



# Annual Market Assessment Report

26 December 2022 to 25 December 2023

This Report is prepared by the  
Philippine Electricity Market Corporation –  
Market Assessment Group  
and approved by the  
Market Surveillance Committee

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The information contained in this document is based on data that are subject to continuous verification by the Philippine Electricity Market Corporation (PEMC). The same information is subject to change as updated figures come in.

## Table of Contents

<b>I. Highlights of Market Assessment</b> .....	4
<b>II. Assessment of the Market</b> .....	4
A. Supply.....	4
i. Registered Capacity.....	4
ii. Capacity Profile.....	7
iii. Capacities on Outage .....	9
iv. Generation Mix .....	14
v. Dispatch Factor.....	15
B. Demand.....	16
C. Price .....	18
i. Price and Supply Margin .....	18
ii. Price Distribution.....	20
iii. Hourly Price Profile .....	21
iv. Hourly Price Profile .....	23
<b>III. Generator Trading Behavior</b> .....	28
<b>IV. Competitiveness Analysis</b> .....	31
A. Residual Supply Index (RSI) .....	31
B. Pivotal Suppliers .....	31
C. Market Share and Herfindahl-Hirschman Index (HHI) .....	32
<b>V. Spot Market Transactions</b> .....	33
A. Spot Exposure .....	33
B. Energy Trading Amount (ETA) Share.....	35

## List of Figures

Figure 1: Capacity Mix, 2022 vs 2023.....	5
Figure 2: Registered Capacity by Age of Plants, 2023.....	6
Figure 3: Registered Capacity by Age of Plants by Resource Type, 2023.....	6
Figure 4: Capacity Profile by Component - Yearly, 2022 vs 2023.....	7
Figure 5: Capacity Profile by Component, 2022 vs 2023.....	7
Figure 6: Capacity Profile by Component – Q1-2023.....	8
Figure 7: Capacity Profile by Component – Q2-2023.....	8
Figure 8: Capacity Profile by Component – Q3-2023.....	9
Figure 9: Capacity Profile by Component – Q4-2023.....	9
Figure 10: Capacity on Outage by Plant Type, 2023.....	10
Figure 11: Capacity on Outage by Category, 2023.....	11
Figure 12: Average Forced Outage Days per Age Range of Generator Units, 2023.....	13
Figure 13: Average Outage Days Based on Unit Capacity, 2023.....	14
Figure 14: Capacity Mix vs Generation Mix - 2023.....	14
Figure 15: Quarterly Capacity Factor by Plant Type, 2023.....	16
Figure 16: System Demand Frequency Distribution, 2023.....	16
Figure 17: Demand and Temperature, 2022 vs 2023.....	17
Figure 18: Growth Trend of Supply and Demand, 2015-2022.....	17
Figure 20: System LWAP and Average Supply Margin, 2022 vs 2023.....	19
Figure 21: System LWAP and Average Supply Margin, 2022 vs 2023.....	20
Figure 22: System LWAP Based on Hour Type, 2022 vs 2023.....	20
Figure 23: System LWAP Frequency Distribution, 2022 vs 2023.....	21
Figure 24: System LWAP Hourly Curve, 2022 vs 2023, First Quarter.....	21
Figure 26: System LWAP Hourly Curve, 2022 vs 2023 Third Quarter.....	22
Figure 27: System LWAP Hourly Curve, 2022 vs 2023 Fourth Quarter.....	22
Figure 28 Summary of Pricing Conditions in Luzon, 2022 to 2023.....	25
Figure 29: Summary of Pricing Conditions in Visayas, 2022 to 2023.....	25
Figure 30: Summary of Pricing Conditions in Mindanao, 2022 to 2023.....	26
Figure 31: Quarterly Summary of Pricing Conditions in Luzon, 2023.....	27
Figure 32: Quarterly Summary of Pricing Conditions in Visayas, 2023.....	27
Figure 33: Quarterly Summary of Pricing Conditions in Mindanao, 2023.....	28
Figure 34: Average Offer Prices Based on Plant Type, 2022 and 2023, 1 <sup>st</sup> Quarter.....	29
Figure 35: Average Offer Prices Based on Plant Type, 2022 and 2023, 2 <sup>nd</sup> Quarter.....	29
Figure 36: Average Offer Prices Based on Plant Type, 2022 and 2023, 3 <sup>rd</sup> Quarter.....	30
Figure 37: Average Offer Prices Based on Plant Type, 2022 and 2023, 4 <sup>th</sup> Quarter.....	30
Figure 38: Market RSI, 2022 vs 2023.....	31
Figure 39: Market Share, 2023.....	33
Figure 40: Herfindahl-Hirschman Index, 2023.....	33
Figure 41: Spot Market Exposure, 2022 to 2023.....	34
Figure 42: Hourly Generator Spot Market Exposure, 2023.....	35
Figure 43: Energy Trading Amount and Spot Exposure, 2023.....	36

