

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



**IN THE MATTER OF THE
APPLICATION FOR
APPROVAL OF THE
ANCILLARY SERVICES
PROCUREMENT
AGREEMENT BETWEEN
THE NATIONAL GRID
CORPORATION OF THE
PHILIPPINES (NGCP) AND
MASINLOC POWER
PARTNERS CO. LTD.
(MPPCL) WITH PRAYER
FOR ISSUANCE OF
PROVISIONAL AUTHORITY**

ERC CASE NO. 2018-010 RC

**NATIONAL GRID
CORPORATION OF THE
PHILIPPINES (NGCP) and
MASINLOC POWER
PARTNERS CO. LTD.
(MPPCL),**

Applicants.

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D O C K E T E D
Date: MAY 03 2018
By: _____

ORDER

For the Commission's consideration is the prayer for issuance of provisional authority included in the application for approval of the Ancillary Services Procurement Agreement (ASPA) for a period of five (5) years between the National Grid Corporation (NGCP) and Masinloc Power Partners Co. Ltd. (MPPCL) dated 28 February 2018, for its 10 MW Masinloc Battery Energy Storage System (BESS) located in Masinloc, Zambales.

FACTS OF THE CASE

The foregoing are the narration of facts relative to the prayer for issuance of provisional authority of the applicants NGCP and MPPCL:

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1. NGCP is a corporation created and existing under the laws of the Philippines, with office address at NGCP Building, Quezon Avenue corner BIR Road, Diliman, Quezon City. NGCP is the concessionaire that assumed the power transmission functions of the National Transmission Corporation (TRANSCO) pursuant to Republic Act No. 9136¹ (EPIRA). It holds a franchise under Republic Act No. 9511² to engage in the business of conveying or transmitting electricity through high-voltage back-bone systems of interconnected transmission lines, substations and related facilities, and for other purposes. The franchise also includes the authority to conduct activities necessary to support the safe and reliable operation of the transmission system.

2. MPPCL is a corporation organized and existing under and by virtue of the Philippine laws with principal office address at Masinloc Coal-Fired Thermal Power Plant, Barangay Bani, Masinloc, Zambales. The primary activity of MPPCL is power generation. It is the owner and operator of the AES Masinloc Battery Energy Storage System (“BESS”) located at Masinloc, Zambales Province, which was certified and accredited by NGCP to be capable of providing Ancillary Services (“AS”) in the form of Regulating Reserve (“RR”).

3. Under *Section 2 (b) of the Electric Power Industry Reform Act of 2001* (EPIRA), the National Transmission Commission Corporation (TRANSCO), now NGCP, is mandated to ensure and maintain the quality, reliability, security and affordability of the supply of electric power. To this end, there is a need to comply with the system requirements for Ancillary Services (AS) to ensure grid system reliability. NGCP has the mandate to procure the required AS.

4. Ancillary Services are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the transmission system in accordance with good utility practice and the Grid Code [*Section 49(b), EPIRA*].

5. MPPCL entered into an ASPA with NGCP on 08 September 2017.

¹ Republic Act No. 9136 entitled, “An Act Ordaining Reforms in the Electric Power Industry, Amending for the Purpose Certain Laws and for other Purposes”;

² An Act Granting the National Grid Corporation of the Philippines a Franchise To Engage in the Business of Conveying or Transmitting Electricity Through High Voltage Back-Bone System of Interconnected Transmission Lines, Substations and Related Facilities, and for other Purposes;

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6. On 28 February 2018, NGCP and MPPCL filed the application for approval of its Ancillary Services Procurement Agreement for a period of five (5) years under ERC Case No. 2018-010 RC.

7. Following the *ERC Rules of Practice and Procedure*, The Commission has seventy-five (75) days from the date of filing of the application or until 14 May 2018 within which to grant or disallow the provisional authority prayed for.

JUSTIFICATIONS FOR THE GRANT OF PROVISIONAL AUTHORITY

8. In the Application, NGCP and MPPCL prayed for the issuance of a provisional authority to implement the subject ASPA, to maintain the present reliability and security of the grid. Based on the current levels of available contracted AS in the Luzon Grid, the firm and non-firm contracted AS have not yet met the required levels of the ASPP. The continued participation of MPPCL as AS service provider ensures competition between and among AS service providers which will ultimately initiate a downward pressure to current prices.

9. Applicants manifested that as the demand for power in the Luzon increases, the requirements of the system to ensure stability, reliability and security likewise increases. Thus, ensuring the integrity of the system is essential to protect the interests of the public.

