DEPARTMENT CIRCULAR NO. DC_____

PROVIDING SPECIFIC POLICY FOR THE OPTIMAL UTILIZATION OF THE KALAYAAN PUMPED-STORAGE POWER PLANT PHASE I AND II

WHEREAS, RA No. 9513, or the "Renewable Energy Act of 2008" (RE Act), declares as a policy of the State to increase the utilization of RE by institutionalizing the development of national and local capabilities in the use of RE systems, and promoting its efficient and cost-effective commercial application by providing fiscal and non-fiscal incentives;

WHEREAS, the National Renewable Energy Program (NREP) 2020-2040 sets a target of at least 35% RE share in the power generation mix by 2030 and 50% by 2040 to attain energy security, sustainable development, inclusive growth, and mitigate the impacts of climate change;

WHEREAS, on 5 October 2022, the DOE issued Department Circular (DC) No. DC2022-10-0031, entitled "Declaring All Renewable Energy Resources as Preferential Dispatch Generating Units in the Wholesale Electricity Spot Market Amending for this Purpose Department Circular No. DC2015-03-0001", which grants all generating units utilizing RE resources either Must Dispatch or Priority Dispatch status (collectively referred to as "Preferential Dispatch" status) to aid in the acceleration of the development and utilization of indigenous RE resources;

WHEREAS, on 20 April 2023, the DOE issued Department Circular (DC) No. DC2023-04-0008, titled "Prescribing the Policy for Energy Storage System in the Electric Power Industry", recognizing the role of Energy Storage Systems (ESS), including Integrated RE Plant and ESS, in ensuring the quality, reliability, security, sustainability, and affordability of electric power. It likewise laid down the general policies to support the influx of variable RE (VRE) technologies and sustain RE integration and grid stability;

WHEREAS, Pumped-Storage Hydropower (PSH) functions similarly as an Integrated RE Plant and ESS, having the combined ability to draw and/or inject electricity;

WHEREAS, in recognition of the evolving role of PSH in providing reliability services to the grid or the distribution system, the DOE issued DC2023-10-0029, as amended, which sets out the settlement mechanism for PSH Facilities under the Green Energy Auction Program;

WHEREAS, the 661.300 MW Kalayaan Pumped-Storage Power Plant Phase I and II (KPSPP), located in Kalayaan, Laguna, is a government-owned PSH Facility, through the Power Sector Assets and Liabilities Management (PSALM) Corporation;

WHEREAS, the KPSPP is the only existing PSH Facility in the country whose commercial operations commenced prior to the effectivity of the RE Act and has been instrumental in supporting the grid by providing essential ancillary services;

WHEREAS, the KPSPP has the following features:

Phase No.	Unit No.	Capacity in MW	Commercial Operations Date
I	1	155.550	21 March 2002
	2	155.550	08 February 2001
II	3	175.100	24 November 2003
	4	175.100	22 January 2004

WHEREAS, the DOE acknowledges the strategic importance of the KPSPP in achieving the policies set forth in the NREP;

WHEREAS, the KPSPP provides the same reliability services as those PSH Facilities under the GEAP thereby necessitating a separate settlement mechanism for the former that takes into account its design and period of commercial operations, among others;

WHEREAS, Section 47(a) of Republic Act No. 9136 (EPIRA) states that the privatization value to the National Government of the National Power Corporation generation assets, real estate, other disposable assets as well as Independent Power Producer contracts, which includes the KPSPP, shall be optimized;

NOW, THEREFORE, for and in consideration of the foregoing premises, the DOE, consistent with its mandate under the EPIRA and the RE Act, hereby adopts and promulgates the following:

Section 1. Scope. This Circular sets forth the framework for the optimal utilization of the KPSPP and provides the settlement mechanism for the KPSPP based on Available Capacity as defined herein.

Section 2. Revenues Attributable to the KPSPP. The revenues attributable to the KPSPP shall be the Total KPSPP Amount which shall be based on Available Capacity and the corresponding KPSPP Tariff regardless of the Total Trading Amount.

Section 3. Available Capacity. The Available Capacity of the KPSPP refers to the capacity of the KPSPP which can be utilized to inject and/or draw electricity and/or support and provide flexibility to the grid: *Provided,* That the Available Capacity of the KPSPP shall exclude non-operational units of such facility and shall not exceed the total Pmax of the plant or generating unit, as the case may be: *Provided, Further,* That the Available Capacity of the KPSPP shall be based on the nominated capacity in kW per trading interval without regard to the mode of operation, i.e., injecting and/or drawing electricity, how the facility is used, e.g., load following, peak shaving, load shifting, and the sub market where the capacity is sold/sourced.

