



Philippine Electricity Market Corporation

WHOLESALE ELECTRICITY SPOT MARKET RULES CHANGE COMMITTEE

RESOLUTION NO. 2014-17

Proposed General Amendments to the Dispatch Protocol Manual

WHEREAS, on 27 February 2014, the PEM Board approved the Proposal for Urgent Amendments to the Dispatch Protocol Manual (Issue 8.0), as submitted to the Rules Change Committee (RCC) by the Philippine Electricity Market Corporation (RCC);

WHEREAS, said Proposal for Urgent Amendments was published on 28 February 2014 and made effective on 26 March 2014;

WHEREAS, the Manual of Procedures for Changes to the WESM Rules (Rules Change Manual) defines the effectivity of urgent amendments, as follows: *Section 7.4 (b) "The amendment shall be effective for a period of not more than six (6) months from publication...or until such time that a general amendment on the same matter has been approved and become effective, whichever comes first."*

WHEREAS, in view of the foregoing, the PEMC, as Proponent, re-submitted the same Proposal for Urgent Amendments but as general amendments, following the procedures for Rules Changes;

WHEREAS, the Proposal for General Amendments to the Dispatch Protocol Manual (Annex A) was received by the Rules Change Committee on 4 August 2014;

WHEREAS, the Proposal for General Amendments to the Dispatch Protocol Manual is the addition of Appendix A.12 on Scheduling and Dispatch of Reserves, which intends to provide the procedures related to the operation of the Reserve Market;

WHEREAS, the proposed additional Appendix A.12 in the Dispatch Protocol Manual describes the criteria for: (1) determining required reserve levels by the System Operator (SO), which will be the basis of the Market Operator (MO) as input to the Market Management System; and (2) Reserve Effectiveness Factors (REF);

WHEREAS, during the 90th RCC meeting held on 6 August 2014, the PEMC presented before the RCC its Proposed General Amendments to the Dispatch Protocol Manual, with a request for approval of the same;

WHEREAS, during the same meeting, the RCC reviewed the Proposal for General Amendments and finding the said Proposal compliant with the criteria for rules change pursuant to Section 4 of the Rules Change Manual, approved its publication in the WESM Website;

WHEREAS, the Proposal was published in the WESM website on 7 August 2014 to solicit comments of Participants, with notice to Participants sent the following day;

WHEREAS, no further comments were received relative to the Proposal;

WHEREAS, on 10 September 2014, where quorum was established, the RCC convened for its 92nd Meeting to deliberate on the Proposal;

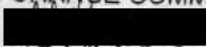
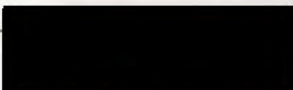
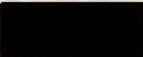
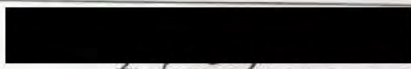
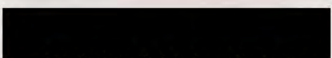
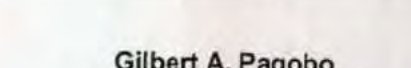
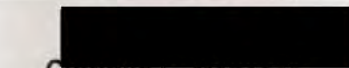
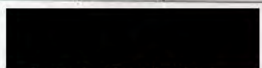
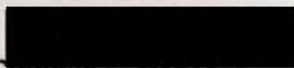
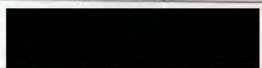
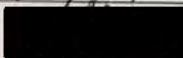
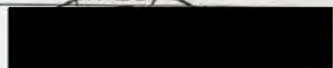
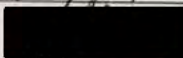
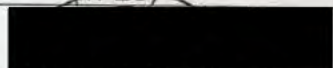
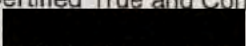
WHEREAS, during the same meeting, the RCC further reviewed and deliberated on the Proposal and thereafter, finding merit on the same, approved the Proposal for General Amendments to the Dispatch Protocol Manual and agreed to endorse the same to the PEM Board, for its approval;

NOW THEREFORE, we, the undersigned and in behalf of the sector we represent, hereby resolve as follows:

RESOLVED, that the Proposal for General Amendments to the Dispatch Protocol Manual (Annex A) is hereby adopted and approved, as submitted;

RESOLVED FURTHER, that the attached Proposal for General Amendments to the Dispatch Protocol Manual is hereby endorsed to the PEM Board, for its approval.

