MINUTES OF RULES CHANGE COMMITTEE 116th Regular Meeting (No. 2016-09)	
Meeting Date & Time:	07 July 2016, 9:00 AM to 2:00 PM
Meeting Venue:	19/F Conference Room, Robinsons Equitable Tower, Ortigas Center, Pasig City

Attendance List

In-Attendance	Not In-Attendance
Rules Change Committee **Principal Members:** Maila Lourdes G. de Castro, Chairperson--Independent Francisco Leodegario R. Castro, Jr., - Independent Concepcion I. Tanglao – Independent Allan C. Nerves–Independent Jose Ferlino P. Raymundo – Generation (SMC Global) Theo Cruz Sunico -- Generation (1590 EC) Ciprinilo C. Meneses – Distribution (MERALCO) Jose P. Santos –Distribution (INEC) Ludovico D. Lim – Distribution (ANTECO) Ambrocio R. Rosales --System Operator (NGCP) **Alternate Member:** Edwin N. Mosa – Market Operator (PEMC) Ernesto N. Padilla – Supply (TPEC) Henry V. dela Cruz - (NGCP)	Joselyn D. Carabuena– Generation (PSALM) Jose Ildebrando B. Ambrosio – Generation (Northwind) Gilbert A. Pagobo – Distribution (MECO) Lorreto H. Rivera – Supply (TPEC)
PEMC – Market Assessment Group (MAG) Geraldine A. Rodriguez Karen A. Varquez Divine Gayle C. Cruz Aldjon Kenneth M. Yap	
PEMC – Legal Atty. Caryl Miriam Lopez-Mateo	

Atty. Sheryll M. Dy

PEMC – Finance
Mary Anne T. Santiago

PEMC – CPC
Jonathan B. Dela Viña

DOE Observer(s)
Ferdinand B. Binondo
Lorelie Baguio-Moya

There being a quorum, Mr. Francisco L.R. Castro, Jr. commenced with the meeting upon the request of Chairperson Atty. Maila Lourdes G. de Castro's, who thereafter presided a few minutes later.

The RCC reviewed the proposed agenda as presented by the Secretariat. Mr. Castro, noting the numerous items in the proposed agenda, suggested that the matters subject for RCC approval be discussed first. Subsequently, the RCC agreed with the recommendation and approved the agenda, as revised.

1. Review of the Minutes of the Previous Meeting

Atty. De Castro initiated the review of the minutes for the115th RCC Meeting. Ms. Concepcion Tanglao expressed her clarification on the minutes, specifically on the discussion of the counterproposal submitted by the Power Sector Assets and Liabilities Management (PSALM). Ms. Tanglao suggested that the final decision on the matter of the time frame given to trading participants to claim additional MRU payments also be included in the RCC agreements column of the minutes on the discussion regarding the Proposed Amendments to the Rules and WESM Manuals on the MRU-MSU and the Administered Price Determination Methodology for easier reference. With the agreement of the RCC members to the suggested edits, Atty. De Castro then instructed the Secretariat to revise the minutes of the meeting and transmit the same to the RCC members for their approval through electronic mail.

2. Matters Arising from the Previous Meeting

2.1. Proposed Amendments to the WESM Rules regarding Bilateral Contract Quantities (BCQ) Declaration and Line Rental Calculation

Mr. Jonathan dela Viña continued with the discussions on the subject proposal which is aimed towards addressing the audit findings on bilateral contact declarations and line rental fees. Mr. dela Viña expounded on the details of the PEMC proposal which recommends shifting the timeline of declaring BCQ from ex-post (D+1) to ex-ante (H-1).

In relation to RCC's inquiry about the allowable conditions for BCQ re-declaration, Mr. dela Vina explained that the conditions that will warrant a BCQ re-declaration, are as follows:

- Changes due to metered quantities;
- Changes on the generator node assignment for line rental flexibility; and
- Changes based on ex-post agreements by the counter-parties.

He added that PEMC shall be requiring counterparty confirmations for such re-declarations, as necessary.

Given these scenarios, PEMC proposed to revise its original proposal for Clause 3.13.1.3 of the WESM Rules, to read as:

> *"Trading Participants may, after each trading interval, submit revisions on bilateral sell quantities submitted for that trading interval under WESM Rules Clause 3.13.1.1(a)* ***to reflect metered quantities or with confirmation from their counterparties*** *in accordance with the relevant Market Manual"*

Mr. dela Viña explained that PEMC proposes that a validation by the generator's counterparty be required so as to confirm, within a certain period of the BCQ re-declaration, otherwise, the EAQ of the requesting generator shall be maintained by the Market Operator. Mr. Ludovico Lim sought elaboration on the process being proposed by PEMC. Mr. dela Viña explained that the generators will submit its re-declaration and the Market Operator shall develop a facility where customers can see and confirm the changes.

Mr. Ciprinilo Meneses expressed his concern about the timeline within which generators and customers may re-declare its BCQ, since the provision seems to be open-ended. Mr. dela Viña stated that the time window for the said re-declaration will only be until the immediately succeeding day.

In relation to the proposed counter-party confirmation, Mr. Ernesto Padilla stated that according to the audit findings, there are some issues regarding DU-affiliated generators. In these cases, he stated that it may defeat the purpose of the proposal since the re-declaration will just be confirmed by a DU who is technically affiliated with the re-declaring generator. Mr. dela Viña agreed with the comment stated by Mr. Padilla.

The RCC noted Mr. Padilla's comments and sought confirmation if the proposed amendments to the affected WESM Market Manuals have already been drafted. Considering that the proposal is limited to the amendment of the WESM Rules and hence only the general policy on the matter is being recommended, the body remanded the proposal to the proponent requesting it to also submit the proposed amendments to the relevant WESM Manual detailing the proposal's implementation.

The Secretariat was tasked by the RCC to submit to the RCC through e-mail, the complete proposal once submitted by PEMC, and for the same to be included in the agenda for the next meeting in August 2016.

Agreement/ Action Plans:
a. The RCC requested PEMC to re-submit its proposal together with the proposed amendments to the relevant WESM Manual detailing the proposal's implementation. b. The Secretariat to submit, through email to the RCC, the complete proposal on the BCQ declaration and Line Rental charges once re-submitted by PEMC.

2.2. Finalization of the Agreements on the Proposed Amendments to the WESM Rules and Manuals on MRU-MSU and Administered Price Determination Methodology (APDM)

Based from the agreements made in the previous meeting, Ms. Mary Anne T. Santiago from PEMC-Finance Department presented to the RCC a non-exhaustive list of supporting documents that the Trading Participants (TP) shall submit to the Market Operator (MO) in filing for additional compensation if they are called to be dispatched as a Must-Run Unit or during market intervention. In these cases, documents which are required to be submitted by the generators are enumerated below:

a) Certified correct Fuel Consumption and Inventory Report
b) Purchase Invoices, Official Receipts and other supporting documents
c) ERC approved rate or if not available, List of Variable Operation and Maintenance Costs supported by photocopies of invoices/receipts

Mr. Meneses sought clarification on the certification of fuel consumption and inventory report. Ms. Santiago explained that this is a self-certification which the MO shall review afterwards. Ms. Santiago added that upon receipt of the complete required documents, the MO shall have fourteen (14) working days to process the additional claims for both cases. Atty. De Castro inquired if there is a possibility that MO shall require other documents from the TPs which are not enumerated in the list. Ms. Santiago stated that currently, the items enumerated in the list are enough to support the claim and are already being complied with by the TPs, except for some that are having issues in gathering these documents. She further added that the TPs are amendable with the timeline except for PSALM and NPC which have contracts with the operators of its power plants. Ms. Tanglao recalled that during the previous discussions, a timeline of two (2) billing periods has initially been proposed for efficiency. She then suggested to include in the proposal that submission be made preferably within two (2) billing periods for the said submission but

still with due consideration to the one (1) year maximum timeline as agreed upon previously by the RCC. Mr. Meneses opined that if that shall be the case, TPs will just tend to follow the maximum allowed time for the submission of claims. Also in the DU sector, Mr. Ludovico Lim explained that the only concern from his end is regarding the payment of the claims which are passed on to the customers. He further added that there are some instances where TPs pay for the said claims even if it was not a consumer during the occurrence of these cases.

Following the discussions, the RCC agreed to adopt the following amendments:

WESM Rules

- Specify in *WESM Rules* Clause 3.5.13.1 that the details of the procedures and process for claiming additional compensation for Must-Run Units are found in the relevant market manuals

WESM Market Manual on Management of MRU and MSU

- Specify that a Trading Participant shall be given **one (1) year** from the time it was dispatched within which to file additional compensation as a Must-Run Unit to provide sufficient time in gathering necessary information. Claims not submitted within such period shall be deemed waived.
- Specify that the Market Operator shall notify the affected Trading Participants of its approval or disapproval of claims within **fourteen (14) working days** upon the Trading Participant's submission of complete documents

WESM Market Manual on Administered Price Determination Methodology

- Specify that Trading Participants called during market intervention and suspension should file their claim for additional compensation **no later than fourteen (14) working days from the end of the billing period. Claims not filed within such period shall be deemed waived.**
- Specify that the Market Operator shall notify the affected Trading Participants of its approval or disapproval of claims within **fourteen (14) working days** upon the Trading Participant's submission of complete documents.