10. They likewise stressed that absence of system reliability and stability will certainly discourage investments and growth, thus, there is a need for the immediate issuance of Provisional Approval of the subject ASPA to maintain the reliability and security of the Grid.

11. In support to the prayer for PA, an illustration of the available level of RR in the Luzon Grid for the period January 2017 to December 2017 was provided by NGCP, to wit:

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Month	Regulating Reserve			
	Average Scheduled (MW)	Average Required (MW)	Availability (%)	Deficiency (%)
January 2017	249	256	97.04	2.96
February 2017	286	296	96.63	3.37
March 2017	249	260	95.80	4.20
April 2017	301	305	98.99	1.01
May 2017	311	312	99.57	0.43
June 2017	329	331	99.35	0.65
July 2017	295	300	98.62	1.38
August 2017	304	310	98.07	1.93
September 2017	310	316	98.19	1.81
October 2017	295	298	98.99	1.01
November 2017	306	309	98.96	1.04
December 2017	281	285	98.74	1.26

THE ISSUE

The issue for the Commission's resolution is whether NGCP and MPPCL have satisfied the requirements provided by law for the grant of provisional authority.

THE COMMISSION'S RULING

The Commission hereby **GRANTS** provisional approval of the Ancillary Services Procurement Agreement (ASPA) between the National Grid Corporation of the Philippines (NGCP) and Masinloc Power Partners Co. Ltd. (MPPCL) for its 10 MW Masinloc Battery Energy Storage System (BESS) located in Masinloc, Zambales, subject to certain conditions.

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DISCUSSION

1. Ancillary Service Background

Under the EPIRA, TRANSCO/NGCP is mandated to ensure and maintain the reliability, adequacy, security, stability and integrity of the nationwide electrical grid and to adequately serve generation companies, distribution utilities and suppliers requiring transmission service and/or ancillary services through the transmission system.

Ancillary services are services necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the transmission system in accordance with good utility practice and the Grid Code (*Section 4b, R.A. 9136*). Such services are essential in ensuring reliability in the operation of the transmission system and in the reliability of the electricity supply in the Luzon, Visayas and Mindanao Grids.

On 09 March 2006, the Commission approved TransCo's proposed Ancillary Services Procurement Plan (ASPP) and directed it to file a separate application for the approval of the Ancillary Services-Cost Recovery Mechanism (AS-CRM). In the Decision dated 03 October 2007 in ERC Case No. 2006-049RC, the Commission approved with finality, the AS-CRM subject to certain conditions, including the following:

- a) The cost of procuring the ancillary services under the ASPP shall be recovered 100% from load customers but only until such time that such ancillary services are already traded in the Wholesale Electricity Spot Market; and
- b) All contracts for the procurement of ancillary services shall be submitted to the Commission for approval.

The ancillary services are essential in maintaining the power quality, reliability, and security of the national grid. NGCP invited and negotiated with all prospective generation companies (Gencos) capable of providing AS, one of which is MPPCL. For this ASPA between NGCP and MPPCL, the latter will supply Regulating Reserve (RR) for a period of five (5) years under a Firm arrangement.

Regulating Reserve (RR), also called load following and frequency regulating reserve, refers to generating capacity that is allocated exclusively to cover inter and intra-hour variations in demand (load behaviors), variations from generation schedules and hourly forecasts. During normal system conditions, loads and generator outputs vary from time to time; this behavior results in imbalance between supply and demand characterized by small deviations in system frequency. The Philippines Grid Code (PGC) requires that under normal conditions the frequency should remain within +/- 0.6 Hz of the standard 60.0 Hz in order to ensure quality of supply and security of the Grid.

2. Procurement of the ASPA

MPPCL entered into an ASPA with NGCP on 08 September 2017 for a period of five (5) years, which was filed with the Commission on 28 February 2018 under ERC Case No. 2018-010 RC. The salient features³ of the said ASPA are the following:

1. The ASPA become effective upon its execution, until five (5) years from the commencement of the provision of the AS, renewable for another five (5) years;
2. Applicants agreed that upon signing and until the issuance of a provisional or final approval of the Application by the Commission (“Interim Period”), MPPCL may already provide RR, in whole or in part;
3. Firm contracted capacity of 20,000 kW; and
4. With the following proposed rates:

Ancillary Service	Applicable Hourly Rate
	Firm
Regulating Reserve (RR)	Capacity Payment - PhP2.20/kW/Hr Incidental Energy Payment – Maximum of PhP0.05/kWh for dispatched energy

³ Judicial Affidavit (p.6) of Engr. LisaFlor Bacani-Kater, NGCP.

