



**Republic of the Philippines**  
**DEPARTMENT OF ENERGY**

DEPARTMENT CIRCULAR NO. DC2017-03-0001

**ADOPTING FURTHER AMENDMENTS TO THE WHOLESALE ELECTRICITY SPOT  
MARKET (WESM) RULES AND MARKET MANUALS FOR THE IMPLEMENTATION  
OF ENHANCEMENTS TO WESM DESIGN AND OPERATIONS**  
(Provisions for Price Determination Methodology and Constraint Violation Coefficients  
and Pricing Re-run)

**WHEREAS**, Sections 30 and 37(f) of the Electric Power Industry Reform Act (EPIRA) provides that the 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**, any changes, amendments, and modifications to the WESM Rules including its Market Manuals shall be undertaken in accordance with the provisions of Chapter 8 thereof;

**WHEREAS**, on 27 May 2016, the Philippine Electricity Market Corporation (PEMC) submitted to the Rules Change Committee (RCC) the Proposed Amendments to the WESM Market Manuals on Price Determination Methodology (PDM) and the Constraint Violation Coefficients (CVC), which changes are in accordance with the DOE policies on enhancements to market design and operations and the amended WESM Rules for the New Market Management System (NMMS) through Department Circulars No. DC2015-10-0015 and No. DC2016-10-0014, respectively;

**WHEREAS**, on 01 June 2016, the RCC during its 115<sup>th</sup> RCC Meeting, discussed the said amendments to the PDM and CVC Market Manuals, which thereafter approved the publication of the proposal in the WESM website to solicit comments from market participants and other interested parties;

**WHEREAS**, on 07 September, 05 October and 26 October 2016, the RCC during its 118<sup>th</sup>, 119<sup>th</sup>, 121<sup>st</sup> RCC Meetings, respectively, deliberated on the said proposal giving due course to the comments received from market participants and the DOE;

**WHEREAS**, on 09 November 2016, the RCC during its 122<sup>nd</sup> RCC Meeting, further deliberated on and finalized the proposal including the necessary amendments to the WESM Rules for consistency, which thereafter approved its endorsement to the PEM Board;

**WHEREAS**, on 29 November 2016, after due evaluation and deliberation, the PEM Board during its 121<sup>st</sup> PEM Board Meeting approved for endorsement to the DOE the above stated RCC proposal;

**WHEREAS**, on 09 December 2016, the above stated PEM Board-approved amendments to the WESM Rules, Price Determination Methodology Manual and Constraint Violation Coefficients and Pricing Re-runs Manual were submitted to the DOE for final approval, in compliance with Chapter 8 of the WESM Rules;

**WHEREAS**, the DOE thoroughly reviewed the said PEM Board-approved proposal, and considered it consistent with the objectives of the WESM and the DOE policies on the enhancements of WESM design and operations;

**WHEREAS**, the DOE deemed it necessary to further revise certain provisions of the said Price Determination Methodology Manual and Constraint Violation Coefficients and Pricing Re-runs Manual for consistency with the WESM Rules;

**NOW THEREFORE**, pursuant to its authority under the EPIRA and WESM Rules, the DOE hereby adopts, issues, and promulgates the following amendments to the WESM Rules and Market Manuals for the new market design and NMMS:

**Section 1. Amendments to the WESM Rules.** The following provisions in the WESM Rules are hereby amended:

- (a) Clause 3.3.5.2 under Reserve Market Cost Recovery is amended to read as -

"3.3.5.2 The costs of reserves are to be recovered through the settlement amounts calculated by the Market Operator under Clause 3.13.8 in accordance with the cost recovery formula to be developed by the Market Operator for each reserve category."

- (b) Original Clause 3.4.2 and its sub-clauses under Market Dispatch Interval, Settlement Interval and Timetable are amended to read as -

"3.4.2 Settlement Interval

*A settlement interval is defined to be a period of one (1) hour, commencing on the hour."*

- (c) Clause 3.6.2 under Market Dispatch Optimization Model is amended to read as -

"3.6.2 Constraint Violation Variables and Coefficients

xxx      xxx      xxx

*The constraint violation coefficients shall be set for:*

- (a) *market projections and dispatch scheduling; and*  
(b) *market pricing re-runs when the market dispatch has resulted in a non-zero violation variable."*

- (d) Clause 3.6.7.3 under Automatic Pricing Re-runs is amended to read as -

"3.6.7.3 The automatic re-run of the *dispatch* optimization shall use the following



changes to the soft *constraint* that was violated:

- (a) In case of over-generation and under-generation, the soft constraint shall be relaxed by a value to allow the *market dispatch optimization model* to find a feasible price; and
- (b) For all other *constraints* that were violated, each *constraint's* requirement shall be relaxed corresponding to the resulting non-zero violation variable, including a very small value to allow the *market dispatch optimization model* to find a feasible price."

