	Installed Capacity (MW)			
2	Available capacity (MW)			
3	Peak Load (MW)			
4	Annual Net Generation (GWh)			
4.1	Annual Net Generation of Utilities (GWh)			
4.2	Annual Net Generation of IPPs (GWh)			
5	Total Annual Sales (GWh)			
5.1	Annual Sales to local Customers (GWh)			
5.2	Annual Export Sales (GWh)			
6	Annual Import (GWh)			
7	Distribution Losses (GWh)			
8	Transmission Losses (GWh)			

BREAKDOWN OF ANNUAL NET GENERATION BY SOURCES
ELECTRICITY SECTOR

YEAR		2010	2011	2012
a	Net Generation from Petroleum (GWh)			
b	Net Generation from Natural Gas (GWh)			
c	Net Generation from Hydroelectric (GWh)			
d	Net Generation from Coal (GWh)			
e	Net Generation from Solar P/V (GWh)			
f	Net Generation from Wind (GWh)			
g	Net Generation from Wood (GWh)			
h	Net Generation from Wastes (GWh)			
i	Net Generation from Other sources (GWh)			
j	Total Net Generation (GWh)			

QUATRIEME REUNION DES COMITES CONSULTATIFS DE L'ARREC
19 Novembre 2013, Kairaba Hotel, Banjul, LA GAMBIE

