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Catalogue of Retail Market Monitoring Data and Indices

Issue 1

Abstract	This manual covers the list of market monitoring data indices to be used in assessing the development of the Philippine retail electricity market or Retail Competition and Open Access (RCOA).
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WESM-MSCM	Market Surveillance, Compliance and Enforcement Market Manual

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SECTION 1. INTRODUCTION

1.1. BACKGROUND

- 1.1.1. Clause 1.3.2 of the Retail Rules for the Integration of the Retail Competition and Open Access in the Wholesale Electricity Spot Market ("*Retail Rules*") provides that consistent with the Electric Power Industry Reform Act of 2001 (Act) and with the objectives of the *WESM* as set out in the *WESM Rules*, the integration of retail competition in the *WESM* aims to promote competition, customer choice and empowerment, transparency, accountability and greater efficiency in the power industry and to reflect the true cost of electricity.
- 1.1.2. Clause 1.5.1 of the *Retail Rules* provides that Chapter 1 of the *WESM Rules* shall apply with respect to the governance of the integration of retail competition in the *WESM*, the operation of the *Central Registration Body* and the participation and transactions in the *WESM* of *Suppliers* and *Contestable Customers*.
- 1.1.3. Clause 1.4.6 of the *WESM Rules* provides for the *Market Surveillance Committee* to monitor and report on activities in the spot market.
- 1.1.4. Clause 1.4.7.1 (b), (c) and (d) of the *WESM Rules* mandates the Market Assessment Group to:
 - (a) Assist the *PEM Board* or the *Market Surveillance Committee* to establish the procedures for monitoring and assessing the performance of the *WESM* and the activities conducted by the *WESM members* with the end view of ensuring the effective functioning or overall efficiency the *WESM*.
 - (b) Regularly collect and process market monitoring data and indices.
 - (c) Prepare periodic assessment reports on overall market performance and competitiveness.
- 1.1.5. Section 7.2.2 of the Market Surveillance, Compliance and Enforcement Market Manual provides that the *Market Surveillance Committee* shall develop and adopt a list of monitoring indices to analyse the monitoring data and other information collected in connection with the market surveillance.

1.2. PURPOSE

- 1.2.1. This catalogue of monitoring data and indices was developed as a guide in monitoring and assessing the performance of the retail market and the activities conducted by the retail market participants with the end view of ensuring the effective functioning or overall efficiency of the integrated *WESM* and retail market.
- 1.2.2. This catalogue contains a list of monitoring indices which provide indication of market trends, performance, and circumstances which may require further assessment and enhancement in the *Retail Rules*.

- 1.2.3. This catalogue is intended to be complementary with the Catalogue of Market Monitoring Data and Indices.

1.3. SCOPE

- 1.3.1. This catalogue provides the list, sources, frequency and manner of collection of data to be used in the computation of Retail Market monitoring indices.
- 1.3.2. This catalogue also provides the list, formula, purpose and study points of Retail Market monitoring indices.

SECTION 2. DEFINITIONS, REFERENCES AND INTERPRETATION

2.1. DEFINITIONS

Unless otherwise defined or the context implies otherwise, the italicized terms used in this document that are defined in the *WESM Rules* and *Retail Rules* shall bear the same meaning as defined in the *WESM Rules* and *Retail Rules*. In addition, the following words and phrases as used in this document shall have the following meaning:

- 2.1.1. **Captive Customer** refers to an electricity end user who does not have a choice of a *Supplier* of electricity, as may be determined by the *Energy Regulatory Commission* in accordance with the Act.
- 2.1.2. **Central Registration Body** refers to the *Philippine Electricity Market Corporation* designated by the *Department of Energy* to undertake the management of the required systems and processes and information technology system that is capable of handling *Customer Switching* and information exchange as well as their transactions in the *WESM*.
- 2.1.3. **Contestable Customer** refers to an electricity end-user that is certified by the *Energy Regulatory Commission* as having met the demand threshold for contestability as set out in the Act. Collectively, these end-users make up the Contestable Market.
- 2.1.4. **Customer Switching** refers to the commercial transfer of a *Contestable Customer* to another *Supplier*, other than a transfer to a *Supplier of Last Resort*.
- 2.1.5. **End User** refers to any person or entity requiring the supply and delivery of electricity for its own use.
- 2.1.6. **Market Operator** refers to the *Philippine Electricity Market Corporation* responsible for the operation of the spot market governed by the *PEM Board* in accordance with Clause 1.4 of the *WESM Rules* which, for the avoidance of doubt, is the AGMO for a period of twelve months from the spot market commencement date and thereafter the entity to which the functions, assets and liabilities of the AGMO are transferred in accordance with section 30 of the Act.