Atty. De Castro sought clarification on the action of the MO upon the receipt of complete requirements, Ms. Santiago explained that MO will communicate with the relevant TP regarding the status of its claims.

The RCC agreed with PEMC-Finance Department's proposed amendments to the relevant provisions in the WESM Market Manual on the Management of MRU-MSU and APDM, along with the revisions adopted in the previous meeting. The Secretariat was instructed to finalize the proposal reflecting the agreements and transmit the RCC Resolution for the same through e-mail, for the Committee's final approval.

Agreement/ Action Plans:
a. The RCC finalized and approved the proposed amendments as discussed with the PEMC – Finance Department b. The Secretariat to prepare the resolution for the said proposed amendment and have the same approved by the RCC through electronic mail

2.3. RCC Resolution No. 2016-06 – Proposed Amendments to the WESM Metering Manual regarding Site-Specific Loss Allocation

The Secretariat informed the RCC that the above resolution has earlier been emailed to the RCC for comments and approval but that the matter is being presented to the RCC for final action and approval.

The RCC reviewed the resolution and thereafter approved the same for submission to the PEM Board.

Agreement/ Action Plans:
The RCC approved the resolution for transmittal to the PEM Board

2.4. Resolution No. 2016-07 – Proposed Amendments to the WESM Market Manual on Dispatch Protocol Manual Issue No. 11

The Secretariat advised the RCC that the resolution on the above matter is being finalized and shall just be emailed to the RCC. In this regard, the Secretariat was instructed to immediately prepare and transmit the draft resolution for the RCC's comment and approval.

Agreement/ Action Plans:
The Secretariat to prepare the resolution for the said proposed amendment and have the same approved by the RCC through electronic mail

2.5. RCC Resolution No. 2016-08 – Proposed Amendments to WESM Market Manuals regarding Preferential Dispatch

The Secretariat sought clarification on the agreements of the RCC with respect to the proposed WESM Market Manual on the Procedures for the Monitoring of Forecast Accuracy Standards for Must Dispatch Generating Units regarding the value of the mean absolute percentage error (MAPE) and Percentile95 (Perc95) standards for run-of-river hydro generators. Ms. Geraldine Rodriguez informed the RCC that the resolution and attachments for the Proposed Amendments to the WESM Market Manuals regarding Preferential Dispatch have been forwarded to the RCC, via electronic mail, for its perusal. Ms. Rodriguez also recalled that during the discussion, Mr. Meneses recommended the adoption of the MAPE and Perc95 standards for Solar and Wind for the Run-of-River Hydro power plants since this has already been approved by the ERC. Ms. Divine Gayle Cruz stated that when she reviewed the discussion on this matter, there was, however, no resolution on what to adopt as the MAPE and Percentile95 standards for Run-of-River Hydro generators.

Atty. De Castro stated that in case the proposal is presented to the PEM Board, the reference for the MAPE and Perc95 standards may be raised in the discussion. Mr. Ambrosio Rosales then suggested referring the matter to the Technical Committee. Atty. De Castro recalled that PEMC already conducted a study regarding the matter which may have also involved the assistance of the Technical Committee. Ms. Rodriguez added that if the same will be referred to the Technical Committee, it probably would take some time for the study to be concluded.

Mr. Ferdinand Binondo raised his observations regarding the objective of the new WESM Market Manual. He stated that during the last discussion on the proposal, it was clarified that the manual does not intend to provide the standards for Must-Dispatch Generating Units. Ms. Tanglao recalled that the RCC also expressed its reservations on PEMC's position in providing standards for Must-Dispatch Generating Units. Atty. De Castro stated that the RCC has two options for this matter, either refer it to the Technical Committee or insert a value that has to have a basis.

In relation to the discussions on setting standards, Mr. Binondo reiterated that the manual does not cover the methodology in determining the standards for Must-Dispatch Generating Units. Noting Mr. Binondo's comment, Ms. Tanglao suggested referring the provision to the relevant rules which the affected generating units must comply with. Atty. Caryl Miriam Lopez-Mateo stated that it may be more appropriate to refer the matter to the Philippine Grid Code (PGC) since it would be the authority that shall provide the appropriate values for the same. Ms. Tanglao agreed with Atty. Mateo and further suggested to leave the values for Run of River generating units blank with corresponding reference to what the PGC will subsequently provide.

In this regard, the RCC agreed to revise the table of standards as follows:

Technology	Standards	
	MAPE	Perc95
Solar Wind	< 18%	< 30%
Run of River Hydro*	~~<8%~~	~~<32%~~

**in accordance with the Philippine Grid Code ~~subject to the approval of ERC/GMC~~*

The RCC approved, as revised, the proposed amendments to the affected WESM Market Manuals regarding the Implementation of Preferential Dispatch, FIT-All Collection and Non-Expiration of Standing Submissions in the WESM together with the corresponding resolution on the matter.

Agreement/ Action Plans:

a. The RCC agreed to refer the values for mean absolute error (MAPE) and percentile 95 (Perc95) for Run of River Hydro generators in accordance with the values to be provided by the Philippine Grid Code.
b. The RCC approved the resolution presented by the Secretariat for transmittal to the PEM Board.

2.6. Proposed Amendments to the WESM Market Manual on Management of Net Settlement Surplus

Mr. dela Viña led the discussion on the subject proposal, providing PEMC's responses to the comments received from the DOE, Aboitiz Power Corporation (APC) and SN Aboitiz Power (SNAP). Mr. dela Viña informed the RCC that he also prepared a presentation to further discuss the details of the study on the Net Settlement Surplus (NSS).

As a background, he mentioned that the ERC already promulgated a resolution on how the NSS shall be distributed to the WESM Participants. According to the resolution, the NSS shall be allocated on a pro-rata basis depending on the contribution of the Trading Participants to the total NSS that is measured by the line loss and congestion charges (LLCC) payment of each participant. Mr. dela Viña further explained that the resolution does not include the formula in calculating the LLCC, which urged PEMC to propose for the calculation of the same to be included in the relevant WESM Market Manual for the proper allocation of the NSS.

Mr. dela Viña explained that the proposal intends to:

(i) specify in the NSS Manual the formula for calculating LLCC payments of trading participants based on the methodology that is currently being implemented (with consideration of bilateral contracts); and

(ii) specify in the NSS Manual the formula for calculating LLCP of trading participants and changing the reference price from $MCP_{Highest}$ to MCP_{Lowest}.

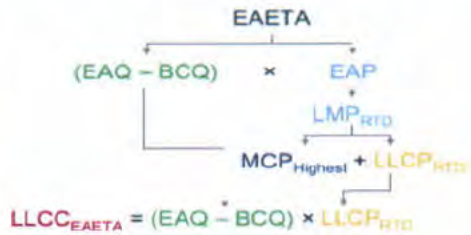
For the calculation of LLCC, Mr. dela Viña discussed PEMC's derivation of the same for both the generator and the load which were based on the trading amount formula of the participants. The formula also includes considerations of the BCQ and Line Rental charges as it would reduce the LLCC. Mr. dela Viña also informed the RCC that PEMC assumes that the Line Rental fee is charged to the load. Said derivation is as follows:

Participant	WESM Total Trading Amount Formula
Load	EAETA + EPETA + LR
Generator	EAETA + EPETA

By default, loads pay for the line rental attributed to bilateral contract transactions (but could also be assigned to the generator).

LINE LOSS AND CONGESTION CHARGE

- Ex-Ante Energy Trading Amount (EAETA)



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LINE LOSS AND CONGESTION CHARGE

- Ex-Post Energy Trading Amount (EPETA)

EPETA

(MQ – EAQ) × EPP

LMP_{RTX}

$MCP_{Highest} + LLCP_{RTX}$

$LLCC_{EPETA} = (MQ - EAQ) \times LLCP_{RTX}$

LINE LOSS AND CONGESTION CHARGE

- Line Rental

Line Rental

BCQ × $(EAP_L - EAP_G)$

$(LMP_{RTD,L} - LMP_{RTD,G})$

$[\cancel{MCP_{Highest}} + LLCP_{RTD,L} - (\cancel{MCP_{Highest}} + LLCP_{RTD,G})]$

$LLCP_{RTD,L} - LLCP_{RTD,G}$

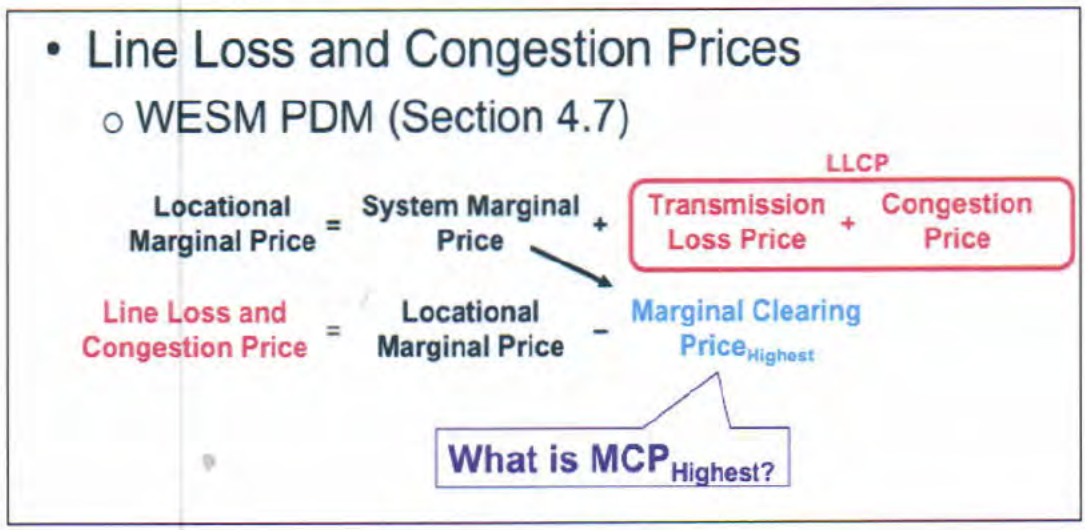
$LLCC_{LR} = BCQ \times (LLCP_{RTD,L} - LLCP_{RTD,G})$

