Republic of the Philippines
DEPARTMENT OF ENERGY

Department Circular No. _____

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

WHEREAS, Section 2 (b) 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, the following:

a) Ensure the quality, reliability, security and affordability of the supply of electric power;
b) 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;
c) Protect the public interest as it is affected by the rates and services of electric utilities and other providers of electric power; and
d) Establish a strong and purely independent regulatory body and system to ensure consumer protection and enhance the competitive operation of the electricity market;

WHEREAS, Section 37 of the EPIRA further mandates the Department of Energy (DOE), among other things to:

a) Supervise the restructuring of the electric power industry;
b) Jointly with the electric power industry participants, establish the wholesale electricity spot market and formulate the detailed rules governing the operations thereof;
c) Formulate such rules and regulations as may be necessary to implement the objectives of the EPIRA; and
d) Exercise such other powers as may be necessary or incidental to attain the objectives of the EPIRA;

WHEREAS, pursuant to its mandate, in consultation with the electric power industry participants, the DOE promulgated Department Circular No. DC2002-06-003 or the WESM Rules and established the Wholesale Electricity Spot Market (WESM);

WHEREAS, on 18 November 2003, on the initiative of the DOE, the Philippine Electricity Market Corporation (PEMC) was incorporated as a non-stock, non-profit private corporation currently comprising of an equitable representation of electricity 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") has approved the Price Determination Methodology ("PDM") for the WESM on 20 June 2006, the Administered Price Determination Methodology ("APDM") and the Structure and Level of the Market Fees for the WESM on 22 June 2006;

WHEREAS, on 21 June 2006, the DOE issued Circular No. 2006-06-0008 declaring the start of commercial operations of the WESM in the Luzon grid;

WHEREAS, on 26 November 2010, the DOE issued Circular No. 2010-11-0012 declaring the start of commercial operations of the WESM in the Visayas grid and its integration with the Luzon Grid;

WHEREAS, on 14 October 2016, the DOE issued Department Circular No. 2016-10-0014 adopting the enhancements to WESM Design and Operations and on [●] approved the corresponding amendments to the Price Determination Methodology through Department Circular No. [●];

WHEREAS, the on-going development of the New Market Management System by the PEMC pursuant to the enhancement WESM design policy stipulated in Department Circular No. 2016-10-0014 already considers the operationalization of the electricity market in Mindanao;

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 993 MW in 2017;

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

WHEREAS, the feasibility of interconnecting Mindanao to the Luzon-Visayas grids is being studied by the National Grid Corporation of the Philippines as part of the infrastructure support for the establishment of the WESM in Mindanao;

WHEREAS, focused group discussions were held on the following dates and venues to discuss the preparation towards the launch of the WESM in Mindanao:

4 November 2015	Grand Regal Hotel, Davao City
5 November 2015	
9 November 2015	N Hotel, Cagayan De Oro City
10 November 2015	
14 December 2015	Greenleaf Hotel, General Santos City
15 December 2015	

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

NOW, THEREFORE, premises considered, and pursuant to its authority under the EPIRA, the DOE hereby declares the following:

Section 1. Launch of the WESM in Mindanao. The DOE hereby declares the launch of the WESM in the Mindanao grid on 26 June 2017 (hereinafter referred to as the

"Launch Date"). The commencement of the commercial operations of the WESM in Mindanao (hereinafter referred to as the "Commercial Operation Date") shall be subject to the fulfilment of criteria set forth in Section 2 below. PEMC shall submit a certification to the DOE on the status of the criteria at least fifteen (15) calendar days prior to the Launch Date. Upon the receipt of the said certification, the DOE shall determine its acceptability and sufficiency and shall determine the Commercial Operation Date.

All provisions of the WESM Rules, Market Manuals as amended, as well as the pricing methodology shall apply to the WESM in Mindanao. Prior to the establishment of the physical infrastructure connecting the Mindanao grid to the Luzon-Visayas grids, prices and dispatch schedules for Mindanao shall be separate.

