

**WHOLESALE ELECTRICITY SPOT MARKET  
RULES CHANGE COMMITTEE**

**RESOLUTION NO. 2014-06**

**Proposed Amendments to Clause 3.10.5 of the WESM Rules and the Manual on  
Criteria and Guidelines for the Issuance of Pricing Error Notices and  
Conduct of Market Re-Run (PEN-MRR) Issue 1.0**

**WHEREAS**, the RCC received a letter on the Policy Directive of the Department of Energy (DOE) dated 04 April 2013, relative to the Proposed Amendments to the Manual on the Criteria and Guidelines for the Issuance of Pricing Error Notices and the Conduct of Market Re-run (PEN-MRR) Manual Issue 1.0;

**WHEREAS**, the letter of the DOE directs the RCC to do as follows: 1) Conduct additional simulations to further assess the proposed methodology's impact on WESM prices; 2) Provide further justifications on the merits of the proposal considering the criteria for effecting the WESM rules change; 3) Identify and propose other alternative methodology to resolve the issues on pricing errors for consideration of the DOE; and 4) Identify and propose appropriate amendments to the WESM Rules before amending the PEN-MRR Manual to ensure consistency;

**WHEREAS**, in response to the DOE's Directives, the RCC wrote to the DOE on May 17 stating that it has resolved to set a timeline of up to the end of July 2013 to comply with the Directives, and to likewise inform that working groups have been correspondingly created towards this end, to ensure the RCC's substantive yet speedy compliance with the Directives;

**WHEREAS**, the RCC once again wrote to the DOE on 29 July 2013 informing the DOE of the progress of the RCC in so far as the DOE Directives on PEN-MRR Manual is concerned;

**WHEREAS**, the RCC during its 79th RCC meeting held on 07 August deliberated on the result of additional simulation presented by the PEMC as requested by the RCC, on the use of other numbers for the trading nodes showing that regardless of the number of trading nodes, the resulting prices would have minimal differences;

**WHEREAS**, during the same meeting, the RCC, with due consideration to the comments and request of MERALCO and NGCP-SO representatives to the RCC, requested PEMC to conduct additional simulations, as follows: a) simulation using the nearest nodes based on TLF but considering only the five geographically nearest nodes and b) simulation using top five Transmission Loss Factor (TLF) with the assumption that the marginal plant is in Zapote;

**WHEREAS**, the RCC likewise deliberated on the notes and initial comments on the corresponding proposed changes to the WESM Rules relative to PEN-MRR as crafted by the PEN-MRR sub-committee;

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**WHEREAS**, during the 78th RCC meeting held on 04 September 2013, the RCC deliberated upon the comparative results of all simulations requested from PEMC, with the additional simulations previously suggested by MERALCO and NGCP-SO;

**WHEREAS**, based on the comparative results of the simulations, the RCC agreed to adopt the original methodology presented by PEMC and discussed by the RCC, using the weighted significance of the five nearest trading nodes based on Transmission Loss Factor (TLF);

**WHEREAS**, the RCC during its 79th Meeting held on 02 October 2013, deliberated upon the draft proposed amendments to Clause 3.10.5 of the WESM Rules and the revised proposed amendments to the PEN-MRR Issue 1.0 Manual following the previous RCC discussions on the matter;

**WHEREAS**, the RCC during its 80th Meeting held on 06 November 2013 continued with its deliberations on the PEN-MRR Proposal and thereafter approved the posting in the WESM Market Information Website, as discussed, of the Proposed Amendments to Clause 3.10.5 of the WESM Rules (ANNEX A) and the Manual on the Criteria and Guidelines for the Issuance of Pricing Error Notices and Conduct of Market Re-Run (PEN-MRR) Issue 1.0 (ANNEX B);

**WHEREAS**, the proposal was posted in the Market Information Website on 03 December 2013 with notification email issued on the following day, to solicit comments of Participants;

**WHEREAS**, on 02 January 2014, the RCC received comments from Aboitiz Power Corporation (ANNEX C) and SN Power Aboitiz (ANNEX D) on the Proposed Amendments to Clause 3.10.5 of the WESM Rules and the Manual on the Criteria and Guidelines for the Issuance of Pricing Error Notices and Conduct of Market Re-Run Issue 1.0, respectively;

**WHEREAS**, during the 82nd and 83rd RCC Meetings held on 08 January and 05 February 2014, the RCC deliberated upon the comments of APC and SNAP, respectively, and thereafter agreed to revise the proposal, as discussed, with consideration to said comments;

**WHEREAS**, during the same meetings, the RCC approved the proposed amendments to Clause 3.10.5 of the WESM Rules and the Manual on the Criteria and Guidelines for the Issuance Pricing Error Notices and Conduct of Market Re-run Issue 1.0, as discussed and revised;

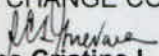
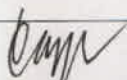
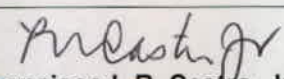
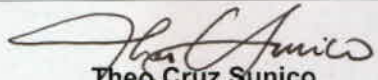
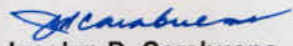

