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22 June 2017

MEMORANDUM

TO : **CONCERNED ELECTRIC COOPERATIVES (ECs)**

SUBJECT : **DEPARTMENT CIRCULAR No. DC2017-05-0009**

This is to provide you with a copy of the DOE's Department Circular No. DC2017-05-0009 entitled "Declaring the Launch of Wholesale Electricity Spot Market (WESM) in Mindanao and Providing for Transition Guidelines".

For your information.

EDGARDO R. MASONGSONG
Administrator

NATIONAL ELECTRIFICATION ADMINISTRATION
Office of the Administrator
NEA-OA241198
06/23/17

Republic of the Philippines
DEPARTMENT OF ENERGY

DEPARTMENT CIRCULAR No. DC2017-05-0009

DECLARING THE LAUNCH OF THE WHOLESALE ELECTRICITY SPOT MARKET (WESM) IN MINDANAO AND PROVIDING FOR TRANSITION GUIDELINES

WHEREAS, Section 2 of Republic Act No. 9136, otherwise known as the Electric Power Industry Reform Act of 2001 ("EPIRA"), declared the Policy of the State among others:

"xxx xxx

b) To ensure the quality, reliability, security and affordability of the supply of electric power;

c) To ensure transparent and reasonable prices of electricity in a regime of free and fair competition and full public accountability to achieve greater operational and economic efficiency and enhance the competitiveness of Philippine products in the global market;

xxx xxx

f) To protect the public interest as it is affected by the rates and services of electric utilities and other providers of electric power;

xxx xxx

j) To establish a strong and purely independent regulatory body and system to ensure consumer protection and enhance the competitive operation of the electricity market;

xxx xxx"

WHEREAS, Section 37 of the EPIRA further mandates the Department of Energy (DOE) to supervise the restructuring of the electricity industry, and in addition thereto:

"xxx xxx

f) Jointly with the electric power industry participants, establish the wholesale electricity spot market and formulate the detailed rules governing the operations thereof;

xxx xxx

l) Formulate such rules and regulations as may be necessary to implement the objectives of the EPIRA;

xxx xxx

q) Exercise such other powers as may be necessary or incidental to attain the objectives of the EPIRA;

xxx xxx"

WHEREAS, pursuant to its mandate, in consultation with the electric power industry participants, the DOE, on 28 June 2002, promulgated Department Circular ("DC") 2002-06-0003 or the Wholesale Electricity Spot Market ("WESM") Rules and established the WESM;

WHEREAS, pursuant to Section 30 of the EPIRA, the DOE is mandated to constitute a market operator which shall be an autonomous group with equitable representation from electric power industry participants;

WHEREAS, the Philippine Electricity Market Corporation ("PEMC"), on 18 November 2003, was incorporated as a non-stock, non-profit corporation currently comprising of an equitable representation from electric power industry participants and currently designated as the Autonomous Group Market Operator ("AGMO") of the WESM;

WHEREAS, PEMC, as the AGMO, has been tasked to undertake the preparatory work for the establishment of the WESM, pursuant to Section 30 of the EPIRA;

WHEREAS, the Energy Regulatory Commission ("ERC") approved the Price Determination Methodology ("PDM") for the WESM on 20 June 2006, and the Administered Price Determination Methodology ("APDM") and the Structure and Level of the Market Fees for the WESM on 22 June 2006;

WHEREAS, the DOE, on 21 June 2006, issued DC 2006-06-0008 declaring the start of commercial operations of the WESM in the Luzon Grid;

WHEREAS, the DOE, on 26 November 2010, issued DC 2010-11-0012 declaring the start of commercial operations of the WESM in the Visayas Grid and its integration with the Luzon Grid;

WHEREAS, the DOE adopted and promulgated enhancements to the WESM design and operations through the following: (a) on 23 October 2015, DC 2015-10-0015[1];

[1] Department Circular DC2015-10-0015 "Providing Policies for Further Enhancement of the Wholesale Electricity Spot Market (WESM) Design and Operations"

(b) on 14 October 2016, DC 2016-10-0014[2]; and (c) on 20 March 2017, DC 2017-03-0001[3];

WHEREAS, Mindanao has experienced excess generation supply in 2016 with the entry of 748 MW of new generation capacity and expected to increase further by 1,260 MW until 2018;

WHEREAS, the WESM will provide a venue for efficient scheduling, dispatch and settlement of energy withdrawal and injections in the Mindanao Grid;

WHEREAS, in preparation for the launch of WESM in Mindanao, the DOE has conducted various activities[4];

WHEREAS, there is a need for additional preparations for the launch of the WESM in Mindanao and provide for transition guidelines until its commercial operations;

NOW, THEREFORE, pursuant to its authority and mandate under the EPIRA and its Implementing Rules and Regulations, the DOE hereby declares the following:

Section 1. Guiding Principles. The establishment of the WESM in Mindanao shall be guided by the following principles:

1.1 Uniform application of the WESM Rules and Market Manuals to the WESM in Mindanao;

1.2 Support representation of Mindanao stakeholders through the establishment of a Mindanao WESM Transition Committee to be attached as one of the committees under the Philippine Electricity Market ("PEM") Board, and representations in the PEM Board and other working committees as may be applicable;

1.3 Promotion of greater transparency through continuing Information, Education and Communication ("IEC") campaigns to the stakeholders.