- (e) Clause 3.8.2.1 under Responsibilities of the System Operator is amended to read as -

"3.8.2.1 During each five (5) minutes *dispatch interval*, the *System Operator* shall use its reasonable endeavors to:

xxx      xxx              xxx

- (f) In relation to (e) above, the *System Operator* shall incorporate to its *ancillary service* procurement plan *must-run units* as an additional *type of ancillary service*. For this purpose, the criteria and procedures developed under Clause 3.5.13 shall be revised accordingly; and

xxx      xxx              xxx"

- (f) Clause 3.10.5.1 under Pricing Error Notice is amended to read as -

"3.10.5.1 In the event where calculated prices are believed to be in error due to erroneous, inconsistent, or inappropriate input data, notwithstanding the application of *automatic pricing re-run* under Clause 3.6.7.1, as a result of *load shedding*, occurrence of *constraints violation coefficients*, or for any other reason, the *Market Operator* shall issue a *pricing error notice*."

- (g) Original Clause 3.10.6 (Determination of Energy Settlement Prices) under Determination of Market Prices is hereby deleted.
- (h) Original Clause 3.10.7 (Determination of Reserve Price and Reserve Settlement Price) under Determination of Market Prices is renumbered and amended accordingly to read as -

"3.10.6 Determination of Reserve Price

When applicable, the *reserve price* for a *reserve category* in a particular *reserve zone* for each *dispatch interval* shall be determined as the *shadow price* on the relevant *reserve requirement constraint*, defined in accordance with Clause 3.6.1.4 (e), in the *dispatch optimization* for that *dispatch interval* and *published* by the *Market Operator* before the start of that *dispatch interval*."

- (i) Clause 3.11.1.1 under Market Information is amended to read as -

"3.11.1.1 The *Market Operator* shall *publish* the following:

- (a) *Nodal energy dispatch prices for all dispatch intervals and for each market trading node;*
- (b) *Final nodal energy dispatch prices used for settlements;*
- (c) *Zonal energy prices for all dispatch intervals and for each Customer pricing zone;*
- (d) *When applicable, reserve requirements and prices for each reserve category in each reserve region and reserve category;*
- (e) *Final reserve prices used for settlements;*
- (f) *Binding network constraints, for each dispatch interval in accordance with the timetable;*

xxx      xxx      xxx"

- (j) Clause 3.13.1.1 under Submission of Bilateral Contract Data for Energy is amended to read as –

*"3.13.1.1 Trading Participants who sell electricity pursuant to bilateral contracts and wish those bilateral contracts to be accounted for in settlements after each trading day, in accordance with the billing and settlement timetable, shall:*

- (a) *Submit a schedule to the Market Operator specifying the MWH bilateral sell quantities for each trading participant who buys electricity pursuant to that bilateral contract for that dispatch interval of that trading day;*
- (b) *Identify the market trading node associated with the bilateral contract quantity submitted; provided, however, that in case the market trading node is not identified prior to the submission of the bilateral contract quantity, the market trading node associated with the bilateral contract quantity shall be set to the market trading node of the selling Trading Participant; and*

xxx      xxx      xxx"

- (k) Clause 3.13.1.2 under Submission of Bilateral Contract Data for Energy is amended to read as –

*"3.13.1.2 Bilateral sell quantities submitted in accordance with Clause 3.13.1.1 (a) are to be deemed the negative of the bilateral buy quantities for the buying trading participant identified in Clause 3.13.1.1 (a) at the same market trading node identified in Clause 3.13.1.1 (b)."*

- (l) Clause 3.13.3.2 under Submission of Transmission Right Data is amended to read as –

*"3.13.3.2 Trading Participants who hold transmission rights and wish to have those transmission rights accounted for in settlements shall, after each trading day, in accordance with the timetable, submit to the Market Operator a schedule specifying:*

xxx      xxx      xxx

- (b) *the MWH quantities of each transmission right in each dispatch interval of that trading day, as they apply at the sending node;*



xxx                      xxx                      xxx"

(m) Clause 3.13.4 under Settlement Quantities and Amounts is amended to read as –

"3.13.4 Data for Bilateral Contracts and Transmission Rights

xxx                      xxx                      xxx

(b) If the data provided under Clause 3.13 is valid or complete, employ that data for *settlement* purposes in accordance with Clause 3.13.12."

