Republic of the Philippines
DEPARTMENT OF ENERGY
(Kagawaran ng Enerhiya)

DEPARTMENT CIRCULAR NO. DC2021-07-0021

ADOPTING FURTHER AMENDMENTS TO THE WHOLESALE ELECTRICITY SPOT MARKET (WESM) RULES AND MARKET MANUALS ON METERING FOR THE IMPLEMENTATION OF ENHANCEMENTS TO WESM DESIGN AND OPERATIONS
(Provisions for Metering Services Provider Performance, Metering Standards and Site-Specific Loss Adjustments)

WHEREAS, Sections 30 and 37(f) of the Electric Power Industry Reform Act (EPIRA) provides that the Department of Energy (DOE), jointly with the electric power industry participants, shall establish the Wholesale Electricity Spot Market (WESM) and formulate the detailed rules governing the operations thereof;

WHEREAS, on 28 June 2002, the DOE, with the endorsement of the electric power industry participants, promulgated the WESM Rules through Department Circular No. DC2002-06-003;

WHEREAS, on 14 October 2016, the DOE promulgated the amended WESM Rules for the enhancements of WESM design and operations through Department Circular No. DC2016-10-0014;

WHEREAS, any changes, amendments, and modifications to the WESM Rules, Retail Rules and their Market Manuals shall be undertaken in accordance with the provisions of Chapter 8 of the WESM Rules;

WHEREAS, on 12 February 2019, the Market Operator submitted to the Rules Change Committee (RCC) its proposed amendments to the WESM Rules and Market Manual on Metering Standards and Procedures;

WHEREAS, the proposal seeks to clarify that the Philippine Electricity Market Corporation (PEMC) shall have the responsibility to monitor the Metering Services Provider performance as part of its governance function;

WHEREAS, 22 February 2019, the RCC during its 149th RCC Meeting discussed with Market Operator the abovementioned proposal, and thereafter approved the publication of the proposed amendments in the market information website to solicit comments from market participants and other interested parties;

WHEREAS, on 03 April 2019, the National Grid Corporation of the Philippines (NGCP) also submitted to the RCC its proposed amendments to the WESM Rules and Market Manual on Metering Standards and Procedures with the objective of aligning the WESM's Market Manual on metering with the procedures and standards set forth in the Philippine Grid Code (PGC), Philippine Distribution Code (PDC) and issuances from the DOE and Energy Regulatory Commission (ERC);

WHEREAS, 12 April 2019, the RCC during its 151st RCC Meeting discussed with NGCP the abovementioned proposal, and thereafter approved the publication of the proposed amendments in the market information website to solicit comments from market participants and other interested parties;

WHEREAS, the RCC during its 151st RCC Meeting held on 12 April 2019 and 152nd RCC Meeting held on 17 May 2019, deliberated upon the abovementioned proposal of the Market Operator, giving due course to the comments and recommendations submitted by the relevant parties;

WHEREAS, during the 153rd RCC Meeting and 154th RCC Meeting held on 21 June and 19 July 2019 respectively, the RCC deliberated on the abovementioned proposal of NGCP giving due consideration to the submitted comments and the corresponding responses of the proponent;

WHEREAS, the RCC finalized the proposed amendments of the Market Operator and NGCP, and thereafter approved for endorsement to the PEM Board on 17 May 2019 and 19 July 2019, respectively;

WHEREAS, on 29 May 2019 and 31 July 2019 during the Regular PEM Board Meetings, the PEM Board, after due evaluation and deliberation, approved the above stated RCC-approved proposal for endorsement to the DOE;

WHEREAS, on 14 October 2019, the Market Operator submitted to the RCC its additional proposed amendments to the WESM Market Manual on Metering Standards and Procedures, particularly on the enhancements of the calculation of the Site-Specific Loss Adjustment (SSLA) and clarification on the appropriate location of the metering point;

WHEREAS, on 29 November 2019, the Manila Electric Company also submitted to the RCC its proposed amendments to the abovementioned WESM Market Manual on Metering Standards and Procedures, particularly on the standards and requirements for the current transformer for revenue metering;

WHEREAS, on 18 October 2019 and 06 December 2019, the RCC during its 157th and 159th RCC Meeting, respectively, discussed the abovementioned proposals, and thereafter approved the publication of the proposed amendments in the market information website to solicit comments from market participants and other interested parties;

WHEREAS, on 24 January 2020 and 13 March 2020, the RCC during its 160th and 163rd RCC Meeting, respectively, deliberated on the proposal giving due course to the comments received from market participants, and thereafter finalized and approved for endorsement to the PEM Board;

WHEREAS, on 25 March 2020, after due evaluation and deliberation, the PEM Board during its 22nd Regular PEM Board Meeting, approved for endorsement to the DOE the above stated RCC-approved proposals;

WHEREAS, on 07 April 2020, the PEM Board-approved amendments to the WESM Market Manual on Metering Standards and Procedures were submitted to the DOE for approval, in compliance with Chapter 8 of the WESM Rules;

WHEREAS, the DOE conducted various public consultations on the foregoing proposed amendments to solicit inputs and consider comments of stakeholders in the finalization of the amendments, particularly on the following dates:

Date	Leg	Venue / Platform
07 October 2019	Luzon	F1 Hotel, BGC, Taguig
10 October 2019	Visayas and Mindanao	Marco Polo Davao
22 July 2020	Luzon	Microsoft Teams
29 July 2020	Visayas & Mindanao	Microsoft Teams

NOW THEREFORE, after careful review of the abovementioned PEM Board-approved proposals and the comments and recommendations received on the same, the DOE, pursuant to its authority under the EPIRA, hereby adopts, issues, and promulgates the following amendments to the WESM Rules and Market Manuals:

Section 1. Amendments to the WESM Rules. The following provisions in the WESM Rules promulgated by the DOE through Department Circular No. DC2016-10-0014 are hereby amended:

a. Clause 4.4.1 under Registration of *Metering Services Provider* is amended to read as –

"4.4.1. A *Metering Services Provider* is a person or an entity who:

(a) Is authorized by the ERC to provide *metering services*;
(b) Is registered with the *Market Operator* as a *Metering Services Provider*; and
(c) Is required to have the qualifications and adhere to the performance standards specified in the relevant *Market Manual*."