Section 2. Criteria for Commencement of Full Commercial Operations. The WESM in Mindanao will have commenced full commercial operations on the date declared by the DOE that the following criteria have been complied with:

2.1 All systems and procedures including all interfaces with the participants and service providers necessary for the operation of the WESM in the Mindanao grid are in place and pursuant with the requirements set under the WESM Rules;
2.2 The Trial Operations Program (TOP) was implemented successfully commencing on 26 February 2017 with the System Operator and on 26 March 2017 with the Market Participants;
2.3 The forecasting, scheduling, dispatch, pricing, metering, and settlement processes of the WESM are fully operational in the Mindanao grid;
2.4 Training programs shall have been conducted for the WESM Mindanao Trading Participants;
2.5 The price determination methodology for the enhanced WESM design has been approved by the ERC and duly published; and
2.6 The Market Dispatch Optimization Model (MDOM) has been certified as compliant with the WESM Rules by an independent auditor.

Section 3. Transition Arrangements on the Dispatch of Capacities and Nomination of Demand. The National Grid Corporation of the Philippines shall continue to implement the existing dispatch protocol as indicated in the attached Annex A, for the system operations in the Mindanao grid during the preparations for the integration of Mindanao to the WESM.

Section 4. Mandatory Registration in the WESM. Consistent with WESM Rules Clause 2.2.4.2, upon the effectivity of this Circular, all electric power industry participants in Mindanao shall be considered WESM members and are therefore enjoined to submit registration documents in the WESM to ensure proper accounting of supply and demand in the Mindanao grid specifically during the TOP and the Launch Date. In the registration of WESM members in Mindanao, PEMC shall give due regard to the documents submitted as IMEM registration that may be deemed applicable.

All embedded generators (a) with installed capacity of five (5) MW and above and (b) those with installed capacity below 5 MW that have a contract outside its host distribution utility, which intends to sell to the WESM, or inject power to the grid shall likewise be registered in the market and shall be required to submit the necessary information to assist the Market Operator in providing optimal dispatch schedule and pricing in the market. Embedded generators with installed capacity below 5 MW and do not fall under the above conditions may register in the WESM on a voluntary basis.

Section 5. Trial Operations. PEMC, as the Market Operator, shall conduct TOP with the Mindanao WESM participants and System Operator to ensure their readiness for the WESM commercial operations. Such trial operations shall include a limited live dispatch operation (LLDO), which shall involve the implementation by the System Operator of the dispatch schedules generated by the WESM Market Management System (MMS) but without financial settlement. For this purpose,

5.1 PEMC shall prepare the detailed guidelines for the TOP;

5.2 Generators are mandated to participate in the TOP and limited live dispatch operations (LLDO);

5.3 PEMC shall submit a readiness assessment to the DOE at fifteen (15) days before the Launch Date as provided in Section 1 hereof.

Section 6. Termination of the Interim Mindanao Electricity Market (IMEM). The DOE's declaration of the commencement of the full commercial operation of the WESM in Mindanao shall automatically terminate the implementation of the IMEM.

Section 7. Additional Responsibilities of the Market Operator. The Philippine Electricity Market Corporation as the Market Operator for the WESM in Mindanao shall undertake the following additional responsibilities:

7.1 Ensure completion of the New Market Management System for the timely commercial operation of the WESM in Mindanao;
7.2 Coordinate with the WESM Governance Committees on the preparation and updating of rules, conduct of studies and audits necessary for the efficient integration of the WESM in Mindanao;
7.3 Coordinate with the System Operator and other WESM Mindanao Participants for the preparation and completion of procedures necessary for the efficient operation of the WESM in Mindanao;
7.4 Secure relevant information and data needed from the System Operator and WESM Mindanao Participants for the development of the market network model for the WESM in Mindanao;
7.5 Ensure readiness and availability of relevant interfaces with the System Operator and WESM Mindanao Participants for seamless workflow during the trial runs and the actual market operations;
7.6 Seek recovery with the ERC of just and prudent costs incurred in the implementation of this policy;

7.7 Participate in all fora, conduct of trainings and other activities for the smooth integration of Mindanao to the WESM; and
7.8 Assist in all activities relating to the integration of the Mindanao in the WESM, as may be necessary, or, as may be directed by the DOE.