Done this 10 September 2014, Pasig City.

<p>Approved by: RULES CHANGE COMMITTEE  Rowena Cristina L. Guevara Chairperson University of the Philippines (UP)</p>	
Members:	
<p>Concepcion I. Tanglao Independent</p> 	<p>Francisco L.R. Castro, Jr. Acting Chairperson Independent Tensaiken Consulting</p> 
<p>Maia Lourdes G. de Castro Independent</p> 	<p>Jose Ferlino P. Raymundo Generation Sector SMC Global</p> 
<p>Theo Cruz Sunico Generation Sector 1590 Energy Corporation (1590 EC)</p> 	<p>Joselyn D. Carabuena Generation Sector Power Sector Assets and Liabilities Management Corporation (PSALM)</p> 
<p>Gilbert A. Pagobo Distribution Sector (PDU) Mactan Electric Company (MECO)</p> 	<p>Cipriano C. Meneses Distribution Sector (PDU) Manila Electric Company (MERALCO)</p> 
<p>Jose P. Santos Distribution Sector (EC) Ilocos Norte Electric Cooperative, Inc. (INEC)</p> 	<p>Sulpicio C. Lagarde Jr. Distribution Sector (EC) Central Negros Electric Cooperative, Inc. (CENECO)</p> 
<p>Lorreto H. Rivera Supply Sector TeaM (Philippines) Energy Corporation (TPEG)</p> 	<p>Isidro E. Cacho Jr. Market Operator Philippine Electricity Market Corporation (PEMC).</p> 
<p>Ambrocio R. Rosales Transmission Sector/System Operator National Grid Corporation of the Philippines (NGCP)</p> 	
	<p>Certified True and Correct:  Elaine D. Gonzales RCC Secretary PEMC</p>



REQUEST FOR AMENDMENTS OR CHANGES TO THE WESM MANUALS

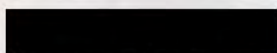
Proposals made only under this prescribed form shall be accepted and considered as submitted:

This request for amendments to the WESM Rules can be submitted to:

PEM Board

Attention: **PEM Committee Secretariat**
Philippine Electricity Market Corporation
18/F Robinsons Equitable Tower
ADB Avenue, Ortigas Center
Pasig City, 1605 Philippines
Email address: rcc@wesm.ph
Fax Number: (+632) 395-2704

I. Proposer's Information

Name	President Melinda L. Ocampo
Designation	President
Signature	
Company	Philippine Electricity Market Corporation
Company Address	18/F Robinsons Equitable Tower, ADB Avenue, Ortigas Center, Pasig City
Telephone No.	(02) 631-8734
Fax. No.	(02) 636-0802
Email Address	helpdesk@wesm.ph

II. WESM Manual Amendments Information

Title of WESM Manual being commented:

Dispatch Protocol

Nature of Request (please indicate with x)

☐ Addition ☒ Alteration ☐ Deletion ☐ Clarification ☐ Clerical Correction

III. Proposed Amendment

Title	Section	Provision	Proposed Amendment	Rationale
	Appendix	New Appendix	<u>APPENDIX A.12</u> <u>SCHEDULING AND DISPATCH OF RESERVES</u>	
			<p>1. <u>Background</u></p> <p><u>Upon the commencement of the trading of reserves in the WESM, the scheduling and dispatch of reserves that are traded in the WESM shall be in accordance with the requirements and procedures set out in the WESM Rules.</u></p> <p><u>WESM Rules clause 3.3.7.4 requires the System Operator to continuously adjust the quantum of reserve to be scheduled to meet each locationally specific reserve requirement by the Market Dispatch Optimization Model, so as to accurately reflect the power system under existing or future conditions, within the relevant market time frames.</u></p> <p><u>The reserve effectiveness factor (REF) is defined in the WESM Rules as a factor to define the effectiveness of reserve from a particular type of reserve provider in meeting requirements for particular reserve categories. WESM Rules clause 3.3.7.4 requires the System Operator to</u></p>	<p>The proposed amendments intend to provide the procedures related to the scheduling and dispatch of reserves. This is an essential part of the Dispatch Protocol for the implementation of the Reserve Market. The procedures herein will guide the Market Operator and the System Operator in the efficient operation of the reserve market by setting a procedure in determining the reserve requirements and monitoring of reserves through the implementation of the reserve effectiveness factors.</p>