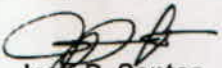



**WHEREAS**, the RCC passed a Resolution on 05 February 2014, adopting the proposed amendments and endorsing said proposal to the PEM Board;

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

**RESOLVED**, that the Proposed Amendments to Clause 3.10.5 of the WESM Rules and the Manual on the Criteria and Guidelines for the Issuance of Pricing Errors and Conduct of Market Re-Run Issue 1.0 (ANNEX E and F, respectively) are hereby adopted and approved;

**RESOLVED FURTHER**, that the attached Proposed Amendments to the WESM Rules and the Manual on the Issuance of Pricing Errors and Conduct of Market Re-Run Issue 1.0 be endorsed to the PEM Board for its approval.

Done this 05 February 2014, Pasig City.

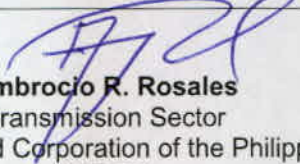
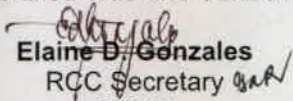
<p>Approved by:</p> <p><b>RULES CHANGE COMMITTEE</b></p> <p>  <b>Rowena Cristina L. Guevara</b>  Chairperson  University of the Philippines  (UP)</p>	
<p>Members:</p>	
<p>  <b>Concepcion I. Tanglao</b>  Independent</p>	<p>  <b>Francisco L.R. Castro, Jr.</b>  Independent  Tensaiken Consulting</p>
<p><b>Maila Lourdes G. de Castro</b>  Independent</p>	<p><b>Jose Ferlino P. Raymundo</b>  Generation Sector  SMC Global</p>
<p>  <b>Theo Cruz Sunico</b>  Generation Sector  1590 Energy Corporation  (1590 EC)</p>	<p>  <b>Joselyn D. Carabuena</b>  Generation Sector  Power Sector Assets and Liabilities Management  Corporation (PSALM)</p>
<p>  <b>Gilbert A. Pagobo</b>  Distribution Sector (PDU)  Mactan Electric Company  (MECO)</p>	<p><b>Ciprinilo C. Meneses</b>  Distribution Sector (PDU)  Manila Electric Company  (MERALCO)</p>
<p>  <b>Jose P. Santos</b>  Distribution Sector (EC)  Ilocos Norte Electric Cooperative, Inc.  (INEC)</p>	<p>  <b>Sulpicio C. Lagarde Jr.</b>  Distribution Sector (EC)  Central Negros Electric Cooperative, Inc.  (CENECO)</p>
<p>  <b>Loretto H. Rivera</b>  Supply Sector  Team Energy</p>	<p>  <b>Isidro E. Cacho Jr.</b>  Market Operator  Philippine Electricity Market Corporation  (PEMC).</p>



Rules Change Committee

Resolution No. 2014-06

Proposed Amendment to the WESM Rules and the Manual on the Criteria and Guidelines for the Issuance of Pricing Error  
Notices and Conduct of Market Re-Run (PEN-MRR) Issue 1.0

 <b>Ambrocio R. Rosales</b> Transmission Sector National Grid Corporation of the Philippines (NGCP)	
	Certified True and Correct:  <b>Elaine D. Gonzales</b> RCC Secretary PEMC

Proposed Amendments to the WESM Rules on RTD Pricing Error Notices (PEN)  
ORCP-WR\_WM-13-16\_a

Section	Original Provision	RCC-Approved Proposed Amendments	Rationale
3.10.5 Pricing Error Notice	<p><b>Pricing Error Notice</b></p> <p>In the event where no <i>ex-ante prices</i> can be determined or communicated within the timeframe specified by the <i>timetable</i>, or the calculated prices are believed to be in error, as a result of <i>load shedding</i>, occurrence of <i>constraints violation coefficients</i>, or for any other reason:</p> <p>(a) The <i>Market Operator</i> may, as soon as possible after the end of a <i>trading interval</i>, issue a <i>pricing error notice</i>, in which case, the <i>ex-post quantities</i> and the <i>ex post prices</i> determined according to clause 3.10.7 shall also serve as ex-ante quantities and ex-ante prices. If no ex-post prices can be determined or the calculated prices are believed to be in error as a result of the imposition or relaxation of constraints pursuant to clause 3.5.13.1,</p>	<p><b>Pricing Error Notice</b></p> <p>3.5.1 In the event where no <i>ex-ante prices</i> can be determined or communicated within the timeframe specified by the <i>timetable</i>, or the calculated prices are believed to be in error, as a result of <i>load shedding</i>, occurrence of <i>constraints violation coefficients</i>, or for any other reason:</p> <p>(a) The <i>Market Operator</i> may, <u>as soon as possible after the end of a trading interval</u>, issue a <i>pricing error notice</i>, in which case, the <i>ex-post quantities</i> and the <i>ex post prices</i> determined according to clause 3.10.7 shall also serve as ex-ante quantities and ex-ante prices. If no ex-post prices can be determined or the calculated prices are believed to be in error as a result of the imposition or relaxation of constraints pursuant to</p>	<p>The proposed revision aims to allow for the price substitution other than the current process of ex-post substitution. The details are proposed to be included in the WESM Manual for the Issuance of Pricing Error Notices and Conduct of Market Re-Run on Ex-Ante Pricing Error Notices .</p>

