



Republic of the Philippines
DEPARTMENT OF ENERGY

DEPARTMENT CIRCULAR NO. DC2017-04-0005

**ADOPTING THE WHOLESALE ELECTRICITY SPOT MARKET (WESM) MARKET
MANUAL ON THE MANAGEMENT OF NET SETTLEMENT SURPLUS AND ITS
FURTHER AMENDMENTS**

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 24 February 2016, the Rules Change Committee (RCC) received the Market Operator's (MO) proposed amendments to the Market Manual on Management of Net Settlement Surplus in order to enhance the current methodology in allocating the Net Settlement Surplus (NSS);

WHEREAS, the NSS is defined in the WESM Rules as the "settlement surplus remaining after all market transactions have been accounted for, including the assignment of transmission line rentals to Network Service Providers";

WHEREAS, on 03 March 2016, the RCC during its 111th RCC Meeting, discussed the said proposal, which thereafter approved its publication in the WESM website to solicit comments from market participants and other interested parties;

WHEREAS, on 07 July 2016, the RCC during its 116th RCC Meeting deliberated on the proposal giving due course to the comments received from market participants, which thereafter approved its endorsement to the PEM Board;

WHEREAS, on 10 November 2016, after due evaluation and deliberation, the PEM Board during its 120th PEM Board Meeting approved for endorsement to the DOE the above stated RCC proposed amendments to the Market Manual on Management of Net Settlement Surplus;

WHEREAS, on 23 November 2016, the above stated amendments to the Market Manual on Management of Net Settlement Surplus were submitted to the DOE for final approval, in compliance with Chapter 8 of the WESM Rules;

WHEREAS, the DOE reviewed the said PEM Board-approved proposal, and deems it appropriate and consistent with the WESM Rules and the objectives of the WESM; and

NOW THEREFORE, pursuant to its authority under the EPIRA and WESM Rules, the DOE hereby adopts, issues, and promulgates the following Market Manual and its further amendments:

Section 1. Amendments to the Market Manual. Pursuant to DOE Circular No. DC2015-07-0013 entitled "Adopting Further Amendments to the WESM Rules (Procedure for Changes to the WESM Rules and Market Manuals)," the WESM Market Manual on Management of Net Settlement Surplus presented as "Annex A" to this Circular is hereby approved and adopted.

Section 2. Net Settlement Surplus (NSS) Allocation Methodology. The Philippine Electricity Market Corporation (PEMC) is hereby directed to file a petition before the Energy Regulatory Commission (ERC) for final approval of the said allocation methodology for NSS 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 on the NSS allocation methodology to ensure its smooth implementation in the WESM.

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. Effectivity. This Circular shall take effect after fifteen (15) days following the completion of their publication either in the Official Gazette or two (2) newspapers of general circulation in the Philippines, and shall remain in effect until otherwise revoked.

Issued this ____ March 2017 at the DOE, Energy Center, Rizal Drive, Bonifacio Global City, Taguig City, Metro Manila.


ALFONSO G. CUSI
Secretary



APR 20 2017



PUBLIC

WESM Market Manual

Management of Net Settlement Surplus Issue 3

Abstract	This Market Manual sets the procedure for the allocation of the net settlement surplus in the Philippine Wholesale Electricity Spot Market
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Document Identity: WESM-MNSS

Issue: 3

Reason for Issue: Incorporate ERC Resolution No.06 Series of 2009 and address audit findings

Approval Date:

Publication Date:

Effective Date:

**Document Change History**

Issue No.	Proponent	Date of Effectivity	Reason for Amendment
1	PEMC	27 September 2006	Original Document
2	PEMC	03 October 2014	Incorporate ERC Resolution No. 06 Series of 2009 and address audit findings
3	PEMC		

Document Approval

Issue No.	RCC Approval	RCC Resolution No.	PEM Board Approval	PEM Board Resolution No
1	07 September 2006		27 September 2006	
2	02 July 2014	2014-12	31 July 2014	2014-41
3	07 July 2016	2016-09		

Reference Documents

Document ID	Document Title
	WESM Rules
WESM-PDM	WESM Price Determination Methodology
WESM-BSM	Billing and Settlements Manual
	PEMC Board Resolution No. 2005-37, 15 December 2005
	Energy Regulatory Commission Decision, In the Matter of the Application for Approval of the Price Determination Methodology for the Philippine Wholesale Electricity Spot Market, ERC Case No. 2006-007 RC, 21 June 2006.
	Energy Regulatory Commission Resolution No 06 Series of 2009, A Resolution Adopting the Rules for the Distribution of Net Settlement Surplus



