



DEPARTMENT CIRCULAR NO. _____

PROVIDING POLICIES FOR THE EFFECTIVE UTILIZATION OF ANCILLARY SERVICES IN THE GRID THROUGH CAUSER PAYS MECHANISM

WHEREAS, Republic Act (RA) No. 9136, titled “*Electric Power Industry Reform Act of 2001*” or the EPIRA, declares the policy of the State, among others, to ensure the quality, reliability, security, and affordability of the supply of electric power and 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;

WHEREAS, Section 37 of the EPIRA mandates the Department of Energy (DOE) to, among others, supervise the restructuring of the electric power industry; facilitate and encourage reforms in the structure and operations of distribution utilities for greater efficiency and lower costs; jointly with the electric power industry participants, establish the wholesale electricity spot market and formulate the detailed rules governing the operations thereof; and exercise such other powers as may be necessary or incidental to attain the objectives of the EPIRA;

WHEREAS, Section 9 of the EPIRA mandated the TRANSCO to improve and expand its transmission facilities, consistent with the Grid Code and the Transmission Development Plan to adequately serve generation companies, distribution utilities and suppliers requiring transmission service and/or Ancillary Services (AS) through the transmission system;

WHEREAS, Section 12 of the Implementing Rules and Regulations of the EPIRA specified that the WESM Rules shall provide for the methodology for the price and cost recovery of Ancillary Service, and the transmission users shall pay charges for the use of transmission and the said AS;

WHEREAS, on 28 June 2002, the DOE, with the endorsement of the electric power industry participants, promulgated the WESM Rules through Department Circular No. DC2002-06-003 which includes the provisions for the co-optimization of energy and required AS or the implementation of Reserve Market;

WHEREAS, on 02 December 2014, the DOE promulgated the Protocol for the Central Scheduling and Dispatch of Energy and Contracted Reserves through Department Circular No. DC2014-12-0002 in order to provide effective monitoring of the available generation capacity and familiarize the Trading Participants for the impending WESM Reserve Market;

WHEREAS, on 12 November 2015, the DOE declared the commercial operation of the Central Scheduling in the WESM through Department Circular No. DC2015-11-0018 entitled “*Declaring the Commercial Operation of the Central Scheduling and Dispatch of Energy and Contracted Reserves in the Wholesale Electricity Spot Market and Further Amendments to Its Protocol in Preparation for the Eventual Commercial Operation of the WESM Reserve Market*”;

WHEREAS, on 20 March 2017, the DOE adopted and promulgated the Price Determination Methodology (PDM) Manual for the implementation of enhancements to WESM design and operations as endorsed by the Rules Change Committee and the PEM Board to the DOE in accordance with the EPIRA and WESM Rules;

WHEREAS, said PDM Manual includes the provisions for the responsibility of the WESM members on the costs of the AS, however, the said provisions need further enhancements to cover all types of AS such as Primary Reserve, Secondary Reserve, Tertiary Reserve, Reactive Power Support and Black Start;

WHEREAS, the costs of all the AS are currently passed on to the loads or customers;

WHEREAS, the DOE, in the exercise of its mandate under the Republic Act No. 7638 and the EPIRA, particularly to ensure the security, reliability, quality and affordability of the supply of electric power and the reserve requirements, deems it necessary to establish a mechanism in order to provide transparency and fair cost recovery to the electric power industry participants on the utilization of AS;

WHEREAS, the said mechanism shall establish the accountability of the market participants that cause the need for the AS;

WHEREAS, on 04 December 2019, the DOE issued DC No. DC2019-12-0018 entitled, "Adopting a General Framework Governing the Provision and Utilization of AS in the Grid", providing general framework for the utilization of AS in the Grid;

WHEREAS, on 13 May 2021, the DOE issued DC No. DC2021-03-0009 titled, "Adopting a General Framework Governing the Operationalization of the Reserve Market in the WESM and Providing Further Policies to Supplement DC2019-12-018" providing policy framework for the co-optimization of Energy and Reserve Markets;

WHEREAS, on 07 November 2022, the DOE promulgated DC No. DC2022-11-0032 entitled, "Adopting Further Amendments to the WESM Rules and Market Manuals for the Implementation of Reserve Market";

WHEREAS, the reserve categories to be traded in Spot Market include Regulating Reserve, Contingency Reserve, Dispatchable Reserve and Other Reserve Categories defined by DOE through a policy;