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Section	Original Provision	RCC-Approved Proposed Amendments	Rationale
	<p>the <i>Market Operator</i> shall re-run the <i>Market Dispatch Optimization Model</i>.</p> <p>The <i>Market Operator</i> shall develop and publish the procedures for the determination of the market re-run prices. Such procedures shall provide the criteria and conditions for the market re-run and the timetable for implementation.</p> <p>(b) If no <i>pricing error notice</i> is issued within the time specified in the foregoing paragraph, the <i>ex-post prices</i> and quantities shall serve as <i>ex-ante prices</i> and quantities and shall stand irrespective of the outcome of any subsequent investigations or resolutions of any dispute.</p> <p>(c) Should the pricing error also include <i>reserves</i>, the <i>reserve quantity</i> and price determined in the <i>ex-post run</i> shall serve as the <i>reserve quantity</i> and prices.</p>	<p>clause 3.5.13.1, the <i>Market Operator</i> shall re-run the <i>Market Dispatch Optimization Model</i>. <u>However, if the pricing error is due to the occurrence of a constraint violation on load-end equipment in the Market Network Model, or if the pricing error is due to network congestion resulting in extreme nodal price separations, the Market Operator shall apply price substitution mechanisms to determine the appropriate ex-ante or ex-post price.</u></p> <p>The <i>Market Operator</i>, <u>in consultation with the WESM Members and subject to the approval of the PEM Board, ERC, and DOE</u>, shall <u>develop and</u> publish the procedures for the determination of the market re-run prices <u>and substitute prices</u>. Such procedures shall provide the criteria and conditions for the market re-run and <u>the application of substitute prices including</u> the timetable for</p>	



Section	Original Provision	RCC-Approved Proposed Amendments	Rationale
		<p>implementation.</p> <p>(b) If <b>a pricing error is determined but</b> no <i>pricing error notice</i> is issued within the time specified in the foregoing paragraph, <b>the Market Operator shall issue the pricing error notice prior to the issuance of the preliminary settlement for the relevant billing period.</b> <del>†</del> The <i>ex-post</i> prices and quantities shall serve as <i>ex-ante</i> prices and quantities and shall stand irrespective of the outcome of any subsequent investigations or resolutions of any dispute.</p> <p>(c) Should the pricing error also include <i>reserves</i>, the <i>reserve</i> quantity and price determined in the <i>ex-post</i> run shall serve as the <i>reserve</i> quantity and prices.</p>	

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**Proposed Amendments to the WESM Manual on Criteria and Guidelines  
for the Issuance of Pricing Error Notices and Conduct of Market Re-Run  
ORCP-WR\_WM\_13-16\_b**

Section	Original Provision	RCC-Proposed Amendments	Rationale
<b>5. CATEGORIES OF PRICING ERRORS</b>			
<b>5.1.2</b>	5.1.2. Non-congestion pricing errors are those that occur when there are no ex-ante prices or ex-post prices are determined or communicated within the timetable or when such prices are determined to be in error but are otherwise not classified as network congestion pricing errors under the PSM Manual.	5.1.2. Non-congestion pricing errors are those that occur when there are no ex-ante prices or ex-post prices <u>are</u> determined or communicated within the timetable or when such prices are determined to be in error but are otherwise not classified as network congestion pricing errors under the PSM Manual. <u>Non-congestion pricing errors may also include localized non-congestion at the load-end substations.</u>	Clarification that non congestion pricing errors may include localized congestion in load-end substations or step-up transformers in a generating plant
<b>6.1.1</b>	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 –  6.1.1. The resulting ex-ante or ex-post prices are reflective of constraint violation coefficients due to occurrence of any one of the following conditions, as these are defined in the WESM Manual on Constraint Violation Coefficients –	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 –  6.1.1. The resulting ex-ante or ex-post prices are reflective of constraint violation coefficients due to occurrence of any one of the following conditions, as these are defined in the WESM Manual on	

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Section	Original Provision	RCC-Proposed Amendments	Rationale
	a) Under-generation constraint b) Over-generation constraint c) Base case constraint d) Contingency constraint e) Transmission constraint group f) Reserve constraint  For avoidance of doubt, only constraint violation coefficients associated with localized base case, contingency and transmission constraint group constraints are considered as non-congestion pricing errors. Localized constraint refers to constraint that manifests on a radially-connected line or load end transformer, which is the source of the load connected to it, or step-up transformer in a generating plant.	Constraint Violation Coefficients – a) Under-generation constraint b) Over-generation constraint c) Base case constraint d) Contingency constraint e) Transmission constraint group f) Reserve constraint  For avoidance of doubt, only constraint violation coefficients associated with localized base case, contingency and transmission constraint group constraints are considered as <b>localized</b> non-congestion pricing errors. Localized constraint refers to constraint that manifests on a radially-connected line or load end transformer, which is the source of the load connected to it. <b><u>or step-up transformer in a generating plant</u></b>	
<b>New 6.1.5</b>		<b><u>6.1.5. A Localized Non-Congestion Pricing Error shall be defined as the case when the load end equipment in the Market Network Model exceeds its transmission limit.</u></b>	Since the 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
		8.1. Non-Congestion Pricing Errors  8.1.1. Pursuant to WESM Rules clause 3.10.5, where there is pricing error	