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MPPCL agreed to supply Ancillary Services in the following capacities under Schedule 1 of the subject ASPA:

Type	FIRM Contracted Capacity
Regulating Reserve (RR)	<p>Up to 10,000 kW into the grid or draw up to 10,000 kW from the grid, 24 hours per day at the 7.2 kV side of the Generation Facility.</p> <p>The Firm contracted Capacity is subject to the Constraint Guidelines as outlined in Schedule 7</p>

Applicants prayed that *Schedule 4: Ancillary Services Fees and Applicable Rates* and *Schedule 7: Constraint Guidelines* of Annex A be treated as confidential information pursuant to Rule 4, Section 1 of the ERC Rules of Practice and Procedure.

Schedule 6 of the ASPA provides that the Annual Performance Evaluation, which is required by NGCP as a basis of monitoring and evaluating the performance of the Service Provider for its provision of Ancillary Services, shall be the following:

1. Prior to the Reserve Market becoming operational, NGCP shall evaluate the Performance Effectiveness factor (the "PEF"), which shall be Hours Complied divided by the Scheduled Hours.
2. Once the Reserve Market becomes operational, the Reserve Effectiveness Factor (the "REF") may be used by NGCP to gauge the performance of the Service provider for its provision of the contracted AS.

In the Judicial Affidavit executed by NGCP's Engr. Lisaflor Bacani-Kater, Division Head of the Special Accounts Portfolio, Network Access and Customer Account Division (SAP-NetAccesso), Revenue and Regulatory Affairs Department (RRAD), it was stated that the current levels of available contracted firm AS in the Luzon Grid, and firm contracted AS have not yet met the required levels of the ASPP. NGCP guaranteed that there are available AS on a daily basis to assure reliability of the grid. The immediate approval of the ASPA between NGCP and MPPCL will improve the availability of AS in the Luzon Grid and significantly lower the AS cost to the benefit of the consumers. With this ASPA, the Luzon Grid is assured of AS from

MPPCL until 2023 and has ensured the system reliability and stability of said grid.

3. ASPA Rate Proposal/Formula

Schedule 4 of the ASPA provides for the computation of the Ancillary Service Fees to be paid by NGCP in each billing period and shall be calculated based on the Applicable Rate and shall consist of the Capacity payment and the Incidental Energy payment, to wit:

$$\text{Ancillary Services Fees} = CP + IEP$$

1. Capacity Payment:

$$CP = \sum_{i=1}^n (SC * CF * SF)i$$

Where:

CP = means the "Capacity Payment" for ancillary service capacity for RR in the Billing Period

n = means the total number of hours in the relevant Billing Period

SC = means the "Scheduled Capacity"

CF = means the "Capacity Fee" which shall be PhP2.20 per kW of Firm Contracted Capacity

SF = means the "SOC Factor" which shall be as follows:

- If the Generation Facility is operated in Free Governor Mode and the HSOC is greater than 60.0% or less than 40.0%, then $SF = 100\% - \text{Absolute Value (HSOC} - 50\%)$;
- Otherwise, $SF = 100\%$.

Note: The State of Charge (SOC) at any moment is calculated as the Generation Facility's actual stored energy (in kWh) at that moment divided by the Generation Facility's maximum energy storage capacity (in kWh). The HSOC is the State of Charge at the beginning of an hour.

2. Incidental Energy Payment:

IEP = all WESM, NGCP, and governmental costs and charges incurred by the Service Provider in provision of ancillary services, subject to a cap for each Billing Period calculated as the product of **PhP 0.05 * average scheduled capacity * the total number of hours in the Billing Period.**

4. ASPA Rate Derivation

NGCP's end goal in establishing the ASPA rates is to lower cost to consumers. Ancillary Services are pass-through costs and are revenue neutral for NGCP. However, as the counter party for the ASPA, NGCP felt it was proper that it procure the ASPA at the lowest possible rate for the benefit of the consumer.

From NGCP's side, it considered rates that it felt were appropriate, using a number of methodologies such as New Build, Opportunity Cost and Comparative Revenue. Ultimately, NGCP needs to entice the generators to sign and commit their capacity, for as long as the rate fell within NGCP's benchmark range.