Section 2. Amendments to the WESM Market Manual on Metering Standards and Procedures. The following provisions in the WESM Market Manual on Metering Standards and Procedures Issue No. 12.0 are hereby amended:

a. Section 1.1 (Background) under Introduction is amended to read as –

"1.1 Background

Xxx xxx xxx

This *Market Manual*, in compliance with Chapter 4 of the *WESM Rules*:

(a) xxx xxx xxx
(b) prescribes the manner of labeling and identification of a revenue *metering installation* with a Site and Equipment Identification Label (SEIL)
(c) xxx xxx xxx
(d) xxx xxx xxx"

b. Section 2.2 (Location of the Metering Point) under Metering Installation Standards is amended to read as –

"2.2. Location of the Metering Point

The location of the metering point shall adhere to the applicable provisions of the WESM Rules, the Philippine Grid Code (PGC), the Philippine Distribution Code (PDC), and other relevant issuances of the Energy Regulatory Commission (ERC) and the Department of Energy (DOE).

In accordance with the DOE Department Circular No. DC2016-05-0007, the market trading node, metering point and its *metering installations* shall be located at the *connection point*. In accordance with *WESM Rules* Clause 3.2.2.2 (e), the metering point and *metering installations* shall be located and installed within 500 meters from the *connection point*, as defined in the PGC and PDC.

For non-compliant metering point that is located more than 500 meters from the *connection point*, Site-Specific Loss Adjustment (SSLA) shall be applied to the meter data for the full distance from the *connection point* representing the energy produced or consumed by the Trading Participant at that metering point for determining the quantities to be settled in the WESM. If the metering point is located within 500 meters from the *connection point*, no Site-Specific Loss Adjustment (SSLA) shall be applied."

c. Section 2.4.1 (Requirements for Transmission Grid Revenue Meters) under Meters is amended to read as –

"2.4.1. Requirements for Transmission Grid Revenue Meters

There shall be a main and alternate meter preferably of different meter model but are both compliant to the requirements of the prevailing PGC.

The meter shall also have a mass memory capable of recording the 5-minute required demand interval data for a period of at least 60 days and have communication capabilities for remote and manual data retrievals."

d. Section 2.4.2 (Requirements for Revenue Meters for Embedded Generators Registered as WESM Participants) under Meters is amended to read as –

"2.4.2. Requirements for Revenue Meters for Embedded Generators Registered as WESM Participants

For Embedded Generators registered as WESM Participants, the main meter shall adhere to the prevailing requirements of the PDC and shall be capable of recording 5-minute interval data. If there is an alternate meter, it shall also adhere to the requirements of the prevailing PDC Edition."

e. Section 2.5.1 (General Requirements) under Instrument Transformers is amended to read as –

"2.5.1. General Requirements

Metering installations, if applicable, shall include instrument transformers."

f. Section 2.5.1.1 under General Requirements is added to read as –

"2.5.1.1. Requirements for Transmission Grid Instrument Transformers

Instrument Transformers used for metering of transmission grid connections shall adhere to the requirements of the prevailing PGC."

g. Section 2.5.1.2 under General Requirements is added to read as –

"2.5.1.2. Requirements for Embedded Generators Registered as WESM Participants

Instrument Transformers used for metering of Embedded Generators registered as WESM Participants shall adhere to the requirements of the prevailing PDC."

h. Section 2.5.2 (Use of Instrument Transformers) under Instrument Transformers is amended to read as –

"2.5.2. Use of Instrument Transformers

Instrument transformers supplying the revenue meter shall be used solely for purposes of revenue metering and not for any other purposes, including, but not limited to, the attachment of other devices.

The following schemes shall not be allowed:

(a) The use of an instrument transformer for meters other than the registered WESM Meters except as permitted in this section; and
(b) Paralleling of current transformers.

Meters covered by Energy Conversion Agreements (ECA) contracts which were already in effect prior to the operation of WESM shall be temporarily permitted to share the instrument transformers used for WESM metering until the end of the ECA cooperation period; provided that the ECA and WESM meters shall have separate meter enclosure/box and that the secondary terminals of the instrument transformers are properly sealed."

i. Section 2.5.3.1 (Selection of Current Transformer Ratios) under Instrument Transformer Ratios is amended to read as:

"2.5.3.1 Selection of Current Transformer Ratios

Current transformer ratios shall be selected according to the following factors:

(a) The maximum sustained primary current in a current transformer shall not exceed the rated primary current multiplied by the current rating factor of the current transformer; and
(b) The minimum sustained primary current during normal operation shall not be less than the lowest primary current that the current transformer can measure wherein the measurement accuracy is still guaranteed."

j. Section 2.5.4.1 (Current Transformers) under Accuracy Requirements is amended to read as –

"2.5.4.1. Current Transformers

Current transformers shall adhere to the requirements of the prevailing PGC. In addition, the accuracy of the current transformers shall be guaranteed from 0-100% of the rated burden."

k. Section 2.5.4.2 (Voltage Transformers) under Accuracy Requirements is amended to read as –

"2.5.4.2. Voltage Transformers

a. Voltage transformers shall adhere to the requirements of the prevailing PGC. In addition, the accuracy of the voltage transformers shall be guaranteed from 0-100% of the rated burden."

l. Section 2.5.4.3 (Proof of Accuracy Compliance) under Accuracy Requirements is amended to read as –

a. "2.5.4.3. Proof of Accuracy Compliance

Proof of compliance with Sections 2.5.4.1 and 2.5.4.2 shall be provided in the form of factory routine test reports showing the serial numbers of the instrument transformers."

m. Section 2.5.4.4 (Other Requirements Relating to Accuracy) under Accuracy Requirements is amended to read as --

"2.5.4.4. Other Requirements Relating to Accuracy

a. Where accuracy tests are required, they shall comply with the following requirements:

(a) tests shall be carried out by the *Metering Services Provider* using equipment traceable to National or International Standards of Measurements;
(b) tests shall include ratio and phase-angle error tests;
(c) ratio and phase-angle tests of current transformers shall be measured over a range of test currents based on the accuracy curve as defined by the applicable standards whereby the current transformer was designed; and
(d) test results shall provide ratio correction factors at each test point which may be applied, if deemed necessary for WESM settlement, to both active and reactive power."