$LLCC_{LR}$ = Line Rental since $MCP_{Highest}$ cancels itself in the Line Rental formula

240 The resulting formulas for the calculation of LLCC are as follows:

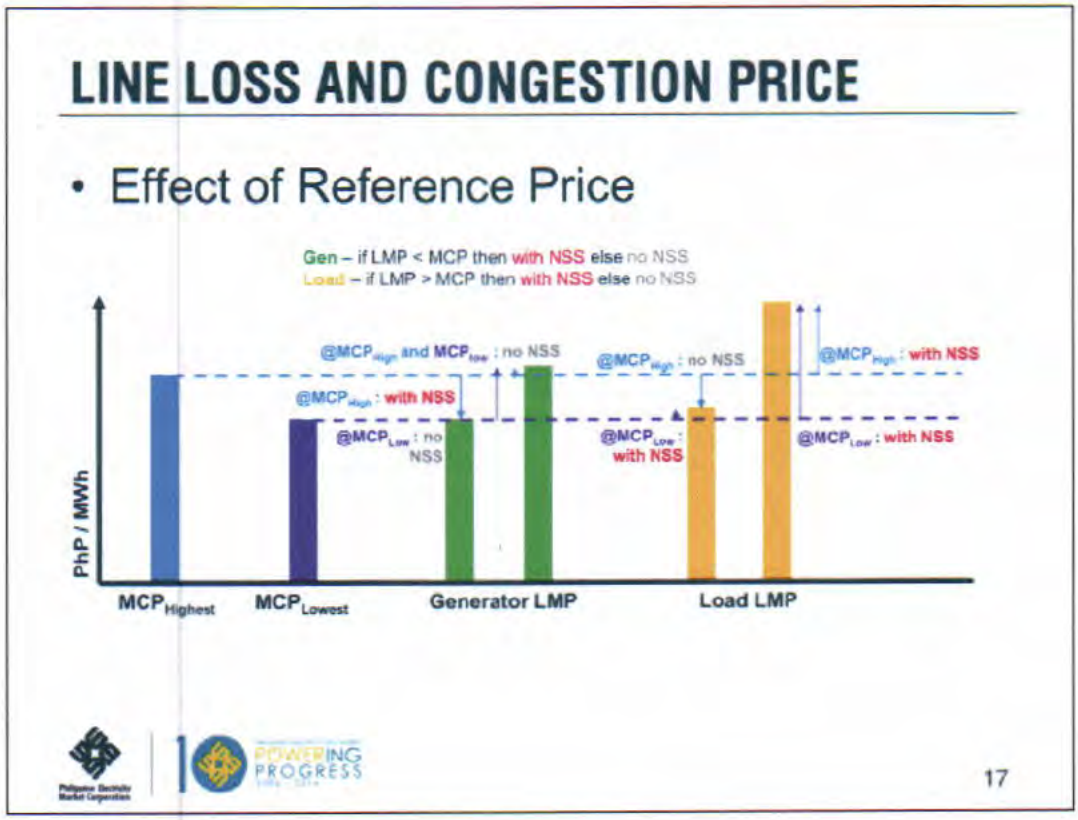
Participant	Current Implementation	Proposed
Load	$LLCP_{RTD}$ x EAQ + $LLCP_{RTX}$ x (MQ – EAQ)	$LLCP_{RTD}$ x (EAQ – BCQ) + $LLCP_{RTX}$ x (MQ – EAQ) + Line Rental
Generator	$LLCP_{RTD}$ x EAQ + $LLCP_{RTX}$ x (MQ – EAQ)	$LLCP_{RTD}$ x (EAQ – BCQ) + $LLCP_{RTX}$ x (MQ – EAQ)

241 Referring to the above formulation, it was noted that the line loss and congestion price
242 (LLCP) shall be part of the calculation of the LLCC. In line with this, Mr. dela Viña
243 presented a brief explanation on the calculation of LLCP and expounded on the use of the
244 Market Clearing Price in the settlement in the sport market.



245 Mr. dela Viña explained that the highest Market Clearing Price (MCP) is currently used for
246 reference in calculating the LLCP. With the proposed amendment of PEMC, the lowest
247 MCP will instead be used in calculating LLCP when congestion occurs. In this case, if
248 there is a generator which has a Locational Marginal Price (LMP) around the MCP lowest,
249 it will not receive NSS allocation since its marginal losses have already been duly covered.
250
251 Currently, if the reference is at MCP high, generators receive NSS allocation because they
252 argue that they could have received higher payments, but due to congestion they are paid
253 at a lower price. With the current proposal, if the LMP of the generator is equal or higher
254 than the reference MCP, no NSS allocation shall be flowed back to them. In relation to the
255 calculation of LLCP for the load, it currently will not be subjected to NSS allocation if its
256 LMP is lower than the reference MCP. This results to more allocation of the NSS to

generators. On the proposed calculation of the LLCP, if the reference is MCP low, most of the NSS allocation will be flowed back to the loads since they are the Trading Participants which paid at high prices.



Mr. Padilla inquired if PEMC has already tried actual simulations using high and low MCPs at the same time since according to him it would be better if generators and loads are referenced at the MCP of its location. Mr. dela Viña explained that if the suggestion of Mr. Padilla shall be applied, then it would result to allocation of losses only. Mr. Meneses stated that it would be appropriate to calculate LLCC separately when there is congestion on the High Voltage, Direct Current (HVDC) cable. Mr. dela Viña explained that during congestion, the HVDC cable cannot accommodate cheaper power, which leads to Luzon loads' consumption of generated power by the Visayas generators. In this case, Luzon loads pay at the MCP of Luzon and afterwards settles at the price of Visayas' MCP. The excess payments made by the load is the NSS to be allocated to the Trading Participants. In case the HVDC is totally out, Mr. dela Viña explained that there will be no resulting NSS as it would only be existent due to marginal losses.

Mr. dela Viña also presented PEMC's response to the comments received from APC, SNAP and the DOE. The responses are as follows:

<table>
<tr><th>Title</th><th>Clause</th><th>Provision</th><th>Proposed Amendment</th><th>Comment</th><th>PEMC Response</th></tr>
<tr><td></td><td></td><td>General Comment</td><td></td><td>SNAP: Contracting (BCQ) is an activity driven by commercial decisions made by market participants and the effect of such commercial decision is reflected in the WESM line rental charges. The WESM line rental charge to be paid by the customer when he enters into a contract with a supplier whose location is far from his location is higher compared with the line rental charge when his supplier is located in the same area. The net settlement surplus should not be used to mitigate such contracting decision.</td><td>The ERC NSS Rules establishes that the NSS should be allocated based on the line loss and congestion charge payment of each trading participant. Based on the analysis, the line rental charge is a form of line loss and congestion charge payment. This is why it was proposed to be included in the formula.</td></tr>
<tr><td></td><td></td><td>General Comment</td><td></td><td>SNAP: The line rental charges does not accurately show the line loss and congestion charges associated with the market participants. Refer to the table below.