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SECTION 1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 The surplus or deficit resulting from the aggregate *settlement* transactions in the Philippine *Wholesale Electricity Spot Market (WESM)* is the *net settlement surplus*.¹ Specifically, a *net settlement surplus* arises when the total payments of *Customers* exceeds the total payments to *Generation Companies* (or generators, for brevity).
- 1.1.2 The *WESM Rules* Clause 3.13.16.2² provides that the *net settlement surplus*:
- a) may be retained by the *Market Operator* to fund deficit *settlement* as a result of transactions required in *WESM Rules* Clause 3.13.14 and may be flowed back to the *Trading Participants* in accordance with the procedures to be developed under *WESM Rules* Clause 3.13.16.3 and 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* and the *System Operator*.
- 1.1.3 In accordance with *WESM Rules* Clause 3.13.6.3 (d), the *Market Operator* is required to develop procedures on the possible uses of *net settlement surplus* subject to approval by the *PEM Board*; and, to continuously review the procedures on possible uses of such surplus to the extent the *Market Operator* considers it to be reasonably necessary to promote *WESM* objectives. Any changes made on the procedures are approved by the *PEM Board*.³
- 1.1.4 The *Energy Regulatory Commission* (the "*Commission*") in its decision in the application for approval of the *WESM* price determination methodology likewise directed the *Philippine Electricity Market Corporation* (the "*PEMC*") to formulate the procedures for redistribution of the *net settlement surplus* within three (3) months from the start of the *WESM* commercial operations in Luzon. It likewise directed the *PEMC* to annually submit to the *Commission* a comprehensive report on the *net settlement surplus*, including but not limited to, the monthly levels and the underlying causes of the surplus.⁴

1.2 PURPOSE

- 1.2.1 This document implements the above-mentioned requirements of the *WESM Rules* and the directive of the *Commission* and specifically establishes the following –

¹ *WESM Rules* Clause 3.13.16.1.

² See *WESM Rules* Clauses 3.13.16.2 and 3.13.16.3, as amended by DOE Circular DO-2004-07-008.

³ See *WESM Rules* Clause 3.13.16.2, as amended by DOE Circular DO-2004-07-008.

⁴ Decision, In the Matter of the Application for Approval of the Price Determination Methodology for the Philippine Wholesale Electricity Spot Market, ERC Case No. 2006-007 RC, 21 June 2006.



- a) The manner by which the *net settlement surplus* or deficit is calculated;
- b) The uses of the *net settlement surplus* and the methodology for its allocation;
- c) The schedule for allocation or flow back of the *net settlement surplus*; and
- d) The manner of compliance with the reportorial requirements set in the *WESM Rules* and in regulatory directives.

1.2.2 This document governs the uses and procedures for allocation of the *net settlement surplus* until the implementation of the financial *transmission rights* market or other utilization regime as may be decided and approved by the *PEM Board*.

1.3 SCOPE

The guidelines and methodology set in this document applies to all *Trading Participants* registered in the *WESM*, the *Market Operator* and the *Philippine Electricity Market Corporation*.

SECTION 2 DEFINITIONS, REFERENCES AND INTERPRETATION

2.1 DEFINITIONS

All italicized terms in this document will have the same meaning as defined in the *WESM Rules*, unless the context provides otherwise.

2.2 REFERENCES

This document should be read together with the –

- a) *WESM Rules*, as amended;
- b) Price Determination Methodology;
- c) Billing and *Settlements Manual*;
- d) *Energy Regulatory Commission Decision*, In the Matter of the Application for Approval of the Price Determination Methodology for the Philippine *Wholesale Electricity Spot Market*, ERC Case No. 2006-007 RC, 21 June 2006; and
- e) *Energy Regulatory Commission Resolution No. 6, Series of 2009*, A Resolution Adopting the Rules for the Distribution of *Net Settlement Surplus*.

2.3 INTERPRETATION

Any reference to a clause in any section of this *Market Manual* shall refer to the particular clause of the same section in which the reference is made, unless otherwise specified or the context provides otherwise.



SECTION 3 RESPONSIBILITIES

3.1 MARKET OPERATOR

3.1.1 In accordance with *WESM Rules* Clause 3.13.16.3, the *Market Operator* shall:

- a) *Publish* regular summary reports on the amount of any *net settlement surplus* being generated;
- b) Within one (1) year from *spot market commencement date*, and every year thereafter, *publish* a review of the underlying factors giving rise to any *net settlement surplus*, and attempt to identify any binding *constraints* which may have caused or contributed to such *net settlement surplus*;
- c) Determine, in consultation with *Trading Participants* and *Network Service Providers*, and subject to approval by the *PEM Board*, whether the *net settlement surplus* generated by any particular set of *constraints* is of such magnitude as to justify development of a regime similar to that implemented in the *WESM Rules* with respect to *transmission line rentals* and *transmission rights*.
- d) Develop procedures on the possible uses of *net settlement surplus* subject to approval by the *PEM Board*; and
- e) Continuously review the procedures on possible uses of *net settlement surplus* to the extent the *Market Operator* considers it to be reasonably necessary to promote *WESM* objectives. Any changes made on the procedures shall have approval from the *PEM Board*.