n. Section 2.5.5.1 (Burden Calculation – All Current Transformers) under Instrument Transformer Burdens: General Requirements is amended to read as –

"2.5.5.1. Burden Measurement – All Current Transformers

The actual connected burden shall be measured using a CT burden measuring instrument. If manual calculation will be employed, the calculation shall consider the following:

(a) the impedance of the secondary wiring; and
(b) the impedance of all devices connected to the current transformer."

o. Section 2.5.5.2 (Not to Exceed Nameplate Ratings) under Instrument Transformer Burdens: General Requirements is amended to read as –

"2.5.5.2. Not to Exceed Nameplate Ratings

The measurement shall verify the actual burdens in service that do not exceed the rated burden limits specified under Section 2.5.4.1."

p. Section 2.5.5.3 (Burden Calculations – All Voltage Transformers) under Instrument Transformer Burdens: General Requirements is amended to read as –

"2.5.5.3 Burden Measurement – All Voltage Transformers

The actual connected burden shall be measured using a VT burden measuring instrument. If manual calculation will be employed, the calculation shall consider the apparent power and power factor at the secondary terminals of the instrument transformers."

q. Section 2.5.5.4 (Not to Exceed Nameplate Ratings) under Instrument Transformer Burdens: General Requirements is amended to read as –

"2.5.5.4. Not to Exceed Nameplate Ratings

The measurement shall verify the actual burdens in service that do not exceed the rated burden limits specified under Section 2.5.4.2."

r. Section 2.5.6.1 under General Requirements for Grounding System is amended to read as –

"2.5.6.1 The installation shall be in accordance but not limited to the following provisions of the Philippine Electrical Code:

(a) xxx xxx xxx

Xxx xxx xxx

(f) For voltage level 69kV and higher, the minimum size of copper conductor to be used for metering instrument transformer grounding shall be 100 mm^2.
(g) For voltage lower than 69kV the minimum size of copper conductor to be used for metering instrument transformer grounding shall be 60 mm^2.
(h) The minimum size of copper conductor to be used for the secondary circuits of instrument transformers shall be 3.5 mm^2.
(i) Connections to all bonded parts shall be made in accordance to Article 2.50.1.8 of the Philippine Electrical Code 2009 Part 1."

s. Original Section 2.5.7 (Current Transformer Requirements) under Instrument Transformers is hereby deleted.

t. Original Section 2.5.8 (Voltage Transformer Requirements) under Instrument Transformers is hereby deleted.

u. Original Section 2.5.9 (Surge Arrester) under Instrument Transformers is hereby renumbered and amended to read as -

"2.5.7. Surge Arrester

2.5.7.1. Surge Arresters installed (if necessary) at the WESM *metering installation*, shall meet the minimum requirements listed below:

Nominal System Voltage	Max. Rated Voltage	Standard Lightning Impulse Withstand Voltage	Max. Continuous Operating Voltage	Max. Nominal Discharge Current	Maximum Line Discharge Class		Long Duration Current Impulse Withstand Capability
[KV]	[KV]	[KV]	[KV]	[KA]	IEC	ANSI	[KVA]
13.8	15	95	12	10	CL 2	Station	100
34.5	36	170	29	10	CL 2	Station	100
69	72.5	325	58	10	CL 2	Station	100
115	123	550	98	10	CL 2	Station	100
138	145	650	116	10	CL 2	Station	100
230	245	900	196	10	CL 2	Station	100
500	525	1550	420	20	CL 4	Station	100

If there are existing surge arresters in the facility where the *metering installation* is located which already provides the protection as required by this WESM *Market Manual*, installation of additional metering surge arresters shall no longer be necessary.

2.5.7.2 The surge arrester shall be located at the line side, as close as possible to the instrument transformers in the Metering Point. Refer to Figure 2(a) and 2(b)."

v. Section 2.6.1. (Location of Primary Terminals of Current Transformer) under Primary Connections is amended to read as –

"2.6.1. Location of Primary Terminals of Current Transformer

The primary terminals of each current transformer shall be located as close as practicable to the prescribed Connection Point."

w. Section 2.6.2. (Location of Primary Terminals of Voltage Transformer) under Primary Connections is amended to read as –

"2.6.2. Location of Primary Terminals of Voltage Transformer

The primary terminals of each voltage transformer shall be located as close as practicable to the prescribed Connection Point."

x. Section 2.7.1.1 (Size of Secondary Cabling) under Current Transformer is amended to read as –

"2.7.1.1 Size of Secondary Cabling

The secondary cabling between the current transformers and the meter test switch/block shall be of a sufficient size that the rated burden specified in Section 2.5.4.1 accuracy class is not exceeded when current, equivalent to the rated current, flows in the secondary winding."

y. Section 2.7.3 (Codes and Conditions) and its Subsections under Secondary Connections for Instrument Transformers are amended to read as –

"2.7.3. Codes and Conditions

Instrument transformer secondary cabling and cabling accessories shall comply with the following codes and conditions:

2.7.3.1. The Philippine Electrical Code;

2.7.3.2. The meters shall be provided with dedicated current and voltage transformers used only for WESM *metering installation*, except as permitted in Section 2.5.2;

2.7.3.3 Current transformers may be supplied with more than one secondary core. However, no secondary core other than those intended for revenue meters may be provided;

2.7.3.4. Voltage transformers may be supplied with more than one secondary windings intended for the revenue meters and shall not be used for any other purpose;

xxx xxx xxx"

z. Section 2.9.1.1. (Instrument transformers connections) under Physical Security of Metering Equipment is amended to read as –

"2.9.1.1. Instrument transformers connections

Primary and secondary cablings and connections shall be secure, tamper-resistant and compliant with the requirements of the prevailing PGC on security of registered revenue *metering installations* and metering data. Any ratio-tap changing facility which cannot be secured using a security seal or its equivalent shall not be permitted."

aa. Section 2.9.1.7. (Metering Perimeter) under Physical Security of Metering Equipment for Instrument Transformers is amended to read as –