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Section	Original Provision	RCC-Proposed Amendments	Rationale
New 8.1.2		<p>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.</p> <p>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 Price (LMP) for the identified nodes with such pricing errors will be determined by the formula as follows::</u></p> <p><u>LMP<sub>i</sub> = percentage weight of 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>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 contingency constraint, the PEN should decrease significantly.</p>

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Section	Original Provision	RCC-Proposed Amendments	Rationale
		$Diff_{i,A} = ABS \left[ \frac{1}{TLF_i} - \frac{1}{TLF_A} \right]$ <p><u>= the lowest transmission loss factor to the affected nodes</u></p> <p><u>Where,</u></p> <p><u>TLF<sub>i</sub> = Transmission Loss Factor of node i where i refers to customers not affected by load-end contingency CVCs</u></p> <p><u>TLF<sub>A</sub> - Transmission Loss Factor of node A where A refers to the affected node</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>	
	8.3.2 If the ex-ante market run indicates the simultaneous occurrence of congestion pricing error and non-congestion pricing error, such that the resulting prices reflect constraint violation coefficients ("CVC") or there are no valid	8.3.2 If the ex-ante market run indicates the simultaneous occurrence of <u>non-congestion pricing error in combination with</u> congestion pricing error <u>and/or Localized Non-Congestion Pricing Error as defined in Section 6.1.5 of this</u>	The hierarchy of pricing error and application of substitute prices should depend on the extent of the affected nodes. In doing so, non-congestion will take the highest priority because this include supply

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Section	Original Provision	RCC-Proposed Amendments	Rationale
	prices, WESM Rules clauses 3.10.5 (a) and (b) shall apply. As such, the ex-post prices, if valid, shall serve as ex-ante prices.	<u>manual</u> , such that the resulting prices reflect constraint violation coefficients ("CVC") or there are no valid prices, WESM Rules clauses 3.10.5 (a) and (b) shall apply. As such, the ex-post prices, if valid, shall serve as ex-ante prices.	deficiency and input data error. While congestion pricing error will take priority over local non-congestion pricing error.
New 8.3.3		<p><u>8.3.3 If the ex-ante market run indicates the simultaneous occurrence of congestion pricing error and Localized Non-Congestion Pricing Error as defined in Section 6.1.5 of this manual, such that there are no valid prices, PSM Manual shall be applied by using the substitute prices in accordance to Section 8.1.2..</u></p> <p><u>8.3.34 ... xxx</u></p> <p><u>8.3.45 ... xxx</u></p> <p><u>8.3.56...xxx</u></p>	

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## Proposed Amendments to the WESM Rules on RTD Pricing Error Notices (PEN)