SECTION 4 NET SETTLEMENT SURPLUS ALLOCATION

4.1 NET SETTLEMENT SURPLUS

- 4.1.1 The *WESM Rules*, as amended, defines *settlement surplus* as that surplus remaining after all *market transactions* have been accounted for and is assumed to be attributable to *economic rentals* arising from other binding *constraints*.
- 4.1.2 The *net settlement surplus* is the difference between the collections from the *Customers* and the payments to the generators. In some cases (e.g. loop flows, forecasting error, etc.), the payments to generators exceed collections from *Customers* which then results to a deficit in the *net settlement*.

The *WESM Price Determination Methodology (PDM)* adopts locational marginal pricing so that the *trading amounts* of the *Trading Participants* are determined at their respective *market trading nodes*. This methodology accounts for congestion and losses in the *transmission system*. It is thus expected that there will be price differences between *generator nodes* and *customer nodes* as a result partly of these losses and congestion. These price differences result in a residual amount for each *trading day*. This residual amount, which may be a surplus or a deficit, resulting from the aggregate *WESM settlement transactions* is the *net settlement surplus*.⁵

⁵ *WESM Rules* Clause 3.13.16.1.



For *bilateral contract* transactions that are scheduled in the WESM, a *line rental* amount is calculated based on the *bilateral contract* quantity that is scheduled and declared by the relevant *Trading Participant* and the difference in the *energy* price at the *receiving* and *sending nodes*.⁶ This is payable to the *Market Operator* by the relevant *Trading Participant*. The *line rental* amount is included in the calculation of the *net settlement surplus*. The WESM Rules require the *bilateral contract* parties to identify which party will pay the *line rental* amount associated with their declared *bilateral contract* quantity.⁷

- 4.1.3 The inherent characteristics of the *transmission network* affect the amount of *generation* or *energy* quantities being injected into the system to satisfy the demand at different *trading intervals*. As a result, a generator supplying *energy* to meet *load* demand may inject a greater amount of *energy* into the *grid* to compensate for systems losses. In addition to this, congestion that may occur during any *trading interval* would also normally affect the level of *energy* injected by generators to meet overall system demand.

In view of these *network constraints* and characteristics, the *load end* participants are invoiced for the amount of *energy* transmitted into the system inclusive of incremental charges for losses and congestion in the system. As a result of these incremental charges, the amount charged and collected from all *Customers* will expectedly be higher than the amount being charged by generators. This gives rise to the *settlement surplus*, although in some circumstances, this can be a deficit amount.

- 4.1.4 Thus, all *opportunity costs* associated with either losses or congestions are assessed and accounted for at the *Customer* or *load end* side of the equation. For *spot market transactions*, the *net settlement surplus* resulted from the payment of the *Customers* for losses and congestion in the form nodal prices that are higher when compared to the nodal prices at *generator nodes*.

For *bilateral supply* transactions, on the other hand, the WESM Rules require the *bilateral contract* counterparties to identify which party shall pay the *line rental* amount corresponding to their *bilateral contract* quantities that are scheduled in the WESM.

In view of these, any form of reimbursements or flow back of the *settlement surplus* should prioritize return to the *load end* participants or *Customers* for *spot market transactions* and to the party which paid the *line rental* attributable to *bilateral contract* quantities.

4.2 OWNERSHIP OF NET SETTLEMENT SURPLUS

- 4.2.1 WESM Participants that paid for the loss and congestion charge shall receive a share in the *net settlement surplus*. Pursuant to ERC Resolution No. 06 Series of 2009, the *net settlement surplus* (NSS) shall be allocated and distributed to the following WESM Participants:

⁶ WESM Rules Clause 3.13.17.2 (c), as amended by DOE Circular DC No. 2006-07-008, 7 July 2004.

⁷ WESM Rules Clause 3.13.1.1 (b).