• Assumptions:
• Market Clearing Price (MCP) = Php 3100
• Price at the Customer's Node = Php 3250
• Price at the Generator's Node = Php 3200
• Quantity = 1 MW
• BCQ = 1 MW
• Total Line Loss and Congestion Charges = Php 500
• Net Settlement Surplus = Php 500

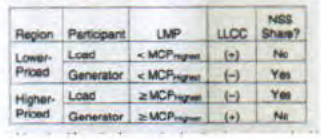
<table><tr><th></th><th>Rebate, Php (Existing)</th><th>Rebate, Php (Proposed)</th></tr><tr><td>Customer</td><td>500 x (150/500) = 150</td><td>500 x (50/500) = 50</td></tr><tr><td>Generator</td><td>0</td><td>0</td></tr><tr><td>Total</td><td>150</td><td>50</td></tr></table>
The table above shows that the resulting total rebate when using the proposed formula is</td><td>The total LLCC would not necessarily equate to the total NSS. In the example given, if the NSS is P 500 then the allocation should be 500 x 150/150 and 500 x 50/50. In both cases, the customer would receive the NSS.</td></tr>
</table>

Title	Clause	Provision	Proposed Amendment	Comment	PEMC Response
				less than the total rebate when using the existing formula.	
		General Comment		SNAP: The proposed formula considers the line rental charge in calculating the rebate for a load customer but not for a generator. The party that pays for the line rental charges depends on the agreement between the contracting parties and it is possible that the generator will be the party paying for the line rental charge.	Agree. The line rental charge would be considered in the LLCC of the counterparty that would pay the line rental charge.
		General Comment		SNAP: The rebate calculated using the existing formula for line loss and congestion charges (LLCC) should be broken down into two components, spot quantity and bilateral contract quantity, rather than changing the LLCC formula. Then the rebate associated with the bilateral contract quantity should be remitted to the party paying for the line rental charge.	Since the principle is to allocate the NSS based on the LLCC payment of each trading participant, consideration of the line rental amounts, which are LLCC payments, would be more consistent with the principle.
		General Comment	Jon: Is it possible to break down the allocation of NSS on spot and BCQ? JVD: I think we could do that, but it is still lump and then allocate it afterwards. You start by calculating LLCC and break it down in to two JDV:	SNAP: Based on the illustration, line rental charges cannot accurately capture the LLCC actually paid for by Participants. • If Load 1 were to contract with Gen1, then LLCC paid for by Gen 1 and Load are effectively considered in LR and can be used in LLCC calculation • If load 1 were to contract with Gen2, then the LR paid by Load 1 does not accurately capture the LLCC paid by Load 1. The LR is much lower than the actual LLCC paid by Load 1 since the 'benefit' of Gen 1 (which	The LR paid by Load 1 is its LLCC payment. Load 1 was never charged for the difference between Gen 2's price and the MCP; hence, it may not be considered as part of Load 1's LLCC payment.

Title	Clause	Provision	Proposed Amendment	Comment	PEMC Response
				is not an LLCC, LLCC is only positive or zero) was subtracted from Load 1's LLCC.	
		General Comment		SNAP: Application of the lowest market clearing price as the reference price for calculating the LLCCs of the trading participants. – The proposal to change the reference market clearing price arises from the interpretation that the net settlement surplus (NSS) is only associated with those paying participants thus NSS should be allocated to those that were part of the collectibles (participants that provided actual payments to the market). NSS arises because of the price differences between the nodes due to losses and congestion which is a result of the locational marginal pricing adopted for the WESM. Therefore, both customers and suppliers contribute to the NSS eventually. Rather than using the lowest market clearing price (MCP) as reference, it would be better to use the MCP of an unconstrained market solution which reflects the condition without the congestion.	NSS arises, in the case of congestion, because lower-priced power is exported to the higher-priced region. As a result, customers in the higher-priced region are paying at a higher price for the imported power and results in NSS. The generators in the lower-priced region would have still been paid at or above its offer price.
		General Comment		APC: While we do not disagree with the concept as per the PEMC proposal, we would like to highlight that the new PEMC proposal may not be aligned with the formula they presented at the ERC hearings way back in 2008 to 2009. In order to change the formula and concept of NSS, PEMC will need to go back to ERC for its approval. We note that the computation of Net Settlement Surplus (NSS) approved by the ERC in the Rules for the Distribution	PEMC agrees that the proposed amendment to the NSS manual would have to be submitted to the ERC for approval.

Title	Clause	Provision	Proposed Amendment	Comment	PEMC Response
				of Net Settlement Surplus (the "Rules") promulgated under ERC Resolution No. 6, Series of 2009 is as follows: "Section 5.1 .....The monthly amount to be distributed to each recipient shall be equal to the sum of the NSS amounts computed per trading interval, which in turn is equal to the total NSS amount per interval multiplied by the ratio of the recipient's line loss and congestion charges payments for the trading interval to the total line loss and congestion charges payments for the trading interval of all recipients...." We also note that the Locational Marginal Price (LMP) under the Rules takes into account the line loss and congestion costs of each participant. Thus, for a customer, the higher the line loss and congestion costs, the higher is the LMP. On the other hand, the LMP of a generator will be lower so as to limit the dispatch of that particular generator when the lines are congested. Thus, the LMP of the generator will be lower if congestion and line loss is higher. We believe that the ERC approval of the NSS distribution scheme is based on the logic described above. Both the generator and customer can claim NSS based on the effect of line loss and congestion cost to each of them. This is consistent with one of the Rules' objectives of providing a mechanism for the just and equitable distribution of the NSS. On the other hand, the PEMC proposal is limiting the NSS to the load side and transferring the bulk of the NSS proceeds to the	Although congestion does result in a higher-priced region and a lower-priced region, the prices paid to the generators in the lower-price region is appropriate since it would always be greater than or equal to the offer price of the generators in the region. In no circumstance is a generator paid below its offer price due to congestion.

Title	Clause	Provision	Proposed Amendment	Comment	PEMC Response
				participant who paid the higher line rental charge. To assure proper processes are met, we recommend that the PEMC proposal be referred to ERC for approval.	
	5.3.4	(new)	The line loss and congestion charges payments of each trading participant shall be calculated as follows: $\mathbf{LLCC_{j,k} = LLCP_{RTD,j,k} \times (EAQ_{j,k} - \Sigma BCQ_{j,c,k}) + LLCP_{RTX,j,k} \times (MQ_{j,k} - EAQ_{j,k}) + \Sigma Line\ Rental_{j,c,k}}$ **Where:** $\mathbf{LLCC_{j,k}}$= line loss and congestion charges payments of recipient **j** for the trading interval **k** $\mathbf{LLCP_{RTD/X,j,k}}$= line loss and congestion price during the ex-ante or ex-post run of recipient j for trading interval **k** $\mathbf{EAQ_{j,k}}$= ex-ante quantity of recipient j for trading interval **k** $\mathbf{BCQ_{j,c,k}}$= bilateral contract quantity of the bilateral contract between recipient **j** and counterparty **c** for trading interval **k** $\mathbf{MQ_{j,k}}$= metered quantity of recipient j for trading interval **k** **ΣLine Rental** = 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)	APC: This formula changed the concept approved by ERC in the Rules for the Distribution of Net Settlement Surplus as per ERC Resolution No. 6, Series of 2009. In the ERC hearings conducted on the said Rules in 2008-2009, PEMC said that even though their proposed formula is complicated, the formula assures equitable distribution of the NSS. DOE: Suggest that the term Line Rental amount should be expressed in the formula similar to Philippine Electricity Market Corporation's (PEMC) previous proposal in the WESM Rules to delete and replace the term "Line Rental" with adjustments of Bilateral Contracts.	The formula is consistent with the concept established under the ERC NSS Rules. Section 5.1 of the ERC NSS Rules provides that the allocation shall be on a pro-rata basis based on the line loss and congestion charges payments of each trading participant. The proposed amendment does not change this principle but only details the calculation of the line loss and congestion charge payment of each trading participant. Agree. The LLCC formula would be changed if the proposed amendment to delete the term Line Rental would be approved as follows: $LLCC_{j,k} = LLCP_{RTD,j,k} \times EAQ_{j,k} + LLCP_{RTX,j,k} \times (MQ_{j,k} - EAQ_{j,k}) - LLCP_{RTD,j,c,k} \times BCQ_{j,c,k}$ Where, $LLCP_{RTD,j,c,k}$ = line loss and congestion price during the RTD run of counterparty c of recipient j for trading interval k If the proposal to the BCQ will be approved, then the line rental will be removed.
	5.3.5	(new)	The line loss and congestion price of each trading participant for the ex-ante or	We recommend that the table presented below be maintained, based on the logic	Although congestion does result in a higher-priced region and a lower-priced

Title	Clause	Provision	Proposed Amendment	Comment	PEMC Response
			ex-post run shall be calculated as follows: $LLCP_{RTD/X,j,k} = LMP_{RTD/X,j,k} - MCP_{lowest,k}$ **Where:** $LLCP_{RTD/X,j,k}$= 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	described above in our general comments.  	region, the prices paid to the generators in the lower-price region is appropriate since it would always be greater than or equal to the offer price of the generators in the region. In no circumstance is a generator paid below its offer price due to congestion. In this regard, it would be more appropriate to allocate the NSS to loads that paid the higher price instead of to generators at the lower-priced region.

After the discussion of the responses, Atty. De Castro sought comments from the body. Mr. Meneses clarified on PEMC's plan regarding the computation, once the new Market Management System has already been promulgated, since the proposed formula still considers ex-post pricing. Mr. dela Viña elaborated that the same formulation has been adopted and included in the proposed Price Determination Methodology manual, only it was re-derived to be appropriate. Mr. dela Viña clarified that the proposed NSS formula, once approved, will be submitted to the ERC. It is expected that if the ERC approves the proposal, this NSS formula would only be in effect until such time that PEMC has migrated to the new Market Management System.

The RCC approved the proposal as presented for endorsement to the PEM Board. The Secretariat was instructed to prepare the corresponding RCC Resolution, for the body's approval.