Section	Original Provision	RCC-Approved Proposed Amendments for Posting	APC Proposed Amendments	RCC Agreement 08 January 2014
3.10.5 Pricing Error Notice	<p><b>Pricing Error Notice</b></p> <p>In the event where no <i>ex-ante</i> prices can be determined or communicated within the timeframe specified by the <i>timetable</i>, or the calculated prices are believed to be in error, as a result of <i>load shedding</i>, occurrence of <i>constraints violation coefficients</i>, or for any other reason:</p> <p>(a) The Market Operator may, as soon as possible after the end of a <i>trading interval</i>, issue a <i>pricing error notice</i>, in which case, the <i>ex-post quantities</i> and the <i>ex post prices</i> determined according to clause 3.10.7 shall also serve as <i>ex-ante</i> quantities and <i>ex-ante</i> prices. If no <i>ex-post</i> prices can be determined or the</p>	<p><b>Pricing Error Notice</b></p> <p>3.5.1 In the event where no <i>ex-ante</i> prices can be determined or communicated within the timeframe specified by the <i>timetable</i>, or the calculated prices are believed to be in error, as a result of <i>load shedding</i>, occurrence of <i>constraints violation coefficients</i>, or for any other reason:</p> <p>(a) The Market Operator may, <del>as soon as possible</del> <u>after the end of a trading interval</u>, issue a <i>pricing error notice</i>, in which case, the <i>ex-post quantities</i> and the <i>ex post prices</i> determined according to Clause 3.10.7 shall also serve as <i>ex-ante</i> quantities and <i>ex-ante</i> prices. If no <i>ex-post</i> prices can be determined or the calculated prices are believed to be in error as a result of the imposition or relaxation of constraints pursuant to clause 3.5.13.1,</p>	<p><b>Pricing Error Notice</b></p> <p>3.10.5-1 In the event where no <i>ex-ante</i> prices can be determined or communicated within the timeframe specified by the <i>timetable</i>, or the calculated prices are believed to be in error, as a result of <i>load shedding</i>, occurrence of <i>constraints violation coefficients</i>, or for any other reason:</p> <p>(a) The Market Operator may, as soon as possible <del>after the end of a trading interval</del>, issue a <i>pricing error notice</i>, in which case, the <i>ex-post quantities</i> and the <i>ex post prices</i> determined according to clause 3.10.7 shall also serve as <i>ex-ante</i> quantities and <i>ex-ante</i> prices. If no <i>ex-post</i> prices can be determined or the calculated prices are believed to be in error as a result of the imposition or relaxation of constraints pursuant to clause 3.5.13.1, the Market Operator shall re-run the Market Dispatch Optimization Model.</p>	<p>Approved and adopted APC Proposal for a), as follows:</p> <p>Xxx</p> <p>a) The Market Operator may, as soon as possible <del>after the end of a trading interval</del>, issue a <i>pricing error notice</i>, in which case, the <i>ex-post quantities</i> and the <i>ex post prices</i> determined according to clause 3.10.7 shall also serve as <i>ex-ante</i> quantities and <i>ex-ante</i> prices.</p> <p>XXX</p> <p><u>However, if the pricing error is due to the occurrence of a constraint violation on load-end equipment in the Market Network Model, the Market Operator shall apply the formula as defined in the WESM Manual on Criteria and Guidelines for the Issuance of Pricing Error Notices and Conduct of Market Re-Run for the nodes affected, or if the pricing error is due to network congestion resulting in extreme nodal price</u></p>



	<p>calculated prices are believed to be in error as a result of the imposition or relaxation of constraints pursuant to clause 3.5.13.1, the Market Operator shall re-run the Market Dispatch Optimization Model.</p> <p>The Market Operator shall develop and publish the procedures for the determination of the market re-run prices. Such procedures shall provide the criteria and conditions for the market re-run and the timetable for implementation.</p> <p>(b) If no pricing error notice is issued within the time specified in the foregoing paragraph, the ex-post prices and quantities shall serve as ex-ante prices and quantities and shall stand irrespective of</p>	<p>the Market Operator shall re-run the Market Dispatch Optimization Model.</p> <p><u>However, if the pricing error is due to the occurrence of a constraint violation on load-end equipment in the Market Network Model, or if the pricing error is due to network congestion resulting in extreme nodal price separations, the Market Operator shall apply price substitution mechanisms to determine the appropriate ex-ante or ex-post price.</u></p> <p>The Market Operator, in consultation with the WESM Members and subject to the approval of the PEM Board, ERC, and DOE, shall develop and publish the procedures for the determination of the market re-run prices and substitute prices. Such procedures shall provide the criteria and conditions for the market re-run and the application of substitute</p>	<p><u>However, if the pricing error is due to the occurrence of a constraint violation on load-end equipment in the Market Network Model, the Market Operator shall apply the formula as defined in the WESM Manual on Criteria and Guidelines for the Issuance of Pricing Error Notices and Conduct of Market Re-Run for the nodes affected, or if the pricing error is due to network congestion resulting in extreme nodal price separations, the Market Operator shall apply price substitution mechanisms as defined in the Price Substitution Methodology Manual to determine the appropriate ex-ante or ex-post price.</u></p> <p>The Market Operator, in consultation with the WESM Members and subject to the approval of the PEM Board, ERC, and DOE, shall develop and publish the procedures for the determination of the market re-run prices and substitute prices. Such</p>	<p><u>separations, the Market Operator shall apply price substitution mechanisms as defined in the Price Substitution Methodology Manual to determine the appropriate ex-ante or ex-post price.</u></p> <p>xxx</p>
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	<p>the outcome of any subsequent investigations or resolutions of any dispute.</p> <p>(c) Should the pricing error also include <i>reserves</i>, the <i>reserve</i> quantity and price determined in the <i>ex-post</i> run shall serve as the <i>reserve</i> quantity and prices.</p>	<p><u>prices including</u> the timetable for implementation.</p> <p>(b) If <u>a pricing error is determined but</u> no pricing error notice is issued within the time specified in the foregoing paragraph, <b>the Market Operator shall issue the pricing error notice prior to the issuance of the preliminary settlement for the relevant billing period.</b></p> <p>¶The <i>ex-post</i> prices and quantities shall serve as ex-ante prices and quantities and shall stand irrespective of the outcome of any subsequent investigations or resolutions of any dispute.</p> <p>(c) Should the pricing error also include <i>reserves</i>, the <i>reserve</i> quantity and price determined in the <i>ex-post</i> run shall serve as the <i>reserve</i> quantity and prices.</p>	<p>procedures shall provide the criteria and conditions for the market re-run and <u>the application of substitute prices including</u> the timetable for implementation.</p> <p>(b) If <u>a pricing error is determined but</u> no pricing error notice is issued within the time specified in the foregoing paragraph, <u>the Market Operator shall issue the pricing error notice prior to the issuance of the preliminary settlement for the relevant billing period.</u></p> <p>The <i>ex-post</i> prices and quantities shall serve as ex-ante prices and quantities and shall stand irrespective of the outcome of any subsequent investigations or resolutions of any dispute.</p> <p>(c) Should the pricing error also include <i>reserves</i>, the <i>reserve</i> quantity and price determined in the <i>ex-post</i> run shall serve as the <i>reserve</i> quantity and prices.</p>	<p>Retain original proposal for b).</p>
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Section	Original Provision	RCC-Approved Amendments	Rationale	SNAP Comments
5. CATEGORIES OF PRICING ERROR				
5.1.2	5.1.2. Non-congestion pricing errors are those that occur when there are no ex-ante prices or ex-post prices are determined or communicated within the timetable or when such prices are determined to be in error but are otherwise not classified as network congestion pricing errors under the PSM Manual.	5.1.2. Non-congestion pricing errors are those that occur when there are no ex-ante prices or ex-post prices <b>are</b> determined or communicated within the timetable or when such prices are determined to be in error but are otherwise not classified as network congestion pricing errors under the PSM Manual. <b><u>Non-congestion pricing errors may also include localized non-congestion at the load-end substations.</u></b>	Clarification that non-congestion pricing errors may include localized congestion in load-end substations or step-up transformers in a generating plant.	<p>The intention is to classify congestion in load end substations or step-up transformers in a generating plant as non-congestion pricing errors as indicated in the rationale.</p> <p>5.1.2. Non-congestion pricing errors are those that occur when there are no ex-ante prices or ex-post prices determined or communicated within the timetable or when such prices are determined to be in error but are otherwise not classified as network congestion pricing errors under the PSM Manual. Non-congestion pricing errors may also include localized <del>non-congestion</del> <b><u>affecting at the load-end substations and step-up transformers of a generating plant.</u></b></p>
6.1.1	xxxxx  For avoidance of doubt, only constraint violation coefficients associated with localized base case, contingency and transmission constraint group constraints are considered as non-congestion pricing errors. Localized constraint refers to	xxxxx  For avoidance of doubt, only constraint violation coefficients associated with localized base case, contingency and transmission constraint group constraints are considered as <b><u>localized</u></b> non-congestion pricing errors. Localized		<p>In the rational, the intention is to include localized congestion in load-end substations or step-up transformers in a generating plant. However, it was deleted in the proposed changes in 6.1.1.</p> <p>In case the intention is to exclude</p>