Section 8. Responsibilities of the National Grid Corporation of the Philippines. The National Grid Corporation of the Philippines as the System Operator, Transmission Network Service Provider and WESM Metering Service Provider shall:

8.1 Coordinate with the Market Operator for the preparation and completion of procedures necessary for the efficient operation of the WESM Mindanao;
8.2 Provide to the Market Operator necessary information and data relevant to the development of the market network model for the WESM Mindanao;
8.3 Ensure the readiness and robustness of all its transmission networks and related facilities such as to comply with systems security requirements and other processes to allow non-discriminatory access and optimal dispatch of generating facilities in Mindanao;
8.4 Ensure the readiness of all metering facilities in accordance with the WESM Rules;
8.5 Ensure readiness and availability of relevant interfaces with the Market Operator for seamless workflow during the trial runs and the actual market operations;
8.6 Complete the Visayas Mindanao interconnection by December 2020 to ensure the integration of Mindanao WESM into the Philippine WESM.
8.7 Participate in all fora, conduct of trainings and other activities for the smooth integration of Mindanao the WESM Mindanao; and
8.8 Assist in all activities relating to the integration of Mindanao in the WESM, as may be necessary, or, as may be directed by the DOE.

Section 9. Responsibilities of Electric Power Industry Participants in Mindanao. All Mindanao WESM Members are enjoined:

9.1 To cooperate and fully comply with the guidelines for trial operations, and the instructions of PEMC or the System Operator relating to the implementation of WESM Mindanao;
9.2 Provide necessary data and information relevant to the development of the market network model for the WESM in Mindanao;
9.3 Ensure availability of necessary infrastructure such as Market Participants' Interface and WESM compliant metering installations, among others;
9.4 Seek recovery with the Energy Regulatory Commission of just and prudent costs incurred in the implementation of this policy;
9.5 Participate in all fora, conduct of trainings and other activities for the smooth integration of Mindanao to the WESM; and
9.6 Assist in all activities relating to the integration of Mindanao in the WESM, as may be necessary, or, as may be directed by the DOE.

Section 10. Responsibilities of Mindanao Electric Cooperatives. All Electric Cooperatives in Mindanao are enjoined to support implementation and comply with the enforcement of this Circular. Towards this end, the Mindanao ECs shall:

10.1 Register with the Market Operator and submit all required data and documents as may be determined including but not limited to distribution system configuration and establishment of a Market Participant Interface (MPI);
10.2 Coordinate with the National Electrification Administration on any required assistance to ensure readiness in the new market environment, including, but not limited to securing the prudential guarantees and seeking regulatory approvals for the recovery of the same;
10.3 Comply with all technical and documentary requirements of the System Operator including but not limited to distribution system configuration;
10.4 Participate in all activities prior to the Launch Date including but not limited to TOP, trainings, consultations and other fora that may be organized for the successful establishment of Mindanao WESM;
10.5 Ensure compliance to key performance standards and updating of outstanding balances with power providers and work out as necessary a special payment arrangements to address the same;
10.6 In coordination with the DOE, NEA and PEMC, conduct information, education and communication (IEC) campaign to its member consumers on the benefits and potential changes the establishment of WESM may brought upon the EC operations and the consumers in general;
10.7 Assist in all activities relating to the integration of Mindanao in the WESM, as may be necessary, or, as may be directed by the DOE.

Section 11. Responsibility of the National Electrification Administration. The National Electrification Administration shall ensure that all Mindanao electric cooperatives are technically and financially prepared to operate under the deregulated electricity market, consistent with its mandate under section 58 of the EPIRA. Towards this end, the NEA shall undertake the following:

11.1 11.1 Assist the ECs in securing sufficient amount of prudential guarantees and filing with the ERC on the recovery of the same;
11.2 Pursue completion of initiatives undertaken in line with DOE Circular No. DC2012-06-0007 entitled "*Directing the National Electrification Administration to Develop a Mechanism for Ensuring the Adequacy of and Compliance by the Electric Cooperatives with the Prescribed Prudential Requirements in the Wholesale Electricity Spot Market and Spearhead the Collective Petition Thereof for the Approval of the Energy Regulatory Commission*" for the recovery of prudential requirements needed by the ECs;
11.3 Provide guidance to ECs in the transition to the new market environment and ensure timely compliance of the ECs to all requisites for their successful registration in the WESM;
11.4 In coordination with the DOE and PEMC, conduct information, education and communication (IEC) campaign to the ECs on the benefits and potential changes the establishment of WESM may brought upon the EC operations and the consumers in general;
11.5 Assist in all activities relating to the integration of Mindanao in the WESM, as may be necessary, or, as may be directed by the DOE.