Agreement/ Action Plans:

a. The RCC approved the proposed amendments to the WESM Market Manual on Management of Net Settlement Surplus
b. The Secretariat to prepare the corresponding RCC Resolution for the RCC's review and approval and endorsement to the to the PEM Board

2.7. Proposed Amendments to the WESM Metering Manual regarding the Metering Service Provider Performance

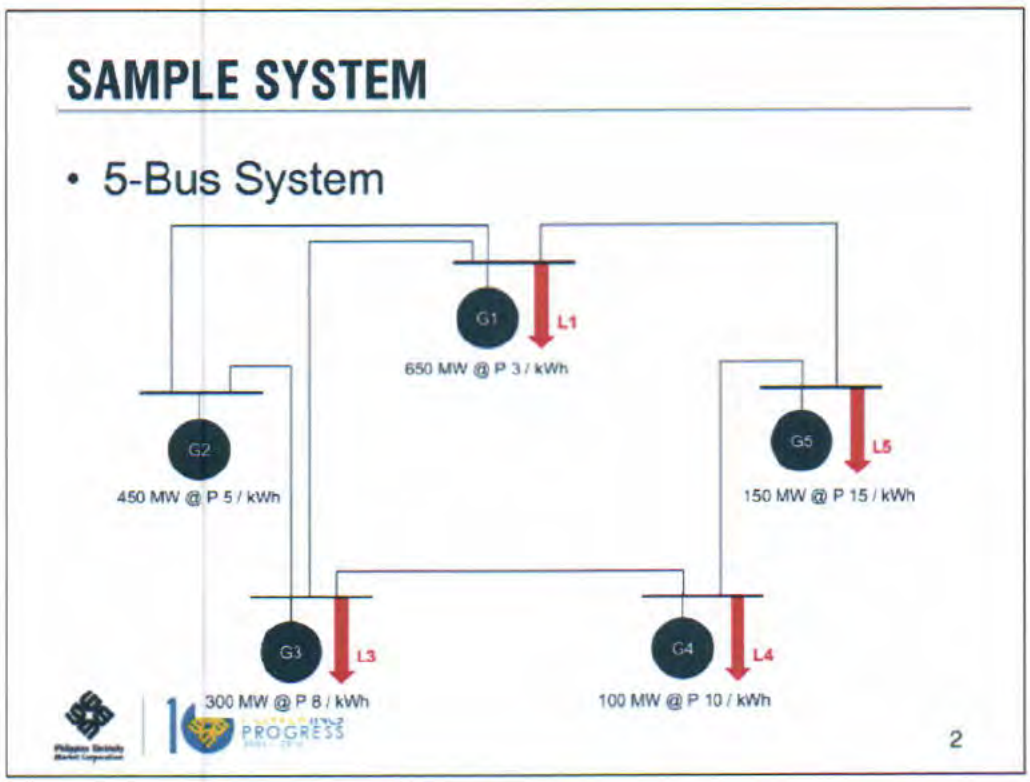
Agreement/ Action Plans:

Deferred; to be discussed in the next scheduled meeting

2.8. Presentation on Sample Settlement Calculation related to the Proposed Amendments to the Price Determination Methodology Manual

As a background, during the 115th RCC meeting, PEMC presented its proposal for the amendment of the WESM Market Manuals on Price Determination Methodology and Constraint Violation Coefficient. For better appreciation of the proposals, the RCC requested the proponent to present a sample calculation in the settlement of the spot market prices.

For the sample calculation, the proponent used a 5-bus system with 5 generators and 4 loads which will be varied throughout the discussion.



Mr. dela Viña presented the proposed calculation for the Energy Settlement Price (ESP) for the loads and generators. He explained that the ESP will still be calculated hourly but with considerations to the varying LMP per interval.

305 For Load:

ENERGY SETTLEMENT PRICE (ESP)

- L3:

Dispatch Interval	Schedule (MW)	LMP (PhP/MWh)	MW x LMP (PhP/h)
5	150	5,265	789,761
10	150	5,275	791,228
15	150	8,000	1,200,000
20	150	8,000	1,200,000
25	150	8,000	1,200,000
30	150	8,000	1,200,000
35	150	8,000	1,200,000
40	150	8,000	1,200,000
45	150	8,000	1,200,000
50	150	8,000	1,200,000
55	300	9,641	2,892,155
60	325	9,675	3,144,401
TOTAL	2,125	93,856	17,217,545

$$ESP^{*} = \frac{\text{TOTAL (MW} \times \text{LMP)}}{\text{TOTAL MW}}$$

$$ESP = \frac{17{,}217{,}545}{2{,}125}$$

$$\mathbf{ESP = PhP\ 8,102\ /MWh}$$

In an hourly market, only the top of the hour price is determined and is the basis for settlement.

*Proposed PDM Section 8.2.1(b)

8

306 For Generators:

ENERGY SETTLEMENT PRICE (ESP)

- G4:

Dispatch Interval	Schedule (MW)	LMP (PhP/MWh)	MW x LMP (PhP/h)
5	0	5,483	0
10	0	5,495	0
15	0	8,342	0
20	0	8,349	0
25	0	8,357	0
30	0	8,352	0
35	0	8,348	0
40	0	8,324	0
45	0	8,348	0
50	0	8,317	0
55	40	10,000	396,066
60	64	10,000	637,511
TOTAL	103	97,715	1,033,577

$$ESP^{*} = \frac{\text{TOTAL (MW} \times \text{LMP)}}{\text{TOTAL MW}}$$

$$ESP = \frac{1{,}033{,}577}{103}$$

$$\mathbf{ESP = PhP\ 10,000\ /MWh}$$

*Proposed PDM Section 8.2.1(a)

9

307 For Generators which have not injected energy to the market, the summation of all its LMP
308 divided by the number of intervals is used to determine its ESP:

ENERGY SETTLEMENT PRICE (ESP)

- G5:

Dispatch Interval	Schedule (MW)	LMP (PhP/MWh)	MW × LMP (PhP/h)
5	0	5,429	0
10	0	5,444	0
15	0	8,270	0
20	0	8,285	0
25	0	8,299	0
30	0	8,291	0
35	0	8,282	0
40	0	8,236	0
45	0	8,199	0
50	0	8,139	0
55	0	9,843	0
60	0	9,856	0
TOTAL	0	96,570	0

$$ESP^{*} = \frac{\text{TOTAL (MW} \times \text{LMP)}}{\text{TOTAL MW}}$$

$$ESP = \frac{0}{0}$$

$$ESP = \frac{\text{TOTAL (LMP)}}{12}$$

ESP = PhP 8,048 /MWh

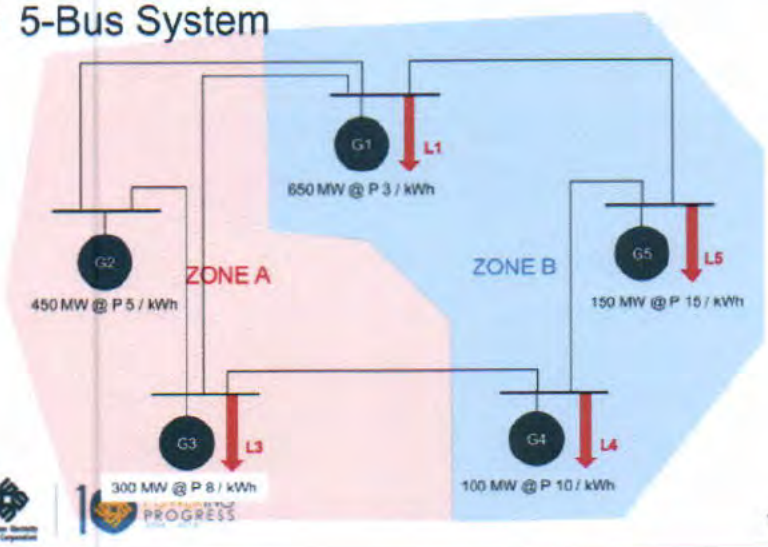
*Proposed PDM Section 8.2.1(a)

10

309 Mr. dela Viña informed the body that Zonal Energy Pricing shall be the reference for
310 incorporating the same to the PDM. To further explain the process, the 5-bus system was
311 separated into two (2) zones and was presented step-by-step as follows:

ZONAL ENERGY PRICE (ZEP) FOR CUSTOMERS

- 5-Bus System



11

ENERGY SETTLEMENT PRICE (ZONAL)

- ZONE B:

$$\frac{\text{TOTAL (MW} \times \text{LMP)}}{\text{TOTAL MW}}$$

DI		L1	L4	L5	TOTAL	Zonal Energy Price*, ZEP (PhP/MWh)
5	Schedule (MW)	450	250	200	900	$\frac{4,778,680}{900} = 5,310$
	LMP (PhP/MWh)	5,161	5,483	5,429	16,072	
	MW×LMP (PhP/h)	2,322,290	1,370,682	1,085,708	4,778,680	
10	Schedule (MW)	475	250	200	925	$\frac{4,921,747}{925} = 5,321$
	LMP (PhP/MWh)	5,177	5,495	5,444	16,116	
	MW×LMP (PhP/h)	2,459,196	1,373,850	1,088,702	4,921,747	
15	Schedule (MW)	500	250	200	950	$\frac{7,675,280}{950} = 8,079$
	LMP (PhP/MWh)	7,872	8,342	8,270	24,483	
	MW×LMP (PhP/h)	3,935,962	2,085,386	1,653,932	7,675,280	
20	Schedule (MW)	525	250	200	975	$\frac{7,888,147}{975} = 8,090$
	LMP (PhP/MWh)	7,893	8,349	8,285	24,527	
	MW×LMP (PhP/h)	4,143,972	2,087,274	1,656,901	7,888,147	

PROGRESS

*Proposed PDM Section 8.2.1(c)(i)

12

ENERGY SETTLEMENT PRICE (ZONAL)

- L1:

Dispatch Interval	Sched. (MW)	LMP (PhP/MWh)	ZEP (PhP/MWh)	MW×ZEP (PhP)
5	450	5,161	5,310	2,389,340
10	475	5,177	5,321	2,527,384
15	500	7,872	8,079	4,039,621
20	525	7,893	8,090	4,247,464
25	550	7,915	8,102	4,456,180
30	600	7,943	8,102	4,861,279
35	650	7,971	8,105	5,268,501
40	700	7,985	8,090	5,662,729
45	700	7,970	8,089	5,662,327
50	725	7,963	8,066	5,848,018
55	825	9,686	9,770	8,060,238
60	825	9,712	9,789	8,075,890
TOTAL	7,525	93,248	94,914	61,098,970

$$\text{ESP}^* = \frac{\text{TOTAL (MW} \times \text{ZEP)}}{\text{TOTAL MW}}$$

$$\text{ESP} = \frac{61,098,970}{7,525}$$

$$\textbf{ESP} = \textbf{PhP } 8.119 \textbf{ /MWh}$$

Straight average is also applied if total MW is zero (0).