	constraint that manifests on a radially-connected line or load end transformer, which is the source of the load connected to it, or step-up transformer in a generating plant.	constraint refers to constraint that manifests on a radially-connected line or load end transformer, which is the source of the load connected to it. <u>or step-up transformer in a generating plant.</u>		step-up transformer in a generating plant, what is the rational behind this? Will this be treated as congestion pricing error?
New 8.1.2		<p>xxxxx</p> <p>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 Price (LMP) for the identified nodes with such pricing errors will be determined by the formula as follows:</u></p> <p><u>LMP<sub>i</sub> = percentage weight of 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> $D_{i,A} = \text{ABS} \left[ \frac{1}{TLF_i} - \frac{1}{TLF_A} \right]$ <p><u>= the lowest transmission</u></p>	<p>Since the 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 contingency constraint, the PEN should decrease significantly.</p>	<p>Comment:</p> <p>"xxxxx thus by defining a Localized and System contingency constraint, the PEN should decrease significantly."</p> <p>Even if the proposed change is adopted, the number of PENs will still be the same since a PEN should still be issued before the substitute prices can be used. The frequency of market re-run however will decrease significantly.</p> <p>To reduce pricing errors, load-end transformers (e.g Zapote transformers) should not be included in the Contingency List.</p>

		<p><u>loss factor to the affected nodes</u></p> <p><u>Where,</u></p> <p><u>TLFi = Transmission Loss Factor of node i where i refers to customers not affected by load-end contingency CVCs</u></p> <p><u>TLFA - Transmission Loss Factor of node A where A refers to the affected node</u></p> <p><u>The ex-ante price and schedule for the nodes not affected by the pricing error shall be valid.</u></p>		
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**Proposed Amendments to the WESM Rules on RTD Pricing Error Notices (PEN)**  
**as approved through RCC Resolution No. 2014-06**