Title	Section	Provision	Proposed Amendment	Rationale
			<p><u>continuously adjust the reserve effectiveness factors for each reserve facility category.</u></p> <p><u>The REF to be implemented in the WESM is based on the applicable and measurable response characteristics of providing reserve service, including adequacy, timeliness, and accuracy based on the generator's actual operating parameters.</u></p>	
			<p><u>2. Scope and Purpose</u></p> <p><u>This Section describes the criteria for determining required reserve levels by the System Operator which will be the basis of the Market Operator as input to the Market Management System.</u></p> <p><u>This Section sets out the criteria of the reserve effectiveness factors that will be applied to reserve providers in the WESM, either a generator or load. The procedures for the provision and validation of reserve provider data and for submission of the REF data for each reserve provider is also set out in this Section.</u></p> <p><u>The criteria, procedures and formulae set out in this Section cover only the requirements for the types of reserves that are to be traded in the</u></p>	

Title	Section	Provision	Proposed Amendment	Rationale
			<p><u>WESM. Procedures for procurement, monitoring and settlement of other types of ancillary services are not within the scope of this Section or this Dispatch Protocol.</u></p> <p><u>The criteria, procedures and formulae set out in this Section shall apply to the determination and submission of reserve requirements and monitoring and settlement of reserve providers in the reserve zones in the regions where the WESM is in operation.</u></p>	
			<p>3. <u>Responsibilities</u></p> <p>3.1 <u>System Operator. The System Operator is responsible for -</u></p> <p>a. <u>Determining the required reserve levels for each type of reserves that are to be traded in the WESM in accordance with its Ancillary Services Procurement Plan, and informing these required levels to the Market Operator.</u></p> <p>b. <u>Implementing the Real-Time Reserve Dispatch Schedule upon receipt of the same from the Market Operator.</u></p>	

Title	Section	Provision	Proposed Amendment	Rationale
			<p>c. <u>Monitoring the compliance of each reserve provider in the WESM. This compliance monitoring report shall be submitted to the Market Operator for settlement purposes.</u></p> <p>d. <u>Preparing and assessing the REFs of each reserve provider in the WESM, and continuously monitoring and adjusting the REF of a reserve provider within such period as may be required from time to time. The System Operator is also responsible for providing the REFs for each reserve provider to the Market Operator.</u></p>	
			<p>3.2 <u>Market Operator. The Market Operator is responsible for -</u></p> <p>a. <u>Ensuring that the required reserve levels per System Operator are used as inputs in pre-dispatch market projections and real time dispatch scheduling processes in the WESM. It is also responsible for providing and maintaining the facility for timely receipt of submissions from the</u></p>	

Title	Section	Provision	Proposed Amendment	Rationale
			<p><u>System Operator;</u></p> <p>b. <u>Using the REF determined by the System Operator in the calculation of the settlement amounts due to reserve providers in the WESM.</u></p>	
			<p>4. <u>Determination of Reserve Requirements</u></p> <p>4.1 <u>Criteria for Determining Reserve Requirements. In determining reserve requirements for each reserve type in accordance with its Ancillary Services Procurement Plan, the System Operator shall ensure compliance with the power quality and reliability performance standards set out in the Philippine Grid Code.</u></p> <p><u>The level of reserve requirement for Regulating Reserve service shall be based on the latest ASPP duly approved by the ERC, and shall be used as reference by the Market Operator to come up with a Day Ahead or Hour Ahead Reserve dispatch schedule. The reserve requirement shall be equally distributed to</u></p>	