PROGRESS

*Proposed PDM Section 8.2.1(c)(ii)

13

ENERGY SETTLEMENT PRICE (ZONAL)

- L1, L4, and L5

DI	ZEP (PhP/MWh)	Schedule (MW) L1	L4	L5
5	5,310	450	250	200
10	5,321	475	250	200
15	8,079	500	250	200
20	8,090	525	250	200
25	8,102	550	250	200
30	8,102	600	250	175
35	8,105	650	250	150
40	8,090	700	250	100
45	8,089	700	300	50
50	8,066	725	300	0
55	9,770	825	300	0
60	9,789	825	300	0
	ESP	**8,119**	**7,973**	**7,341**

Note: There are currently no customer pricing zones in the WESM. Determination of customer pricing zones is subject to the approval of ERC.

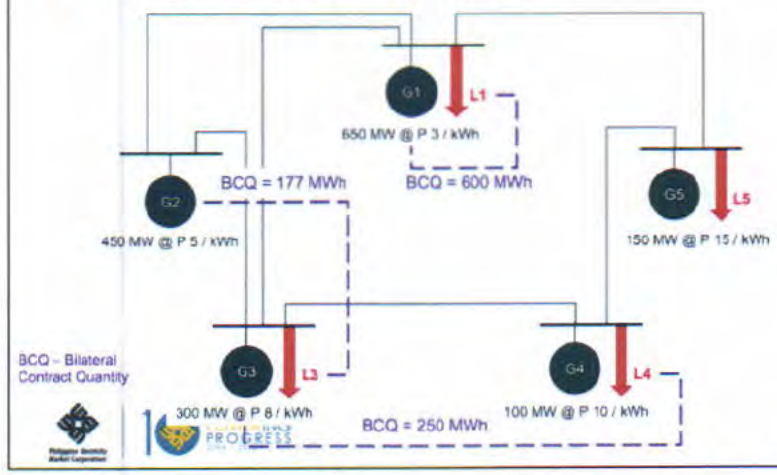
14

Mr. dela Viña informed the RCC that one of the advantages of promulgating the Zonal Energy Settlement Pricing is that the settlement prices shall depend on Trading Participants' actual schedule. He further added that this methodology is still subject for the approval of the ERC.

For the Energy Trading Amount, considerations for the BCQ and line rental charges are duly accounted for in the sample computations as follows:

SAMPLE SYSTEM

- Sample Bilateral Contracts



16

ENERGY TRADING AMOUNT (ETA)

TP	GESQ[1] (MWh) [A=MQ]	BCQ (MWh) [B]	ESP (P/MWh) [C]	ESP × GESQ (PhP) [D = C × A]	∑(ESP[4] X BCQ) (PhP) [E = C × B]	ETA* (PhP) [F = D – E]	SQ[2] (MWh) [G = A – B]	SP[3] (P/MWh [H = F / G]
G1	650	600	7,771	5,050,945	4,662,411	**388,534**	50	7,771
G2	447	177	7,473	3,342,567	1,323,281	**2,019,286**	270	7,473
G3	106	250	8,779	933,684	2,194,853	**(1,261,168)**	(144)	8,779
G4	9	0	10,000	86,131	0	**86,131**	9	10,000
G5	0	0	8,048	0	0	**0**	0	N/A
L1	(627)	(600)	7,988	(5,008,902)	(4,662,411)	**(346,491)**	(27)	12,794
L3	(177)	(177)	8,102	(1,434,795)	(1,323,281)	**(111,514)**	0	N/A
L4	(267)	(250)	8,207	(2,188,492)	(2,194,853)	**6,361**	(17)	(382)
L5	(123)	0	7,506	(922,658)	0	**(922,658)**	(123)	7,506
TOT	**19**	**0**	--	**(141,520)**	**0**	**(141,520)**	**19**	--

1\ Gross Energy Settlement Quantity
2\ Spot Quantity
3\ Spot Price (not officially used, for illustration only)
4\ Example assumes that the ESP is referenced at the generator counterparty's node

*Proposed PDM Section 8.4.1

18

319 Mr. dela Viña also explained about the referencing of nodes on bilateral contracts. He
320 stated that if the reference node is set at the generator side, the load contracted to it
321 shoulders the line rental. Otherwise, the generator pays for the line rental.

ENERGY TRADING AMOUNT (ETA)

- Contract Reference Node

TP	GESQ [A=MQ]	BCQ [B]	ESP [C]	ESP × GESQ [D = C × A]	∑(ESP X BCQ) [E = C × B]	ETA [F = D – E]	SQ [G = A – B]	SP [H = F / G]
Generator Node Reference Price								
G2	447	177	7,473	3,342,567	**1,323,281**	**2,019,286**	270	7,473
L3	(177)	(177)	8,102	(1,434,795)	**(1,323,281)**	**(111,514)**	0	N/A
Load Node Reference Price								
G2	447	177	7,473	3,342,567	**1,434,795**	**1,907,771**	270	7,060
L3	(177)	(177)	8,102	(1,434,795)	**(1,434,795)**	**0**	0	N/A
Difference								
G2	--	--	--	0	**(111,514)**	**111,514**	--	--
L3	--	--	--	0	**111,514**	**(111,514)**	--	--

21

Mr. dela Viña also presented the comparison of the proposed and current energy trading amounts (ETA) calculated.

ENERGY TRADING AMOUNT (ETA)

- Comparison with Current (1hr vs 5min)

TP	TOP-OF-THE-HOUR PRICE [A]	MQ [B]	BCQ [C]	ETA (1-HR) [D = A×B – A×C]	ETA (5-MIN) [E]	DIFFERENCE (5-MIN LESS 1-HR) [F = E – D]	
G1	9,712	650	600	485,611	388,534	(97,077)	(P 454,537)
G2	9,272	447	177	2,505,409	2,019,286	(486,124)	
G3	9,675	106	250	(1,389,832)	(1,261,168)	128,663	
G4	10,000	9	0	86,131	86,131	0	
G5	9,856	0	0	0	0	0	
L1	9,712	(627)	(600)	(263,039)	(346,491)	(83,452)	P 384,454
L3	9,675	(177)	(177)	(71,447)	(111,514)	(40,067)	
L4	10,000	(267)	(250)	(247,897)	6,361	254,257	
L5	9,856	(123)	0	(1,211,415)	(922,658)	288,757	
TOT	--	19	0	(106,478)	(141,520)	(35,042)	

Net Settlement Surplus (NSS) = P 141,520

22

Based on the presentation, a Net Settlement Surplus was arrived at in the sample computation. Mr. dela Viña subsequently discussed about the proposed steps in allocating NSS among the Trading Participants.

NSS ALLOCATION

Step 1: Retrieve Marginal Loss and Congestion Cost*

TP	5 [A]	10 [B]	15 [C]	20 [D]	...
G1	161	177	(128)	(107)	
G2	0	0	(410)	(399)	
G3	265	275	0	0	
G4	483	495	342	349	
G5	429	444	270	285	
L1	161	177	(128)	(107)	
L3	265	275	0	0	
L4	483	495	342	349	
L5	429	444	270	285	
Min	0	0	(410)	(399)	

Step 2: Compute for Line Loss and Congestion Price (LLCP) per Dispatch Interval**

TP	5 [A – MIN A]	10 [B – MIN B]	15 [C – MIN C]	20 [D – MIN D]	...
G1	161	177	282	293	
G2	0	0	0	0	
G3	265	275	410	399	
G4	483	495	751	749	
G5	429	444	679	684	
L1	161	177	282	293	
L3	265	275	410	399	
L4	483	495	751	749	
L5	429	444	679	684	

*Output of the market dispatch optimization model
** Proposed PDM Section 9.4.2(c)

24

NSS ALLOCATION

- G3:

Step 3: Compute for Line Loss and Congestion Price (LLCP) per Settlement Interval