(n) Clause 3.13.5 under Settlement Quantities and Amounts is amended to read as –

"3.13.5 Reserve Settlement Quantity

The *reserve settlement quantity* for each *Trading Participant* in each *dispatch interval* for a *reserve category* shall be calculated as:

(a) The *reserve* schedule for each *facility*, less

xxx                      xxx                      xxx"

(o) Clause 3.13.6 under Settlement Quantities and Amounts is amended to read as –

"3.13.6 Defining the Gross Energy Settlement Quantity for Market Trading Nodes

For each *dispatch interval*, the *gross energy settlement quantity* for each *market trading node* shall be determined by the *Market Operator* as follows:

xxx                      xxx                      xxx"

(p) Original Clause 3.13.7 (Energy Settlement Quantity Adjustments for Bilateral) under Settlement Quantities and Amounts is hereby deleted.

(q) Original Clause 3.13.8 and its sub-clauses (Determining the Energy Trading Amount) under Settlement Quantities and Amounts are renumbered and amended accordingly to read as –

"3.13.7 Determining the Energy Trading Amount

3.13.7.1 For *settlement* purposes, the *energy trading amount* for each *market trading node* and *settlement interval* will be determined as the aggregate of the:

(a) Final nodal energy dispatch prices multiplied by the gross energy settlement quantity (in MWh); less

(b) Reference final *nodal energy dispatch price* multiplied by the corresponding *bilateral contract* quantity (in MWh) as determined under Clause 3.13.1.1 for that *node*

in all *dispatch intervals* within that *settlement interval*.

3.13.7.2 For informational purposes, the *Market Operator* shall calculate *line rental trading amounts* for each *bilateral contract* quantity declaration."

- (r) Original Clause 3.13.9 and its sub-clauses (Determining the Reserve Trading Amount) under Settlement Quantities and Amounts are renumbered and amended accordingly to read as –

"3.13.8 Determining the Reserve Trading Amount

3.13.8.1 For *settlement* purposes, the *reserve trading amount* for a *settlement interval* of a *Trading Participant* who supplies *reserve* for a particular reserve category in a *reserve region* shall be determined as the aggregate of the product of the *reserve price* and the *reserve settlement quantity* multiplied by the fraction of the duration of a *dispatch interval* relative to the duration of a *settlement interval* for that *Trading Participant* in that reserve category in the *reserve region* for all *dispatch intervals* within that *settlement interval*.

3.13.8.2 During the initial operation of the *interim WESM*, the *reserve trading amount* shall be calculated based on the cost of *reserves* contracted for by the *System Operator*."

- (s) Original Clause 3.13.10 (Determining the Reserve Cost Recovery Charge) under Settlement Quantities and Amounts is renumbered accordingly to read as –

"3.13.9 Determining the Reserve Cost Recovery Charge

The *reserve cost recovery charge* for *settlement* purposes will be determined for each *Trading Participant* in each *settlement interval* in accordance with the procedures developed under Clause 3.3.5."

- (t) Original Clause 3.13.11 (Calculation of Line Rental Trading Amounts) under Settlement Quantities and Amounts is hereby deleted.
- (u) Original Clause 3.13.12 (Determining the Transmission Rights Trading Amount) under Settlement Quantities and Amounts is renumbered and amended accordingly to read as –

"3.13.10 Determining the Transmission Rights Trading Amount

For *settlement* purposes, the *transmission right trading amount* for each *transmission right* in each *trading interval* is to be determined as the aggregate of the:

- (a) MWh capacity of that *transmission right* as notified under Clause 3.13.2, multiplied by the *energy dispatch price* for the *receiving node*; minus the sum of
- (b) MWh capacity of that *transmission right*, as notified under Clause 3.13.2, multiplied by the *energy settlement price* at the *sending node* in that *settlement interval*; plus
- (c) MWh capacity of that *transmission right*, as notified under Clause 3.13.2,



multiplied by the agreed *loss differential for that transmission right*, as notified under Clause 3.13.2, multiplied by the *energy dispatch price* at the *receiving node* in all *dispatch intervals* within that *settlement interval*."