In the 2013 ASPA application of NGCP and San Roque Power Corporation (SRPC) under ERC Case No. 2013-009 RC, the proposed rates were based on the new build assumption wherein it considered the build cost of a new hydro-electric plant (dam type) that could provide all ancillary services. A hydro-electric plant was chosen because of its capability to provide all ancillary services (Regulating, Contingency and Dispatchable reserve), as well as its low fuel cost operations. For comparison, NGCP believed that the build cost of San Roque was the most appropriate benchmark, because (a) it was built fairly recently (2003), compared to Magat (1983) or CBK (1950-1982), (b) it has a fairly large size (411 MW), and (c) the plant is certified for all 3 aforementioned services.

San Roque Build Cost	: US\$ 1.17 bn ⁴
Installed Capacity	: 411 MW
Actual Build Cost	: US\$2.89/MW
Range	: +/- 15%

⁴ http://www.eca-watch.org/problems/asia_pacific/philippines/sanroqueproject.html

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New Build Cost Range : US\$ 2.17-3.33mn per MW
 WACC: 15%

Plant Life : 25 years
 Estimated Capital Cost : PhP 1.57 – PhP 2.41/kWh

Based on the actual build cost to construct a significant hydro-power plant, and applying a range of +/- 15%, and a return on capital of 15% with a project life of 25 years, NGCP estimate the cost range to be between PhP 1.57 – PhP 2.41/kWh.

Effect to the consumer was the primary concern of NGCP. The rates NGCP is proposing are lower than the current structure. NGCP's analysis indicates that for the same amount of reserves (same quantity), the new rates can be 30 to 40% less.

Reserve	Old Rate (2011 Actual)		New Rate		
	Quantity (GWh)	Cost (PhPMn)	Quantity (GWh)	New Rate	Cost (PhPMn)
Regulating	1,459	2,428	1,459	2.50	3,647
Contingency	1,396	5,734	1,396	2.25	3,141
Dispatchable	1,502	6,046	1,502	1.25	1,877
Total Cost		14,208			8,666
Billing Determinant	49,121 GWh		49,121 GWh		
Cost to Consumer	0.29 / kWh		0.18 kWh		

5. Initial Findings

MPPCL is the owner and operator of the 10 MW Masinloc Battery Energy Storage System under COC No. 17-07-M-00127L issued on 15 May 2017 and valid until 14 May 2022. It has a Rated Capacity of 10 MW, Dependable capacity of 10 MW and Ramp Up Rate of 4.9 MW/sec and Ramp Down Rate of 5.1 MW/sec.

The said Masinloc Battery Energy Storage System (BESS) Facility provides 10 MW of interconnected capacity and enhances the reliability of the Luzon grid. It will use the Advancion Energy Storage Solution. It will be the one of the first advanced energy storage installation in South East Asia and among the largest in all of Asia.

In the Accreditation Certificate No. 2017-Lo20 issued by NGCP dated 01 December 2017 with an expiry date of 30 November 2018,

MPPCL has successfully proven its capability to provide the Regulating Reserve. The subject Masinloc BESS can provide up to 10,000 kW into the grid or draw up to 10,000 kW from the grid, thus providing a Firm Contracted Capacity of 20,000 kW of RR. The said plant was further certified to have met and complied with the Standard Ancillary Services Technical Requirements of the System Operations during the actual testing of the said plant. The RR Service of Masinloc BESS shall be subject to re-certification test as maybe required in compliance with the approved 2016 Philippine Grid Code (PGC) and corresponding ERC issuances.

MPPCL certified in their application that it has no existing Power Supply Agreement (PSA) with any other distribution utility or electric cooperative, retail electricity supplier (RES), or any other trading participants.

The contract is on a firm basis. The contracted capacity for the aforesaid AS shall be made available at all times for NGCP's instruction and dispatch except upon the existence of any of the circumstances specified in the ASPA. NGCP shall pay MPPCL at the proposed rate for the said firm upon schedule for dispatch.

The Firm Contracted Capacity shall be scheduled first by NGCP before the Non-Firm Contracted Capacity. The Firm Contracted Capacity shall be scheduled at all times when declared by the Service Provider.