Dispatch Interval	LLCP (PhP/MWh)	Schedule (MWh)	LLCP × MW (PhP/h)
5	265	0	0
10	275	0	0
15	410	21	8,808
20	399	46	18,426
25	389	71	27,563
30	376	94	35,484
35	362	118	42,831
40	356	117	41,435
45	362	117	42,515
50	366	91	33,373
55	398	300	119,342
60	403	300	121,039
TOTAL	4,361	1,276	490,817

$$LLCP^{*} = \frac{\text{TOTAL (LLCP} \times \text{MW)}}{\text{TOTAL MW}}$$

$$LLCP = \frac{490{,}817}{1{,}276}$$

LLCP = PhP 385 /MWh

*Proposed PDM Section 9.4.2(c)

25

NSS ALLOCATION

Net Settlement Surplus (NSS) = P 141,520

	LLCP [A]	GESQ [B=MQ]	BCQ [C]	LLCP × GESQ [D = A × B]	LLCP × BCQ [E = A × C]	LLCC* [F = D – E]	NSS ALLOC** $\left[G = \frac{F}{\text{TOTAL F}} \times \text{NSS}\right]$
G1	313	650	600	203,343	187,701	0	0
G2	0	447	177	0	0	0	0
G3	385	106	250	40,901	96,149	(55,247)	26,131
G4	739	9	0	6,369	0	0	0
G5	0	0	0	0	0	0	0
L1	328	(627)	(600)	(205,407)	(187,701)	(17,706)	8,375
L3	369	(177)	(177)	(65,373)	0	(65,373)	30,921
L4	687	(267)	(250)	(183,257)	(96,149)	(87,108)	41,201
L5	600	(123)	0	(73,772)	0	(73,772)	34,893
TOTAL	--	19	0	(277,195)	(0)	(299,206)	141,520

*Line Loss and Congestion Charge (LLCC) is set to zero if the formula results in a positive value

* Proposed PDM Section 9.4.2(a)
** Proposed PDM Section 9.4.2

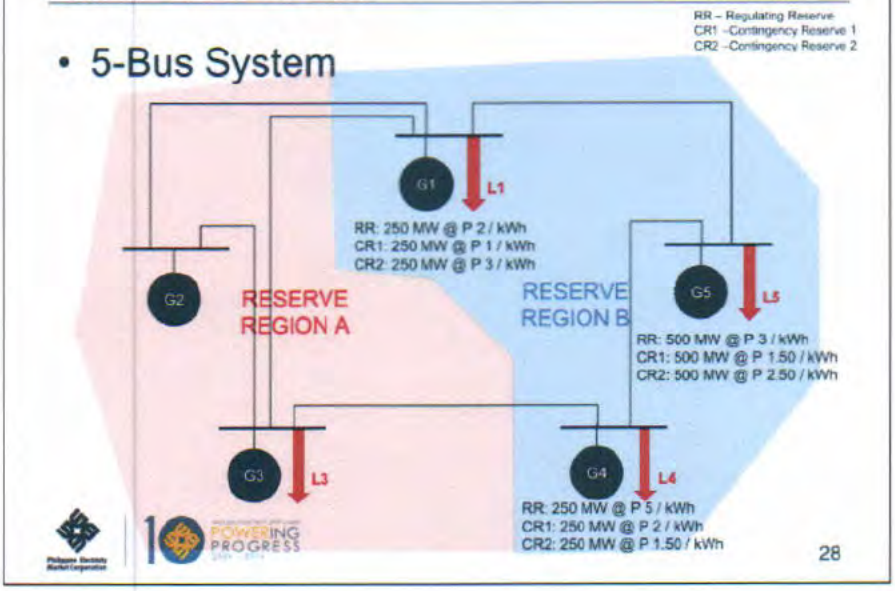
26

Mr. dela Viña explained that positive values of the LLCC means that the Trading Participants benefited from the congestion. In these cases these positive values are considered zero, otherwise, the resulting values are used for the calculation of the Trading Participant's NSS allocation.

For the reserve settlement sample computation, Mr. dela Viña presented to the RCC as follows:

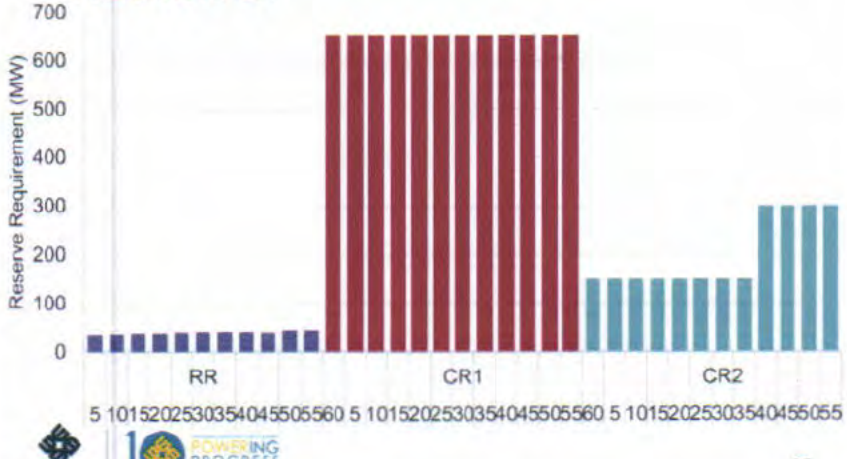
SAMPLE SYSTEM

- 5-Bus System

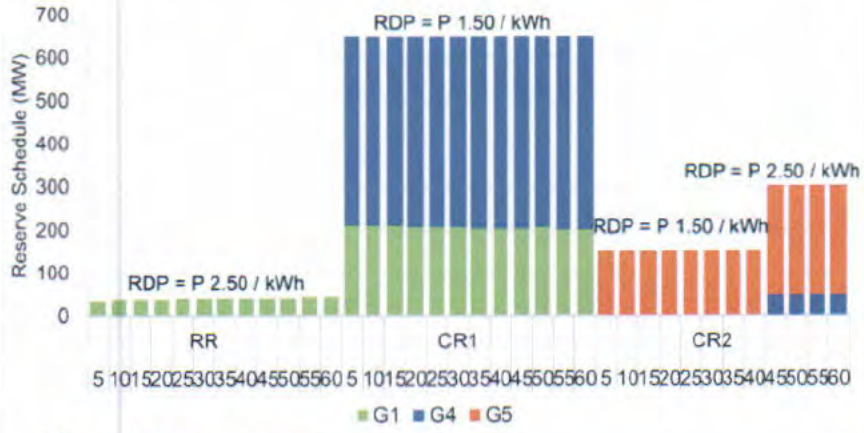


RESERVE REQUIREMENTS

- REGION B:



RESERVE SCHEDULES AND PRICES



RDP - Reserve Dispatch Price
RR – Regulating Reserve
FCR - Fast Contingency Reserve
SCR - Slow Contingency Reserve

30

RESERVE SETTLEMENT PRICE (RSP)*

- G4:

	RR			CR1				CR2			
DI	Sched (MW)	RDP (P/MWh)	MW×RDP (P/h)	DI	Sched (MW)	RDP (P/MWh)	MW×RDP (P/h)	DI	Sched (MW)	RDP (P/MWh)	MW×RDP (P/h)
5	0	2,500	0	5	436	1,500	654,000	5	0	1,500	0
10	0	2,500	0	10	437	1,500	655,500	10	0	1,500	0
15	0	2,500	0	15	438	1,500	657,000	15	0	1,500	0
20	0	2,500	0	20	439	1,500	658,500	20	0	1,500	0
25	0	2,500	0	25	440	1,500	660,000	25	0	1,500	0
30	0	2,500	0	30	441	1,500	661,500	30	0	1,500	0
35	0	2,500	0	35	442	1,500	663,000	35	0	1,500	0
40	0	2,500	0	40	442	1,500	663,000	40	0	1,500	0
45	0	2,500	0	45	442	1,500	663,000	45	50	2,500	125,000
50	0	2,500	0	50	441	1,500	661,500	50	50	2,500	125,000
55	0	2,500	0	55	445	1,500	667,500	55	50	2,500	125,000
60	0	2,500	0	60	445	1,500	667,500	60	50	2,500	125,000
TOT	0	30,000	0	TOT	5,288	18,000	7.932 M	TOT	200	22,000	500,000

* Proposed PDM Section 8.2.2

RESERVE SETTLEMENT PRICE (RSP)*

- G4:

RR

DI	Sched (MW)	RDP (P/MWh)	MW×RDP (P/h)
TOT	0	30,000	0

$$RSP_{RR} = \frac{\text{TOTAL (MW} \times \text{RDP)}}{\text{TOTAL MW}}$$

$$RSP_{RR} = \frac{0}{0}$$

$$RSP_{RR} = \frac{\text{TOTAL RDP}}{12}$$

$$RSP_{RR} = \frac{30{,}000}{12}$$

$$RSP_{RR} = 2{,}500$$

CR1

DI	Sched (MW)	RDP (P/MWh)	MW×RDP (P/h)
TOT	5,288	15,000	7.932 M

$$RSP_{CR1} = \frac{\text{TOTAL (MW} \times \text{RDP)}}{\text{TOTAL MW}}$$

$$RSP_{CR1} = \frac{7{,}932{,}000}{5{,}288}$$

$$RSP_{CR1} = 1{,}500$$

CR2

DI	Sched (MW)	RDP (P/MWh)	MW×RDP (P/h)
TOT	200	22,000	500,000

$$RSP_{CR2} = \frac{\text{TOTAL (MW} \times \text{RDP)}}{\text{TOTAL MW}}$$

$$RSP_{CR2} = \frac{500{,}000}{200}$$

$$RSP_{CR2} = 2{,}500$$

* Proposed PDM Section 8.2.2

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GROSS RESERVE SETTLEMENT QUANTITY (GRSQ)*