- (v) Original Clause 3.13.13 and its sub-clauses (Settlement Amounts for Trading Participants) under Settlement Quantities and Amounts are renumbered and amended accordingly to read as –

"3.13.11 Settlement Amounts for Trading Participants

3.13.11.1 For each *billing period*, the *Market Operator* shall determine the *settlement amount* for each *Trading Participant* as the sum of the aggregate *trading amounts* for the *settlement intervals* in that *billing period*, determined in accordance with Clause 3.13.11.2: plus

- (a) any amount payable by the *Market Operator* to that *Trading Participant* in respect of that *billing period* and not accounted for in Clause 3.13.11.2, including payment for any *ancillary services* purchased on behalf of the *System Operator*, less the sum of

xxx      xxx                  xxx

3.13.11.2 The aggregate *trading amount* for a *Trading Participant* for a *settlement interval* equals the sum of:

- (a) the *energy trading amounts* for each *market trading node* for which that *Trading Participant* is responsible calculated in accordance with Clause 3.13.7 (which may be positive or negative for any *Trading Participant*); plus  
(b) the *reserve trading amounts* for each *reserve region* into which that *Trading Participant* contributes *reserve* calculated in accordance with Clause 3.13.8 (which will always be positive for both *Generation Companies* and *Customers*); plus  
(c) the *transmission right trading amounts* for each *transmission right* held by the *WESM Participant* calculated in accordance with Clause 3.13.10 (which will typically be positive for any *Trading Participant*); less the sum of

xxx      xxx                  xxx

3.13.11.3 The *Market Operator* shall develop and implement, subject to approval by the *ERC*, the appropriate pricing and *settlement* methodology for compensation of *Trading Participants* whose *generating units* are designated as *must-run units* or identified as *displaced generators*, and the corresponding recovery mechanism for the same."

- (w) Original Clause 3.13.14 and its sub-clauses (Treatment of Remaining Settlement Surplus) under Settlement Quantities and Amounts are renumbered and amended accordingly to read as –

"3.13.12 Treatment of Remaining Settlement Surplus

3.13.12.1 If the transactions required by Clauses 3.13.12.2 (a), (b) and (d), in

aggregate, result in a surplus or deficit remaining, this will be known as the *net settlement surplus*.

3.13.12.2 The *net settlement surplus*:

- (a) May be retained by the *Market Operator* to fund deficit as a result of transactions required in Clauses 3.13.11, or may be flowed back to the *WESM Participants* in accordance with the procedures to be developed under Clause 3.13.12.3, or, may be used by the *Market Operator* to establish and support the market for financial *transmission rights* subject to the approval of the *PEM Board*; and
- (b) Shall be clearly accounted for and taken into account when setting the allowable charges under any regulatory instruments applying to the *Market Operator*.

3.13.12.3 The *Market Operator* shall:

xxx      xxx      xxx"

- (x) Original Clause 3.13.15 and its sub-clauses (Settlement Amounts for Trading Participants with Bilateral Contracts) under Settlement Quantities and Amounts are hereby deleted.
- (y) Clause 3.15.4.1 under Amount of Security is amended to read as –

"3.15.4.1 Subject to Clause 3.15.2.2, prior to the end of each *financial year*, the *Market Operator* shall determine and provide written confirmation to each *WESM Member* of its *maximum exposure* to the *Market Operator* in respect of a *billing period* in the following *financial year*. The amount of security to be provided by each *WESM Member* pursuant to Clauses 3.15.2.1 and 3.15.2.2 shall be equivalent to the *maximum exposure*.

xxx      xxx      xxx

If there is a change in the *bilateral contract* of a *WESM Member*, the *maximum exposure* shall be computed based on the *settlement amounts* estimated by the *Market Operator* using the average actual *market price* based on the *billing period* of 26<sup>th</sup> March to 25<sup>th</sup> September. In no case shall the *maximum exposure* be less than ten percent (10%) of the total demand. Average actual *market price* shall refer to the ratio of the total *spot market* payment of a *WESM Member*, which may include *spot market energy* and *reserve* transactions, to the total *metered quantities* net of *bilateral contract* quantities for each *billing month*.

xxx      xxx      xxx"

- (z) Glossary Chapter 11 is amended to include the following definition of terms –

"Bilateral Buy Quantity. The quantity of electricity purchased by a *Trading*



*Participant* pursuant to a bilateral contract determined in accordance with Clause 3.13.1.2.