- 2.1.1. **Supplier** refers to any person or entity authorized by the *Energy Regulatory Commission* to sell, broker, market or aggregate electricity to the end-users and registered as a *Customer* pursuant to the *WESM Rules* and the *Retail Rules*.
- 2.1.2. **WESM Participants** refer to all *Generation Companies, Distribution Utilities, Suppliers, Aggregators, End-users, the TRANSCO or its Buyer or Concessionaire, IPP Administrators, and other entities* authorized by the *Energy Regulatory Commission* to participate in the *WESM* in accordance with the Act.

2.2. REFERENCES

- 2.2.1. This document should be read in association with the following documents:
- (a) *WESM Rules*;
 - (b) *Retail Rules*;
 - (c) Market Surveillance, Compliance and Enforcement Market Manual; and
 - (d) Catalogue of Market Monitoring Data and Indices.

2.3. INTERPRETATION

- 2.3.1. Any reference to any law, regulation made under any law, rules or codes shall be to that item as amended, modified, revised or replaced from time to time.
- 2.3.2. The provisions in this Manual, the *WESM Rules, Retail Rules*, and other Market Manuals shall be read, construed and interpreted in such a manner as to harmonize and reconcile each and every provision thereof. In the event of inconsistency, the *WESM* and *Retail Rules* shall prevail.

SECTION 3. RESPONSIBILITIES

3.1. MARKET SURVEILLANCE COMMITTEE

The Market Surveillance Committee shall have the following responsibilities:

- 3.1.1. Monitor and assess activities conducted by *WESM Participants*.
- 3.1.2. Review the retail market monitoring indices and reports submitted by the Market Assessment Group.
- 3.1.3. Prepare and submit quarterly and annual Retail Market Monitoring Reports to the *PEM Board, Department of Energy and Energy Regulatory Commission*.

3.2. MARKET ASSESSMENT GROUP

The Market Assessment Group shall have the following responsibilities:

- 3.2.1. Collect, validate and process monitoring data and indices and other information, documents and reports regarding the retail market that need to be assessed or reviewed by the *Market Surveillance Committee*.
- 3.2.2. Prepare and submit quarterly and annual Retail Market Assessment Reports to the *Market Surveillance Committee*, which shall be attached as an annex to the periodic Retail Market Monitoring Report of the *Market Surveillance Committee*.
- 3.2.3. Publish the Retail Market Assessment Report in the *Market Information Website* upon submission by the MSC of the Retail Market Monitoring Report to the *PEM Board*.

3.3. CENTRAL REGISTRATION BODY/MARKET OPERATOR

The *Central Registration Body/Market Operator* shall provide the monitoring data, as applicable and specified in this catalogue to the Market Assessment Group.

SECTION 4. MARKET MONITORING INDICES

4.1. TYPES OF INDICES

The types of indices are summarized as follows:

4.1.1. Market Performance

Market performance indices provide indications on electricity demand trend at retail level and according to type of end users as well as to determine typical load profile and nodes where load is more concentrated.

4.1.2. Market Structure

The market structure indices are used to measure the concentration of a market, to assess if existing conditions facilitate or impede the development of competition. The less concentrated the market, the greater the possibility of effective competition.

4.1.3. Retail Activity

Indices on retail activity are used to assess the development of the retail market in terms of the activities of the *Suppliers* and *Contestable Customers*.

4.2. STUDY POINTS AND FREQUENCY OF MONITORING INDICES

- 4.2.1. The monitoring indices shall be determined on an hourly basis and calculated for specific study points, which may include the following:
 - (a) Monthly
 - (b) Quarterly
 - (c) Semi-annual
 - (d) Annual

- 4.2.2. Other study points maybe considered in assessing the evolution of the retail market.

4.3. MONITORING INDICES

4.3.1. Market Performance

Indices on market performance are determined as follows:

- (a) Electricity Consumption at Retail Level (based on Metered Quantity)
- (b) Electricity Consumption by Type of End Users (based on Metered Quantity)
- (c) Contestable Customers' Hourly Electricity Consumption Profile (based on Metered Quantity)
- (d) Contestable Customers' Load Factor

4.3.2. Market Structure

In terms of market structure, the types of indices are as follows:

- (a) Number of players - to determine the size of the retail market in terms of:
 - i. Number of Contestable Customers; and
 - ii. Number of Suppliers
- (b) Market share - to assess the size of the Contestable Market, and whether particular *Suppliers* might have large regional or national market share.
 - i. Supplier market share
 - ii. Herfindahl-Hirschman Index (HHI)
 - iii. Four-firm Concentration Index (C4)
- (c) *Supplier* structure – to assess the level of retail market competition through the degree of integration between and among *Suppliers* and *Generation Companies*, *Distribution Utility* and/or *Contestable Customers*.
 - i. Percentage of *Suppliers* with affiliate generators
 - ii. Percentage of *Suppliers* with affiliate *Contestable Customers*
 - iii. Percentage of *Suppliers* with affiliate generator and *Contestable Customers*
 - iv. Percentage of *Suppliers* with affiliate *Distribution Utilities* (DUs) and generators
 - v. Percentage of Supplier with affiliate DUs and *Contestable Customers*