Section 2. Launch of the WESM in Mindanao. The DOE hereby declares the launch of the WESM in the Mindanao Grid effective 26 June 2017 ("Launch Date") to provide sufficient time for the Market Operator ("MO"), System Operator ("SO") and WESM Participants to prepare and familiarize themselves in WESM operations.

Upon the Effectivity of this DC, all Electric Power Industry Participants in Mindanao Grid shall be considered WESM Participants and shall submit and comply with the registration requirements as prescribed in the WESM Rules and Market Manuals, no

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[2] Department Circular DC2016-10-0014 "Adopting Further Amendments to the WESM Rules (Enhancements to WESM Design and Operations)"
[3] Department Circular DC2017-03-0001 "Adopting Further Amendments to the Wholesale Electricity Spot Market (WESM) Rules and Market Manuals for the Implementation of Enhancements to WESM Design and Operations (Provisions for Price Determination Methodology and Constraint Violation Coefficients and Pricing Re-run)"
[4] Annex "A"

later than the Launch Date. For this purpose, PEMC shall consider the documents submitted during the registration in the Interim Mindanao Electricity Market ("IMEM").

All Embedded Generators (a) with installed capacity of at least 5 MW; (b) with installed capacity below 5 MW that have a contract outside its host distribution utility, or intends to sell to the WESM, or inject power to the Grid; and (c) all Feed-in-Tariff ("FIT") eligible Renewable Energy ("RE") plants shall be registered in the WESM. Embedded Generators with installed capacity below 5 MW and do not fall under (b) or (c) may register in the WESM on a voluntary basis.

For purposes of testing all market systems for scheduling, dispatch, pricing, metering, and settlements, including the interfaces between PEMC and National Grid Corporation of the Philippines ("NGCP"), PEMC as the MO shall conduct Trial Operations ("TOP") consistent with Section 3 hereof.

Section 3. Trial Operations Program. The PEMC, as the MO, shall conduct TOP with the Mindanao WESM Trading Participants and SO to ensure readiness for the WESM commercial operations. Such TOP shall include a Limited Live Dispatch Operation ("LLDO") prior to Commercial Operations Date ("COD"), which shall involve the implementation by the SO of the dispatch schedules generated by MO but without financial settlement. For this purpose:

3.1 PEMC shall, within 15 days from the Effectivity of this DC, prepare the detailed guidelines for the TOP, subject to DOE's approval;

3.2 SO shall coordinate with the MO for the preparation and completion of procedures necessary for the successful conduct of the TOP;

3.3 Trading Participants are mandated to participate in the TOP including LLDO; and

3.4 PEMC shall submit weekly reports to the DOE of the results of the TOP.

Section 4. Criteria for Commencement of Full Commercial Operations. The DOE shall declare the COD of the WESM in Mindanao, upon compliance with the following:

4.1 All systems and procedures including all interfaces between and among the WESM Participants necessary for the operation of the WESM in the Mindanao Grid are in place and in conformity with the requirements set under the WESM Rules and Market Manuals;

4.2 The TOP has been successfully implemented;

4.3 The forecasting, scheduling, dispatch, pricing, metering, and settlement processes of the WESM are fully operational in the Mindanao Grid;

4.4 Training programs shall have been conducted for the Mindanao WESM Participants;

4.5 The PDM for the enhanced WESM design has been approved by the ERC and duly published; and

4.6 The New Market Management System ("NMMS") has been certified as compliant with the WESM Rules and Market Manuals by an independent auditor.

PEMC shall submit a certification to the DOE on the compliance to the criteria within three (3) months from the Launch Date.

Section 5. Additional Responsibilities of the Market Operator. The PEMC, as the MO for the WESM in Mindanao, shall:

5.1 Ensure completion of the NMMS for the timely commercial operation of the WESM in Mindanao;

5.2 Coordinate with the SO and other WESM Participants for the preparation and completion of procedures necessary for the efficient operation of the WESM;

5.3 Secure relevant information and data needed from the SO and WESM Participants for the development of the Market Network Model ("MNM");

5.4 Ensure readiness and availability of the necessary interfaces with the SO and WESM Participants;

5.5 Seek recovery with the ERC of just and prudent costs incurred in the implementation of WESM in Mindanao;

5.6 Participate in all fora, conduct of trainings and other activities for the smooth implementation of the WESM in Mindanao; and

5.7 Assist in all activities relating to the implementation of the WESM in Mindanao, as may be necessary, or, as may be directed by the DOE.

Section 6. Additional Responsibilities of the National Grid Corporation of the Philippines. The NGCP, as the SO, transmission Network Service Provider ("NSP") and WESM Metering Services Provider ("MSP") shall:

6.1 Assist the MO in the preparation and completion of procedures necessary for the efficient operation of the WESM;

6.2 Provide to the MO necessary information and data relevant to the development of the MNM for the WESM;

6.3 Ensure the readiness and reliability of all its transmission networks and related facilities so as to comply with systems security requirements and other processes to allow non-discriminatory access and optimal dispatch of generating facilities in Mindanao;

6.4 Ensure the readiness and complete registration of all metering facilities in accordance with the WESM Rules and Market Manuals;

6.5 Ensure readiness and availability of the necessary interfaces with the MO and WESM Participants;

6.6 Participate in all fora, conduct of trainings and other activities for the smooth implementation of the WESM in Mindanao; and

6.7 Assist in all activities relating to the implementation of the WESM in Mindanao, as may be necessary, or, as may be directed by the DOE.