Section 12. Regulatory Support. The ERC shall ensure the provision of support in the regulatory requirements and approvals consistent with the policies set forth under this Circular and in accordance with existing laws and procedures.

Section 13. Repealing Clause. Except insofar as may be expressly manifested as inconsistent herewith, nothing in this Circular shall be construed as to repeal any of the mechanisms already existing or responsibilities provided for under existing rules.

Section 14. Separability Clause. If for any reason, any section or provision of this Circular is declared unconstitutional or invalid, such parts not affected shall remain valid and subsisting.

Section 15. Effectivity. This Circular shall take into effect fifteen (15) days from its publication in at least two (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

ANNEX A

MINDANAO DISPATCH PROTOCOL

Version: January 2017

1.0 Purpose and Scope

1.1 Purpose

The purposes of this Protocol are to:

a. Comply Section 3.1 of Department Circular No. ____ DECLARING THE LAUNCH OF THE WHOLESALE ELECTRICITY SPOT MARKET (WESM) IN MINDANAO AND PROVIDING FOR TRANSITION ARRANGEMENTS;
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;
e. Implementation of Generation Schedule and Dispatch Instructions.

1.2 Scope

This dispatch protocol shall apply to the following entities in Mindanao Grid also known as the Grid Users:

a. System Operator (SO);
b. All Generators (GENs) whether Grid Connected, Renewables, Embedded and Merchant Plants and their respective Trading Group if any;
c. All Load End Customers (CUS). Customers include Distribution Utilities, Private Utilities, Industrial Customers and Directly Connected Customers.

2.0 General Requirements

2.1 All Generators and their respective Trading Groups shall establish reliable communication facilities at all-time to allow proper coordination between the Generators and the System Operator.

2.2 All Distribution Utilities, Private Utilities, Industrial Customers and Directly Connected Customers shall establish reliable communication facilities at all-time to allow proper coordination between the Customers and Generators, Customers the System Operator.

2.3 If these facilities fail, the affected parties shall quickly try to establish contact via any other means like fax, mobile phone, email, etc.

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

3.0 Operational Responsibilities

3.1 System Operator (SO)

The SO shall be responsible for:

3.1.1 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 economic operation while maintaining Power Quality, Reliability and Security of the Grid.

3.1.2 Consolidating the System Generation Requirement based on the submitted demand forecast of the customer;

3.1.3 Evaluating and assessing the submitted customers' demand based on SO's Generation Load Forecasting tool;

3.1.4 Preparing and disseminating the Week-Ahead Generation Schedule, Day-Ahead Generation Schedule of all Generators;

3.1.5 Formulating the Dispatch Order of Priority, Generation to Maintain Matrix Table with consideration of Generators' Bilateral Power Supply contracts to customers;

3.1.6 Implementing the Day-Ahead Generation Schedule and issuing of dispatch instructions to generators based on the approved dispatch priority order in a timely manner;

3.1.7 Monitoring the compliance of Generators with the Day-Ahead Generation Schedule and the Dispatch Instruction;

3.1.8 Conducting economic dispatch with due consideration of the bilateral contracts;

3.1.9 Ensuring the demand – supply balance is maintained during normal and/or emergency conditions;

3.1.10 Ensuring the overall reliability and security of Mindanao Grid;

3.2 The Generators and Trading Groups (GENs)

The GENs shall be responsible for:

3.2.1 Submitting the Week-Ahead and Day-Ahead Dependable Capacity, Contracted Capacity, Nominated Capacity for Energy including the replacement power if applicable, Ancillary Services Nomination for certified AS Providers, and other data for its Scheduled generating Units to the SO;

3.2.2 Submitting of re-nomination of capacities to SO at least two hours before implementation and shall not be more than three (3) times during peak period and three (3) times during off-peak period within the day;

3.2.3 Assuring that its generating units can fully deliver the declared dependable and contracted capacities;

3.2.4 Preparing and disseminating the load allocation to their corresponding contracted customers;

3.2.5 Dispatching of their facilities according to the approved Day-Ahead Generation Schedule generated by the SO;

3.2.6 Executing instructions of the SO during normal and/or emergency conditions;

3.2.7 Coordinating at all-times with the SO in maintaining the security and reliability of the grid;

3.2.8 Providing the 3- Year Maintenance Plan of each generating units to SO;

3.2.9 Submitting other information and data that may be required by the SO as stated in the Philippine Grid Code (PGC);

3.3 The Customers (CUS)

The CUS including the Distribution Utilities, Private Utilities, Industrial Utilities and Directly Connected Customers shall be responsible for:

3.3.1 Submitting their updated bilateral power supply contracted capacities from their power suppliers;

3.3.2 Submitting and preparing their respective Week-Ahead and Day-Ahead Customer Demand Forecast in an accurate and timely manner to the SO;

3.3.3 Submitting their respective Week-Ahead and Day-Ahead Customer Power System Information Report that include the planned and forced outage of distribution equipment in a timely manner to the SO;

3.3.4 Submitting nominations and re-nominations of their load requirement to GENs in a timely manner, and limit such re-nominations to 4 times a day;

3.3.5 Informing the SO for any line or equipment trippings, outages or other events that would result in, or have resulted to the non-compliance of GENs with its Day-Ahead Generation Dispatch Schedule produced by the SO;

3.3.6 Coordinating at all-times the SO in maintaining the security and reliability of the grid;

3.3.7 Providing other data and information required by the SO and GENs as stated in the PGC;

4.0 Dispatch Criteria and Priority Order

4.1 Dispatch Criteria

The System Operator shall undertake the day-ahead load forecasting and dispatch scheduling in a manner that will result to the least cost to users, based on the consideration of the following operational criteria but not limited to:

4.1.1 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;
4.1.2 The technical and operational constraints of the Grid and the Generating Units;
4.1.3 The Government mandated activities during special events;
4.1.4 The statutory requirements on Lake Lanao Operations;
4.1.5 The bilateral supply contracted capacities between generators and distribution utilities;
4.1.6 The declared nomination and re-nominations of generators and its corresponding bilateral customers;
4.1.7 The load and supply balance of load customers;
4.1.8 The Security and Reliability of the Grid.

4.2 Dispatch Order of Priority

4.2.1 The Dispatch Order of Priority shall be established per type of technology and based on the lowest to highest operational cost ranking, with due consideration of Government Mandated Law:

4.2.1.1 Renewable energy plants/units with capacity nomination shall be priority dispatch per RE Law for Small Hydros, Solar, Biomass and Wind.

4.2.1.2 National Power Corporation (NPC) Hydro Plants are 2nd to dispatch since they are the least cost among other Generating Units in the Mindanao.

4.2.1.3 NPC Coal specifically STEAG Power Coal Plant is 3rd to dispatch since it is currently under the NPC portfolio and the least cost among other coal-fired power plants.

4.2.1.4 Geothermal is 4th to dispatch. A based load plant, renewable and with operational and environmental constraints.

4.2.1.5 Independent Power Producers (IPP) Coal Generators are the 5th to dispatch. These are the new base load plants in the region with corresponding Bilateral Contracts with the Customers.

4.2.1.6 Diesel Generators are the last to dispatch considering the operational cost per kWh. These include the IPPs, Small Diesel Plants and Modular Plants.

4.2.2 The SO shall follow the Dispatch Order of Priority from the lowest operational cost GENs to the highest for the increase of generation to Pmax, and from highest operational cost GENs to lowest for decrease of generation to shutdown.

5.0 Generation to Maintain Matrix

5.1.1 The Generation to Maintain Matrix Table (GMMT) contains the Day-Ahead Generation Schedule per Generator arranged based on the Priority Dispatch Order with their corresponding bilateral customers. (*see Attachment 9 for sample illustration of Generation to Maintain Matrix Table);*

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

6.1 Central Dispatch for Grid Without WESM

Central Dispatch is the process of scheduling 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 economic operation while maintaining Power Quality, Reliability and Security of the Grid.

The System Operator 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 Timetable

The nomination and dispatch protocol timetable provides an overall schedule of activities under different time frames of operation. These activities are presented as follows:

6.2.1 Week-Ahead Scheduling

6.2.1.1 The SO shall generate the Week-Ahead System Generation Requirement (WASGR) by evaluating the Week-Ahead Load Requirement (WALR) using the SO's Generation Load Forecasting Tool.

6.2.1.2 The SO shall then determine the Ancillary Service requirement and transmit to NPC-PSALM by 0900H the Week-Ahead Ancillary Services Requirement (WAASR) (see Attachment 1 for WAASR template).