WHEREAS, the costs of reserves are to be recovered from the System Operator (SO) through the Reserve Trading Amounts by the MO in accordance with the settlement amounts calculated through AS cost recovery formula;

WHEREAS, on 24 August 2023, the Energy Regulatory Commission (ERC) granted an interim relief on ERC Case No. 2023-002 RC titled, "Application for the Issuance of Rules on the PDM for the Implementation of the co-optimized Energy and Reserve Market in the WESM", jointly filed by the Independent Market Operator of the Philippines (IEMOP) as the MO and Philippine Electricity Market Corporation (PEMC) as the WESM Governance Arm;

WHEREAS, on 26 September 2023, the DOE declared the commercial operation of the Reserve Market through Department Circular No. DC2023-09-0026 entitled "Declaring the Commercial Operations of the Reserve Market and Providing Further Policies";

WHEREAS, on 26 January 2024, the full commercial operation of the Reserve Market commenced following the dispatch of MO at 0005H interval.

WHEREAS, based on the February 2024 billing period, the MO generally observed that the Reserve Market has significantly improved the reliability of the grid operations as required capacities for reserves were met, however, high market clearing price for AS were also recorded which translates to increase in the transmission charge to electricity consumers; and

WHEREAS, the DOE deemed it necessary to provide price mitigating measures in the Reserve Market such as the causer pays mechanism to ensure consumer protection and accountability of market participants in ensuring grid reliability;

NOW THEREFORE, from the foregoing premises, the DOE hereby adopts the following policies and guidelines on Causer Pays Mechanism for the effective utilization and fair recovery of the AS in the Grid:

Section 1. Guiding Principles. The implementation of the Causer Pays Mechanism or CPM for the effective utilization of AS in the Grid shall be guided by the following principles:

- 1.1 The CPM is a principle wherein the cost of AS, as determined under the Philippine Grid Code (PGC) 2016 edition, which may include Primary Reserve, Secondary Reserve, Tertiary Reserve, Reactive Power Support, and Black-Start, utilized shall be recovered equitably from the WESM Member that requires or caused the use of such AS;
- 1.2 The CPM shall apply to all WESM Members requiring or causing the use of AS, which shall include the Generation Companies, the Transmission Network Service Provider (NSP) and the Customers in the WESM;
- 1.3 Costs of Primary Reserves shall be recovered from the Generation Companies with at least five (5) MW registered capacity, Transmission NSP and Customers;
- 1.4 Costs of Secondary Reserves and Tertiary Reserves shall be recovered from the Generation Companies and Customers;
- 1.5 Costs of Reactive Power Supports shall be recovered from the Distribution Utilities or Transmission NSP;
- 1.6 Costs of Black Start shall be recovered from the Generation Companies, Transmission NSP and Customers;
- 1.7 Cost of Must-Run Units shall be recovered from the Generation Companies and Customers;
- 1.8 The CPM shall apply the Reserve Responsibility Share (RRS) formula to determine the share or contribution factor of each WESM Member to the costs of each type of AS; and
- 1.9 All new conventional generation facilities shall at least provide one (1) type of AS and shall be included in the certificate of compliance issued by the ERC.

Section 2. Definition of Terms.

- 2.1 Ancillary Services. 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.
- 2.2 Black Start. The process of recovery from Total System Blackout using a Generating Unit with the capability to start and synchronize with the Power System without an external power supply.
- 2.3 Customer. A person who engages in the activity of purchasing electricity supplied through a transmission or distribution system which may include Distribution Utilities, Retail Electricity Suppliers and directly connected customers in the Grid.
- 2.4 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.
- 2.5 Grid Operating Maintenance Program (GOMP). Refers to the operating program or the periodic program prepared by the Transmission NSP and the SO based on data submitted by generation company and users which specifies the expected availability and aggregate capability of generation to meet forecasted demand.
- 2.6 Must-Run Unit (MRU). A generating unit identified and instructed, by the SO to either a) come on-line, or b) provide additional energy on a particular trading interval but the dispatch of which is said to be out of merit, to address system security requirements. For clarity, MRU shall be utilized only after the SO has exhausted all available AS.
- 2.7 Primary Reserve. Synchronized generating capacity that is allocated to stabilize the system frequency and to cover the loss or failure of a synchronized generating unit or a transmission line or the power import from a single circuit interconnection.
- 2.8 Qualified Interruptible Load. A load that is tested, certified and monitored by the SO to provide Tertiary Reserve Ancillary Service.
- 2.9 Reactive Power Support. The capability of a generating unit to supply or absorb Reactive Power beyond the ranges prescribed under the PGC.
- 2.10 Reserve Responsibility Share (RRS). The percentage share of generation company, Transmission NSP and/or Customer to the total cost of the AS.
- 2.11 Secondary Reserve. Synchronized generating capacity that is allocated to restore the system frequency from the quasi-steady state value as established by the Primary Responses of generating units to the nominal frequency of 60 Hz.