Section 7. Responsibilities of WESM Participants. All Mindanao WESM Participants shall:

7.1 Cooperate and fully comply with the guidelines for TOP, and the instructions of MO and SO relating to the implementation of WESM in Mindanao;

7.2 Provide necessary data and information relevant to the development of the MNM for the WESM in Mindanao;

7.3 Ensure availability of necessary infrastructure such as Market Participants' Interface ("MPI") and WESM compliant metering installations, among others;

7.4 Seek recovery with the ERC of just and prudent costs incurred in their participation in WESM in Mindanao;

7.5 Participate in all fora, conduct of trainings and other activities for the smooth implementation of the WESM in Mindanao; and

7.6 Assist in all activities relating to the implementation of the WESM in Mindanao, as may be necessary, or, as may be directed by the DOE.

In the case of Electric Cooperatives ("ECs"), ensure compliance to key performance standards and coordinate with the DOE, National Electrification Administration ("NEA") and PEMC, for the conduct of IEC campaign to its member consumers.

Section 8. Responsibility of the National Electrification Administration. The NEA shall render technical, financial, and institutional capacity building to all Mindanao ECs, consistent with its mandate under Section 58 of the EPIRA. Towards this end, the NEA shall:

8.1 Assist the ECs in securing sufficient amount of prudential guarantees and filing with the ERC on the recovery of the same;

Section 10. Termination of the Interim Mindanao Electricity Market. The IMEM shall automatically terminate upon the Effectivity of this DC.

Section 11. Regulatory Support. The ERC shall ensure the provision of support in the regulatory requirements and approvals consistent with the policies set forth under this DC and in accordance with existing laws and procedures.

Section 12. Repealing Clause. All previous issuances inconsistent with this DC are hereby repealed or amended accordingly.

Section 13. Separability Clause. If for any reason, any section or provision of this DC is declared unconstitutional or invalid, such parts not affected shall remain valid and subsisting.

Section 14. Effectivity. This DC shall take effect 15 days after its publication in at least 2 newspapers of general circulation and shall remain in effect until otherwise revoked.

Issued on _____ at Energy Center, Bonifacio Global City, Taguig City.

ALFONSO G. CUSI
Secretary

MAY 04 2017

Republic of the Philippines
DEPARTMENT OF ENERGY
IN REPLYING PLS. CITE
DOE-AGC-17001852

ANNEX A

LIST OF CONSULTATIVE ACTIVITIES FOR THE LAUNCH OF THE WESM IN MINDANAO

Activity	Date	Venue
Focus Group Discussion on the Introduction of Electricity Market in Mindanao	4-5 November 2015	Davao City
	9-10 November 2015	Cagayan de Oro City
	14-15 December 2015	General Santos City
Messaging Workshop	25 January 2017	Davao City
Focus Group Discussion with Electric Cooperatives	9 February 2017	Davao City
Public Consultations on the Draft Department Circular Declaring the Launch of the Wholesale Electricity Spot Market (WESM) in Mindanao and Providing for Transition Arrangements	13 February 2017	Cagayan de Oro City
	17 February 2017	Zamboanga City
	21 February 2017	Davao City
	28 February 2017	Butuan City
	7 March 2017	General Santos City
Workshop on Mindanao Dispatch Protocol	8 March 2017	Davao City
Writeshop on Mindanao Dispatch Protocol	16 March 2017	Ortigas, Pasig City
	24 March 2017	Mandaluyong City
Workshop on the Finalization of Department Circular and Roadmap on WESM Mindanao	28-29 March 2017	Subic, Olongapo City

ANNEX B

INTERIM MINDANAO DISPATCH PROTOCOL

(PRIOR TO IMPLEMENTATION OF WESM)

1.0 Purpose and Scope

1.1 Purpose

The purposes of this Interim Mindanao Dispatch Protocol ("Dispatch Protocol") are to:

a. Comply with Section 9 of Department Circular No. DC2017-05-0009 Declaring the Launch of the Wholesale Electricity Spot Market (WESM) in Mindanao and Providing for Transition Guidelines;

b. Provide detailed information and timeline on the Generation Day-Ahead Nomination and Scheduling and Implementation Process;

c. Determine the Dispatch Order of Priority of Generating units per type of technology;

d. Formulate the Generation to Maintain Matrix Table (GMMT);

e. Implement Generation Schedule and Dispatch Instructions thru dispatching of quantities covered by bilateral contracts, except during Grid emergency as provided for in the Philippine Grid Code (PGC);

f. Implement monthly reconciliation on Nominations, Actual Schedules, Metered Quantities, System Losses and Imbalances as provided for in the guidelines for consolidating and transmitting to the Generators (GENs) and Load End Customers (CUSTOMERs) their respective metering data.

1.2 Scope

This Dispatch Protocol shall apply to the following entities in the Mindanao Grid, also known as the Grid Users:

a. System Operator (SO);

b. All GENs, Grid Connected and Embedded Generator. For the avoidance of doubt, GENs shall also include all Power Sector Assets and Liabilities Management Corporation (PSALM)/National Power Corporation (NPC) owned, operated or contracted Independent Power Producers (IPP) Plants; and

c. All CUSTOMERs to include Distribution Utilities (DUs) and Directly Connected Customers.