"2.9.1.7. Metering Perimeter

The *metering installation* shall be secured by a perimeter fence similar to Figure 7 if applicable and its gate properly padlocked, sealed and secured. If the *metering installation* is located inside a perimeter which already provides equivalent security as required by this WESM *Market Manual*, installation of additional perimeter fence shall no longer be necessary. A perimeter fence shall also not be required for pole-mounted, vault-type and other similarly secured *metering installations*. Metering perimeter shall also be well lighted and free from any unwanted materials, equipment, vegetation, etc. (refer Table 7). Lighting shall be provided by the owner of the perimeter where the *metering installation* is located."

bb. Section 2.10.1 under Redundant Metering Installation is amended to read as –

"2.10.1. A redundant *metering installation* can be achieved using a single set of instrument transformers to either common or separate core."

cc. Section 2.10.2 under Redundant Metering Installation is amended to read as –

"2.10.2. The minimum requirement for redundant metering shall be the use of a single set of instrument transformers wherein the main and alternate meters are in series-parallel and connected to a common core."

dd. Section 2.10.3 under Redundant Metering Installation is amended to read as –

"2.10.3. The metered energy (kWh) and demand (kW) data recorded by the main and alternate meters shall not deviate by more than +/- 0.6% of the monthly average values recorded by the meters for three (3) consecutive billing periods. In the event that the deviation exceeds this value, the Metering Services Provider shall investigate and correct the causes of such deviations not later than three (3) months from discovery."

ee. Section 2.11 (Metering Installation - Existing) under Metering Installations Standards is amended to read as –

"2.11. An existing *metering installation* that does not fully comply with the requirement of this standard shall be permitted by the *Market Operator* to remain in service subject to the following conditions:

(a) ERC has tested/verified and sealed the meter;
(b) Meters which are non-compliant to the mass memory requirements shall be replaced when they become defective or until they reach the end of their economic life;

(c) All non-compliant instrument transformers shall be replaced within the period of two (2) years from the effectivity of this version of WESM Market Manual on Metering.

Continued non-compliance of *metering installations* shall be subject to applicable sanctions or penalties."

ff. Section 3 (Site Equipment Identification (SEIN)) is amended to read as –

"SECTION 3 SITE AND EQUIPMENT IDENTIFICATION LABEL (SEIL)"

gg. Section 3.1 (Introduction) under Site and Equipment Label (SEIL) is amended to read as –

"3.1 Introduction

xxx xxx xxx

The objectives of assigning Site and Equipment Identification Label (SEIL) for *metering installations* are as follows:

xxx xxx xxx"

hh. Section 3.2 (General Procedures) under Site and Equipment Identification Label (SEIL) is amended to read as –

"3.2 General Procedures

The assignment of the Site and Equipment Identification Label (SEIL), in general, shall be done by the *Metering Services Provider*. However, for embedded generators, with the concerned DU as their *Metering Services Provider*, the responsibility to assign the SEIL is with the *Market Operator*.

xxx xxx xxx"

ii. Section 3.3 (Basis for Establishing the SEIL) under Site and Equipment Identification Label (SEIL) is amended to read as –

"3.3 BASIS FOR ESTABLISHING THE SEIL

xxx xxx xxx"

jj. Section 4.3.2 under Requirements for Registration of Metering Installations is amended to read as –

"4.3.2. To initiate the registration of a *metering installation*, the WESM *Metering Services Provider*, on behalf of its *Trading Participant*, shall submit the following to the *Market Operator*:

(a) Accomplished Metering Installation Form signed or confirmed by both the *Metering Services Provider* and the *Trading Participant*;

xxx xxx xxx

(l) Other Special Features of the Meter."

kk. Section 4.3.5 is added under Requirements for Registration of Metering Installations to read as –

"4.3.5 All requests of the *Trading Participant* for clarifications and/or reconsideration concerning the approval of registration of metering facility shall be addressed to the *Market Operator* for resolution."

ll. Section 5.3.1 (Requirements) under Collection and Submission Procedure is amended to read as –

"5.3.1 Requirements

(a) Data

The metering data shall contain the following:

(i) xxx xxx xxx
(ii) The metering data in kWh (Active Energy), kVARh (reactive energy), voltage per phase and current per phase in their assigned channel (for daily meter data delivery);
(iii) Site and Equipment Identification Label (SEIL) or Recorder ID of Meter (RevMeterID/Meter Point);
(iv) xxx xxx xxx
(v) xxx xxx xxx
(vi) xxx xxx xxx
(vii) Resolution (every 5 minute)

xxx xxx xxx"

mm. Section 5.3.2 (Daily Process) under Collection and Submission Procedure is amended to read as –

"5.3.2. Daily Process

xxx xxx xxx

EPJ

(b) All collected meter data shall be submitted by the *Metering Services Provider* to the *Market Operator's* Meter Data Warehouse on or before 0800H of the succeeding trading day. However, for metering facilities with failed communication capability, the *Metering Services Provider* shall conduct remote meter data retrieval and submit to the *Market Operator* not later than 1200H of the same day. The *Metering Services Provider* shall not make, cause or allow any alteration to the original stored meter data as retrieved in the *metering installation*.

xxx xxx xxx"

nn. Section 5.3.3 (Monthly Process) under Collection and Submission Procedure is amended to read as --

"5.3.3. Monthly Process

(a) Not later than three (3) business days after the end of the billing period, the *Metering Services Provider* shall submit, via File Transfer Protocol (FTP) or any secure file storage device, monthly preliminary metering data of all metering points of its associated *Trading Participants*. In addition, the *Metering Services Provider* shall submit a transmittal letter that includes a tabulation of all associated metering points and their corresponding total metered quantity for the billing period.

(b) The *Market Operator* shall validate the monthly metering data relative to its format, the given SEILs, metering data and per *dispatch interval*. The *Market Operator* shall compare the monthly metering data to the values of the daily metering data for each *metering point* submitted by the *Metering Services Provider*. If there are discrepancies between the values, the *Market Operator* shall issue a Meter Trouble Report (MTR) to the *Metering Services Provider*.