The Commission used the comparison of the proposed maximum rate with that of the previously approved ASPA rate, to wit:

Ancillary Service	MASINLOC-AES (ERC Case No. 2018-010 RC)	San Roque HEPP (ERC Case No. 2013-009 RC)	SNAP-BI Ambuklao HEPP (ERC Case No. 2016-165 RC)	SNAP-MI Magat HEPP (ERC Case No. 2016-164 RC)
RR	PhP2.20/kW/Hr (Firm)	PhP2.25/kW/Hr (Firm)	PhP2.25/kW/Hr (Firm)	PhP2.25/kW/Hr (Firm)

The above table shows that the proposed ASPA rates of MPPCL is lower than the provisionally approved Firm RR rates of other existing AS Providers of different technology (hydroelectric power plant – dam type).

In the final evaluation of this case, the Commission will address the issue on the appropriate benchmark to use for different power plant technologies to establish the reasonableness of the proposed ASPA rates.

The rate under the ASPA was subjected to a simulation by the Applicants with the following billing determinants (January to December 2017) and Indicative Rate Impact⁵:

Billing Determinants	Luzon	Unit
Billing Determinant Demand	9,646	MW
Billing Determinant Energy	4,919	GWh

AS Type	Cost, PhP Mn	Indicative Rate Impact	
		PhP/kW-mo.	PhP/kWh equivalent
Regulating Reserve	385.44	3.3299	0.0065

Further, the Commission believes that the contracted ancillary service capacity provided by MPPCL is needed to augment the deficiency of ancillary reserve capacity to be able to maintain the reliability in the operation of the transmission system and in the reliability of the electricity supply in the Luzon Grid.

However, the Commission noted that in the ASPA Application and the Affidavit executed by Engr. Lisaflor Bacani-Kater of NGCP stated that Capacity Payment is equal to PhP2.20/kW/Hr but the formula for Capacity Payment has consideration of the State of Charge (SOC) under Schedule 4. Thus, the Capacity Payment will not be always equal to PhP2.20/kW/Hr. Further, it was noted that under *Schedule 2. Term and Effectivity* there are the provisions for the renewal for another period of five (5) years under such terms and conditions as may be mutually agreed upon by the parties, and the "Interim Period" that MPPCL may at its sole discretion, supply and nominate the AS, in whole or in part, and NGCP shall schedule or and/or dispatch such nomination, under the terms and conditions of the ASPA. Considering that these are not consistent with the previous provisional approval of ASPA by other AS Providers, the Commission

⁵ Item 15, page 5 of the ASPA Application

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recommends for disallowing the same for purposes of issuance of a Provisional Authority. The Commission will raise these issues together with the benchmarking with other plant technologies during the public hearing to be conducted for this case.

For the Incidental Energy, the Commission will instead use the following formula to consider the Charging State and Discharging State of the BESS facility:

$$IE = Gx(AR + \text{Variable Costs}) - (REV_{WESM} - PMT_{WESM})$$

Where:

G = Summation of energy generated or dispatched due to Firm Contracted Capacity, in kWh

AR = Applicable AS Rate (Maximum of PhP2.20/kW/Hr)

Variable Costs = Maximum of PhP0.05/kWh

REV_{WESM} = Summation of WESM revenue based on Final Ex-Post market clearing price of the AS Provider's trading Node arising from G above.

PMT_{WESM} = Summation of WESM payment during charging based on Final Ex-Post market clearing price of the AS Provider's trading Node arising from G above.

The subject ASPA is governed by the Open Access Transmission Service (OATS) Rules, the Philippine Grid Code (PGC), and other relevant issuances, orders, rules and regulations as promulgated by proper government agencies and authorities. However, with the approval of the 2016 PGC on 05 October 2016, there is a need to amend the ASPP to harmonize with the provisions of the 2016 PGC. The 2016 PGC adopted the latest international standards and practices in the operation of ancillary services. Also in the 2016 PGC, the current types of reserves were amended and instead developed new types of reserves and order of priority, and also provides the respective modes and frequency controls that must be reflected in the ASPP. Thus, the NGCP filed with the Commission on 31 March 2017 the petition seeking the approval of its proposed amended ASPP under ERC Case No. 2017-005 RM.

Until the approval of the amended ASPP and other relevant rules, the subject ASPA shall be allowed to continue using the current type of AS under the existing ASPP and 2001 PGC (Amendment 1). However, the Commission recommends to apply the following during the transition period as proposed by NGCP in the amended ASPP, to wit:

“All approved and existing ASPA shall remain in full force and effect until the termination date, unless the accredited power plant of the AS Provider cannot comply with the technical requirements provided in the 2016 PGC. Accordingly, the AS categories of the ASPA will be converted as follows:

- i. Contingency Reserve - Primary Reserve;*
- ii. Dispatchable Reserve - Tertiary Reserve; and*
- iii. Regulating Reserve - Secondary Reserve.*

However, the AS Provider with an existing ASPA may opt to renegotiate its offer in a new ASPA that will be filed to the Honorable Commission for approval.”