## List of Tables

Table 1: Significant events in WESM .....	4
Table 2: Total Outage Days of Major Power Plants (> 30 days), as of 2023 .....	11
Table 3: Quarterly LWAP comparison, 2022 vs 2023 .....	19
Table 4: Quarterly Average Supply Margin comparison, 2022 vs 2023 .....	19
Table 5: Number of Market Intervention and Market Suspension, 2023 .....	24
Table 6: Number of Market Intervention and Market Suspension, 2023 .....	26
Table 7: Top Pivotal Suppliers, 2023 .....	32

## ANNUAL MARKET ASSESSMENT REPORT

This Annual Market Assessment Report (AMAR) provides an assessment of the results on the integrated Luzon, Visayas, and Mindanao operations of the Wholesale Electricity Spot Market (WESM) for the covered period (26 December 2022 to 25 December 2023). This includes an overview on the results of the market performance, trends, and the corresponding drivers which in turn provide the means to assess competition and conditions in the WESM, as well as the bidding behavior of trading participants.

### I. Highlights of Market Assessment

- WESM Mindanao commenced operation on 26 January 2023.
- Cebu-Mandaue 138kV underground line 2 was damaged during the excavation activities of the DPWH on 21 January 2023.
  - This resulted in frequent congestions of the Cebu-Mandaue 138kV line 1
- Implementation of single Settlement for WESM trading participants in Luzon, Visayas, and Mindanao grids pursuant to DOE Advisory dated 11 May 2023<sup>1</sup>.

Table 1: Significant events in WESM

Billing Month	Significant events in WESM
May 2023	New all-time highest peak demand recorded on 09 May 2023, 1350h at 14,854 MW from 14,358 MW last year on 12 Mayn 2022, 1440h

- Downtrend price outcome following the full flow of Mindanao-Visayas Interconnection Project (MVIP) capacity in May 2023.
  - Reduced Secondary Price Cap impositions.
- Frequent congestions in the Maasin-Ubay lines 1&2 resulted in price separation in the region.

### II. Assessment of the Market

#### A. Supply

##### i. Registered Capacity

- The 2023 Billing Year recorded a total registered capacity is 27,227.7MW for the Luzon, Visayas, and Mindanao Grids.
- A net increase<sup>2</sup> of 936.97 MW was accounted in the total registered capacity for 2023.
  - Of the newly registered power plants in the WESM, about 67% or an aggregated capacity of 758.5 MW was attributed to the entry of Renewable Energy (RE) plants.

<sup>1</sup> DOE Advisory. "Implementation of Single Settlement for WESM Trading Participants in Luzon, Visayas and Mindanao Grids" dated 11 May 2023.

<sup>2</sup> Net increase is the remaining capacities after the noted changes in the registered capacity.

