

Republic of the Philippines  
**ENERGY REGULATORY COMMISSION**  
San Miguel Avenue, Pasig City



IN THE MATTER OF THE  
APPLICATION FOR THE APPROVAL  
OF THE PROPOSED PRICE  
DETERMINATION METHODOLOGY  
(PDM) FOR THE PHILIPPINE  
WHOLESALE ELECTRICITY SPOT  
MARKET (WESM)

ERC CASE NO. 2003-356

DEPARTMENT OF ENERGY (DOE),  
THROUGH THE PHILIPPINE  
ELECTRICITY MARKET  
CORPORATION - MARKET  
OPERATOR

Applicant.

D O C K E T E D  
Date: NOV 30 2005  
By: [Signature]

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### ORDER

The instant case stems from the application made by the Department of Energy ("DOE") for the approval of the Price Determination Methodology ("PDM") for the Philippine Wholesale Electricity Spot Market ("WESM"). The instant issue before us arises from the Compliance submitted by the DOE through the Philippine Electricity Market Corporation-Market Operator ("PEMC-MO", formerly TRANSCO-MO)) on 31 August 2005. The said Compliance is founded on the Order issued by the Energy Regulatory Commission ("the Commission") dated 15 March 2004, directing the re-submission of the Price Determination Methodology and ordering the PEMC-MO to submit additional information and clarification in respect to certain issues. In said Order, the Commission stated that it:

- Approves in concept elements of the said methodology submitted;
- Provides guidance for the further development of some elements of said methodology;

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- Seeks additional information and/or explanation for some elements of the methodology; and
- Designates certain elements of said methodology for future, separate, independent filing with the Commission.

The Order dated 15 March 2004 essentially found the submission of the PEMC-MO to be inconsistent with the provisions of the WESM Rules and maintained that such inconsistencies and omissions will need to be cured prior to the resubmission of the PDM or final approval by the Commission.

The PEMC-MO filed its partial Compliance on 01 December 2004 but several documents were not submitted on the basis of the contention that the finalization of these documents was subject to the results of the Trial Operations Program being conducted by it. Finally, on 31 August 2005 full Compliance to the said Order was filed.

The authority of the Commission to approve the price determination methodology is grounded on Section 30 of the Republic Act No. 9136 otherwise known as the Electric Power Industry Restructuring Act (EPIRA).

While several of the submissions contained in the said Compliance of 31 August 2005 have substantially complied with the directives of the Commission, the failure to do so in several items is noted in which case it perceives the need to fully comply thereto to ensure that the pricing in the WESM are governed as far as practicable by commercial and market forces consistent with the objectives of the WESM Rules. Hence, pending the submission of comments from industry participants on the same, following are the preliminary issues and the

corresponding directives from the Commission relative to the said PDM submission:

### MARKET SUSTAINABILITY

In its 15 March 2004 Order, the Commission noted the absence of provisions in the WESM Rules on bid caps or price caps despite the averments of the PEMC-MO of the need to impose such. The need to establish a mechanism to prevent undue volatility or unrealistic prices was pointed out during the public consultation. As highlighted by the Commission in said Order, the Philippine WESM has no operational experience from which to provide assurance to the Commission that the WESM Rules, as written, will result in true competitive behavior from the Market Participants. The Commission thus emphasized its need to be assured that the PEMC-MO has developed robust procedures, rules and penalties with regard to market sustainability issues.

The PEMC-MO submitted general concepts on market sustainability measures in its December 2004 compliance. It averred that a detailed provision on market sustainability measures shall be finalized during the market trials. However, the same set of mitigating measures were proposed in its current compliance.

The Commission deems that the said recommendations are so general in nature as to be of little use in achieving the above goals. Nothing in the submission states that guidelines or criteria for the development of the details of each measure are already in place, contrary to the directive issued by the Commission. Detailed status of the development of these measures and concrete steps taken including pre-emptive market power mitigation measures,

development of demand side involvement in the short-term market arrangements are necessary to ensure a regime of clear, predictable and enforceable mitigating procedures that may optimally benefit electricity producers, retailers/aggregators and consumers.