Section 4. Payment and Settlement of the Total KPSPP Amount. The payment and settlement of the Total KPSPP Amount shall be collected and administered through the WESM by the Market Operator.

For delivery of energy and/or ancillary services, the KPSPP shall be paid with the Total KPSPP Amount in consideration of the KPSPP Available Capacity following the formula below:

$$Total\ KPSPP\ Amount\ = \sum_{i \in h} (|AC_i| \times KPSPP\ Tariff \times d_i)$$

Where:

Total KPSPP Amount or TA_{KPSPP}: refers to the amount in PhP that the KPSPP is entitled to be compensated for.

AC_i: Absolute value of the Available Capacity in kW for trading interval i for settlement interval h;

KPSPP Tariff: refers to the tariff, in PhP/kW/h, as approved by the ERC;

d_i: Duration of trading intervals in hours; and,

$$\boldsymbol{d_i = \frac{T}{60}\ hours}$$

T: Duration of trading intervals in minutes (i.e., 5, 15, 60, etc.);

The settlement to the KPSPP shall be subject to the collection and payment allocation methodology prescribed under the WESM Rules and the WESM Market Manual on Billing and Settlement.

To ensure sufficient payment to the KPSPP, the basis for the determination of the collection and payment mechanism is the **Total Trading Amount$_{KPSPP}$ or TTA_{KPSPP}**, which shall be determined using the formula below:

$$TTA_{KPSPP_{p,h}} = ETA_{KPSPP_{p,h}} + RTA_{KPSPP_{p,h}}$$

Where:

$\boldsymbol{TTA_{KPSPP_{p,h}}}$ refers to the total trading amount in PhP of trading participant p for settlement interval h.

$\boldsymbol{ETA_{KPSPP_{p,h}}}$ refers to the energy trading amount in PhP of trading participant p for settlement interval h as provided under the approved Price Determination Methodology and Billing and Settlement Manual, and subsequent amendments thereto.

$\boldsymbol{RTA_{KPSPP_{p,h}}}$ refers to the reserve trading amount in PhP of trading participant p for settlement interval h as provided under the approved Price Determination Methodology and Billing and Settlement Manual, and subsequent amendments thereto.

Section 5. Collection and Flowback of Difference between Total Trading Amount$_{KPSPP}$ and Total KPSPP Amount. To account for the total amount to be collected or flowed back to the WESM Trading Participants for the Services KPSPP, the Market Operator shall calculate the difference between the TTA_{KPSPP} and the

computed TA_{KPSPP} for the billing month of the KPSPP during the preliminary and final settlement process under the WESM Rules.

Section 5.1. Total Trading Amount$_{KPSPP}$ is lower than Total KPSPP Amount. In case the TTA_{KPSPP} is lower than the computed TA_{KPSPP} for a relevant billing month, the Market Operator shall reflect in the settlement statements the difference in amount and collect the same to satisfy the TA_{KPSPP} following the formula below:

$TTA_{KPSPP} < TA_{KPSPP}$

Allocation for Customers in the Energy Market

$$\boldsymbol{Collection\ Allocation_{b,m}} = GEASA_{energy,m} \times \frac{GESQ_{b,m}}{GESQ_{customer-total,m}}$$

Allocation for System Operator in the Reserve Market

$$\boldsymbol{Collection\ Allocation_{SO,m}} = (TTA_{KPSPP,m} - TA_{KPSPP,m}) \times \frac{SRQ_{KPSPP,m}}{TTQ_{KPSPP,m}}$$

Where:

Collection Allocation per buyer is the buyer's share of the collection amount in PhP for the billing period.

Collection Allocation$_{b,m}$ is the share in the KPSPP Shortfall Amount in PhP of customer b for the billing month m based on transactions in the Energy Market.

Collection Allocation$_{so,m}$ is the System Operator's share in the KPSPP Shortfall Amount in PhP for the billing month m based on transactions in the Reserve Market.

GESQ is the gross energy settlement quantity of electricity sold or purchased as determined in WESM Rules 3.13.6 in MWh.