- Updates and changes to the capacity of various existing plants accounted for 73.1 MW increase and 144.6 MW derating of plants' capacities.
- A total capacity of 111 MW ceased<sup>3</sup> registration from the WESM which was attributed to four (4) Oil-based power plant.
- One (1) Solar power plant with a total capacity of 5.7 MW deregistered<sup>4</sup> in the WESM as a result of its suspension in the market.
- In terms of resource types, Coal power plants continued to dominate the spot market, holding the largest share of about 45% of the total registered capacity.
- The entry of Mariveles Power Generation Corporation Coal-Fired Thermal Power Plant unit 1&2 with a total capacity of 300 MW increased the market share of coal plants by 1% for the billing year.
- All other plant types, except for Natural gas, recorded minimal increases in registered capacities with Solar power plants holding the second resource which had additional capacities, effectively adding 150.1 MW to the system.
- Contrary to the growth in registered capacities from majority of the different resource types, Geothermal and Oil-based plants capacities noted 19.13MW and 112.6MW of net decrease in the registered capacities, respectively.

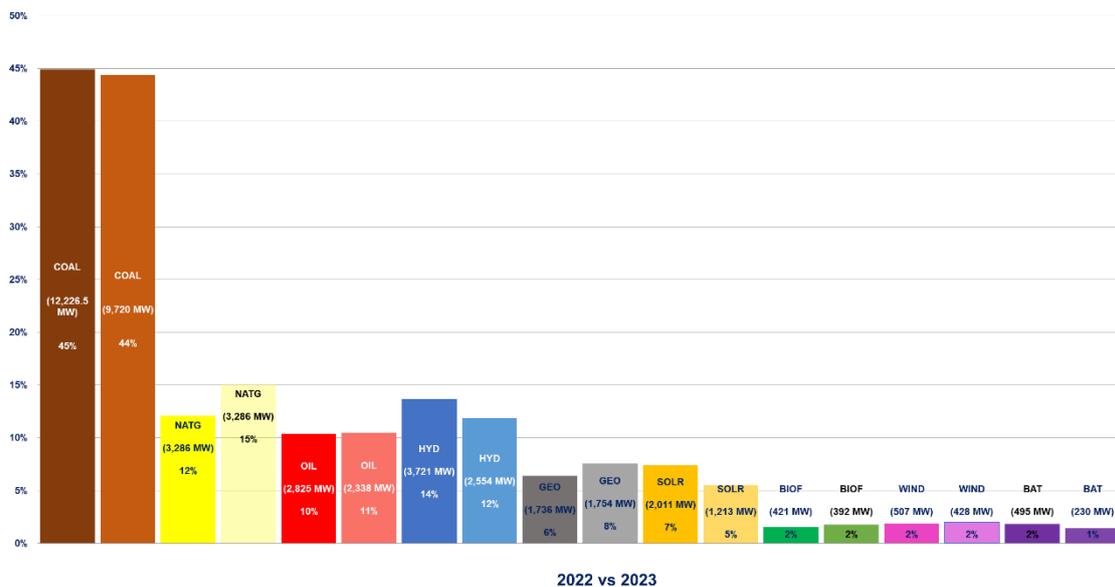


Figure 1: Capacity Mix, 2022 vs 2023  
Note: Darker-shaded bars represent the 2023 figures

- Based on the age of power plants, 309 out of 430 generator resources were within the age range of 0-20 years having an aggregate capacity of 14,686 MW and have continued to comprise 49% of the total WESM registered capacity as of 2023.

<sup>3</sup> Ceased WESM member can no longer re-register using the same information in the market.

<sup>4</sup> Deregistered WESM members can re-apply or register again in the market.

- With the entry of new plants this year, generators beyond 20 years of age held 46% of the total registered capacity from 51% last year.
- Plants over 50 years of age are hydro power plants.