### NET SETTLEMENT SURPLUS

The Commission has approved in concept the collection of line rental revenues resulting from congestion. In the 15 March 2004 Order, PEMC-MO was directed to provide information as to the magnitude of line rental revenues through market simulations using the Market Management System prototype with various generation and load scenarios. Moreover, PEMC-MO was directed to develop the detailed procedures within the WESM Rules for the use of such line rental revenues resulting from congestion prior to the implementation of a Financial Transmission Rights (FTRs) auction. A market simulation using the Market Management System was indeed conducted and results were submitted by the PEMC-MO to illustrate any market surpluses due to congestion. The amount of surplus due to congestion in the Luzon Grid was determined to be approximately One Hundred Sixty Million Eight Hundred Ten Thousand Pesos (PhP160,810,000.00) or 2.19% of the total monthly customer payments or about One Billion Nine Hundred Twenty Nine Million and Seven Hundred Thousand Pesos (PhP1,929,700,000.00) on an annual basis.


The Commission takes note of a certain level of inaccuracies in the figures generated, as the simulation failed to reflect the true state of the system considering that constraints currently occur in North and South Luzon resulting in generation curtailment and power flow limitations, thus the amount of surplus may even be higher. An even higher amount would have likewise resulted had

the simulation utilized data from the Trial Operations Program and not the assumed variable costs for each type of generation unit as generation input bids.

Considering the magnitude of such congestion costs as indicated by the market simulation, the Commission deems that the specific manner of redistributing these costs, pending the determination of a more definite and reasonable regime of utilization should be established inasmuch as the manner by which the surplus is distributed can impact on the incentive of the market participants to cause locational price differences. In addition, depending on how this surplus is returned to market participants, it can impact the extent to which entities benefit from the introduction of a short-term wholesale market. Loads located in areas facing high locational marginal prices will be faced with extremely high wholesale energy costs unless they receive a significant fraction of this surplus.

### MUST-RUN UNITS

The Commission recognizes, as it has approved in concept, the need for the System Operator to designate must run units for reliability and security purposes. However, PEMC-MO was directed in the Order to define within the WESM Rules the time and manner by which the System Operator may alter the dispatch schedule accounting for such units. The Commission notes that compliance to such directive was made through the submission of the manual for the Dispatch Criteria for Must-Run Units. These units must be designated in advance of actual system operation or provisions must be made to allow certain units to be designated as must-run.

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Considering the nature of these must-run units, there must be sufficient safeguards in place to mitigate the bids that these units may offer into the market in view of the potential local market power that these units may possess because of their must-run status. At the same time it is unlikely that some units will earn sufficient revenues from short-term energy sales if their bids are mitigated under a must-run mechanism. Consequently, ensuring that these units earn sufficient revenues to remain financially viable through a long-term contract or other mechanism must be clarified. The specifics of how these units will be designated must-run and how they will earn sufficient revenues to recover their going-forward fixed costs must be included in the said manual.

The Commission reiterates its observation that the WESM Rules do not contain provisions on the treatment of must run units and finds the need to institute amendments thereto.

### CONSTRAINT VIOLATION COEFFICIENTS

The Commission pointed out in its 15 March 2004 Order that in the first submission, there were insufficient details on the level of the Value of Lost Load (VoLL) and the Constraint Violation Coefficients (CVC) intended to be used for the WESM. In its current submission, PEMC-MO manifested that the prices corresponding to each CVC "have been set to provide proper pricing signal to detect constraints violation in the power system and ensure that the pre-defined order of violation priority is maintained. Market prices resulting from CVCs and nodal VoLL are not intended to be used for settlement but rather provide basis for any remedial action of the System Operator to ensure a feasible dispatch."<sup>1</sup>


<sup>1</sup> p.23, Part I, Submissions in compliance with ERC Order dated 15 March 2004

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This can create severe incentive problems for generator owners. They can sell in the ex ante market at a price that is set by a CVC, yet only receive an ex post price based on bids in the ex post market. Because the pricing signals brought about by the application of the violation penalties are intended primarily for the System Operator and not the market participants, no strong incentives exist on the part of the market participants to ensure that these constraints are not violated in the ex-ante-market. The application of these penalties only serve as corrections to infeasibilities and since these are not included in the settlement process, would thus not serve as incentives for the market participants to behave accordingly in the ex-ante market i.e. additional supply produced at the high price locations and additional energy reductions occurring at the low price locations.

Moreover, inasmuch as the market rules do not require that the settlement prices reflect these CVCs, the Commission has to be convinced that the said process would not provide perverse market outcomes in that the ex-post price for a particular supplier will not be less than the bid price by which such supplier was dispatched in the ex-ante market.

In addition, there is as yet no final price levels for these CVCs due to the lack of market based information. PEMC-MO has provided little discussion about how the initial levels of these CVCs have been arrived at. As early though, the Commission needs to be assured that current market conditions would underpin the determined price levels of these penalties which is of significance as these form part of the objective function of the pricing methodology. Thus the setting of such levels must be founded on sufficient market information, at the very least, on the data generated during the Trial Operations Program.