(c) Not later than seven (7) business days after the issuance of the Meter Trouble Report, the *Metering Services Provider* shall correct the metering data in accordance with the procedures set forth in Section 6.4.3 of this *Market Manual*.

xxx xxx xxx"

oo. Section 6.2.1 under General Description is amended to read as --

"6.2.1 All metering data received by the *Market Operator* shall be evaluated using the Validation, Estimation and Editing process described in this section. When metering data contains missing values or exceeds the maximum capacity per dispatch interval, such metering data shall undergo estimation and editing where substitution of metering data shall be made using historical validated data."

pp. Section 6.3.1.2 (Validation Checks) under Daily Validation is amended to read as –

"6.3.1.2 Validation Checks

xxx xxx xxx

(e) Review the historical meter readings which fall outside defined parameters max/min of the historical data. The historical data used are as follows:

(i) Value during the same *dispatch interval* of the previous week;
(ii) Value during the same *dispatch interval* for the previous similar day (i.e. weekday or weekend); and
(iii) Average values during the previous days or previous week of the same *dispatch interval*."

qq. Section 6.4.3.1 under Meter Data Estimation and Editing is amended to read as –

"6.4.3.1. When validation indicates that the data from the main meter are missing or have an invalid data, the values shall be estimated and substituted by the *Metering Services Provider* for Settlement purposes.

The following shall be the hierarchy of methods to be used by the *Metering Services Provider* for meter data estimation and editing:

xxx xxx xxx

(b) Meter Data from Alternate Meter

If more than twelve (12) consecutive intervals of the main meter are missing or have invalid data, the values from the alternate meter may directly be substituted to the main meter provided that the data passed the validation based on the checks performed on Section 6.3.1.2. If the average deviation between the main and alternate meter is greater than 0.2% but not exceeding 0.6%, a correction factor shall be applied.

(c) Use of Computed Phase Voltage and Phase Current using % Phase Voltage or % Phase Current method

If there is a loss of a phase current or phase voltage, the estimation shall be computed by the Metering Services Provider, in coordination with the Market Operator and concerned Trading Participant, in accordance with the following formula:

Total Power = $[(V_{an} \times I_a) + (V_{bn} \times I_b) + (V_{cn} \times I_c)] \times \cos \theta \times M$

where:

I_a, I_b, I_c	phase current values
V_{an}, V_{bn}, V_{cn}	phase voltage values
$\cos \theta$	average power factor
M	multiplier

Missing values of I_a:

% I_a = I_a / (I_a + I_b + I_c) using the valid data within the same billing month

Total % I_a = sum of % I_a of all intervals

Average % I_a = Total %I_a / No. of intervals

I_a = Average % I_a x (I_b + I_c) / (1 – Average % I_a)

where:

I_a	computed phase A current
I_b, I_c	actual recorded per phase current

Note: Computation shall be the same with other phases.

Missing values of V_{an}:

% V_{an} = V_{an} / (V_{an} + V_{bn} + V_{cn}) using the valid data within the same billing month

Total % V_{an} = sum of % V_{an} of all intervals

Average % V_{an} = Total %V_{an} / No. of intervals

V_{an} = Average % V_{an} x (V_{bn} + V_{cn}) / (1 – Average % V_{an})

where:

V_{an}	computed phase A voltage
V_{bn}, V_{cn}	actual recorded per phase voltage

Note:

Computation shall be the same with other phases.

(d) xxx xxx xxx

(e) Historical Main Meter Data

(i) An average 3-day historical data previously gathered from the main meter can be directly substituted
(ii) Values of the same *dispatch interval* of the previous day or same day type (i.e. weekday of weekend)
(iii) Values of the same *dispatch interval* of the same day from the past 3 weeks as recorded on the same meter except for days with shutdown, previous estimation, holidays (i.e. Saturday, Sunday, Holidays)

(f) xxx xxx xxx

(g) Use of Meter Register Reading in VEE

xxx xxx xxx

(i) The per *dispatch interval* equivalent meter data shall be computed proportionately according to the load shape obtained from available RTU data corresponding to metering point for the time covered by the register readings, or to the load shape obtained from the historical load profile data for a similar day and time;
(ii) The per *dispatch interval* equivalent meter data shall undergo site – specific loss adjustment for any equipment between the market trading node and the meter;

xxx xxx xxx

(h) xxx xxx xxx

(i) Parallel lines

Parallel Lines that are Separately Metered (one line with meter data defect): Use metered quantity of the line that has no meter data defect with application of Adjustment Factor (AF).

Note: Adjustment Factor shall be based on historical data.

(j) Temporary Use of correction factor as multiplier for Instrument Transformer in service that failed in accuracy limit.

i. For Current Transformer

Ratio Correction Factor (RCF) = True Primary Current /(True Secondary Current x Marked Ratio)

ii. For Voltage Transformer

Ratio Correction Factor (RCF) = True Primary Voltage /(True Secondary Voltage x Marked Ratio)"

rr. Section 7.2 (Initiation) under Meter Trouble Report is amended to read as –

"7.2. Initiation

xxx xxx xxx

A Meter Trouble Report may be initiated due to the following:

(a) xxx xxx xxx

(b) a *Metering Services Provider* or a *Trading Participant* requests the *Market Operator* to issue a Meter Trouble Report to the *Metering Services Provider* due to difficulties in communicating with a *metering installation*, or validation of metering data. The *Market Operator* shall notify the *Metering Services Provider* or a *Trading Participant* of its decision within twenty-four (24) hours.

Issuance of Meter Trouble Report shall be suspended by the *Market Operator* in cases where a massive communication link failure affects large areas due to force majeure and TELCO related problems which are beyond the control of the *Metering Services Provider*. In cases that *Metering Services Provider* still fails to deliver the meter data of the remaining Metering Point/s to the *Market Operator*, the *Market Operator* shall consider the estimation of meter data of the affected Metering Point/s until such time that the *Metering Services Provider* has collected the meter data remotely or manually and transmitted to the *Market Operator*. In such cases, the *Market Operator* shall inform the affected customer of the temporary estimation made by the *Metering Services Provider*."

ss. Section 7.2.1 (Improving Efficiency in Resolving MTRs) under Initiation is amended to read as –