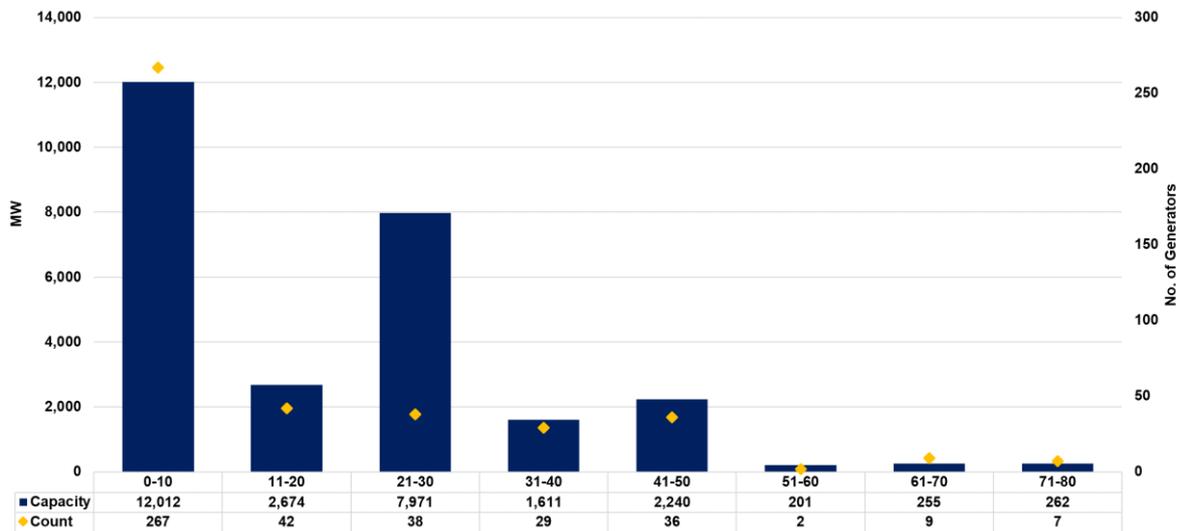


Figure 2: Registered Capacity by Age of Plants, 2023

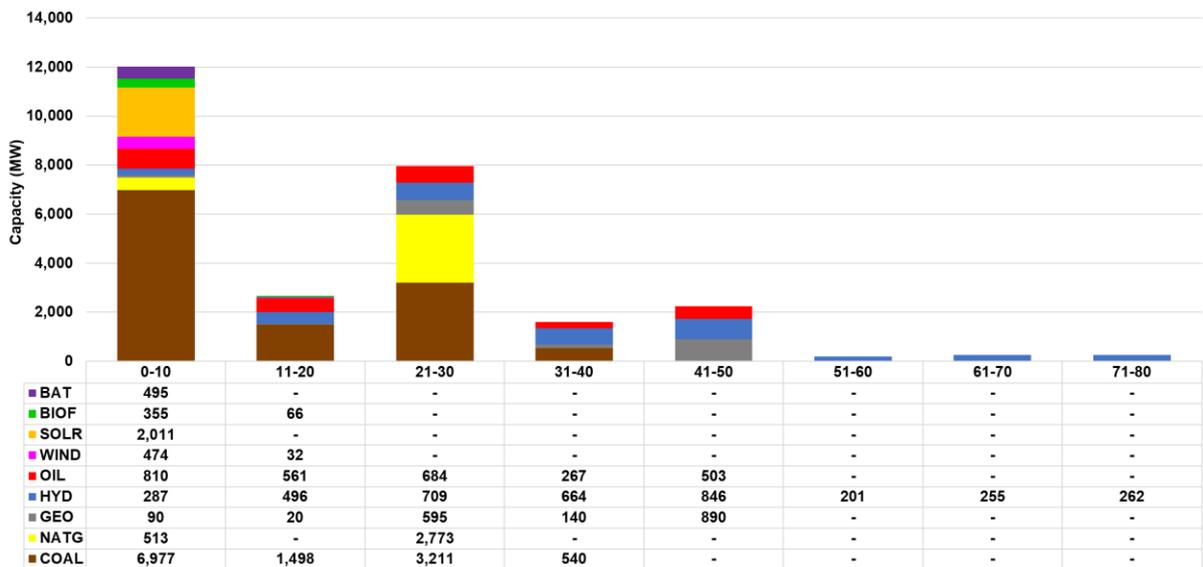


Figure 3: Registered Capacity by Age of Plants by Resource Type, 2023

## ii. Capacity Profile

- Available capacity<sup>5</sup>, with respect to the total registered capacity experienced an increase coming from a 73%-79% share.
- Capacities on outage decreased by an average of 3,056 MW from 3,537 MW for the 2022 billing period, comprising 10% of the total registered capacity.