6.2.1.3 NPC-PSALM to submit to SO their Ancillary Nomination and Dependable Capacity on or before 1000H.

6.2.1.4 CUs shall submit by 1000H of Thursday of the current week the Week-Ahead Load Nomination (WALN) (see Attachment 2 for WALN template) to NPC-PSALM and other GENs they have Bilateral Contracts with.

6.2.1.5 All GENs shall submit to SO on or before 1400H of Thursday of the current week the Week Ahead Dependable Capacity (WADC) (see Attachment 3 for WADC template) and the Week-Ahead Contracted Capacity (WACC) (see Attachment 4 for WACC template).

6.2.1.6 The SO shall evaluate on or before 1400H of Thursday of the current week all the submitted Dependable and Contracted Capacities.

6.2.1.7 The SO shall submit the Weekly Power Outlook (see Attachment 5 for WPO template) in consideration of the CUs WALN and GENs WADC on or before 1400H every Thursday of the current week, and shall be updated daily.

6.2.1.8 SO shall submit by 1700H of Thursday of the current week the Week-Ahead Generation Schedule (WAGS) using all the available data submitted.

6.2.2 Day-Ahead Scheduling

6.2.2.1 The SO shall generate the Day-Ahead System Generation Requirement (DASGR) by evaluating the Day-Ahead Load Requirement (DALR) using the SO's Generation Load Forecasting Tool.

6.2.2.2 The SO shall then determine the Ancillary Service requirement and transmit to NPC-PSALM by 0900H the Day-Ahead Ancillary Services Requirement (DAASR)

6.2.2.3 NPC-PSALM to submit to SO their Day-Ahead Ancillary Nomination and Dependable Capacity on or before 1000H.

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

6.2.2.5 CUs shall submit by 1000H of the current day for the Day-Ahead Load Nomination (DALN) (See Attachment 6 for DALN template) to NPC-PSALM and other GENs they have Bilateral Contracts with.

6.2.2.6 All GENs shall submit to SO on or before 1400H of the current day the Day Ahead Dependable Capacity (DADC) (see Attachment 7 for DADC template) and the Day-Ahead Contracted Capacity (DACC) (see Attachment 8 for DACC template).

6.2.2.7 The SO shall evaluate on or before 1400H of the current day all the submitted Day-Ahead Dependable and Contracted Capacities.

6.2.2.8 The SO shall submit the Daily Power Outlook in consideration of the GENs DADC and Load Forecasted Demand on or before 1200H of the current day.

6.2.2.9 SO shall submit by 1600H of the current day the Day-Ahead Generation Schedule (DAGS) using all the available data submitted.

6.3 Generation Day-Ahead Scheduling Procedure

SO shall generate the Day-Ahead Generation Schedule (DAGS) of GENs in accordance to Section 4.0 and the scheduling timetable.

6.3.1 Normal Condition

6.3.1.1 During normal conditions, the SO shall determine the Day-Ahead Generation Schedule of GENs for each interval based on the submitted dependable capacity nomination against the demand forecast.

6.3.1.2 The Day-Ahead Generation Scheduling shall be based in accordance to Section 4.2 Dispatch Order of Priority

6.3.2 Excess Generation

6.3.2.1 Determine the total capacity of online Pmin against load forecasted demand.

6.3.2.2 Excess Generation exist if the total capacity of online Pmin is greater than the load forecasted demand.

6.3.2.3 Identify intervals where excess generation capacity exists.

6.3.2.4 Effect shutdown of identified online Pmin in accordance to the emergency procedure for Excess Generation of System Operator and as stated in Section 7.1.10

7.0 In-Day or Real Time Dispatch

7.1 Hourly Dispatch Implementation

7.1.1 The DAGS shall be used by SO during the In-Day Hourly Dispatch Implementation.

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

7.1.3 The GENs shall follow dispatch instructions issued by System Operator during Normal and Emergency conditions.

7.1.4 The customers shall notify their BPS GENs if there is a need for load adjustment at least two hours before the implementation.

7.1.5 The GENs shall submit re-nominations to System Operator as a result of Load Adjustment of customers.

7.1.6 The allowable submission of re-nominations shall not be more than three (3) times during peak period and three (3) times during off-peak period within the intra-day.

7.1.7 Load Adjustment Notice (LAN) shall be issued by System Operator to the BPS GENs if there are an excess BPS generation as a result of none submission re-nominations.