This Dispatch Protocol shall also apply to the Metered Quantity

Reconciliation and Contract Declaration Agent (MQ Reconciliation Agent). As part of its continuing function in reconciling Metered Quantities (MQ) introduced in the Interim Mindanao Electricity Market (IMEM), the Philippine Electricity Market Corporation (PEMC) is hereby designated as the MQ Reconciliation Agent for the duration of the Dispatch Protocol.

2.0 General Requirements

2.1 The SO and all GENs shall establish reliable communication facilities to allow proper coordination between GENs and the SO.

2.2 The SO and all CUSTOMERs shall establish reliable communication facilities at all times to allow proper coordination between the CUSTOMERs and the SO.

2.3 If the established communication facilities between the GENs/CUSTOMERs and the SO fail, the affected parties shall quickly try to establish contact via any other means such as facsimile, mobile phone, or electronic mail.

2.4 All GENs whether Grid Connected or Embedded must have real-time monitoring for Central Dispatch.

2.5 The GENs and its CUSTOMERs shall modify their Nomination in their bilateral supply contract to be made consistent with this Dispatch Protocol.

2.6 GENs to GENs transactions shall be recognized as a modality to supply power to CUSTOMERs affected by the non-availability of the GENs to supply power or in case of a re-dispatch instruction by the SO to the GENs, Provided, That, the rates for the cost of power that may be charged to the CUSTOMERs are the rates duly approved by the Energy Regulatory Commission (ERC).

2.7 A separate protocol on the settlement of Imbalances shall be agreed upon among the GENs, copy of which to be provided to the DOE.

2.8 The MQ Reconciliation Agent shall adopt Metering and Contract Declaration Procedures for Mindanao during WESM Preparations, for consolidating and transmitting to the GENs and CUSTOMERs their respective metering data as provided by the Metering Services Provider (MSP) and facilitating the declaration of bilateral contract data.

3.0 Operational Responsibilities

3.1 System Operator

The SO shall be responsible for Central Dispatch, Scheduling of

Generation Facilities and issuing Dispatch Instructions to industry participants (considering the Energy Demand, Operating Reserve Requirements, Security Constraints, Outages and Other Contingency Plans) to achieve power quality, reliability and security of the Grid.

Specifically, while WESM is not yet in place in Mindanao Grid, the SO shall:

a. Generate and publish its Day-Ahead System Demand Forecast based on historical data and demand pattern;

b. Generate and publish its GMMT (Attachment 4) based on Day-Ahead Nominated Capacity for Energy from the GENs based on CUSTOMERs allocation;

c. Implement In-Day or Real-Time Dispatch ensuring that system balance is maintained during normal and/or emergency conditions; and

d. Ensure the overall reliability and security of the Mindanao Grid.

3.2 The Metering Services Provider

The National Grid Corporation of the Philippines (NGCP) and DUs shall provide the MQ of all GENs and CUSTOMERs that it provides metering services for, to the MQ Reconciliation Agent, duly designated by the DOE. The MQ shall be used by the GENs and CUSTOMERs in the settlement of the energy purchases. In case of Embedded Generators currently being metered by the DUs, the DUs will continue to provide metering services.

3.3 The Generating Companies

The GENs shall:

a. Submit to the SO its Day-Ahead Nomination of Dependable Capacity (Attachment 2), Day-Ahead Nomination of Contracted Capacity (Attachment 3), if applicable, Ancillary Services (AS) Nomination for certified AS Providers, and other data for its Generating Units to the SO;

b. Submit to the SO their Day-Ahead Nominated Capacity for Energy including customer allocation;

c. Based on the SO's Day-Ahead System Demand Forecast and the consolidated Day-Ahead Nominations from the GENs, the GENs and its CUSTOMERs shall coordinate for the possible submission of re-nomination to SO during the In-Day dispatch;

d. Execute instructions of the SO during normal and/or emergency conditions;

e. Coordinate with the CUSTOMERs, MSPs and the MQ Reconciliation Agent for the monthly reconciliation of MQ and contract quantity Nominations;

f. Use the reconciled MQ and contract quantity Nominations for billing and settlement purposes; and

g. Submit to the MQ Reconciliation Agent the list of their CUSTOMERs and corresponding bilateral contract data;

3.4 The Load End Customers

The CUSTOMERs shall:

a. Prepare Optimal and Least-Cost Nomination of its contracted GENs;

b. Prepare and submit Day-Ahead Customer Demand Forecast (Attachment 1) to its contracted GEN/s;

c. Submit any planned and scheduled maintenance of distribution line or equipment or any significant events in its distribution facilities in a timely manner to the SO;

d. Submit re-nominations, as necessary, of their demand or energy requirement to GENs two (2) hours before the interval during In-Day Dispatch; and

e. Settle Imbalances identified in the monthly reconciliation with its GENs, MSPs and the MQ Reconciliation Agent.

3.5 Metered Quantities Reconciliation Agent

The MQ Reconciliation Agent shall:

a. Consolidate and transmit to the GENs and CUSTOMERs their respective metering data as provided by the MSP; and

b. Facilitate the declaration of bilateral contract data.