In view of the foregoing, the Commission hereby **GRANTS PROVISIONAL APPROVAL** of the Ancillary Services Procurement Agreement (ASPA) between the National Grid Corporation of the Philippines (NGCP) and Masinloc Power Partners Co. Ltd. (MPPCL) for its 10 MW Masinloc Battery Energy Storage System (BESS) located in Masinloc, Zambales, subject to the following rates and condition:

1. Applicable Rates:

MPPCL shall nominate the corresponding price (in per kW capacity per hour) for the ancillary service capacity to NGCP. In the event that said nominated capacity is scheduled for ancillary service (AS), the pricing shall be as follows:

a. Scheduled capacity without energy dispatched

NGCP shall pay MPPCL the corresponding nominated price of that scheduled capacity. Provided, however, that the nominated price shall in no case exceed the following Fixed Fee Rate, without any minimum cost:

Ancillary Service FIRM	Applicable Rates (Maximum Hourly Rate)
Regulating Reserve (RR)	PhP2.20/kW/hr

b. Scheduled capacity with energy dispatched

The ASPA rate shall be recovered through settlement in the Wholesale Electricity Spot Market (WESM). Thus, in this case, the ancillary capacity is free of charges as the cost is recovered through the market.

Provided that MPPCL shall be entitled to a Monthly Minimum Incidental Energy Cost based on actual dispatch/charging and the cost of generation computed using the formula for Incidental Energy:

$$IE = Gx(AR+Variable Costs) - (REV_{WESM} - PMT_{WESM})$$

Provided further that, in the event that the net result between revenue and payment from WESM exceeds the calculated Monthly Minimum Incidental Energy Cost, the excess shall be used to off-set any positive amount determined within the relevant period or to the immediately succeeding billing month. Otherwise, the same shall be recovered from the AS.

2. The provisions for the renewal for another period of five (5) years and the "Interim Period" under Schedule 2 of the subject ASPA which is not consistent with previously approved ASPA are disallowed.
3. NGCP is enjoined to optimize economic and technical dispatch of the available ancillary service capacity wherein it shall schedule a mix of hourly ancillary service capacity at least cost for a reserve needed to maintain power quality, security, reliability and integrity of the grid;
4. The rate to be paid by NGCP as ancillary services cost should be passed on to its customers in accordance with the

approved "Ancillary Services-Cost Recovery Mechanism" (AS-CRM). Further, NGCP should be directed to submit its monthly computation of ancillary service rates that it passed on to its customers, with supporting documents on or before the 5th day of the month; and

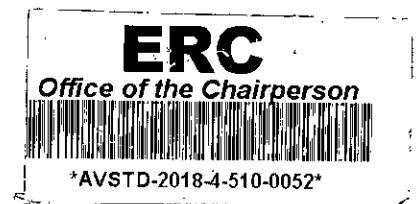
5. The above provisional rates is effective on the next billing cycle of NGCP from receipt of the Order. In the event that the final rates are higher than the provisionally granted, the resulting additional charges shall be collected by MPPCL from NGCP and the latter shall pass it on to its customers. On the other hand, if the final rates are lower than the provisionally granted, the amount corresponding to the reduction shall be refunded by MPPCL to NGCP and the latter shall pass it on to its customers.

Above conditions are consistent with the Commission's Provisional Approval of the previous ASPAs between NGCP and other AS Providers.

SO ORDERED.

Pasig City, 11 April 2018.


