



**WHOLESALE ELECTRICITY SPOT MARKET
RULES CHANGE COMMITTEE**

RESOLUTION NO. 2011-09

**Proposed Amendments to the WESM Manual on Criteria and Guidelines for the
Issuance of Pricing Error Notices and Conduct of Market Re-Run
on Ex-Ante Pricing Error Notices**

WHEREAS, the WESM Manual on Criteria and Guidelines for the Issuance of Pricing Error Notices and Conduct of Market Re-Run (the "PEN-MRR Manual") establishes the criteria and guidelines for the issuance of PENs and conduct of Market Re-Run (MRR) in the WESM;

WHEREAS, the Dispatch Protocol Manual provides the scheduling and dispatch procedures that shall be followed during WESM operation, emergency situations, market suspension and restoration;

WHEREAS, the WESM Manual on System Security and Reliability Guidelines (the "Security and Reliability Manual") prescribes the general guidelines that must be followed by all WESM Participants to maintain the security and reliability of the power systems;

WHEREAS, based on the January-July 2011 data, Pricing Error Notices (PENs) due to contingency constraint violation on MERALCO interchange as a result of the imposition of N-1 contingency on the Araneta, Zapote, and Duhat transformers occurred 42% of all intervals, on average per month, mostly occurring during peak hours;

WHEREAS, the Merchant Generators, composed of 1590 Energy Corporation, Aboitiz Power Inc., AES Philippines-Masinloc Power Partners Co. Ltd., SN Aboitiz Power and San Miguel Energy Corporation, deemed that there is a need to amend the aforementioned Manuals to introduce certain provisions and methodologies that will reduce the PENs during ex-ante runs in order to make the ex-ante prices and quantities binding and visible to the participants, and thus on 25 August 2011 submitted to the Rules Change Committee (RCC) their proposal to amend the Manuals;

WHEREAS, to achieve the objective of reducing the PENs during ex-ante runs, the Merchant Generators put forward the following options:

- a. Amendments to the Security and Reliability Manual and Dispatch Protocol Manual to reflect the relaxation/removal of N-1 contingency requirement on load-point connection element.
- b. Amendments to the PEN-MRR Manual to classify contingency (N-1) constraint violation on load end transformers as "Localized Non-Congestion Pricing Error". The Merchant Generators proposed two options for the corresponding price substitution methodology, as follows:
 - i. The effect of Localized Non-Congestion Pricing Error event on market pricing should be confined to its own node, in which case, the ex-post prices, if valid, shall serve as ex-ante prices for the identified nodes with such pricing errors.

- ii. The substitute ex-ante prices or the Locational Marginal Price (LMP) for the identified nodes with such pricing error shall be determined by removing the Constraint Violation Coefficient (CVC) value and the congestion value which is primarily driven by the N-1 contingency constraints of the load end transformers. Thus, the LMP for the identified nodes shall be equal to the market clearing price (MCP) divided by the respective transmission loss factor (TLF) of the identified trading nodes.

WHEREAS, during the 52nd RCC Meeting on 07 September 2011, the proposed amendments were presented to the RCC, for discussion;

WHEREAS, during the said 52nd Meeting, the System Operator raised that the imposition of N-1 contingency is a requirement set by the Philippine Grid Code (PGC) and that reducing the PENs is not good enough justification to remove the imposition of N-1 contingency, considering the cascading effect of failure of any component of the system;

WHEREAS, as agreed upon by the RCC during the said 52nd Meeting, the proposed amendments were published in the WESM website on 08 September 2011 to solicit comments from the market participants and other interested parties;

WHEREAS, no comments were submitted during the period of publication;

WHEREAS, the RCC further deliberated the proposed amendments during its 53rd Meeting on 05 October 2011, where another price substitution methodology option was discussed, which is the use of the average system price as the substitute price for the affected nodes;

WHEREAS, there being various options proposed for the corresponding price substitution methodology, the RCC requested the PEMC-Trading Operations Department (TOD) to conduct a simulation on the proposed options to guide the RCC in selecting which method/option to approve and implement;

WHEREAS, during the said 53rd Meeting, after due deliberation, the RCC expressed its agreement with the proposal to categorize N-1 contingency event as "Localized Non-Congestion Pricing Error", the corresponding substitution methodology of which shall be determined depending on the results of the simulation to be conducted by PEMC-TOD;

WHEREAS, during the 54th RCC Meeting, the PEMC-TOD presented the results of the simulation, for deliberation;