Title	Section	Provision	Proposed Amendment	Rationale
			<p><u>provide upward and downward Regulating Reserve.</u></p> <p><u>For Contingency reserve service, the System Operator shall determine the level of reserve requirement in accordance with the latest ASPP duly approved by the ERC.</u></p> <p><u>For Dispatchable Reserve, the System Operator shall determine the level of reserve requirement in accordance with the latest ASPP duly approved by the ERC.</u></p> <p><u>The System Operator, in coordination with the Market Operator, shall formulate and maintain its procedures for determining reserve requirements.</u></p>	
			<p>5. <u>Submission of Reserve Requirements</u></p> <p>5.1 <u>Reserve Levels. The reserve requirements based on the reserve levels determined by the System Operator shall be used by the Market Operator in the preparation of the Reserve Dispatch scheduling. The second-latest DAP</u></p>	

Title	Section	Provision	Proposed Amendment	Rationale
			<u>results shall be used as reference by the Market Operator for the determination of the hourly reserve requirements of Contingency Reserve and Dispatchable Reserve while the 1200H DAP of the previous day shall be used for the hourly reserve requirements of Regulating Reserve</u>	
			5.2 <u>Format of Reserve Requirement. The reserve requirement data based on the reserve levels determined by the System Operator shall be inputted by the Market Operator in the format specified in Attachment A5 of this Dispatch Protocol to the Market Management System. Each data shall contain all previous data and is not an incremental update of the previous submission</u>	
			5.3 <u>Schedule of submission. The reserve requirements for a trading interval or trading day shall be transmitted in accordance with the WESM Timetable set out in this Dispatch Protocol.</u> <u>The figure below shows the relevant timeline for the submission of reserve requirements with reference to item 5.1.</u>	

Title	Section	Provision	Proposed Amendment	Rationale
			<p>5.4 <u>Change in timeframe for submission. The specific timeframe for submission of the reserve requirements or any revision thereof may be changed by the Market Operator without need of amending this Dispatch Protocol. Such change can be made to accommodate actual capabilities of the market infrastructure. The Market Operator shall duly notify the System Operator of the change.</u></p>	
			<p>5.5 <u>Submission of Nominations and Offers for Ancillary Services</u></p> <p><u>The Submission of nominations and offers for Ancillary Services shall be based on per single unit per single type of reserve service.</u></p>	
			6. <u>Reserve Effectiveness Factors</u>	
			<p>6.1 <u>Gathering of Reserve Provider Data.</u></p> <p><u>The System Operator shall gather the following data that it will use in determining the REF of each reserve</u></p>	

Title	Section	Provision	Proposed Amendment	Rationale
			<u>provider -</u> a) <u>Energy schedule</u> b) <u>Reserve schedule</u> c) <u>SCADA-EMS real time data (i.e., MW readings)</u> d) <u>Circuit breaker status</u> e) <u>ADC command/status</u> f) <u>System frequency</u> g) <u>Dispatch instructions issued</u>	
			6.2 <u>Validation of Reserve Provider Data.</u> <u>Using the data gathered, the System Operator shall confirm whether (a) the reserve schedule of the reserve provider is available; and (b) that the reserve provider is operating within the declared and certified parameters. The System Operator shall then validate the response characteristics of the reserve provider in providing reserve services using the SCADA-EMS real time data.</u>	
			6.3 <u>Calculation of Reserve Effectiveness Factor.</u> <u>The System Operator shall calculate the hourly, daily and monthly REFs of each reserve provider.</u>	