"7.2.1. Improving Efficiency in Resolving MTRs

In case of outages, a *Trading Participant* and/or its *Metering Services Provider* shall notify the *Market Operator* and *Metering Services Provider* within 24 hours after its occurrence. *Trading Participants* may use the Metering Outages Form to notify their *Metering Services Provider* and the *Market Operator* of any outages that may affect the metering data. The *Metering Services Provider* will use this information to resolve MTRs that

have been issued. A sample of the form and instructions for completion may be found in the Appendices.

xxx xxx xxx"

tt. Section 7.3.1 (Timeline) under Issuance is amended to read as –

"7.3.1. Timeline

Upon receipt of the Meter Trouble Report, the *Metering Services Provider* shall submit the correct metering data to the *Market Operator* within (7) business days."

uu. Section 7.3.2 (Unresolved Meter Trouble Report) under Issuance is amended to read as –

7.3.2. Unresolved Meter Trouble Reports

xxx xxx xxx

(b) Late Resolution

The *Metering Services Provider* may still resolve a Meter Trouble Report and provide metering data acceptable to the *Market Operator* after the deadline set in Section 7.3.1. For late resolutions, the deadline to be reflected in the final settlement statement shall be four (4) working days prior to the issuance of the final settlement statement.

(c) xxx xxx xxx

(d) Certification

The *Market Operator* shall provide a certification on the adjusted metering data showing the agreement of all affected parties and the *Metering Services Provider*.

(e) xxx xxx xxx"

vv. Section 8.2 (Purpose) under Site-Specific Loss Adjustment is amended to read as-

"8.2 PURPOSE

This is an interim procedure which shall be used to adjust the *Trading Participant's* meter data to compensate for the electrical losses in the components that come between the Metering Point and the MTN. The power and energy registered at the Metering Point shall be adjusted to reflect meter readings that would have been obtained if the revenue meter

is physically located at the MTN. Hence, all Metering Services Providers shall endeavor to harmonize the location of the metering point in accordance with their compliance plan as specified in the DOE Department Circular No. DC2016-05-0007 in order to eliminate the adjustments in the metered quantity and better efficiency in the WESM."

ww. Original Section 8.3 (Loss Factor) under Site-Specific Loss Adjustment is hereby deleted.

xx. Original Section 8.4 (Scope) under Site-Specific Loss Adjustment is renumbered and amended to read as –

"8.3 SCOPE

This interim procedure shall only apply to all revenue *metering installations* of *Trading Participants* in the *WESM*, where the Metering Point is non-compliant with the required location and physically located more than 500m from the *Connection Point* as determined by the *Metering Services Provider*."

yy. Original Section 8.5 (WESM Members Involved in Performing SSLA) under Site-Specific Loss Adjustment is renumbered to read as –

"8.4 WESM MEMBERS INVOLVED IN PERFORMING SSLA

xxx xxx xxx"

zz. Original Section 8.6 (Roles and Responsibilities) under Site-Specific Loss Adjustment is renumbered and amended to read as –

"8.5 ROLES AND RESPONSIBILITIES

The involvement of the *Metering Services Provider*, *Network Service Providers* and *Trading Participants* are as follows:"

aaa. Original Section 8.6.1 (Network Service Provider) under Roles and Responsibilities is renumbered and amended to read as –

"8.5.1 Network Service Provider:

8.5.1.1 The *Network Service Provider* shall submit to the *Metering Services Provider* all data necessary in the preparation of the following information that may affect the SSLA computation not later than 20 calendar days, upon implementation of modification in the actual physical configuration of the conductor and power transformer between the metering point and the *Connection Point*:

EPJ

(a) Transformer Resistance, R (ohms)
(b) Transformer Reactance, X(ohms)
(c) Transmission Line Circuit Branch Resistance, R (ohms)
(d) Transmission Line Circuit Branch Reactance, X (ohms)
(e) Transmission Line Circuit Total Branch Susceptance, B (siemens)
(f) Single Line Diagram showing metering point location and distance from the *connection point*"

bbb. Original Section 8.6.2 (Metering Services Provider) and its Subsections under Roles and Responsibilities are renumbered and amended to read as –

"8.5.2 Metering Services Provider

8.5.2.1 The *Metering Services Provider* shall submit to the *Market Operator* the list of the *metering points* that will be subject to the computation of Site-Specific Loss Adjustment (SSLA) including associated single line diagrams and significant line and transformer parameters between the *metering point* and the *connection point,* upon registration of the *metering installation* and as often as it implements significant changes in the actual physical connections between the *metering point* and the *market trading node.*

(a) Transformer Winding Resistance, R
(b) Transformer Winding Reactance, X
(c) Transmission Line Circuit Branch Resistance, R
(d) Transmission Line Circuit Branch Reactance, X
(e) Transmission Line Circuit Total Branch Susceptance, B

8.5.2.2 The *Metering Services Provider* shall submit to the *Market Operator* the meter data from all *metering points* where the *Metering Services Provider* are responsible for in accordance with the format and timeline of submission prescribed in this *Market Manual.*"

ccc. Original Section 8.6.3 (Trading Participant) under Roles and Responsibilities is renumbered and amended to read as –

"8.5.3 Trading Participant:

The *Trading Participant* shall coordinate with its *Metering Services Provider* for the submission by the *Metering Services Provider* of all significant conductor and power transformer data between its metering point and the market trading node upon its registration in the WESM, and as often as it notices significant changes in the actual physical configuration of the conductor and power transformer between its *metering point* and the *market trading node.*"

EPS

ddd. Original Section 8.6.4 (Market Operator) and its Subsections under Roles and Responsibilities are renumbered and amended to read as –

"8.5.4 Market Operator

8.5.4.1 The *Market Operator* shall use the latest conductor and power transformer data and list of metering points that will be subject to SSLA submitted by the *Metering Services Provider*. For any data discrepancy raised by the *Network Service Provider* or *Trading Participant*, the *Market Operator* shall immediately conduct reconciliation to determine the corrected data agreed by the *Market Operator, the Network Service Provider,* the *Metering Services Provider* and the *Trading Participant*. The *Market Operator* shall use the reconciled data starting on the current billing month only, then progressively for the succeeding billing months until a new conductor and power transformer data is submitted.