WHEREAS, the simulation conducted by the PEMC-TOD likewise considers, apart from the options provided by the Merchant Generators, the following price substitution options:

- a. Replace the prices of the identified nodes with pricing errors either with the system or regional ex-ante Load Weighted Average Price (LWAP), excluding the affected load;
- b. Replace the prices of the affected node with the ex-ante LWAP of the 10 nodes, which are located in the same grid as the affected node, with the nearest absolute difference with respect to the affected node;

WHEREAS, results of the simulation show that the Merchant Generators' proposed option to use the ex-post prices as ex-ante prices may result to deficits and their proposed second option is currently not feasible as it entails manual retrieval of data to perform

appropriate price calculations which, in turn, requires major Market Management System (MMS) software enhancement;

WHEREAS, based on the results of the simulation, the PEMC-TOD recommended to the RCC the use of either the regional ex-ante LWAP or the ex-ante LWAP of the nearest nodes as the substitute price;

WHEREAS, after due deliberation, the RCC agreed to adopt the use of ex-ante LWAP of the nearest nodes;

WHEREAS, the RCC further agreed using the 5 nearest nodes, instead of 10 as recommended by PEMC-TOD, basis of which is the number of MERALCO nodes within the Metro Manila area;

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

RESOLVED, that the proposed amendments to the WESM Manual on Criteria and Guidelines for the Issuance of Pricing Error Notices and Conduct of Market Re-Run , as revised by the RCC (attached as Annex "A"), are adopted and approved in full; and

RESOLVED FINALLY, that the RCC-approved proposed amendments to the WESM Manual on Criteria and Guidelines for the Issuance of Pricing Error Notices and Conduct of Market Re-Run be endorsed to the PEM Board for approval.

Done this 09 November 2011, Pasig City.

<p>Approved by:</p> <p>RULES CHANGE COMMITTEE</p> <p> Rowena Cristina L. Guevara Chairperson University of the Philippines (UP)</p>	
<p>Members:</p>	
<p> Epictetus E. Patalinghug Independent University of the Philippines (UP)</p>	<p> Francisco L.R. Castro, Jr. Independent The Herma Group</p>
<p> Maila Lourdes G. de Castro Independent Unitel Productions, Inc.</p>	<p> Cherry Aquino-Javier Generation Sector AES Philippines (AES)</p>
<p> Cynthia R. Encarnacion Generation Sector National Power Corporation (NAPOCOR)</p>	<p> Liberty Z. Dumiao Generation Sector Power Sector Assets and Liabilities Management Corporation (PSALM)</p>
<p> Ralph T. Crisologo Generation Sector SN Aboitiz Power (SNAP)</p>	<p>Augusto D. Sarmiento Distribution Sector (PDU) Dagupan Electric Corporation (DECORP)</p>
<p>Ciprinilo 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> Conrado D. Pecjo Supply Sector Angeles Power, Inc.</p>
<p>Raul Joseph G. Seludo Transmission Sector National Grid Corporation of the Philippines (NGCP)</p>	<p> Robinson P. Descanzo Market Operator Philippine Electricity Market Corporation (PEMC)</p>
	<p>Certified True and Correct:</p> <p> Elaine D. Gonzales RCC Secretary PEMC</p>

**Proposed Amendments to the WESM Manual on Criteria and Guidelines for the Issuance of Pricing Error Notices and
Conduct of Market Re-Run on Ex-Ante Pricing Error Notices
RCC/WESM-WM-11/14**

Original Provision	Merchant Generators' Proposed Amendments (1590 Energy Corporation, Aboitiz Power Inc., AES Philippines-Masinloc Power Partners Co. Ltd., SN Aboitiz Power, San Miguel Energy Corporation)				RCC-Approved Proposed Amendments	
	Option A		Option B			
		Rationale				Remarks
New Provision	6.1. Non-congestion Pricing Errors There is non-congestion pricing error where the results of either the market runs show any one of the following conditions – xxx 6.1.5. The case when the N-1 contingency of load end transformers are violated shall be defined as a Localized Non-Congestion Pricing Error.	Since the significant increase in PEN issuances from load end transformer contingency violations, there is a need to modify the methodology of identifying PENs. The pricing error for system and localized contingency should be defined since their risks and effects are different. Upon evaluation of RTD schedules and prices during such PENs, it was observed that the RTDs are still valid with the exception of those nodes with load-end contingency violations. Thus, by defining a Localized and System	6.1. Non-congestion Pricing Errors There is non-congestion pricing error where the results of either the market runs show any one of the following conditions – xxx 6.1.5. The case when the N-1 contingency of load end transformers are violated shall be defined as a Localized Non-Congestion Pricing Error.	Since the significant increase in PEN issuances from load end transformer contingency violations, there is a need to modify the methodology of identifying PENs. The pricing error for system and localized contingency should be defined since their risks and effects are different. Upon evaluation of RTD schedules and prices during such PENs, it was observed that the RTDs are still valid with the exception of those nodes with load-end contingency violations. Thus, by defining a Localized and System	6.1. Non-congestion Pricing Errors There is non-congestion pricing error where the results of either the market runs show any one of the following conditions – xxx 6.1.5. The case when the N-1 contingency of load end transformers are violated shall be defined as a Localized Non-Congestion Pricing Error.	- Approved, as proposed