Title	Section	Provision	Proposed Amendment	Rationale
			<p>a) <u>The System Operator shall formulate and maintain procedures for the calculation of the hourly REFs.</u></p> <p>b) <u>The daily REF of each reserve provider is the average of all the hourly REFs of that reserve provider for the trading day, as represented in the following formula –</u></p> $REF_{DAILY} = \frac{\sum_{i=1}^n REF_i}{n}$ <p><u>Where: REF_i = REF for interval i</u> <u>n = number of scheduled intervals</u></p> <p>c) <u>The monthly REF is the average of the daily REF of the reserve provider for each billing month.</u></p>	
			<p>6.4 <u>Submission of Reserve Effectiveness Factor Data. The System Operator shall provide the Market Operator with the weekly data on the REF. The System Operator shall also provide the monthly</u></p>	

Title	Section	Provision	Proposed Amendment	Rationale
			<u>data on the REF of each reserve provider</u> <u>not later than 3 days prior to the</u> <u>preliminary settlement run.</u>	



**Wholesale Electricity
Spot Market**

**PROPOSED REVISIONS TO THE WESM
DISPATCH PROTOCOL ISSUE 9.0**
Philippine Electricity Market Corporation

31 July 2014

I. SUMMARY OF THE PROPOSED AMENDMENTS

The proposed amendments to the WESM Manual on the Dispatch Protocol Issue 9.0 is the addition of Appendix A.12 Scheduling and Dispatch of Reserves which is intended to provide the procedures related to the operation of the Reserve Market.

This appendix describes the criteria for:

1. Determining required reserve levels by the System Operator which will be the basis of the Market Operator as input to the Market Management System;
2. Reserve effectiveness factors that will be applied to reserve providers in the WESM, either a generator or load.

The criteria, procedures and formulae set out in this appendix cover only the requirements for the types of reserves that are to be traded in the WESM. Procedures for procurement, monitoring and settlement of other types of ancillary services are not within the scope of this appendix or this Dispatch Protocol.

II. BACKGROUND

Upon the commencement of the trading of reserves in the WESM, the scheduling and dispatch of reserves that are traded in the WESM shall be in accordance with the requirements and procedures set out in the WESM Rules.

WESM Rules clause 3.3.7.4 requires the System Operator to continuously adjust the quantum of reserve to be scheduled to meet each locationally specific reserve requirement by the Market Dispatch Optimization Model, so as to accurately reflect the power system under existing or future conditions, within the relevant market time frames.

The reserve effectiveness factor (REF) is defined in the WESM Rules as a factor to define the effectiveness of reserve from a particular type of reserve provider in meeting requirements for particular reserve categories. WESM Rules clause 3.3.7.4 requires the System Operator to continuously adjust the reserve effectiveness factors for each reserve facility category.

The REF to be implemented in the WESM is based on the applicable and measurable response characteristics of providing reserve service, including adequacy, timeliness, and accuracy based on the generator's actual operating parameters.

III. THE PROPOSED AMENDMENTS

The proposed amendments intend to provide the procedures related to the scheduling and dispatch of reserves. This is an essential part of the Dispatch Protocol for the implementation of the Reserve Market. The procedures herein will guide the Market Operator and the System Operator in the efficient operation of the reserve market by setting a procedure in determining the reserve requirements and monitoring of reserves through the implementation of the reserve effectiveness factors.

IV. BACKGROUND AND DESCRIPTION OF THE PROPONENT

The proponent is the Philippine Electricity Market Corporation. PEMC acts as both the market operator and governance arm of the WESM.

Top Officers:

M. L. Ocampo – President

C. C. Claudio – VP, Trading Operations

C. S. Heruela – VP, Market Assessment

R. P. Descanzo – VP, Corporate Planning & Communications

C. S. Martin-Funelas – VP, Legal

V. CONCLUSIONS AND RECOMMENDATIONS

The proposed amendments to the WESM Rules and the Manual of Procedures for Changes to the WESM Rules are necessary to address deficiencies in the current processes in the WESM Rules Change Process. The revised manual is envisioned to provide better guidance to all users of the manual to ensure the efficient implementation of the procedure on the WESM Rules Change Process.

VI. REFERENCES

- A. Dispatch Protocol Issue 9.0
- B. Department of Energy Department Circular (DC No 2013-12-0027)
- C. Energy Regulatory Commission Order (ERC CASE NO. 2007-004 RC)
- D. WESM Rules