4.0 Dispatch Criteria and Priority Order

4.1 Dispatch Criteria

The SO shall undertake the Day-Ahead Load Forecasting and Dispatch Scheduling based on, but not limited to the following operational criteria:

a. The synchronized generating capacity shall be sufficient to match, at all times, the forecasted Grid Demand and the required operating reserve to ensure the Security and Reliability of the Grid;

b. The technical and operational constraints of the Grid and the Generating Units;

c. The Government mandated activities during special events;

d. The statutory requirements on Lake Lanao Operations;

e. The bilateral supply contracted capacities between GENs and CUSTOMERs;

f. The declared Nomination and re-nominations of GENs and its corresponding bilateral CUSTOMERs;

g. The load and supply balance of CUSTOMERs;

h. The security and reliability of the grid.

4.2 Dispatch Order of Priority

a. The resulting dispatch schedules of the Day-Ahead Nomination Process shall be implemented by SO, ensuring that the aggregate demand of CUSTOMERs based on the Day-Ahead Nominations of the GENs is aligned with the SO generated demand forecast.

b. Any deviation in demand or supply from Day-Ahead Nominations shall be re-nominated by the CUSTOMERs to the corresponding GENs. The GENs shall also correspondingly re-nominate its planned dispatch to SO.

c. On real-time, in case there is Imbalance between Nomination and actual demand because of failure of the GENs to re-nominate, the SO shall Issue a Load Adjustment Notice (LAN) to GENs to adjust (increase/decrease) their generation output to ensure a balanced demand and supply. On the other hand, if the CUSTOMERs of the GENs failed to re-nominate to their GENs and exceeds the load allocation, the SO may implement Manual Load Curtailment.

d. NPC/PSALM shall adjust dispatch of their non-intermittent GENs upon instruction from SO to cover for the Dispatch adjustment of their intermittent GENs and be consistent with their Generation Schedules;

e. If no CUSTOMER re-nomination was submitted by the GENs to the SO, then the CUSTOMER'S Day-Ahead Nomination submitted by the GENs to the SO shall be binding and shall be deemed delivered by the GENs to its CUSTOMERs.

f. Any GEN Imbalances shall be settled and agreed from the monthly reconciliation between and among the GENs, CUSTOMERs, MSPs and the MQ Reconciliation Agent;

g. The Dispatch Order of Priority shall be as follows:

(i) Minimum stable load (Pmin) of all the generation units, except GENs with fast start capabilities and intermittent (Renewable Energy) REs;

(ii) RE Plants/units with capacity Nomination shall be accorded preferential dispatch per RE Law for Run-of-River Hydro, Solar, Biomass and Wind, provided they are registered with the DOE;

(iii) Base load plants depending on their contracted capacities;

(iv) Diesel GENs, including the IPPs, Small Diesel Plants and Modular Plants, depending of their contracted capacities.

5.0 Generation to Maintain Matrix Table

5.1 The GMMT contains the consolidated Day-Ahead Nominations from the GENs. (*see Attachment 4 for sample illustration of GMMT);*

5.2 The GMMT is formulated in an hourly basis and shall be used in the In-Day Dispatch Implementation by SO.

5.3 Any revision from the Dispatch Schedule shall be recorded by SO to be re-nominated by the CUSTOMERs to the GENs, and the GENs to SO.

6.0 Dispatch Scheduling

Dispatch is the process of apportioning the total Demand of the Grid through the issuance of Dispatch Instructions to the GENs, including those providing AS in order to achieve the operational requirements of balancing Demand with Generation that will ensure the security of the Grid.

6.1 Central Dispatch for Grid without WESM

Central Dispatch is the process of scheduling Generation Facilities and issuing Dispatch Instructions to GENs and CUSTOMERs (considering the Energy Demand, Operating Reserve Requirements, Security

Constraints, Outages and Other Contingency Plans,) to achieve economic operation while maintaining power quality, reliability and security of the Grid.

The SO shall be guided by the Dispatch criteria as stated in Section 4.0 and shall ensure the reliability and security of the Grid in all aspects of scheduling and dispatching consistent with the provisions of PGC.

6.2 Day-Ahead Scheduling Process

The Nomination and Dispatch Protocol timetable provides an overall schedule of activities under different time frames of operation. These activities are presented as follows:

a. The SO shall generate Day-Ahead System Demand Forecast and the GMMT.

AS Requirement and Scheduling

b. The SO shall then determine the AS requirement and transmit to NPC-PSALM by 0900H of the current day the Day-Ahead Ancillary Services Requirement (DAASR)

c. NPC-PSALM to submit to SO their Day-Ahead Ancillary Nomination and Dependable Capacity on or before 1100H of the current day.

SO to generate Day-Ahead Ancillary Reserve Schedule (DAARS) and shall be submitted to Ancillary Reserve Service Providers on or before 1600H of the current day. The DAARS shall serve as the reference for billing settlement.

Demand Nominations and Scheduling

d. CUSTOMERs shall submit by 1000H of the current day their validated Day-Ahead Demand Forecast to NPC-PSALM, to GENs which they have bilateral contracts with.

e. All GENs shall submit to SO on or before 1400H of the current day the Day Ahead Nomination of Dependable Capacity and the Day-Ahead Nomination of Contracted Capacity.

f. The SO shall evaluate on or before 1400H of the current day all the submitted Day-Ahead Dependable and Contracted Capacities and compare with its Day-Ahead Demand Forecast for the Grid based on historical data and pattern.

g. SO shall make available by 1600H the Day-Ahead Generation Schedule (DAGS) based on the Day-Ahead System Demand

Forecast and the GMMT for the Day-Ahead projection as submitted by the GENs.