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		contingency constraint, the PEN should decrease significantly.		contingency constraint, the PEN should decrease significantly.		
New Provision	8.1. Non-Congestion Pricing Errors 8.1.1. Pursuant to WESM Rules clause 3.10.5, where there is pricing error in the ex-ante market runs, the ex-post prices if valid shall serve as ex-ante prices. Where there is pricing error in the ex-post run, the prices as determined in the market re-run (the "market re-run prices" or "MRR prices") shall be used as substitute prices. 8.1.2. <u>Where the pricing error is a Localized Non-Congestion Pricing Error as defined in Section 6.1.5 of this Manual, ex-post prices, if valid, shall serve as ex-ante prices for the</u>	For consistency (see explanation above)	8.1. Non-Congestion Pricing Errors 8.1.1. Pursuant to WESM Rules clause 3.10.5, where there is pricing error in the ex-ante market runs, the ex-post prices if valid shall serve as ex-ante prices. Where there is pricing error in the ex-post run, the prices as determined in the market re-run (the "market re-run prices" or "MRR prices") shall be used as substitute prices. 8.1.2. <u>Where the pricing error is a Localized Non-Congestion Pricing Error as defined in Section 6.1.5 of this Manual, the substitute ex-ante prices or Locational Marginal</u>	For consistency (see explanation above) Moreover, the LMP for the identified nodes shall be determined by removing the CVC value and the congestion value which is primarily driven by the n-1 contingency constraints of the load end transformers. Thus, the resulting formula for the LMP is the MCP divided by the TLF. We are also open for the use of the nearest two (2) nodes average as the substitute price.	8.1. Non-Congestion Pricing Errors 8.1.1. Pursuant to WESM Rules clause 3.10.5, where there is pricing error in the ex-ante market runs, the ex-post prices if valid shall serve as ex-ante prices. Where there is pricing error in the ex-post run, the prices as determined in the market re-run (the "market re-run prices" or "MRR prices") shall be used as substitute prices. 8.1.2. <u>Where the pricing error is a Localized Non-Congestion Pricing Error as defined in Section 6.1.5 of this Manual, the substitute ex-ante prices or Locational Marginal</u>	The RCC agreed to adopt the use of weighted average LMP of 5 nearest customer nodes as the substitute price, based on the results of the simulation.

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		Rationale				Remarks
	<p><u>identified nodes with such pricing errors. The ex-ante price and schedule for the nodes not affected by the pricing error shall be valid.</u></p> <p>8.1.23. ...</p> <p>xxx</p>		<p><u>Price (LMP) for the identified nodes with such pricing errors will be determined by the formula as follows:</u></p> $LMP_i = \frac{MCP}{TLF_i}$ <p><u>Where,</u></p> <p><u>TLF_i = Transmission Loss Factor of node i</u></p> <p><u>MCP = Market Clearing Price</u></p> <p><u>The ex-ante price and schedule for the nodes not affected by the pricing error shall be valid.</u></p> <p>8.1.23. ...</p> <p>xxx</p>		<p><u>Price (LMP) for the identified nodes with such pricing errors will be determined by the formula as follows:</u></p> <p><u>LMP_i = weighted average LMP of 5 nearest customer nodes where the 5 nearest customer nodes are defined to be the nodes with the nearest absolute difference with respect to the affected node and selected as follows:</u></p> <p><u>Diff_{1,A} = ABS(TLF₁ – TLF_A) = the lowest transmission loss factor to the affected nodes</u></p> <p><u>Where,</u></p> <p><u>TLF₁ = Transmission Loss Factor of node 1</u></p> <p><u>The ex-ante price and schedule for the nodes</u></p>	

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					not affected by the pricing error shall be valid. 8.1.23. ... xxx	

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