- G4:

$$GRSQ = \frac{\text{TOTAL MW}}{12}$$

* Proposed PDM Section 8.4.2(a)

RR

DI	Sched (MW)
5	0
10	0
15	0
20	0
25	0
30	0
35	0
40	0
45	0
50	0
55	0
60	0
RSQ	0

CR1

DI	Sched (MW)
5	436
10	437
15	438
20	439
25	440
30	441
35	442
40	442
45	442
50	441
55	445
60	445
RSQ	441

CR2

DI	Sched (MW)
5	0
10	0
15	0
20	0
25	0
30	0
35	0
40	0
45	50
50	50
55	50
60	50
TOT	17

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RESERVE SETTLEMENT QUANTITY (RSQ)*

- REGION B: $RSQ = GRSQ - RBCQ$

RR

	GRSQ (MWh) [A]	RBCQ (MWh) [B]	RSQ (MWh) [C=A- B]
G1	41	0	41
G4	0	0	0
G5	0	0	0

CR1

	GRSQ (MWh) [A]	RBCQ (MWh) [B]	RSQ (MWh) [C=A- B]
G1	209	0	209
G4	441	200	241
G5	0	0	0

CR2

	GRSQ (MWh) [A]	RBCQ (MWh) [B]	RSQ (MWh) [C=A- B]
G1	0	0	0
G4	17	0	17
G5	183	100	83

* Proposed PDM Section 8.4.2(b)

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RESERVE TRADING AMOUNT (RTA)

- REGION B:

RR

	RSQ (MWh) [A]	RSP (P/MWh) [B]	RTA (PhP) [C=A×B]
G1	41	2,500	101,667
G4	0	2,500	0
G5	0	2,500	0
		TOT	101,667

CR1

	RSQ (MWh) [A]	RSP (P/MWh) [B]	RTA (PhP) [C=A×B]
G1	209	1,500	314,000
G4	241	1,500	361,000
G5	0	1,500	0
		TOT	675,000

CR2

	RSQ (MWh) [A]	RSP (P/MWh) [B]	RTA (PhP) [C=A×B]
G1	0	1,833	0
G4	17	2,500	41,667
G5	83	1,955	162,879
		TOT	204,545

* Proposed PDM Section 8.4.2(c)

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RESERVE COST RECOVERY AMOUNT (RCRA)

- Region B – Regulating Reserve:

	MQ (MWh) [A]	RTA (PhP) [B]	RR RCRA (PhP) $\left[\frac{A}{\text{TOTAL A}} \times \text{TOTAL B}\right]$
G1	650	101,667	(39,446)
G4	9	0	(523)
G5	0	0	0
L1	627	--	(38,055)
L4	267	--	(16,183)
L5	123	--	(7,459)
TOTAL	1,675	101,667	(101,667)

* Proposed PDM Section 8.3.1

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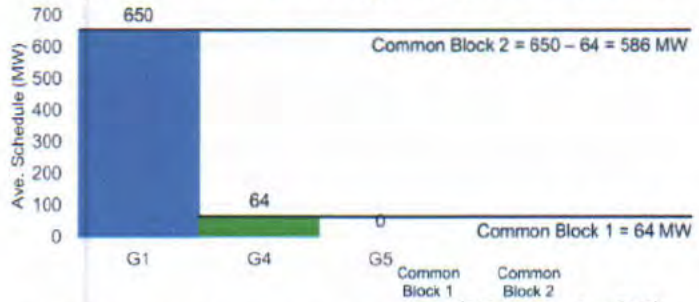
RESERVE COST RECOVERY AMOUNT (RCRA)

- Region B – Contingency Reserve 1*:



$$\text{CR1 Cost Recovery Amount}_{G1} = 675{,}000 \times \left(\frac{0.5 \times 64}{650} + \frac{1 \times 586}{650}\right) = 641{,}769$$

$$\text{CR1 Cost Recovery Amount}_{G4} = 675{,}000 \times \left(\frac{0.5 \times 64}{650}\right) = 33{,}231$$

Total Recovered Amount = P 675,000

* Proposed PDM Section 8.3.2 (for all contingency services)

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SETTLEMENT AMOUNT

TP	ETA (PhP) [A]	NSS[1] (PhP) [B]	RTA[2] (PhP) [C]	RCRA[3] (PhP) [D]	SA[4] (PhP) [E = A + B + C – D]
G1	388,534	0	415,667	853,034	(48,833)
G2	2,019,286	0	457,083	522,298	1,954,071
G3	(1,261,168)	26,131	358,542	289,036	(1,165,531)
G4	86,131	0	402,667	66,481	422,317
G5	0	0	162,879	0	162,879
L1	(346,491)	8,375	--	38,055	(376,172)
L3	(111,514)	30,921	--	4,291	(84,885)
L4	6,361	41,201	--	16,183	31,378
L5	(922,658)	34,893	--	7,459	(895,224)
TOT	(141,520)	141,520	1,796,837	1,796,837	0

1\ Under OTA (other trading amounts) with MRU and PSM adjustments
2\ RR RTA + FCR RTA + SCR RTA
3\ RR CRA + FCR CRA + SCR CRA
4\ Proposed PDM Section 8.6.2
5\ ETA + RTA – RCRA is also referred to as TA (trading amount) in Proposed PDM Section 8.4.3(b)

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Mr. Rosales noted that the proposal already establishes the formula for reserve categories such as fast contingency and slow contingency reserves that are inconsistent with those provided in the Grid Code. Atty. Mateo responded that even if the reserve categories are yet to be settled, the proposed pricing/clearing mechanism will still apply. She added that the proposed formulae are designed to be flexible so that they can still apply to the existing categories and to the new ones whenever the amended Grid Code is approved. Further, there should already be a set of formula incorporated in the new Market Management System so that future changes in infrastructure will be less costly. Still, Mr. Rosales contended that how reserves are classified would still affect the pricing mechanism.

Noting Mr. Rosales' concerns, Mr. Meneses and Mr. Castro, Jr. suggested that instead of identifying specifically the type of reserve categories which are not consistent with the grid code, as to how the pricing will be derived it would perhaps be better, for now, not to specify which pricing formula applies to which reserve category as they could just be paired up later on once the new categories are established. The proponent responded that this should not be a problem as it would not affect the proposed settlement formula.

The Secretariat explained to the RCC that the proposed amendments to the PDM is still within the commenting period and that the presentation was for the body's better appreciation of the proposal. The deliberation for the same will be scheduled for the next meeting.

Agreement/ Action Plans:
For the RCC to deliberate on the proposed WESM Market Manual on Price Determination Methodology in its next scheduled regular meeting

3. Next Meeting

The next RCC meetings were set as follows:

- 117th RCC Meeting – 03 August 2016
- 118th RCC Meeting – 07 September 2016
- 119th RCC Meeting – 05 October 2016

4. Adjournment

There being no other matter to be discussed, the meeting was adjourned at around 2:00 PM.

Prepared By:	Reviewed By:	Noted By:
[redacted]	[redacted]	[redacted]
Aldjon Kenneth M. Yap	**Geraldine A. Rodriguez**	**Elaine D. Gonzales**
***Analyst** – Market Governance Administration Unit*	***Assistant Manager** – Market Governance Administration Unit*	***Manager** – Market Data and Analysis Division*
Market Assessment Group	***Market Assessment Group***	***Market Assessment Group***

Approved by: RULES CHANGE COMMITTEE [redacted] **Maila Lourdes G. de Castro** Chairperson Independent	
Members:	
[redacted] **Concepcion I. Tanglao** Independent	[redacted] **Francisco L.R. Castro, Jr.** Independent
[redacted] **Allan C. Nerves** Independent	[redacted] **Isidro L. Cacho, Jr.** Market Operator Philippine Electricity Market Corporation (PEMC)
[redacted] **Ambrocio R. Rosales** Transmission Sector National Grid Corporation of the Philippines (NGCP)	**Joselyn D. Carabuena** Generation Sector Power Sector Assets and Liabilities Management Corporation (PSALM)
Jose Ferlino P. Raymundo Generation Sector SMC Global	[redacted] **Theo C. Sunico** Generation Sector Vivant Corporation
Atty. Jose Ildebrando B. Ambrosio Generator Sector NorthWind Power Development Corp. (NorthWind)	[redacted] **Ciprinilo C. Meneses** Distribution Sector (PDU) Manila Electric Company (MERALCO)
[redacted] **Jose P. Santos** Distribution Sector (EC) Ilocos Norte Electric Cooperative, Inc. (INEC)	**Gilbert A. Pagobo** Distribution Sector Mactan Electric Company (MECO)
[redacted] **Ludovico D. Lim** Distribution Sector Antique Electric Cooperative, Inc. (ANTECO)	[redacted] **Lorreto H. Rivera** Supply Sector TeaM (Philippines) Energy Corporation (TPEC)