- a) *Distribution Utilities (DUs) that are Direct WESM Members;*
- b) *Wholesale Aggregators (WA), Retail Energy Suppliers (RES), including Local RES and Supplier of Last Resort (SoLR) and other electricity suppliers that are Direct WESM Members;*
- c) *National Power Corporation (NPC) and Power Sector Assets and Liabilities Management (PSALM) as the Default Wholesale Supplier (DWS) of Indirect WESM Members and Non-WESM Members;*
- d) *Generation Companies that are Direct WESM Members;*
- e) *NPC successor Generating Companies who have agreed to act as the DWS for the assigned Transition Supply Contracts (TSC) with Indirect WESM Members and Non-WESM Members;*
- f) *Independent Power Producer (IPP) Administrators who will be assigned a TSC and assume the default wholesale supply functions for the assigned TSC Customers; and*
- g) *Other parties that have paid line loss and congestion charges.*

SECTION 5 METHODOLOGY AND PROCEDURE

5.1 CALCULATION OF NET SETTLEMENT SURPLUS

- 5.1.1 Pursuant to Section 2.2 of the ERC Resolution No. 06 Series of 2009, the *net settlement surplus* amount shall be calculated on a nodal and hourly basis as follows:

$$NSS_k = \text{Collectibles}_k - \text{Payables}_k$$

Where:

NSS_k = Net Settlement Surplus for trading interval k

Collectibles = total amount to be collected by the *Market Operator* from the *Trading Participants* for energy transactions in the market (including loss and congestion charges for both spot and bilateral quantities) for all nodes at trading interval k

Payables = total amount to be paid by the *Market Operator* to the *Trading Participants* for energy transactions in the market for the trading interval k

k = hourly trading interval

- 5.1.2 The *net settlement surplus* will be calculated for each trading interval and summed up for each trading day. These daily values are then aggregated for each WESM billing period. The WESM billing period commences at 0000H of the 26th of each month and ends at 2400H of the 25th of the following month.⁸

⁸ WESM Rules, Chapter 11, as amended by DOE Circular DC No. 2006-07-0010, 20 July 2006.

5.2 NET SETTLEMENT DEFICIT

- 5.2.1 The *net settlement surplus* may be retained by the *Market Operator* to fund deficit *settlement*, pursuant to *WESM Rules* Clause 3.13.16.2(a). Since the issuance of the *settlement* statements are on monthly basis, the formula for calculation of the *net settlement surplus* presented in Section 5.1 of this document automatically takes the deficit into account. Thus, the resulting calculation presented in the statements already netted out the deficit.
- 5.2.2 It is possible that a net *settlement* deficit rather than a surplus will occur. That is, for certain *trading intervals* the sum of the *trading amounts* at the *generator nodes* (i.e., payments) is greater than the *trading amounts* at the *load* or *Customer nodes* (i.e., collections). This deficit may occur because of differences between the *ex-ante* and *ex-post energy trading amounts*, which are due, in turn, to un-realized schedules and resulting price differences during real time (i.e., *ex-post*). These occurrences are beyond the control of the *Market Operator* and are brought about by offer and bid structures submitted to the market by the *Trading Participants*.

5.3 FLOW BACK TO THE PARTICIPANTS

- 5.3.1 The *net settlement surplus* after funding the deficit *settlement* will be returned to the *WESM Participants*. The allocation will be on a pro-rata basis depending on each recipient's share in the total amount paid for loss and congestion charges. The amount to be returned will be equal to the ratio of the recipient's loss and congestion charges to the total loss and congestion charges of all recipients multiplied by the total *net settlement surplus* amount.
- 5.3.2 This is represented by the following formula:

$$R_{jk} = NSS_k \times (\Sigma LCC_{jk} / \Sigma LCC_k)$$

Where:

- R_{jk} = rebate amount or *net settlement surplus* allocation for recipient *j* and for *trading interval k*
- NSS_k = the *net settlement surplus* for the *trading interval k*
- ΣLCC_{jk} = sum of the line loss and congestion charges payments of recipient *j* for the *trading interval k*
- ΣLCC_k = sum of line loss and congestion charges payments of all paying *WESM Customers* for the *trading interval k*
- k* = hourly *trading interval*
- j* = any *WESM Customer* paying line loss congestion charges to which a pro-rated amount of net settlement surplus will be returned.