GESQ$_{b,m}$ is the total GESQ of customer b (buyer in the WESM) for the billing month m in MWh.

GESQ$_{customer-total,m}$ is the total customer GESQ (buyers in the WESM) for the billing month m in MWh.

GEASA$_{energy,m}$ is the energy share for the difference between TTA_{KPSPP} and TA_{KPSPP} for billing month m where TTA_{KPSPP} is lower than TA_{KPSPP} for the same billing month m in PhP.

$$\boldsymbol{GEASA_{energy,m}} = (TTA_{KPSPP,m} - TA_{KPSPP,m}) \times \frac{GESQ_{KPSPP,m}}{TTQ_{KPSPP,m}}$$

$TTA_{KPSPP,m}$ is the total trading amount in PhP of the KPSPP facility for the billing month m.

$TA_{KPSPP,m}$ is the total amount in PhP of the KPSPP facility for the billing month m.

$GESQ_{KPSPP,m}$ is the total GESQ in MWh of the KPSPP facility for the billing month m.

$TTQ_{KPSPP,m}$ is the total transacted quantity that represents the sum of the GESQ and the Scheduled Reserve Quantity in MWh of the KPSPP facility that was scheduled and/or dispatched in the WESM for the billing month m.

$SRQ_{KPSPP,m}$ is the total scheduled reserve quantity in MWh of the KPSPP Facility in PhP for the billing month m.

Section 5.2. Total Trading Amount$_{KPSPP}$ is higher than Total KPSPP Amount. In case the TTA_{KPSPP} is higher than the computed TA_{KPSPP} for a relevant billing month, the Market Operator shall reflect in the settlement statements the difference in amount and treat it as a flowback amount based on the following formula:

$TTA_{KPSPP} > TA_{KPSPP}$

Allocation for Customers in the Energy Market

$$\boldsymbol{Flowback\ Allocation_{b,m}} = GEAFA_{energy,m} \times \frac{GESQ_{b,m}}{GESQ_{customer-total,m}}$$

Allocation for System Operator in the Reserve Market

$$\boldsymbol{Flowback\ Allocation_{SO,m}} = (TTA_{KPSPP,m} - TA_{KPSPP,m}) \times \frac{SRQ_{KPSPP,m}}{TTQ_{KPSPP,m}}$$

Where:

Flowback Allocation per buyer is the buyer's share of the flowback amount in PhP for the billing period.

Flowback Allocation$_{b,m}$ is the share in the KPSPP Flowback Amount in PhP for customer b during the billing month m based on transactions in the Energy Market.

Flowback Allocation$_{SO,m}$ is the System Operator's share in the KPSPP Flowback Amount in PhP for the billing month m based on transactions in the Reserve Market.

$GESQ_{b,m}$ is the total GESQ of customer b (buyer in the WESM) for the billing month m in MWh.

$GESQ_{customer-total,m}$ is the total customer GESQ (buyers in the WESM) for the billing month m in MWh.

$GEAFA_{energy,m}$ is the energy share for the difference between TTA_{KPSPP} and TA_{KPSPP} for billing month m where TTA_{KPSPP} is higher than TA_{KPSPP} for the same billing month m in PhP.

$$\boldsymbol{GEAFA_{energy,m}} = (TTA_{KPSPP,m} - TA_{KPSPP,m}) \times \frac{GESQ_{KPSPP,m}}{TTQ_{KPSPP,m}}$$

$TTA_{KPSPP,m}$ is the total trading amount in PhP of the KPSPP facility for the billing month m.

$TA_{KPSPP,m}$ is the total amount in PhP of the KPSPP facility for the billing month m.

$GESQ_{KPSPP,m}$ is the total GESQ in MWh of the KPSPP for the billing month m.

$TTQ_{KPSPP,m}$ is the total transacted quantity that represents the sum of the GESQ and the Scheduled Reserve Quantity in MWh of the KPSPP that was scheduled and/or dispatched in the WESM for the billing month m.

$SRQ_{KPSPP,m}$ is the total scheduled reserve quantity in MWh of the KPSPP for the billing month m.

Section 6. Payment and Settlement applicable upon ERC approval of KPSPP Tariff. The payment and settlement mechanism for the Total KPSPP Amount provided herein shall apply to the KPSPP upon approval of the KPSPP Tariff by the Energy Regulatory Commission (ERC). For this purpose, the ERC shall, within sixty (60) calendar days from the effectivity of this Circular, issue the Price Determination Methodology (PDM) for the KPSPP.