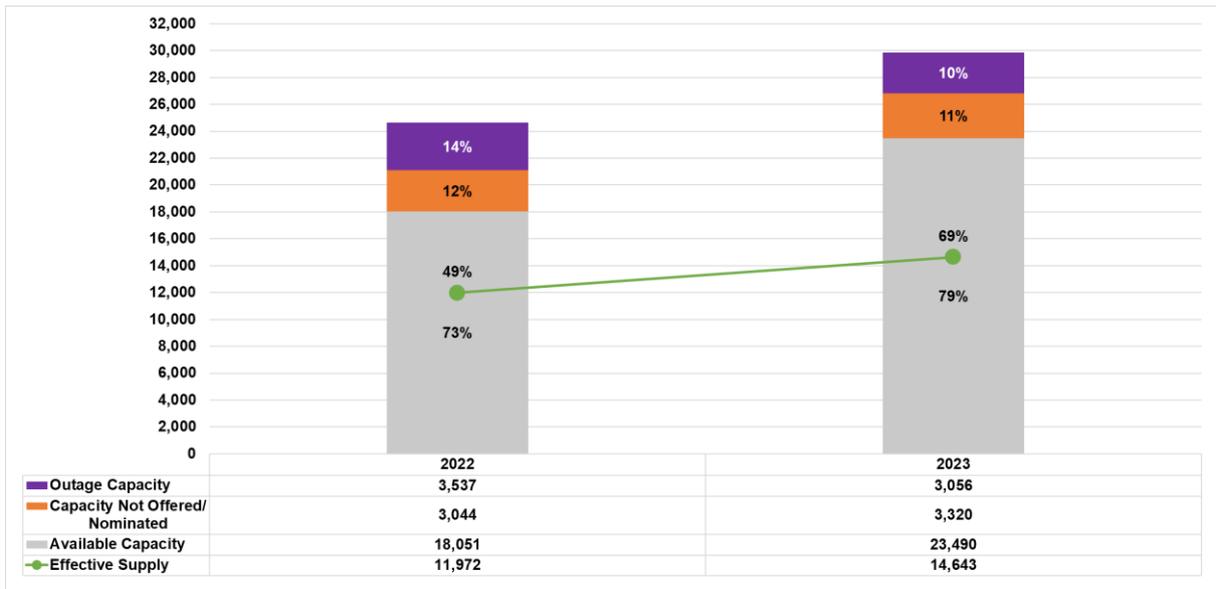


Figure 4: Capacity Profile by Component - Yearly, 2022 vs 2023

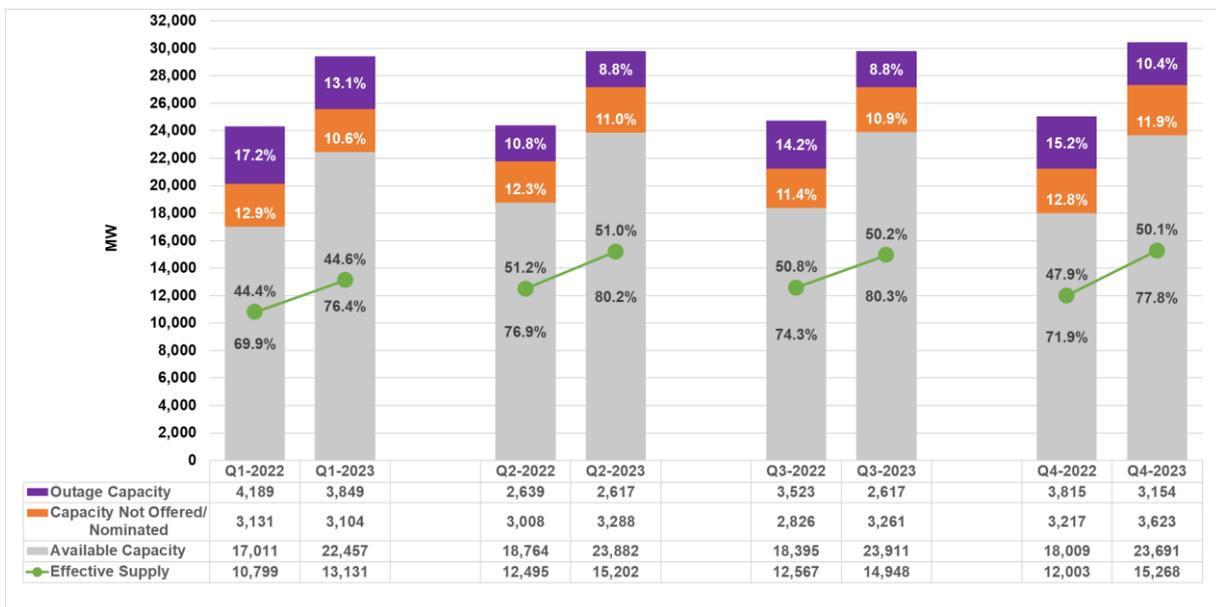


Figure 5: Capacity Profile by Component, 2022 vs 2023

<sup>5</sup> Available capacity refers to the registered capacity less the aggregate of Capacity Not Offered/Nominated, Capacity of Plants under Commissioning Test, and Capacities on Outage.

- Capacities on outage were consistently at the highest during 1<sup>st</sup> and 4<sup>th</sup> quarter where most of the maintenance outage are scheduled during