8.5.4.2 Calculate the loss adjustment in accordance with this procedure using a suitable computation tool.

8.5.4.3 Develop, in consultation with the WESM Participants, a standard table of reference, containing data for power transformers and conductors."

eee. Original Section 8.7 (Site Specific Loss Factor Calculation) under Site-Specific Loss Adjustment is renumbered and amended to read as –

"8.6 Site Specific Loss Adjustment Calculation"

fff. Original Section 8.7.1 (Loss Calculation) under Site-Specific Loss Factor Calculation is renumbered to read as –

"8.6.1 Loss Calculation

xxx xxx xxx"

ggg. Original Section 8.7.2 (Historical Load Share) under Site-Specific Loss Factor Calculation is hereby deleted.

hhh. Original Section 8.7.3 (Loss Sharing) under Site-Specific Loss Factor Calculation is hereby deleted.

iii. Original Section 8.7.4 under Site-Specific Loss Factor Calculation is renumbered to read as –

"8.6.2 Detailed loss calculations for sample cases are included in the Appendix of this Manual under "Site Specific Loss Adjustment"."

jjj. Original Section 8.8 (Procedural Steps for SSLA) under Site-Specific Loss Adjustment is hereby deleted.

kkk. Section 9.1 (Introduction) under Metering Services Provider Performance Measurement is amended to read as –

"9.1 INTRODUCTION

The integrity and timeliness of submission/delivery of meter data to the *Market Operator* by the *Metering Services Provider/s* allows the *Market Operator* to produce and transmit settlement-ready data to the *Trading Participant/s* on a timely basis. Erroneous meter data and/or a delay in submission/delivery of meter data may affect the timely and accurate billing and settlement of WESM generators, and customers."

lll. Section 9.2 (Purpose) under Metering Services Provider Performance Measurement is amended to read as –

"9.2 PURPOSE

This section provides the steps that *Trading Participant/s*, *Metering Services Provider/s*, *Market Operator* and *Governance Arm* shall follow for the review, evaluation and measurement of the performance of a *Metering Services Provider*. The measurement process monitors the conformance of a *Metering Services Provider* to the WESM Rules Clause 4.3.3 – *Metering Services Provider* Obligation and as discussed in this Section."

mmm. Section 9.3 (Scope) under Metering Services Provider Performance Measurement is amended to read as –

"9.3 SCOPE

This procedure is intended to provide the steps that *Trading Participant/s*, *Metering Services Provider/s*, *Market Operator*, and Governance *Arm* information shall follow in rating the performance of the *Metering Services Provider/s*. The procedural workflows described in this section serve as reference for the *Trading Participant/s*, *Metering Services Provider/s*, *Market Operator*, and *Governance Arm* in reflecting the requirement in the WESM Rules.

The scope of an MSP Performance Measurement includes the following:"

nnn. Section 9.3.1 under Scope is amended to read as –

"9.3.1 The integrity of meter data provided by the *Metering Services Provider/s* to the *Market Operator*, and the *Trading Participant/s*.

ooo. Section 9.3.2 under Scope is amended to read as –

"9.3.2 The daily and monthly meter data delivery by the *Metering Services Provider/s* in accordance with the *WESM Rules*."

ppp. Section 9.3.3 under Scope is amended to read as –

"9.3.3 The daily and monthly meter data delivery by the *Metering Services Provider/s* in accordance with the *WESM Rules*."

qqq. Section 9.4.1.1 (Data Meter Data Delivery) under Service Delivery is amended to read as –

"9.4.1.1. Data Meter Data Delivery

Daily Meter Data Delivery or Meter Retrieval Success is the ratio of the number of *metering installations* successfully communicated to the total number of active registered *metering installations*. Required average daily result shall be greater than or equal to 95% as reported in Luzon and Visayas and 85% in Mindanao."

rrr. Section 9.4.1.2 (Integrity of Metering Data) under Service Delivery is amended to read as –

"9.4.1.2. Integrity of Metering Data

Integrity of Metering Data is the valid meter data that passed the validation process as set forth by WESM Rules. This measures the ratio of the number of *metering installations* for which the data passes the validation process to the total number of *metering installation* successfully retrieved (communicated) excluding suspended MP and with no meter data. Required average daily result shall be greater than or equal to 95% as reported in Luzon and Visayas and 85% in Mindanao."

sss. Section 9.4.1.3 (Timeliness and Percentage Resolution to the Daily Meter Trouble Report) under Service Delivery is amended to read as –

"9.4.1.3. Timeliness and Percentage Resolution to the Daily Meter Trouble Report

These measure the percentage of the total number of *metering installations* for which a daily meter trouble reports (MTR) are issued,

that has been resolved or corrected in seven (7) business days. Required average daily result shall be greater than or equal to 90% as reported."

ttt. Section 9.4.1.4 (Timeliness and Percentage Resolution to the Monthly Meter Trouble Report) under Service Delivery is amended to read as –

"9.4.1.4. Timeliness and Percentage Resolution to the Monthly Meter Trouble Report

The MTR issued (for each *metering installation*) based on the submitted monthly meter data for the billing period shall be resolved and corrected within seven (7) business days. Required result shall be greater than or equal to 90% as reported."

uuu. Section 9.5 (Performance Standards) under Metering Services Provider Performance Measurement is amended to read as –

"9.5 Performance Standards

The Performance Standards as set by the WESM are the following:

Performance Indicator	Category	Performance Measures	Percent Weight	Percent Passing
Service Delivery	Daily Meter Data Delivery	Number of Metering Installations successfully retrieved	20	95
	Integrity of Meter Data	Meter Data that passed the validation process	20	95
	Timeliness and Percentage Resolution to the Daily Meter Trouble Report	Resolution to the Meter Trouble Report within 10 calendar days	15	90
	Timeliness and Percentage Resolution to the Monthly Meter Trouble Report	Resolution to the Meter Trouble Report within 2 business days	20	90
	Timeliness of Monthly Meter Data Delivery	Complete delivery of all meter data	25	100

		within 3 calendar days after the billing period.		