2.12 Tertiary Reserve. The capacity which can be connected (automatically or manually) under Tertiary Control, in order to provide an adequate Secondary Reserve. This reserve must be used to contribute to the restoration of the Secondary Control range when required. The restoration of an adequate Secondary Control range may take, for example, up to 15 minutes, whereas Tertiary Control for the optimization of the network and generating system will not necessarily be complete after this time.

2.13 WESM Member. A person who is registered with the Market Operator (MO) which shall include the Generation Companies, the Transmission NSP and the Customers.

Section 3. Reserve Responsibility Share (RRS). All WESM Members shall comply with the following RRS for the effective and fair cost recovery of the AS:

3.1 RRS for the Primary Reserve:

3.1.1 Fifty percent (50%) of the cost recovery for the Primary Reserve shall be allocated to the Generation Companies in accordance with Section 1.3 of this Circular;

3.1.1.1 The RRS of each Generation Company shall be calculated by the MO through runway model in accordance with Section 3.1.1.4 (a) of this Circular;

3.1.1.2 The runway model shall be computed based on the real-time dispatch schedule and reliability performance of the Generation Companies; and

3.1.1.3 Reliability performance shall be determined based on the forced outage rate (FOR) of the Generation Companies, which shall be calculated and published by the MO quarterly in accordance with Section 3.1.1.4 (b) of this Circular;

3.1.1.4 RRS and FOR formulae for Generation Companies:

$$(a) RRS_x = \sum_{i=x}^n \left[\left(\frac{E_i - E_{i+1}}{E_{max}} \right) * \left(\frac{PF_x}{\sum_{j=1}^i PF_j} \right) \right], \text{ If } i+1 > n, \text{ then } E_{i+1}=0$$

Where,

RRS_x	Reserve Responsibility Share of Generator “x”
n	‘n’ numbers of generators considered
x	Generator unit being considered
E_i	Dispatch Schedule of generating unit
E_{max}	Maximum Dispatch Schedule of generating unit among generating units present
PF_x	Performance Factor of Generator “x” PF = 1+ FOR

$$(b) \text{ FOR} = \frac{\text{Forced Outage Hours}}{\text{Forced Outage Hours} + \text{Service}} \times 100\%$$

3.1.2 Twenty-five percent (25%) of the cost recovery for the Primary Reserve shall be allocated to the Transmission NSP.

3.1.3 Twenty-five percent (25%) of the cost recovery for the Primary Reserve shall be allocated to the Customers. The RRS for each Customer shall be the calculated by the MO through pro-rata basis to the energy consumption (metered quantity) per settlement interval in the WESM.

3.2 RRS for Secondary Reserve and Tertiary Reserve:

3.2.1 The RRS for each Generation Company and Customer shall be calculated by the MO through pro-rata basis to the first 5MWh-energy dispatch (metered quantity) of the Generation Companies and energy consumption (metered quantity) of the Customers per settlement interval in the WESM;

$$RRS_{Gen\ x} = \frac{E_x}{\sum_{i=1}^{n_{Gen}}(E_i) + \sum_{j=1}^{n_{load}}(E_{Load\ j})}$$

$$E_x = \begin{cases} E_{Gen\ x}, & 0 \leq E_{Gen\ x} < 5 \\ 5, & E_{Gen\ x} \geq 5 \end{cases}$$

$$RRS_{Load\ y} = \frac{E_{Load\ y}}{\sum_{i=1}^{n_{Gen}}(E_i) + \sum_{j=1}^{n_{load}}(E_{Load\ j})}$$

Where,

$RRS_{Gen\ x}$	Reserve Responsibility Share of Generator “x”
$RRS_{Load\ y}$	Reserve Responsibility Share of Load “y”
$E_{Gen\ x}$	Energy dispatch of Generator “x”
$E_{Load\ y}$	Energy dispatch of Load “y”
E_x	Energy dispatch considered for regulation (first 5MWh)
n_{Gen}	Total number of generating units present
n_{load}	Total number of load present

3.3 RRS for the Reactive Power Support:

3.3.1 The RRS of the Transmission NSP and the Distribution Utilities shall be based on the cause of utilization of the said AS.