6.3 Generation Day-Ahead Scheduling Procedure

SO shall generate the DAGS in accordance with Section 4.0 and the Day-Ahead Scheduling timetable under Section 6.2.

6.3.1 Normal Condition

a. During normal conditions, the SO shall determine the DAGS of GENs for each interval based on the resulting System Demand Forecast and the submitted dependable capacity Nomination of GENs' customers demand allocation.

b. The DAGS shall be based in accordance to Section 4.2.

6.3.2 Excess Generation

Excess Generation exist if the total capacity of online Pmin is greater than the load forecasted or actual demand. The following shall be effected in case of Excess Generation:

a. Effect shutdown of identified online Pmin in accordance to the emergency procedure for Excess Generation of SO and as stated in Section 7.1.10

b. The shutdown of identified GEN/s to address Excess Generation shall not be a forced outage of the said GEN/s.

7.0 In-Day or Real Time Dispatch

7.1 Hourly Dispatch Implementation

a. The DAGS based on the System Demand forecast and the GMMT shall be used by SO during the In-Day Hourly Dispatch Implementation.

b. The SO shall issue Dispatch Instructions to all GENs to ensure timely and accurate hourly Dispatch implementation of the DAGS.

c. The GENs shall follow Dispatch Instructions issued by the SO during normal and emergency conditions.

d. The CUSTOMERs shall notify their contracted GENs their re-nominations at least two hours before the implementation of DAGS.

e. The GENs shall submit re-nominations to SO.

f. The final Nomination or re-nomination shall be binding to the CUSTOMERs and the GENs.

g. If no re-nomination was submitted by the CUSTOMER to its GENs and then GENs to SO, the Day-Ahead Nomination of the CUSTOMER shall be binding and any discrepancy or Imbalances in the actual Dispatch shall be subject to the reconciliation process between GENs, CUSTOMERs, MSPs and MQ Reconciliation Agent.

h. In case of excess generation where the total online Pmin is greater than the actual system demand during the intra-day Dispatch implementation, the SO shall issue re-dispatch Instruction in accordance to Section 6.3.2.

i. During tripping or deration of Generating Units, GENs shall submit re-nomination to the SO. The GEN shall look for another GEN to supply the nominated demand by the affected CUSTOMERs or shall look for another contracted GEN to provide the replacement capacity. Otherwise, SO shall implement Manual Load Curtailment to the CUSTOMERs to maintain security and reliability of the Grid with due consideration to power quality.

j. The SO shall deviate from the Dispatch Order of Priority, when there's an impending threat in system security and shall immediately issue emergency dispatch instruction to the identified GENs to immediately address the situations/conditions.

k. GENs, whether Grid Connected or Embedded Generators or Renewables, and CUSTOMERs shall comply at all times with the Dispatch Instructions issued by the SO.

l. The SO shall thoroughly monitor the Grid to ensure compliance of the Dispatch Instructions by all connected users. All non-compliance with the Dispatch Instructions shall be reported by the SO to ERC through GMC.

m. Actual Dispatch of GENs shall be published for all participating CUSTOMERs and GENs.

7.2 Dispatch Instructions

a. Compliance with the Dispatch Instructions

During the Hourly Dispatch Implementation, GENs from shutdown state shall communicate and seek clearance from the SO at least one (1) hour before the target synchronization/loading. The SO has the discretion not to allow synchronization if the system security is at risk.

Likewise, GENs shall communicate and seek clearance from the SO at least one (1) hour before any shutdown of generating units, except during emergency shutdowns.

All Dispatch Instructions issued by the SO to all Grid Users shall be recorded through the dispatcher's log and voice recording facilities for audit and investigation purposes. Likewise, all GENs may also record through their own facilities.

b. Non-Compliance with the Dispatch Instructions

If a GEN failed to follow the Dispatch Instructions from the SO during an emergency condition without a justifiable reason, the SO shall report the same immediately in writing to the ERC, citing non-compliance to the Dispatch Instruction.

In cases that the compliance of Dispatch Instructions is disputed, both the SO and GEN shall document their communication, agreements, disagreements and reasons for their actions, to enable the settlement of the dispute thru ERC.

The SO shall maintain all records of Dispatch Instruction whether in electronic copy, fax and/or recorded verbal communications related to Dispatch Instructions. These records shall be used in the monthly reconciliation of all participants.

8.0 Definition of Terms

Actual Schedule – The hourly dispatch implemented by the GEN from the directive of the System Operator.

Ancillary Service – Support services such as Primary Reserve, Secondary Reserve, Tertiary Reserve, Reactive Power support, and Black Start Capability which are necessary to support the transmission capacity and Energy that are essential in maintaining Power Quality and the Reliability of the Grid.

Constraint - A limitation on the capability of any combination of network elements, loads, Generating Units, or Ancillary Service Providers such that it is, or is deemed by the System Operator to be, unacceptable to adopt the pattern of transfer, consumption, generation or production of electrical power or other services that would be most desirable if the limitation were removed.