*Bilateral Sell Quantity*. The quantity of electricity sold by a *Trading Participant* pursuant to a bilateral contract submitted to the *Market Operator* under Clause 3.13.1.1 (a)."

- (aa) The definitions of the following terms under Glossary Chapter 11 are amended to read–

*Energy Trading Amount*. The amount to be paid by, or paid to a *Trading Participant*, or *Network Service Provider* in respect of energy in accordance with Clause 3.13.7.

*Gross Energy Settlement Quantity*. The *energy quantity* determined in accordance with Clause 3.13.6 for a *market trading node*, in a *dispatch interval*.

*Line Rental*. The *economic rental* arising from the transmission of bilateral contract quantities from a *market trading node* of the selling *trading participant* to a *market trading node* of the buying *trading participant*.

*Net Settlement Surplus*. The *settlement surplus* remaining after all *market transactions* have been accounted for. This remainder is assumed to be attributable to *economic rentals* arising from other binding *constraints*, and accounted for in accordance with Clause 3.13.13.

*Receiving Node*. For a *transmission right*, the *node* to which the issuer of the *transmission right* is deemed to guarantee transfer of electricity, to be advised to the *Market Operator* in accordance with Clause 3.13.

*Reserve Price*. The price for *reserve* for a particular reserve category in a *reserve region* per *dispatch interval*, determined in accordance with Clause 3.10.6.

*Reserve Settlement Quantity*. The amount of *reserve* deemed to have been supplied by a *reserve supplier* for a particular reserve category in a *reserve region* per *dispatch interval*, determined in accordance with Clause 3.13.5.

*Reserve Trading Amount*. The amount to be paid by, or paid to a *Trading Participant*, or *Network Service Provider* in respect of reserves, in accordance with Clause 3.13.8.

*Sending Node*. For a *transmission right*, the *node* from which the issuer of the *transmission right* is deemed to guarantee transfer of electricity, to be advised to the *Market Operator* in accordance with Clause 3.13.2.

*Trading Amount*. The amount to be paid by, or paid to a *Trading Participant*, or *Network Service Provider* in respect of *energy*, *reserve*, or *transmission rights* calculated in accordance with Clauses 3.13.7, 3.13.8, 3.13.9, or 3.13.11 as applicable.

- (bb) The following terms defined under Glossary Chapter 11 are hereby deleted–

1. Energy Settlement Price; and
2. Reserve Settlement Price

**Section 2. Amendments to the WESM Market Manuals.** The WESM Market Manuals and presented as Annexes to this Circular are hereby approved and adopted:

- (a) Annex A – Price Determination Methodology Manual Issue 1.0; and
- (b) Annex B – Constraint Violation Coefficients and Pricing Re-runs Manual Issue 5.0;

**Section 3. Price Determination Methodology of the WESM.** The Philippine Electricity Market Corporation (PEMC), as the Market Operator, is hereby directed to file a petition before the Energy Regulatory Commission (ERC) for final approval of the Price Determination Methodology (PDM) for the WESM's New Market Management System (NMMS) as adopted in this Circular.

For this purpose, PEMC shall provide updates and reports to the DOE and PEM Board on the ERC's approval of the said PDM to ensure its smooth implementation in the new WESM design.

**Section 4. Transitory Provisions.** These amended WESM Rules and Market Manuals shall be initially used for the development of the WESM's New Market Management System (NMMS) and actual implementation of the enhancements to WESM design and operations. For clarity, the current WESM Rules and its Market Manuals shall remain effective for the commercial operation of the integrated WESM and Retail Market until the DOE issuance through a Department Circular on the commencement date for the NMMS. Notwithstanding, Section 6.2 (Issuance and Publication of Pricing Error Notices) of the Constraint Violation Coefficients and Pricing Re-runs Manual shall be immediately implemented by the Market Operator upon the effectivity of this Circular to ensure the timely issuance of pricing error notices in the WESM.

**Section 5. 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 6. Effectivity.** This Circular shall take effect after fifteen (15) days following the completion of its publication either in the Official Gazette or in a newspaper of general circulation in the Philippines, and shall remain in effect until otherwise revoked.

Issued this \_\_\_\_ February 2017 at the DOE, Energy Center, Rizal Drive, Bonifacio Global City, Taguig City, Metro Manila.

  
**ALFONSO G. CUSI**  
Secretary

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