"

vvv. Section 9.7.2 (Semi-Annual Customer Satisfaction Rating) under Performance Rating is amended to read as –

"9.7.2 Semi-Annual Customer Satisfaction Rating

Every six (6) months, the *Governance Arm* shall conduct a Customer Satisfaction Rating (CSR) on the Metering Services Provider performance through the issuance of the CSR form to all the WESM *Trading Participants* to be accomplished and submitted back to the *Governance Arm*. The CSR forms are to be accomplished every first week of July of the current year and January of the following year. The July rating comprises the Metering Services Provider performance from January to June of the current year and the January rating of the following year corresponds to the second half of the previous year (July to December)."

www. Section 9.7.3 (Annual Performance Rating) under Performance Rating is amended to read as –

"9.7.3 Annual Performance Rating

Annual Performance Rating covers the billing periods January to December of each year. It shall consist of:

(a) The annual Performance Measures under Sub-section 10.4.1 – Service Delivery (Average of the 12 months billing).

(b) The Customer Satisfaction Rating under Sub-sections 10.4.2 and 10.7.2."

xxx. Section 9.7.4 (Work Flow for MSP Performance Rating) under Performance Rating is amended to read as shown in ANNEX A of this Circular.

yyy. Section 10.3 (Timeline for De-Registration) under Metering De-Registration is amended to read as –

"10.3 Timeline for De-Registration

The *Metering Services Provider* shall issue a notification to the *Market Operator* when de-registering a *metering installation* within the 15-day period before its scheduled de-registration and/or actual disconnection.

The *Market Operator* shall facilitate the processing of the deregistered *metering installation* and shall also inform the responsible groups of the de-registration of the same."

zzz. Section 10.5 (Workflow for De-Registration of Metering Installation) under Metering De-Registration is amended to read as shown in ANNEX B of this Circular.

aaaa. Section 10.6 (Procedural Steps for De-Registration of Metering Installation) under Metering De-Registration is amended to read as shown in ANNEX C of this Circular.

bbbb. Appendix C (Governing Provisions of the WESM Rules) is amended to read as –

"APPENDIX C

GOVERNING PROVISIONS OF THE WESM RULES

xxx xxx xxx

Clause 4.4.3 If a *Trading Participant* is a *Customer* and also a *Network Service Provider*, the *Trading Participant* may register as a *Metering Services Provider* only for *connection points* that it does not own.

If there are no other party capable and legally authorized to assume the role of the *Metering Services Provider*, the *Network Service Provider* may be permitted to act as the *Metering Services Provider* on an interim basis provided that it has a valid Certificate of Authority as WESM *Metering Services Provider* granted by the ERC.

xxx xxx xxx"

cccc. Appendix D (Metering Service Agreement) is amended to read as shown in ANNEX D of this Circular.

dddd. Appendix F (Meter Trouble Report Form) is amended to read as shown in ANNEX E of this Circular.

eeee. Table 5 (Ratios and Ratings of Voltage Transformers) under Appendix G Metering Installation Standards is amended to read as -

"Table 5 – Ratios and Ratings of Voltage Transformers

Rated Voltage (V)	Marked Ratio	Secondary Voltage
14,400 Grd Y/8,400	70/120:1	120V/69V
24,940 Grd Y/14,400	120/200:1	120V/69V
34,500 Grd Y/20,125	175/300:1	115V/69V
69,000 Grd Y/40,250	350/600:1	115V/67V
115,000 Grd Y/69,000	600/1000:1	115V/67V
138,000 Grd Y/80,500	700/1200:1	115V/67V
230,000 Grd Y/138,000	1200/2000:1	115V/67V
500,000 Grd Y/287,500	2500/4500:1	115V/67V

ffff. Original Title (SITE EQUIPMENT IDENTIFICATION (SEIN)) under Appendix I is amended to read as –

"APPENDIX I

SITE AND EQUIPMENT IDENTIFICATION LABEL (SEIL)

xxx xxx xxx"

gggg. Table 11 (Metering Equipment, Devices and Auxiliaries) under Appendix I Site and Equipment Identification Label (SEIL) Relevant Tables is amended as shown below:

"Table 11 – Metering Equipment, Devices and Auxiliaries

Designation	Description
CT	Current Transformer
LA	Lightning Arrester
MB	Meter Box
MD	Modem
MF	Multi-function Electronic Meter (Smart Meter)
PT	Potential Transformer
ST	Metering Structure
TS	Meter Test Switch
CI	Combined Instrument Transformer

hhhh. Appendix K (Site-Specific Loss Adjustment) is amended to read as shown as ANNEX F of this Circular.

iiii. Appendix L (Specifications for Transmission Revenue Meters) is amended to read as shown in ANNEX G of this Circular.

jjjj. Appendix M (Specifications for Revenue Meters for Embedded Generators Registered as WESM Participants) is amended to read as shown in ANNEX H of this Circular.

kkkk. Appendix N (Specifications for Current Transformers) is amended to read as shown in ANNEX I of this Circular.

llll. Appendix O (Specifications for Voltage Transformers) is amended to read as shown in Annex J of this Circular.

mmmm. Appendix P (Specifications for Current Transformers for Embedded Generators) is amended to read as shown in Annex K of this Circular.

nnnn. Appendix Q (Specifications for Voltage Transformers for Embedded Generators) is amended to read as shown in Annex L of this Circular.

oooo. Figure 5 (Meter Enclosure) under Appendix H Drawings, Figures & Pertinent Sketches is amended to read as shown in Annex M of this Circular.

pppp. All references to the term "Site Equipment Identification (SEIN)" in this Market Manual, are hereby amended to refer to term "Site and Equipment Identification Label (SEIL)".

Section 3. Separability Clause. If for any reason, any section or provision of this Circular is declared unconstitutional or invalid, such parts not affected shall remain valid and subsisting.

Section 4. Repealing Clause. All issuances inconsistent with the provisions of this Circular are hereby repealed or amended accordingly.

Section 5. Effectivity. This Circular shall take effect fifteen (15) days following its complete publication in at least two (2) newspapers of general circulation and shall remain in effect until otherwise revoked. Copies thereof shall be filed with the University of the Philippines Law Center – Office of National Administrative Register (UPLC – ONAR).

Issued this _____ 2021 at the DOE, Energy Center, Rizal Drive, Bonifacio Global City, Taguig City, Metro Manila.

ALFONSO G. CUSI
Secretary

Republic of the Philippines
DEPARTMENT OF ENERGY
IN REPLYING PLS. CITE
DOE-AGC-21003684

JUN 25 2021