AGNES VST DEVANADERA
Chairman and CEO

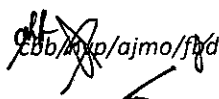



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12. Isabela I Electric Cooperative, Inc. (ISELCO I)
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13. Isabela II Electric Cooperative, Inc. (ISELCO II)
Ilagan City, Isabela
14. Nueva Vizcaya Electric Cooperative, Inc. (NUVELCO)
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15. Quirino Electric Cooperative, Inc. (QUIRELCO)
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16. Abra Electric Cooperative, Inc. (ABRECO)
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17. Benguet Electric Cooperative, Inc. (BENEKO)
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18. Ifugao Electric Cooperative, Inc. (IFELCO)
Lagawe, Ifugao
19. Kalinga Apayao Electric Cooperative, Inc. (KAELCO)
Bulanao, Tabuk, Kalinga Apayao
20. Mountain Province Electric Cooperative, Inc. (MOPRECO)
Poblacion, Bontoc, Mt. Province
21. Ilocos Norte Electric Cooperative, Inc. (INEC)
Dingras, Ilocos Norte
22. Ilocos Sur Electric Cooperative, Inc. (ISECO)
Bigbiga, Santiago, Ilocos Sur
23. La Union Electric Cooperative, Inc. (LUELCO)
Aringay, La Union
24. Pangasinan I Electric Cooperative, Inc. (PANELCO I)
San Jose, Bani, Pangasinan
25. Central Pangasinan Electric Cooperative, Inc. (CENPELCO)
Padilla St., San Carlos City, Pangasinan
26. Pangasinan III Electric Cooperative, Inc. (PANELCO III)
Nancayasan, Urdaneta City, Pangasinan
27. Aurora Electric Cooperative, Inc. (AURELCO)
Reserva, Baler, Aurora
28. Zambales I Electric Cooperative, Inc. (ZAMECO I)
San Vicente, Palauig, Zambales
29. Zambales II Electric Cooperative, Inc. (ZAMECO II)
Magsaysay, Castillejos, Zambales
30. Tarlac I Electric Cooperative, Inc. (TARELCO I)
Amacalan, Gerona, Tarlac
31. Tarlac II Electric Cooperative, Inc. (TARELCO II)
San Nicolas, Concepcion, Tarlac
32. Nueva Ecija I Electric Cooperative, Inc. (NEECO I)
Malapit, San Isidro, Nueva Ecija
33. Nueva Ecija II- Area 1 Electric Cooperative, Inc. (NEECO II- AREA I)
Calipahan, Talavera, Nueva Ecija
34. Nueva Ecija II- Area 2 Electric Cooperative, Inc. (NEECO II- AREA II)
San Leonardo, Nueva Ecija

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35. San Jose City Electric Cooperative, Inc. (SAJELCO)
San Jose City, Nueva Ecija
36. Pampanga Rural Electric Cooperative, Inc. (PRESCO)
Anao, Mexico, Pampanga
37. Pampanga I Electric Cooperative, Inc. (PELCO I)
Sto. Domingo, Mexico, Pampanga
38. Pampanga II Electric Cooperative, Inc. (PELCO II)
San Roque, Guagua, Pampanga
39. Pampanga III Electric Cooperative, Inc. (PELCO III)
San Vicente, Apalit, Pampanga
40. Peninsula Electric Cooperative, Inc. (PENELCO)
Tuyo, Balanga City, Bataan
41. First Laguna Electric Cooperative, Inc. (FLECO)
Lewin, Lumban, Laguna
42. Batangas I Electric Cooperative, Inc. (BATELEC I)
Calaca, Batangas
43. Batangas II Electric Cooperative, Inc. (BATELEC II)
Antipolo del Norte, Lipa, Batangas
44. Quezon I Electric Cooperative, Inc. (QUEZELCO I)
Poctol, Pitogo, Quezon
45. Quezon II Electric Cooperative, Inc. (QUEZELCO II)
Gumian, Infanta, Quezon
46. Camarines Norte Electric Cooperative, Inc. (CANORECO)
Daet, Camarines Norte
47. Camarines Sur I Electric Cooperative, Inc. (CASURECO I)
Puro Batia, Libmanan, Camarines Sur
48. Camarines Sur II Electric Cooperative, Inc. (CASURECO II)
Del Rosario, Naga City, Camarines Sur
49. Camarines Sur III Electric Cooperative, Inc. (CASURECO III)
San Isidro, Iriga City
50. Camarines Sur IV Electric Cooperative, Inc. (CASURECO IV)
Talojongon, Tigaon, Camarines Sur
51. Sorsogon I Electric Cooperative, Inc. (SORECO I)
Gulang-gulang, Irosin, Sorsogon
52. Sorsogon II Electric Cooperative, Inc. (SORECO II)
Monreal St., Sorsogon City, Sorsogon
53. Manila Electric Company (MERALCO)
Lopez Center, Ortigas Center, Brgy. Ugong, Pasig City
54. Ibaan Electric and Engineering Corporation (IEEC)
Poblacion Ibaan, Batangas