5.3.3 The value of the total *net settlement surplus*, ΣNSS_k , is derived from the hourly *settlement runs*.

5.3.4 The line loss and congestion charges payments of each *Trading Participant* shall be calculated as follows:

$$LLCC_{j,k} = LLCPR_{TD/X,j,k} \times (EAQ_{j,k} - BCQ_{j,c,k}) + LLCPR_{TX,j,k} \times (MQ_{j,k} - EAQ_{j,k}) + \text{Line Rental}_{j,c,k}$$

Where:

$LLCC_{j,k}$ = line loss and congestion charges payments of recipient *j* for the trading interval *k*

$LLCPR_{TD/X,j,k}$ = line loss and congestion price during the ex-ante or ex-post run of recipient *j* for trading interval *k*

$EAQ_{j,k}$ = ex-ante quantity of recipient *j* for trading interval *k*

$BCQ_{j,c,k}$ = bilateral contract quantity of the bilateral contract between recipient *j* and counterparty *c* for trading interval *k*

$MQ_{j,k}$ = metered quantity of recipient *j* for trading interval *k*

$\text{Line Rental}_{j,c,k}$ = line rental trading amount associated with the bilateral contract between recipient *j* and counterparty *c* for trading interval *k* (this amount may be zero if the trading participant is not the assigned payer of the line rental trading amount)

5.3.5 The line loss and congestion price of each trading participants for the ex-ante or ex-post run shall be calculated as follows:

$$LLCPR_{TD/X,j,k} = LMP_{TD/X,j,k} - MCP_{lowest,k}$$

Where:

$LLCPR_{TD/X,j,k}$ = line loss and congestion price during the ex-ante or ex-post run of recipient *j* for trading interval *k*

$MCP_{lowest,k}$ = lowest marginal clearing price for trading interval *k*

5.4 LIMITATION OF FLOW BACK MECHANISM

The allocation mechanism described in this document will only be up to the level of the registered *WESM Participants*. Further allocation to the retail *Customers* is not considered in this methodology.

5.5 SCHEDULE OF PAYMENTS TO THE PARTICIPANTS

The *net settlement surplus* will be returned to the *WESM Participants* as an outright adjustment to their *Final Statements*.



SECTION 6 NET SETTLEMENT SURPLUS RETENTION

6.1 RETENTION

As per Section 6.1 of ERC Resolution No. 06 Series of 2009, *PEMC* is allowed to retain ten percent (10%) of the total *net settlement surplus* amount for the previous three (3) months preceding the current *WESM* billing or invoice cycle to cover *settlement* adjustments. The 10% retention shall be reckoned per *WESM Participant*.

6.2 EXCESS AND DEFICIT

Any amount in excess of the allowed ten percent (10%) to be retained shall be returned as a deduction in the *WESM Members'* billing statement. Any deficit in the said allowed retention shall be reflected as an additional payable in the *WESM Members'* billing statement.

SECTION 7 FUND MANAGEMENT AND TAXATION

7.1 INTEREST

Pending distribution to the recipients, the *net settlement surplus* retention will be held by the *PEMC* in trust for the *WESM Participants*. The treatment of any income earned or expense incurred by *PEMC* will be subject of separate guidelines duly approved by the *PEM Board*.

7.2 TAX

The value added tax paid on the surplus will be remitted by *PEMC* to the Bureau of Internal Revenue in accordance with relevant revenue regulations. Taxation of the *net settlement surplus* fund will likewise be in accordance with applicable revenue regulations.

SECTION 8 REPORTORIAL REQUIREMENTS

8.1 REPORTS

8.1.1 The *Market Operator* shall prepare the following:

- a) Regular summary reports on the amount of any *net settlement surplus* being generated. This report will be made available to all *WESM Participants* and will be *published* in the *market information website*⁹; and
- b) Annual report on the monthly levels of the *net settlement surplus* and review of the underlying factors giving rise to any *net settlement surplus* identifying, if possible, any binding *constraints* which may have caused or contributed to the

⁹ *WESM Rules* Clause 3.13.16.3, as amended by *DOE Circular* DC 2004-07-08, 7 July 2004.



settlement surplus. This report will be made available to the *WESM Participants* and will be submitted to the *PEM Board* and the *ERC*.¹⁰

SECTION 9 AMENDMENT, PUBLICATION AND EFFECTIVITY

9.1 AMENDMENTS TO THIS MANUAL

Any amendments to this Manual shall be approved by the *DOE*, following the procedures for changes to *Market Manual* set out in the *WESM Rules* and in the relevant *Market Manual*.

9.2 PUBLICATION AND EFFECTIVITY

This *Market Manual* and its subsequent amendments shall be *published* in the *market information website* maintained by the *Market Operator*.

This *Market Manual* or any amendments thereto shall become effective upon approval of the *DOE* in accordance with *WESM Rules* Clause 8.6.4. The date of effectivity shall be indicated herein.

¹⁰ *WESM Rules* Clause 3.13.16.3, as amended by *DOE* Circular DC 2004-07-08, 7 July 2004; and Decision, *ERC* Case No. 2006-007 RC, 21 June 2006.