4.3.3. Retail Activity

- (a) Customer participation level in the whole market, per region and per franchise DU
 - i. Percentage of *Contestable Customers* from each Industry

- ii. Percentage of *Contestable Customer* participating in the market
- (b) *Customer Switching* rate in the whole market, per region and per DU franchise area
 - i. Percentage of *Contestable Customers* that are switching from one *Supplier* to another
- (c) Spot exposure at the retail level
 - i. Percentage of energy withdrawn not covered by bilateral contracts

4.4. FORMULAE OF MONITORING INDICES

4.4.1. Market Performance

- (a) Total Electricity Consumption in the whole market / region / franchise area during period “t”

$$\sum Consumption_t = \sum Hourly\ Metered\ Quantity_t$$

- (b) Electricity Consumption by Type of End Users in the whole market / region / franchise area during period “t”

$$\sum Consumption_t = \sum Consumption_t^{CC} + \sum Consumption_t^{CM}$$

Where:

CC refers to *Contestable Customers*

CM refers to *Captive Customers*

$$\sum Consumption_t^{CC} = \sum Hourly\ Metered\ Quantity_t^{CC}$$

$$\sum Consumption_t^{CM} = \sum Hourly\ Metered\ Quantity_t^{CM}$$

- (c) The percentage of total energy withdrawn or total electricity consumption by *Contestable Customers* in the whole market, per region and per DU franchise area.

$$Contestable\ Consumption\ Percentage = \frac{\sum Consumption_t^{CC}}{\sum Consumption_t} \times 100\%$$

- (d) *Contestable Customers' Hourly Electricity Consumption Profile* (based on Metered Quantity)
- (e) Load Factor for the period “t”

$$Load\ Factor_t = \frac{\sum Consumption_t}{Peak\ Load_t \times Total\ Hours_t}$$

4.4.2. Market Structure

(a) Number of Players

- i. The number of *Contestable Customers* in the whole market, per region and per DU franchise area

No applicable formula – index is a count

- ii. Number of *Suppliers* in the whole market, per region and per DU franchise area

No applicable formula – index is a count.

(b) Market Share

i. Market Share of Supplier

1. Based on the total consumption of *Contestable Customers* in the whole market, per region and per DU franchise area

$$MarketShare_{s,t} = \frac{Consumption_{s,t}^{CC}}{\sum Consumption_t^{CC}} \times 100\%$$

Where:

$MarketShare_{s,t}$ market share of the *Supplier* “S” in the whole market, per region and per DU franchise area during period “t”

$Consumption_{s,t}^{CC}$ is the consumption of *Contestable Customers* “CC” that are supplied by *Supplier* “S” in the whole market/region/ franchise area during period “t”

$\sum Consumption_t^{CC}$ is the total consumption of *Contestable Customers* “CC” in the whole market / region / franchise area during period “t”

2. Based on the total number of *Contestable Customers* in the whole market, per region and per DU franchise area

$$MarketShare_{s,t} = \frac{No.ofCC_{s,t}}{f} \times 100\%$$

Where:

$No.ofCC_{S,t}$ is the number of *Contestable Customers* that are supplied by *Supplier "S"* in the whole market/region/ franchise area during period "*t*"

f is the total number of *Contestable Customers "CC"* during period "*t*"

ii. Herfindahl–Hirschman Index (HHI)

HHI measures the degree of market concentration. Defined as the sum of the *Suppliers'* market share, the HHI threshold are as follows:

HHI < 1000 - not concentrated
1000 – 1800 - moderately concentrated
Greater than 1800 - concentrated
Greater than 2500 - highly concentrated

$$SupplierHHI_t = \sum_1^N (MarketShare_{S,t})^2$$

Where:

N is the total number of *Supplier* in the whole market/region/franchise area during period "*t*"

iii. Four-firm Concentration Index (C4)

C4 measures the percentage of market share of the four largest firms in the market.

$$C4_t = \frac{\sum_1^4 max_4 (MarketShare_{S,t})}{\sum_1^N (MarketShare_{S,t})}$$

Where:

max_4 selects the four (4) largest $MarketShare_{S,t}$ in the whole market/region/franchise area during period "*t*"

(c) Supplier Structure

i. Percentage of *Suppliers* with affiliate Generators

$$\frac{\text{Number of Suppliers with affiliate Generators}}{N} \times 100\%$$

- ii. Percentage of Suppliers with affiliate Contestable Customers

$$\frac{\text{Number of Suppliers with affiliate Contestable Customers}}{N} \times 100\%$$