Contracted Capacity – The amount of capacity purchased by a Customer from

a Generator, thru contracts, to serve its requirements. Provided, that in the case of Distribution Utility, said amount is duly approved by the Energy Regulatory Commission.

Customer - An entity who engages in the activity of purchasing electricity supplied through a transmission or distribution system.

Day-Ahead Dependable Capacity - The amount in MW of Dependable Capacity of each Generating Unit submitted by Generator to the System Operator before 2:00 p.m of the current day for the day-ahead Dispatch Schedule.

Demand - The Active Power and/or Reactive Power required by a Load at any given time.

Demand Forecast - An estimate of the future system peak Demand expressed in kW or MW of a particular Connection Point, Grid, sub-grid, or distribution area.

Dependable Capacity – The maximum capacity of a Generating Unit, modified for ambient limitations for a specified period of time, such as month or a season.

Directly Connected Customer - refers to an industrial or bulk electricity end-user, which are supplied through the transmission or sub-transmission assets that are still owned by the National Transmission Corporation (TransCo).

Dispatch - The process of apportioning the total Demand of the Grid through the issuance of Dispatch Instructions to the Generating Units and the Generating Units providing Ancillary Services in order to achieve the operational requirements of balancing Demand with generation that will ensure the Security of the Grid.

Dispatch Instruction. Refers to the instruction issued by the System Operator to the GENs with Generating Units and to the GENs whose Generating Units will provide Ancillary Services to implement the final Dispatch Schedule in real time.

Dispatch Schedule - The target loading levels in MW for each scheduled Generating Unit on each interval.

Distribution Utility - refers to any electric cooperative, private corporation, government-owned utility or existing local government unit which has an exclusive franchise to operate a distribution system in accordance with EPIRA;

Embedded Generator - Refers to Generating Units that are indirectly connected to the Grid through the Distribution Utilities' system or industrial generation facilities that are synchronized with the Grid.

Embedded Meters – Meter of an Embedded Generator.

Emergency State - The Grid operating condition when either a Single Outage Contingency or a Multiple Outage Contingency has occurred without resulting in Total System Blackout, but any of the conditions stated under GO 6.2.2.3 of the 2016 PGC exists.

Energy - Unless otherwise qualified, refers to the Active Energy.

Energy Regulatory Commission (ERC) - The independent, quasi-judicial regulatory body created pursuant to Republic Act No. 9136, which is mandated to promote competition, encourage market development, ensure customer choice, and penalize abuse of market power in the restructured electricity industry and among other functions, to promulgate and enforce the Philippine Grid Code (PGC) and the Philippine Distribution Code.

Forced Outage - An Outage that results from emergency conditions directly associated with a Component, requiring that it be taken out of service immediately, either automatically or as soon as switching operations can be performed. Also, an Outage caused by human error or the improper operation of Equipment.

Generation Company – A person or entity authorized by the ERC to operate facilities used in the generation of electricity. May either be an IPP or PSALM. May also either be connected to the transmission system or to a distribution system.

Generating Unit - A conversion apparatus including auxiliaries and associated Equipment, functioning as a single unit, which is used to produce electric Energy from some other form of Energy.

Generator - For clarity, the term Generator shall also include a Generating Unit or generating facility connected, directly or indirectly, to the Grid.

Grid-connected Meters – Meter of a facility of a generation company or a customer that is connected to the transmission system.

Host distribution utility – For an Embedded generator, the distribution utility that it is connected to.

Imbalance – for GENs, deviations of actual dispatch of GEN compared to their actual schedule, excluding those determined as non-compliances. For CUSTOMERs, deviations of binding nomination compared to their actual consumption, excluding those determined as non-compliances.

Independent Power Producer (IPP) – An existing power generating entity which is not owned by the government.

Interval - A one (1)-hour period commencing on the hour.

Metered Quantity - The quantity of electricity delivered and consumed by a

Generator or Load Customer as recorded by the revenue meter at the Connection Point of the Generator or Load Customer.

Minimum Stable Loading (Pmin) - The minimum net output in MW that a Generating Unit, generating block or module, can continuously and reliably sustain based on the generator capability tests.

Nomination – the capacity or demand nominated by a Generator or Customer necessary for the Dispatch Schedule.

Nominated Capacity for Energy – The capacity nominated by a Generator to serve its bilateral contracts

Outage - The state of a Component when it is not available to perform its intended function due to some event directly associated with that Component.

An Outage may or may not cause an Interruption of service to CUSTOMERs.

Power Quality - The quality of the voltage, including its frequency and resulting current, that are measured in the Grid, Distribution System, or any User System during normal conditions.

Power Sector Assets and Liabilities Management Corporation (PSALM Corp.) - The Government-owned and controlled corporation created pursuant to Sec. 49 of the Act, which took ownership of all existing NPC generation assets, liabilities, IPP contracts, real estate, and all other disposable assets.

Reliability - The performance of the elements of the bulk electric system that results in electricity being delivered to CUSTOMERs within accepted standards and in the amount desired. Reliability may be measured by the frequency, duration, and magnitude of adverse effects on the electric supply.

Schedule Day - The period from 0000H to 2400H each day.