Section 6.1. Who may file KPSPP Tariff Application. The PSALM or PSALM's transferee of the KPSPP shall file the application for KPSPP Tariff with the ERC not later than sixty (60) calendar days from the issuance of the PDM for the KPSPP.

Section 6.2. Considerations for the KPSPP Tariff. The PDM of the ERC shall allow recovery of capital infused by the PSALM's transferee, to the extent allowed under applicable laws. The KPSPP Tariff shall consider the residual/current value of the KPSPP, Incremental Costs and other costs/amounts recoverable by a transferee of PSALM's assets under the EPIRA and other applicable laws, rules and regulations. As used herein, "Incremental Costs" shall refer to the additional cost, net of capital costs, incurred by the PSALM or the transferee of the KPSPP in operating the PSH facility such as fuel costs, maintenance costs, and any other variable costs associated with the operations and upkeep of the KPSPP.

Section 6.3. Term of KPSPP Tariff. The KPSPP Tariff approved by the ERC shall apply for a period of twenty (20) years from the date of turnover of the KPSPP to the PSALM's transferee, or after the expiration or termination of any Independent Power Producer Contract or Ancillary Services Procurement

Agreement or any other similar supply agreement, whichever comes later. During this 20-year period, the KPSPP Tariff shall be subjected to periodical adjustment due to Consumer Price Index and Foreign Exchange Rate variation, as may be determined by the Commission.

After such twenty 20-year period, the KPSPP shall continue to perform its functions herein, and must comply with existing rules and guidelines: *Provided*, That the consideration for the KPSPP Tariff shall be limited to (a) Incremental Costs, (b) additional or new investments, if any, (c) such portion of the capital infused by the PSALM's transferee that is unrecovered after the 20-year period, and (d) reasonable return on investments, as may be allowed under applicable laws.

Section 7. Action upon Application for KPSPP Tariff. The ERC shall act on the application for KPSPP Tariff in accordance with the Price Determination Methodology applicable laws, rules and regulations to be issued pursuant to this Circular. ~~Such~~

Section 8. COE-PSH. Upon confirmation by the DOE of the [Plant Availability], the KPSPP shall be deemed available and shall be entitled to the issuance of a Certificate of Endorsement (COE-PSH). The COE-PSH shall indicate the name of the KPSPP, the available capacity of the KPSPP that is eligible for the tariff under this Circular and the actual commencement date of [availability].

The COE-PSH shall be processed as follows:

a. The KPSPP shall provide written notice to the DOE that it has achieved [Plant Availability] together with (i) the most recent year's Generation Company Management Report and Generation Company Information Sheet it submitted to the ERC, and (ii) the results of the most recent Annual Ancillary Services Performance Evaluation conducted by the System Operator. The DOE shall, within fifteen (15) working days from receipt of such notice of Plant Availability, conduct a site validation and inspection of the KPSPP including the interconnection facility.

b. [Plant Availability] is deemed attained if [the plant successfully passes (i) the capacity tests for its declared capacity as provided in the KPSPP's most recent year's Generation Company Management Report and Generation Company Information Sheet, and (ii) the most recent Annual Ancillary Services Performance Evaluation.

c. Not later than fifteen (15) working days from the last day of site validation, the DOE shall issue the confirmation or denial of Plant Availability. In the event the DOE confirms/validates the [Plant Availability], it shall, within fifteen (15) working days from the date thereof, issue the COE-PSH.

Section 9. Stakeholder Responsibilities. To ensure the implementation of this Circular, the Market Operator, ERC, WESM Governance Arm (through its committee), System Operator and the KPSPP shall have the following general mandates and responsibilities:

Section 9.1. Responsibilities of the DOE

a. The DOE shall issue the COE-PSH upon confirmation/validation of the Plant Availability of the KPSPP.

Section 9.2. Responsibilities of the ERC

a. The ERC shall act on the Market Operator's application for approval of the settlement mechanism within one hundred eighty (180) days from receipt of the application; and

b. The ERC shall act on the application for approval of the KPSPP Tariff [within sixty (60) calendar days upon receipt of the application].

c. The ERC shall consider updating the Open Access Transmission Service (OATS) rules to ensure that the KPSPP shall only be subjected to Single Power Delivery Service (PDS) charge, regardless of whether it is injecting or drawing electricity.

d. Ensure that the KPSPP shall only be subjected to a single Power Delivery Service (PDS) Charge, regardless of whether it is injecting or drawing electricity. For this purpose, the DOE and ERC shall consider the updating of the Open Access Transmission Service (OATS) Rules and other relevant rules.