- iii. Percentage of Suppliers with affiliate Generators and Contestable Customers

$$\frac{\text{Number of Suppliers with affiliate Generators and Contestable Customers}}{N} \times 100\%$$

- iv. Percentage of Suppliers with affiliate DU and Generators

$$\frac{\text{Number of Suppliers with affiliate DU and Generators}}{N} \times 100\%$$

- v. Percentage of Supplier with affiliate DU and Contestable Customers

$$\frac{\text{Number of Suppliers with affiliate DU and Contestable Customers}}{N} \times 100\%$$

4.4.3. Retail Activity

- (a) Customer Participation Level

- i. Percentage of Contestable Customers from each Industry in the whole market, per region and per DU franchise area

$$\frac{\text{Number of Contestable Customers from Industry } X}{f} \times 100\%$$

- ii. Percentage of Contestable Customers participating in the market

$$\frac{\text{Number of registered Contestable Customers}}{\text{Number of Contestable Customers with Certificate of Contestability}} \times 100\%$$

- (b) Customer Switching Rate

- i. Percentage of Contestable Customers that are switching to another Supplier in the whole market, per region and per DU franchise area

$$\frac{\text{Number of Contestable Customers who switched during the period}}{f} \times 100\%$$

- (c) Spot exposure of Supplier

- i. Percentage of energy withdrawn not covered by bilateral contracts (for the period “t”)

$$\frac{\text{Total Energy Withdrawn}^t - \text{Total Bilateral Contract}^t}{\text{Total Energy Withdrawn}^t}$$

4.5. MONITORING DATA, SOURCES, AND FREQUENCY AND MANNER OF COLLECTION

The list, sources, frequency and manner of collection of monitoring data are provided in Table 1.

Table 1. Retail Market Monitoring Data

Type of Data	Description	Source	Means of Obtaining	Frequency of Collection
Market Performance				
1. Electricity consumption at Retail Level	Consumption of <i>Contestable Customers</i> and <i>Captive Customers</i>	CRB/MO	WESM settlements, Metering Database	Monthly
2. Load Characteristics	Demand data	CRB/MO	Automatic file transfer	Daily
Market Structure				
1. Number of Players	Number of <i>Contestable Customers</i>	CRB/MO	CRB register	Monthly
	Number of <i>Suppliers</i>	CRB/MO	CRB register	
2. Market Share	Consumption of <i>Contestable Customers</i>	CRB/MO	WESM settlements, Metering Database	
	Consumption of <i>Contestable Customers</i> that is supplied by a <i>Supplier</i>	CRB/MO	WESM settlements, Metering Database	
3. <i>Supplier</i> Structure	Number of <i>Suppliers</i> with affiliate generators		CRB/MO register or ERC	
	Number of Suppliers with affiliate <i>Contestable Customers</i>			
	Number of <i>Suppliers</i> with affiliate Generators and <i>Contestable Customers</i>			

Type of Data	Description	Source	Means of Obtaining	Frequency of Collection
	Number of <i>Suppliers</i> with affiliate DU and Generators			
	Number of <i>Suppliers</i> with affiliate DU and <i>Contestable Customers</i>			
Retail Activity				
1. Customer Participation Level	Industry type (based on the Philippine Standard Industrial Classification) of <i>Contestable Customers</i>	CRB/MO, and other sources (e.g. Business World Top 1000 Corporations in the Philippines, Philippine Business Profiles)	CRB register, and other means (e.g. publication from Business World Top 1000 Corporations in the Philippines or Philippine Business Profiles)	One time data, Yearly
2. <i>Customer Switching Rate</i>	Number of <i>Contestable Customers</i> who switched in region <i>r</i> during period <i>t</i> and the reasons for switching	CRB/MO	CRB register	Quarterly
3. Spot exposure of <i>Supplier</i>	Energy withdrawn not covered by bilateral contracts	CRB/MO	WESM settlements	

SECTION 5. AMENDMENT, PUBLICATION AND EFFECTIVITY

- 5.1. The Market Assessment Group shall cause the publication of the approved version of this Catalogue in the *Market Information Website*.
- 5.2. Upon publication, the effectivity date of this Catalogue shall be specified, which shall in no case be earlier than the date of its publication.
- 5.3. The *Market Surveillance Committee*, with the assistance of the Market Assessment Group, shall conduct periodic reviews of this Catalogue to identify any need for updates and amendments.
- 5.4. The *Market Surveillance Committee* shall approve any amendments to this Catalogue.
- 5.5. Amendment proposals to this Catalogue may be recommended by the *PEM Board* or any other interested party and may arise from:

- a) Experience, problems or other issues identified in the implementation and application of this Catalogue;
- b) Amendments to the *WESM Rules*, *Retail Rules* or other Applicable Law, Rules and Regulations;
- c) Conflict of interpretation; or
- d) Provisions or parts of this Catalogue being annulled or declared invalid.