## MARKET NETWORK MODEL

The Commission reiterates that it has to be satisfied that the proposed Market Network Model fairly represents the power system including the information on the technical characteristics and limitations of the power system, prior to approving the PDM.

While in its 31 August 2005 Compliance PEMC-MO has submitted its draft detailed criteria and procedure, it committed that prior to commercial operations of the WESM, a refined network model based on participants' input shall be published.

The Commission thus seeks to be clarified on whether the Bus Oriented Single Line Diagram posted on its website reflects the current power system. Identification of ongoing and completed transmission line projects must have been made and the PEMC-MO should satisfy the Commission that these are incorporated in the currently published diagram. Likewise, the Commission seeks the basis on which the Manila Electric Company subsystem was accounted for. The network model used must be known to all market participants for them to assess the best possible locations from which to serve their load. It cannot be treated as a "black box" that takes in bids from suppliers and customers and consequently generates prices.

## MARKET SUSPENSION

In the absence of the filing by the PEMC-MO for the approval of the administered price cap, the Commission must be informed of the market procedures to be carried once market suspension is declared by the Commission

under the conditions stated in the WESM rules. We thus seek to be informed as to the specific work flow and procedures to be undertaken by the PEMC-MO and System Operator relative to the imposition of the administered price cap once the Commission determines that the market must be in the state of suspension.

### MARKET DISPATCH OPTIMIZATION MODEL ALGORITHM

The documentation for the algorithm of the dispatch optimization model must be submitted in connection with the instant PDM submission to enable the Commission to confirm that the formulation contained therein is in accordance with the WESM Rules. This software must be submitted in a form that allows the Commission to test the integrity of the software.

**WHEREFORE**, premises considered, the Commission hereby directs PEMC-MO as follows:

1. To submit the detailed status of the development of market sustainability measures and concrete steps taken including pre-emptive market power mitigating measures, provisions on price/bid caps and effective demand side arrangements;
2. To establish the specific manner of redistributing the net settlement surplus to the market participants pending the determination of a more definite and reasonable regime of utilization;
3. To include in the WESM Manual on must run units the manner by which these units are treated including any process of mitigating the bids that these units may offer into the market considering their potential for local market

power yet ensure that these units earn sufficient revenues to remain financially viable and to effect the necessary amendments to the WESM Rules;

4. To provide sufficient illustration to the Commission that the application of the CVCs would not provide perverse results, specifically resulting in bids accepted that are greater than the ex post price that a supplier is ultimately paid or create perverse incentives for unit owners to bid their units in the ex ante versus ex post market;

5. To identify ongoing and completed transmission line projects and present to the Commission through sufficient documentation that these are incorporated in the Market Network Model and the basis on which the Manila Electric Company subsystem was accounted for in the said Market Network Model;

6. To provide the specific work flow and procedures to be undertaken by the PEMC-MO and System Operator relative to the declaration by the Commission of a Market Suspension; and

7. To submit the documentation for the algorithm of the Market Dispatch Optimization Model as part the instant PDM submission to enable the Commission to confirm that the formulation contained therein are in accordance with the WESM Rules. The PEMC-MO is likewise directed to submit the report on the Third Party Audit on the MMS.

The issuance of the foregoing directives is without prejudice to the authority of the Commission to require the submission of such other relevant

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information and documents as it may see fit consistent with its authority to approve the price determination methodology as laid down under the EPIRA.

SO ORDERED.

Pasig City, 23 November 2005

  
**RODOLFO B. ALBANO, JR.**  
Chairman

  
**OLIVER B. BUTALID**  
Commissioner

  
**JESUS N. ALCORDO**  
Commissioner

  
**RAUF A. TAN**  
Commissioner

  
**ALEJANDRO Z. BARIN**  
Commissioner

Copy furnished:

1. **Atty. Celina Encarnacion**  
Philippine Electricity Market Corporation  
9<sup>th</sup> Robinsons Equitable Tower  
Ortigas Center, Pasig City
2. **Hon. Raphael Lotilla**  
Secretary  
Department of Energy  
Energy Center, Fort Bonifacio  
Taguig City
3. **Atty. Noel Z. De Leon**  
General Counsel  
National Transmission Corporation  
Power Center, Diliman, Quezon City
4. **Office of the Solicitor General**  
134 Amorsolo Street, Legaspi Village  
Makati City, Metro Manila
5. **Senate Committee on Energy**  
GSIS Bldg., Roxas Blvd., Pasay City  
Metro Manila
6. **House Committee on Energy**  
Batasan Hills, Quezon City, Metro Manila