Section 9.3. Responsibilities of the WESM Governance Arm.

a. The WESM Governance Arm, through its committee, shall facilitate the rules change process for the proposed amendments that shall be submitted by the Market Operator; and

b. The WESM Governance Arm, through its committee, shall conduct audit of market systems in accordance with the WESM Rules and Market Manuals, that will be used by the market for the implementation of this Circular.

Section 9.4. Responsibilities of Market Operator

a. The Market Operator shall, within thirty (30) days from the effectivity of this Circular, apply for the ERC's approval of the settlement mechanism provided under Section 7 hereof for KPSPP;

b. Within thirty (30) days from the ERC's approval of the settlement mechanism, the Market Operator shall file an urgent amendment of the relevant provisions of the Market Rules and Manuals to reflect the approved settlement mechanism;

c. The Market Operator shall pay and settle the KPSPP Amount in accordance with the ERC-approved settlement mechanism;

d. The Market Operator shall:

i. Implement necessary enhancements on the market systems;
ii. Propose necessary amendments in the WESM Rules and Market Manuals to implement this Circular;
iii. Ensure availability of adequate manpower that will facilitate implementation of this Circular; and
iv. Seek the ERC's approval on the recovery of costs for the implementation of this Circular, including the settlement mechanism referred to in Section 7 hereof.

Section 9.5. Responsibilities of the System Operator.

a. The System Operator shall as far as practicable, consider KPSPP' capacities under its roster/list of Ancillary Service Provider.

b. Based on the dispatch schedule provided by the Market Operator, the System Operator shall ensure maximum dispatch of KPSPP.

c. The System Operator shall adhere to the ERC-approved AS cost recovery mechanism when recovering costs associated with the provision of AS from KPSPP.

d. The System Operator shall ensure that the procurement of the energy needed during pumping mode of KPSPP is at the least cost, whenever practicable. For the avoidance of doubt, the pumping costs of KPSPP shall be collected from WESM trading participants prorated based on their GESQ as defined in the WESM Rules and Market Manuals.

Section 9.6. Joint Responsibilities of the Market Operator and System Operator.

a. The Market Operator shall handle the scheduling of the PSH while the dispatch in the grid shall be handled by the System Operator;

b. The System Operator and Market Operator shall shall schedule the KPSPP in the Reserve Market and in the Energy Market to ensure full utilization;

c. The System Operator and Market Operator shall implement the optimal dispatch of the capacity from the KPSPP providing energy and AS to ensure that the demand and AS grid requirements are always met;

d. The System Operator and Market Operator shall ensure that KPSPP provide other grid support services, such as utilization of excess energy from VRE Facilities for pumping of KPSPP.

Section 9.7. Responsibilities of KPSPP.

a. The KPSPP shall ensure compliance to all permits, licenses and other regulatory requirements under applicable laws, rules and regulations such as RE Contract and Certificate of Compliance;

b. The KPSPP shall ensure their efficient operation;

c. The KPSPP shall ensure their readiness to run upon scheduling and dispatch by the Market Operator and the System Operator, respectively;

d. The KPSPP shall undergo Testing, and secure Certification of AS Capability by the System Operator or any accredited third-party testing entity;

e. The KPSPP shall diligently coordinate with the Market Operator on the timely recovery of compensation in accordance with the ERC-approved settlement mechanism; and

f. The KPSPP shall strictly comply with the WESM Rules and Manuals and other applicable rules and regulations.

Section 10. Separability Clause. If any provision of this Circular is declared invalid or unconstitutional, the other provisions not affected thereby shall remain valid and subsisting.

Section 11. Repealing Clause. Except insofar as may be manifestly inconsistent herewith, nothing in this Circular shall be construed as to repeal any of the mechanisms already existing or responsibilities already provided for under existing rules.

Section 12. Effectivity. This Circular shall take effect fifteen (15) days after its publication in at least two (2) newspapers of general circulation. A copy of this Circular shall be filed with the University of the Philippines Law Center - Office of the 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
Secretary