Scheduling - The process of matching the Generator Nomination to supply Energy and provide Ancillary Services, Customer Nomination to serve its Energy requirements and the operational support required by the Grid which takes into account the operational constraints in the Grid, to prepare the Dispatch Schedule.

Shutdown - The condition of the Equipment when it is de-energized or disconnected from the Power System.

Synchronized - The state when connected Generating Units and/or interconnected AC systems operate at the same frequency and where the phase angle displacements between their voltages vary about a stable operating point.

System Operator - The party responsible for generation dispatch, or the

implementation of the generation dispatch schedule of the Market Operator, the provision of ancillary services, and operation to ensure safety, Power Quality, Stability, Reliability and Security of the Grid.

Attachment 1 : **Day-Ahead Customer Demand Forecast Template**

CUSTOMER 1

DAY-AHEAD CUSTOMER DEMAND FORECAST

FOR: PLANT 1

DELIVERY DATE: _____
DATE AND TIME PREPARED: _____

TIME	MW
0001H – 0100H	
0101H – 0200H	
0201H – 0300H	
0301H – 0400H	
0401H – 0500H	
0501H – 0600H	
0601H – 0700H	
0701H – 0800H	
0801H – 0900H	
0901H – 1000H	
1001H – 1100H	
1101H – 1200H	
1201H – 1300H	
1301H – 1400H	
1401H – 1500H	
1501H – 1600H	
1601H – 1700H	
1701H – 1800H	
1801H – 1900H	
1901H – 2000H	
2001H – 2100H	
2101H – 2200H	
2201H – 2300H	
2301H – 2400H	

Remarks: (Status of Generating Units on Outage, Reasons for Deration)

Prepared by: Approved by:

Attachment 2 : Day-Ahead Nomination of Dependable Capacity

DAY-AHEAD NOMINATION OF DEPENDABLE CAPACITY

DELIVERY DATE: _____
DATE AND TIME PREPARED: _____

TIME	TOTAL	PLANT 1			PLANT 2			PLANT 3			PLANT 4			PLANT 5			PLANT 6		
		U1	U2	Total	U1	U2	Total	U1	U2	Total	U1	U2	Total	U1	U2	Total	U1	U2	Total
0001H – 0100H																			
0101H – 0200H																			
0201H – 0300H																			
0301H – 0400H																			
0401H – 0500H																			
0501H – 0600H																			
0601H – 0700H																			
0701H – 0800H																			
0801H – 0900H																			
0901H – 1000H																			
1001H – 1100H																			
1101H – 1200H																			
1201H – 1300H																			
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1501H – 1600H																			
1601H – 1700H																			
1701H – 1800H																			
1801H – 1900H																			
1901H – 2000H																			
2001H – 2100H																			
2101H – 2200H																			
2201H – 2300H																			
2301H – 2400H																			

Remarks: (Status of Generating Units on Outage, Reasons for Deration)

Prepared by:

Approved by:

Attachment 3 : Day-Ahead Nomination of Contracted Capacity Template

DAY-AHEAD NOMINATION OF CONTRACTED CAPACITY

PLANT 1

DELIVERY DATE: _____
DATE AND TIME PREPARED: _____

TIME	Rated Capacity	Dependable Capacity	Contracted Capacity	Customer 1	Customer 2	Customer 3
0001H – 0100H						
0201H – 0200H						
0201H – 0300H						
0301H – 0400H						
0401H – 0500H						
0501H – 0600H						
0601H – 0700H						
0701H – 0800H						
0801H – 0900H						
0901H – 1000H						
1001H – 1100H						
1101H – 1200H						
1201H – 1300H						
1301H – 1400H						
1401H – 1500H						
1501H – 1600H						
1601H – 1700H						
1701H – 1800H						
1801H – 1900H						
1901H – 2000H						
2001H – 2100H						
2101H – 2200H						
2201H – 2300H						
2301H – 2400H						
TOTAL						

Remarks: (Status of Generating Units on Outage, Reasons for Duration)

Prepared by:

Approved by:

Attachment 4 : Generation to Maintain Matrix Table (sample illustration)

GENERATION TO MAINTAIN MATRIX TABLE

DATE

INTERVAL: 0001H – 0100H

PLANT	CONTRACTED CAPACITY	CEPALCO	DLPC	SOCO	ZAMCELCO	DANECO	ANECO	OTHER CUSTOMERS
BIOMASS	0	0	0	0	0	0	0	0
SMALL HYDRO	32.8	7.2	22.6	0	0	0	0	3
SOLAR	0	0	0	0	0	0	0	0
NPC PSALM	532.63	76.83	189.85	8.64	18.76	10.45	18.98	209.11
MAGPI	98	0	0	5	0	16	22	55
TSI	147.6	19.1	51.7	1	0	5.7	1	69.1
SEC	48	0	0	0	0	0	10	38
SMCPC	76.87	0	0	0	35	6	0	35.87
FDCMPC	75.97	0	0	10	0	0	0	65.97
TMI M1	0	0	0	0	0	0	0	0
TMI M2	0	0	0	0	0	0	0	0
SPPC	0	0	0	0	0	0	0	0
MPC	5	0	0	0	0	0	0	5
WMPC	0	0	0	0	0	0	0	0
SPARE	32.8	32.8	0	0	0	0	0	0
TOTAL	1052.66	136.93	264.16	24.64	53.76	38.15	51.98	481.05