55. Tarlac Electric, Inc. (TEI)
Mabini St., Tarlac City
56. San Fernando Light and Power Company, Inc. (SFELAPCO)
San Fernando, Pampanga
57. Dagupan Electric Corporation (DECORP)
Dagupan, Pangasinan
58. Cabanatuan Electric Corporation (CELCOR)
Maharlika Highway, Bitas, Cabanatuan City
59. Olongapo Electric Distribution Company, Inc. (OEDC)
East Bajac, Olongapo City
60. Angeles Electric Corporation (AEC)
Angeles, Pampanga
61. La Union Electric Company, Inc. (LUECO)
San Fernando, La Union
62. Albay Power and Energy Corporation (APEC)
Albay, Legazpi
63. Clark Electric Distribution Corporation (CEDC)
Clark Freeport, Mabalacat, Pampanga
64. Office of the City Mayor
Quezon City
65. Office of the LGU Legislative Body
Quezon City
66. Office of the Provincial Governor
Province of Cagayan
67. Office of the LGU Legislative Body
Province of Cagayan
68. Office of the Provincial Governor
Province of Isabela
69. Office of the LGU Legislative Body
Province of Isabela
70. Office of the Provincial Governor
Province of Nueva Viscaya
71. Office of the LGU Legislative Body
Province of Nueva Viscaya
72. Office of the Provincial Governor
Province of Quirino
73. Office of the LGU Legislative Body
Province of Quirino
74. Office of the Provincial Governor
Province of Abra

75. Office of the LGU Legislative Body
Province of Abra
76. Office of the Provincial Governor
Province of Benguet
77. Office of the LGU Legislative Body
Province of Benguet
78. Office of the Provincial Governor
Province of Ifugao
79. Office of the LGU Legislative Body
Province of Ifugao
80. Office of the Provincial Governor
Province of Mountain Province
81. Office of the LGU Legislative Body
Province of Mountain Province
82. Office of the Provincial Governor
Province of Ilocos Norte
83. Office of the LGU Legislative Body
Province of Ilocos Norte
84. Office of the Provincial Governor
Province of Ilocos Sur
85. Office of the LGU Legislative Body
Province of Ilocos Sur
86. Office of the Provincial Governor
Province of La Union
87. Office of the LGU Legislative Body
Province of La Union
88. Office of the Provincial Governor
Province of Pangasinan
89. Office of the LGU Legislative Body
Province of Pangasinan
90. Office of the Provincial Governor
Province of Aurora
91. Office of the LGU Legislative Body
Province of Aurora
92. Office of the Provincial Governor
Province of Zambales
93. Office of the LGU Legislative Body
Province of Zambales
94. Office of the Provincial Governor
Province of Tarlac

95. Office of the LGU Legislative Body
Province of Tarlac
96. Office of the Provincial Governor
Province of Nueva Ecija
97. Office of the LGU Legislative Body
Province of Nueva Ecija
98. Office of the Provincial Governor
Province of Pampanga
99. Office of the LGU Legislative Body
Province of Pampanga
100. Office of the Provincial Governor
Province of Bataan
101. Office of the LGU Legislative Body
Province of Bataan
102. Office of the Provincial Governor
Province of Laguna
103. Office of the LGU Legislative Body
Province of Laguna
104. Office of the Provincial Governor
Province of Batangas
105. Office of the LGU Legislative Body
Province of Batangas
106. Office of the Provincial Governor
Province of Quezon
107. Office of the LGU Legislative Body
Province of Quezon
108. Office of the Provincial Governor
Province of Camarines Norte
109. Office of the LGU Legislative Body
Province of Camarines Norte
110. Office of the Provincial Governor
Province of Camarines Sur
111. Office of the LGU Legislative Body
Province of Camarines Sur
112. Office of the Provincial Governor
Province of Albay
113. Office of the LGU Legislative Body
Province of Albay
114. Office of the Provincial Governor
Province of Sorsogon

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115. Office of the LGU Legislative Body
Province of Sorsogon
116. Office of the Provincial Governor
Province of Rizal
117. Office of the LGU Legislative Body
Province of Rizal
118. Office of the Provincial Governor
Province of Bulacan
119. Office of the LGU Legislative Body
Province of Bulacan
120. Office of the Provincial Governor
Province of Cavite
121. Office of the LGU Legislative Body
Province of Cavite
122. Regulatory Operations Service
17th Flr., Energy Regulatory Commission,
Pacific Center Bldg., San Miguel Ave.,
Ortigas Center, Pasig City

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