Section	Original Provision	RCC-Approved Proposed Amendments As Discussed on 08 January 2014	Rationale
<b>3.10.5 Pricing Error Notice</b>	<p><b>Pricing Error Notice</b></p> <p>In the event where no <i>ex-ante prices</i> can be determined or communicated within the timeframe specified by the <i>timetable</i>, or the calculated prices are believed to be in error, as a result of <i>load shedding</i>, occurrence of <i>constraints violation coefficients</i>, or for any other reason:</p> <p>(a) The <i>Market Operator</i> may, as soon as possible after the end of a <i>trading interval</i>, issue a <i>pricing error notice</i>, in which case, the <i>ex-post quantities</i> and the <i>ex post prices</i> determined according to clause 3.10.7 shall also serve as ex-ante quantities and ex-ante prices. If no ex-post prices can be determined or the calculated prices are believed to be in error as a</p>	<p><b>Pricing Error Notice</b></p> <p>3.5.1 In the event where no <i>ex-ante prices</i> can be determined or communicated within the timeframe specified by the <i>timetable</i>, or the calculated prices are believed to be in error, as a result of <i>load shedding</i>, occurrence of <i>constraints violation coefficients</i>, or for any other reason:</p> <p>(a) The <i>Market Operator</i> may <u>, as soon as possible after the end of a trading interval,</u> issue a <i>pricing error notice</i>, in which case, the <i>ex-post quantities</i> and the <i>ex post prices</i> determined according to clause 3.10.7 shall also serve as ex-ante quantities and ex-ante prices. If no ex-post prices can be determined or the calculated prices are believed to be in</p>	<p>The proposed revision aims to allow for the price substitution other than the current process of ex-post substitution. The details are proposed to be included in the WESM Manual for the Issuance of Pricing Error Notices and Conduct of Market Re-Run on Ex-Ante Pricing Error Notices .</p>

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Section	Original Provision	RCC-Approved Proposed Amendments As Discussed on 08 January 2014	Rationale
	<p>result of the imposition or relaxation of constraints pursuant to clause 3.5.13.1, the <i>Market Operator</i> shall re-run the <i>Market Dispatch Optimization Model</i>.</p> <p>The <i>Market Operator</i> shall develop and publish the procedures for the determination of the market re-run prices. Such procedures shall provide the criteria and conditions for the market re-run and the timetable for implementation.</p> <p>(b) If no <i>pricing error notice</i> is issued within the time specified in the foregoing paragraph, the <i>ex-post prices</i> and quantities shall serve as <i>ex-ante prices</i> and quantities and shall stand irrespective of the outcome of any subsequent investigations or resolutions of any dispute.</p> <p>(c) Should the pricing error also include <i>reserves</i>, the <i>reserve quantity</i> and price determined in the <i>ex-post</i> run shall serve as the <i>reserve quantity</i> and</p>	<p>error as a result of the imposition or relaxation of constraints pursuant to clause 3.5.13.1, the <i>Market Operator</i> shall re-run the <i>Market Dispatch Optimization Model</i>. <b><u>However, if the pricing error is due to the occurrence of a constraint violation on load-end equipment in the Market Network Model, the Market Operator shall apply the formula as defined in the WESM Manual on Criteria and Guidelines for the Issuance of Pricing Error Notices and Conduct of Market Re-Run for the nodes affected, or if the pricing error is due to congestion resulting in extreme nodal price separations, the Market Operator shall apply price substitution mechanisms as defined in the Price Substitution Methodology Manual to determine the appropriate ex-ante or ex-post price.</u></b></p> <p>The <i>Market Operator</i>, <b><u>in consultation</u></b></p>	

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Section	Original Provision	RCC-Approved Proposed Amendments As Discussed on 08 January 2014	Rationale
	prices.	<p><u>with the WESM Members and subject to the approval of the PEM Board, ERC, and DOE</u>, shall <u>develop and</u> publish the procedures for the determination of the market re-run prices <u>and substitute prices</u>. Such procedures shall provide the criteria and conditions for the market re-run and <u>the application of substitute prices including</u> the timetable for implementation.</p> <p>(b) If <u>a pricing error is determined but</u> no <i>pricing error notice</i> is issued within the time specified in the foregoing paragraph, <u>the Market Operator shall issue the pricing error notice prior to the issuance of the preliminary settlement for the relevant billing period.</u> <del>†</del>The <i>ex-post</i> prices and quantities shall serve as ex-ante prices and quantities and shall stand irrespective of the outcome of any subsequent investigations or resolutions of any dispute.</p>	

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Section	Original Provision	RCC-Approved Proposed Amendments As Discussed on 08 January 2014	Rationale
		(c) Should the pricing error also include <i>reserves</i> , the <i>reserve</i> quantity and price determined in the <i>ex-post</i> run shall serve as the <i>reserve</i> quantity and prices.	

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**Proposed Amendments to the WESM Manual on Criteria and Guidelines  
for the Issuance of Pricing Error Notices and Conduct of Market Re-Run  
as approved through RCC Resolution No. 2014-06**