7.1.8 In case of excess generation where the total online Pmin is greater than the actual system demand during the intra-day dispatch implementation, the System Operator shall issue re-dispatch instruction in accordance to Section 6.3.2.4

7.1.9 During tripping or deration of generating units, GENs shall submit re-nomination to the System Operator. The bilateral affected customers shall look for another replacement BPS GENs.

Otherwise, System Operator shall implement Manual Load Curtailment to maintain security and reliability of the grid with due consideration to power quality.

7.1.10 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 Generators to immediately address the situations/conditions.

7.1.11 GENs and CUS connected to the grid shall acknowledge and comply at all times the dispatch instructions issued by the SO.

7.1.12 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.

7.2 Dispatch Instructions

7.2.1 Compliance with the Dispatch Instructions

7.2.1.1 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 System Operator has the discretion not to allow synchronization if the system security is at risk.

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

7.2.1.3 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.

7.2.2 Non-Compliance with the Dispatch Instructions

7.2.2.1 The Generator/s failed to follow the Dispatch Instructions from the System Operator during the emergency condition where there is a threat in the security and reliability of the grid, the System Operator shall report

immediately in writing to ERC, citing non-compliance to the dispatch instruction.

7.2.2.2 In cases that the compliance of Dispatch Instructions is disputed, both the SO and Grid Users 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 recorded verbal communications related to Dispatch Instructions. These records can be used for audit or investigations by ERC and/or other government agencies.

DEFINITION OF TERMS

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.

Availability – The long-term average fraction of time that a Component or system is in service and satisfactorily performing its intended function. Also, the steady-state probability that a Component or system is in service.

Available Capacity – The dependable capacity, modified for equipment limitation at any time.

Available Generating Capacity – The sum of the capacity of all operating Generating Units plus the capacity of standby but readily available Generating Units.

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.

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

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.

Department of Energy (DOE) - The government agency created pursuant to Republic Act No. 7638 which is provided with the additional mandate under the Act of supervising the restructuring of the electricity industry, developing policies and procedures, formulating and implementing programs, and promoting a system of incentives that will encourage private sector investments and reforms in the electricity industry and ensuring an adequate and reliable supply of electricity.

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

Dispatch - The process of apportioning the total Demand of the Grid through the issuance of Dispatch Instructions to the Scheduled 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 Generators with Scheduled Generating Units and to the Generators whose Generating Units will provide Ancillary Services to implement the final Dispatch Schedule in real time.

Dispatch Priority Order Table - Refers to the list generating units stacked by technology and is arrange in a manner such that the lowest offer price is at the top of the list.

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

Dispatch Parameters - Refers to the technical data pertaining to the Scheduled Generating Units, used as the basis in the preparation of the Day-Ahead Generation Schedule.

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.

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 exists.

End-User - A person or entity that requires the supply and delivery of electricity for its own use.

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

Energy Forecast - An estimate of the future system energy requirement expressed in KWh or MWh of a particular grid, sub-grid, distribution area, or end-user.

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 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.

Generating Plant - A facility, consisting of one or more Generating Units, where electric Energy is produced from some other form of Energy by means of a suitable apparatus.

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.

Maximum Load (Pmax) - The maximum net output in MW that a Generating Unit can reliably sustain based on the generator capability tests.

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.

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.

Philippine Grid Code - The set of rules, requirements, procedures, and standards to ensure the safe, reliable, secured and efficient operation, maintenance, and development of the high voltage backbone Transmission System and its related facilities.

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.

Ramp Down Rate - The normal rate that a Generating Unit reduces its power output, expressed in MW per minute.

Ramp Rate - Term referring to both the ramp down rate and the ramp up rate.

Ramp Up Rate - The normal rate that a Generating Unit increases its power output, expressed in MW per minute.

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.

Scheduled Generating Unit - A Generating Unit or a group of Generating Units connected at a common connection point with a nameplate rating of greater than or one tenth of one percent (>0.1%) of the peak load in a particular reserve region.

Scheduled Maintenance - The Outage of a Component or Equipment due to maintenance, which is coordinated by the Transmission Network Provider and the System Operator or User, as the case may be.

Scheduling - The process of matching the offers to supply Energy and provide Ancillary Services with the bids to buy Energy and the operational support required by the Grid, to prepare the Dispatch Schedule, which takes into account the operational constraints in the Grid.

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.