3.4 RRS for the Black Start:

3.4.1 Twenty-five percent (25%) of the cost recovery for the Black Start shall be allocated to the Generation Companies. The RRS for each Generation Company shall be calculated by the MO through pro-rata basis to the energy dispatch (metered quantity) per settlement interval in the WESM;

3.4.2 Fifty percent (50%) of the cost recovery for the Black Start shall be allocated to the Transmission NSP - SO; and

- 3.4.3 Twenty-five percent (25%) of the cost recovery for the Black Start shall be allocated to the Customers. The RRS for each Customer shall be calculated by the MO through pro-rata basis to the energy consumption (metered quantity) per settlement interval in the WESM.

Section 4. Additional Responsibilities of the National Grid Corporation of the Philippines (NGCP). The NGCP as the SO and NSP shall:

- 4.1 Pay its share to the cost of AS based on the RRS;
- 4.2 Determine the cause of generator's Forced Outage and shall submit detailed report to the PEMC and the DOE regarding the cause of the event. For this purpose, the NGCP shall provide all necessary documents required by the PEMC for the validation of the Forced Outage event;
- 4.3 Provide to the MO the monthly costs of each type of AS covered by bilateral contracts for recovery and settlement purposes;
- 4.4 Ensure the availability of the transmission system at all times, and submit to the DOE the scheduled maintenance outage of the transmission system or equipment and shall be posted on the website for transparency; and
- 4.5 Any changes in the planned maintenance outage of the transmission system or equipment shall be approved by the DOE;

Section 5. Additional Responsibilities of the Generation Companies. The Generation Companies shall:

- 5.1 Prepare and submit a report to the PEMC, SO and the DOE on the occurrence of Forced Outages which shall include details and the cause of the event;
- 5.2 Adhere to the planned and maintenance schedule of their generating units in accordance with the GOMP as approved by the DOE, hence, any changes in the planned maintenance outage based on the GOMP shall be approved by the NGCP and DOE in accordance with the DOE Circular No. 2010-03-0003;
- 5.3 Pay its share to the cost of the AS based on the RRS; and
- 5.4 For the new conventional generation facility, include in the Certificate of Compliance the type of AS that its generation unit/s can provide.

Section 6. Additional Responsibilities of the Customers in the WESM. All Customers in the WESM, which shall include the Distribution Utilities, Suppliers and directly connected customers, shall pay their shares of the cost of the AS based on the RRS.

Section 7. Additional Responsibilities of the MO. The MO shall:

- 7.1 Determine the RRS of each WESM Member in accordance with Section 3;
- 7.2 Act as the settlement agent for the CPM and the Reserve Market;

- 7.3 Determine the quarterly FOR of the generators based on the reports submitted by the Generation Companies and the SO. If there are inconsistencies in the reports, the MO shall submit the same to the WESM's Enforcement and Compliance Office for review and validation; and
- 7.4 Ensure timely provision of data to the SO in connection with the schedule and actual dispatch of the AS;

Section 8. Additional Responsibilities of the Philippine Electricity Market Corporation (PEMC). The PEMC shall:

- 8.1 Determine and validate the cause of the Forced Outages through its Enforcement and Compliance Office based on the submission of the MO, NGCP-SO and the Generation Companies; and
- 8.2 Prepare and submit a report on the determination and validation of the cause of Forced Outage to the SO, ERC and the DOE;

Section 9. Dispute Arising from the Forced Outage Report. Any dispute arising from the monthly validation report on Forced Outages prepared by the PEMC shall be settled through Dispute Resolution Process of the WESM.

Section 10. Regulatory Support. The ERC shall provide within sixty (60) days the necessary regulatory issuances, if any, for the implementation of the CPM and the harmonization and amendments of the existing AS cost recovery rules with the policy set forth in this Circular.

Section 11. Repealing Clause. The provisions of other circulars, orders, issuances, rules, and regulations which are inconsistent with the provisions of this Circular, are hereby repealed, amended, modified, or superseded accordingly.

Section 12. Separability. 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 13. Effectivity and Publication. This Circular shall take effect immediately upon its publication in two (2) newspapers of general circulation. A copy of this DC shall be filed with the University of the Philippines Law Center – Office of National Administrative Register (UPLC-ONAR).

Issued this _____ at the DOE, Energy Center, Rizal Drive cor. 34th Street, Bonifacio Global City, Taguig City.

RAPHAEL P.M. LOTILLA
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