Section	Original Provision	RCC-Proposed Amendments As Discussed on 05 February 2014	Rationale
<b>5. CATEGORIES OF PRICING ERRORS</b>			
<b>5.1.2</b>	5.1.2. Non-congestion pricing errors are those that occur when there are no ex-ante prices or ex-post prices are determined or communicated within the timetable or when such prices are determined to be in error but are otherwise not classified as network congestion pricing errors under the PSM Manual.	5.1.2. Non-congestion pricing errors are those that occur when there are no ex-ante prices or ex-post prices <u>are</u> determined or communicated within the timetable or when such prices are determined to be in error but are otherwise not classified as network congestion pricing errors under the PSM Manual. <b><u>Non-congestion pricing errors may also include localized non-congestion affecting load-end substations.</u></b>	Clarification that non congestion pricing errors may include localized congestion in load-end substations.
<b>6.1.1</b>	<p>6.1. Non-congestion Pricing Errors</p> <p>There is non-congestion pricing error where the results of either the market runs show any one of the following conditions –</p> <p>6.1.1. The resulting ex-ante or ex-post prices are reflective of constraint violation coefficients due to occurrence of any one of the following conditions, as these are defined in the WESM Manual on Constraint Violation Coefficients –</p>	<p>6.1 Non-Congestion Pricing Errors</p> <p>There is non-congestion pricing error where the results of either the market runs show any one of the following conditions –</p> <p>6.1.1. The resulting ex-ante or ex-post prices are reflective of constraint violation coefficients due to occurrence of any one of the following conditions, as these are defined in the WESM Manual on</p>	

Section	Original Provision	RCC-Proposed Amendments As Discussed on 05 February 2014	Rationale
	a) Under-generation constraint b) Over-generation constraint c) Base case constraint d) Contingency constraint e) Transmission constraint group f) Reserve constraint  For avoidance of doubt, only constraint violation coefficients associated with localized base case, contingency and transmission constraint group constraints are considered as non-congestion pricing errors. Localized constraint refers to constraint that manifests on a radially-connected line or load end transformer, which is the source of the load connected to it, or step-up transformer in a generating plant.	Constraint Violation Coefficients – a) Under-generation constraint b) Over-generation constraint c) Base case constraint d) Contingency constraint e) Transmission constraint group f) Reserve constraint  For avoidance of doubt, only constraint violation coefficients associated with localized base case, contingency and transmission constraint group constraints are considered as <u>localized</u> non-congestion pricing errors. Localized constraint refers to constraint that manifests on a radially-connected line or load end transformer, which is the source of the load connected to it. <u>or step-up transformer in a generating plant</u>	
<b>New 6.1.5</b>		<b><u>6.1.5. A Localized Non-Congestion Pricing Error shall be defined as the case when the load end equipment in the Market Network Model exceeds its transmission limit.</u></b>	Since the 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
		8.1. Non-Congestion Pricing Errors  8.1.1. Pursuant to WESM Rules clause	

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Section	Original Provision	RCC-Proposed Amendments As Discussed on 05 February 2014	Rationale
New 8.1.2		<p>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.</p> <p>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 Price (LMP) for the identified nodes with such pricing errors will be determined by the formula as follows::</u></p> <p><u><math>LMP_i</math> = percentage weight of 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>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 contingency constraint, the PEN should decrease significantly.</p>

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Section	Original Provision	RCC-Proposed Amendments As Discussed on 05 February 2014	Rationale
		$\text{Diff}_{i,A} = \text{ABS} \left[ \frac{1}{\text{TLF}_i} - \frac{1}{\text{TLF}_A} \right]$ <p>= the lowest transmission loss factor to the affected nodes</p> <p>Where,</p> <p><u>TLF<sub>i</sub> = Transmission Loss Factor of node i where i refers to customers not affected by load-end contingency CVCs</u></p> <p><u>TLF<sub>A</sub> - Transmission Loss Factor of node A where A refers to the affected node</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>	
	8.3.2 If the ex-ante market run indicates the simultaneous occurrence of	8.3.2 If the ex-ante market run indicates the simultaneous occurrence of <u>non-</u>	The hierarchy of pricing error and application of substitute prices

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Section	Original Provision	RCC-Proposed Amendments As Discussed on 05 February 2014	Rationale
	congestion pricing error and non-congestion pricing error, such that the resulting prices reflect constraint violation coefficients ("CVC") or there are no valid prices, WESM Rules clauses 3.10.5 (a) and (b) shall apply. As such, the ex-post prices, if valid, shall serve as ex-ante prices.	congestion pricing error <u>in combination with</u> congestion pricing error <u>and/or Localized Non-Congestion Pricing Error as defined in Section 6.1.5 of this manual</u> , such that the resulting prices reflect constraint violation coefficients ("CVC") or there are no valid prices, WESM Rules clauses 3.10.5 (a) and (b) shall apply. As such, the ex-post prices, if valid, shall serve as ex-ante prices.	should depend on the extent of the affected nodes. In doing so, non-congestion will take the highest priority because this include supply deficiency and input data error. While congestion pricing error will take priority over local non-congestion pricing error.
New 8.3.3		<p><u>8.3.3 If the ex-ante market run indicates the simultaneous occurrence of congestion pricing error and Localized Non-Congestion Pricing Error as defined in Section 6.1.5 of this manual, such that there are no valid prices, PSM Manual shall be applied by using the substitute prices in accordance to Section 8.1.2..</u></p> <p><u>8.3.34 ... xxx</u></p> <p><u>8.3.45 ... xxx</u></p> <p><u>8.3.56...xxx</u></p>	

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