these periods, taking advantage of the generally low level of demand attributed to long holidays and the cooler temperature in the country.
- As a result of the limited water supply during the onset of summer months, Hydro power plants became unavailable which contributed to the high level of capacities not offered/nominated during the summer months.
- Most of the reasons for the capacities not offered nor nominated is due to market and resource constraints.

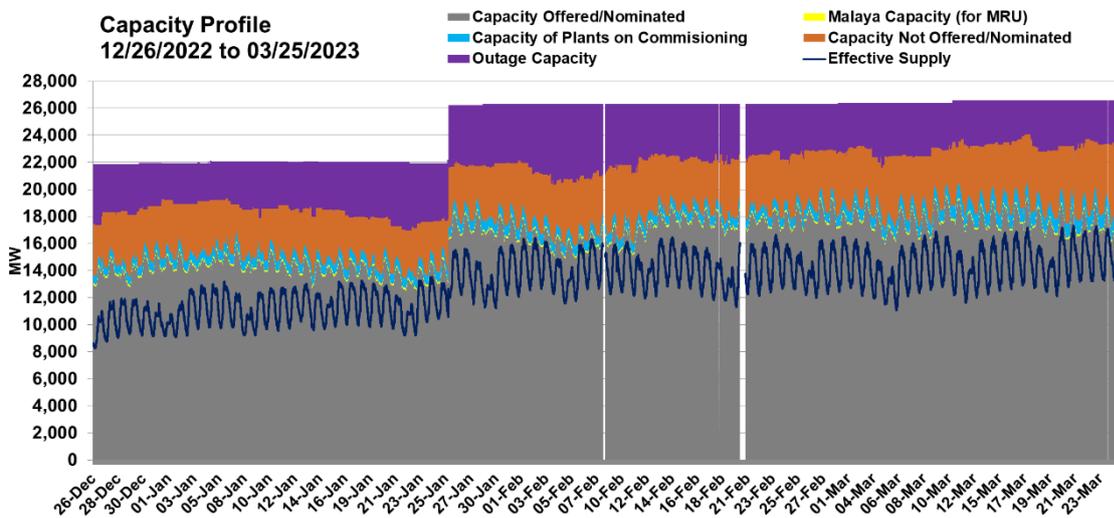


Figure 6: Capacity Profile by Component – Q1-2023

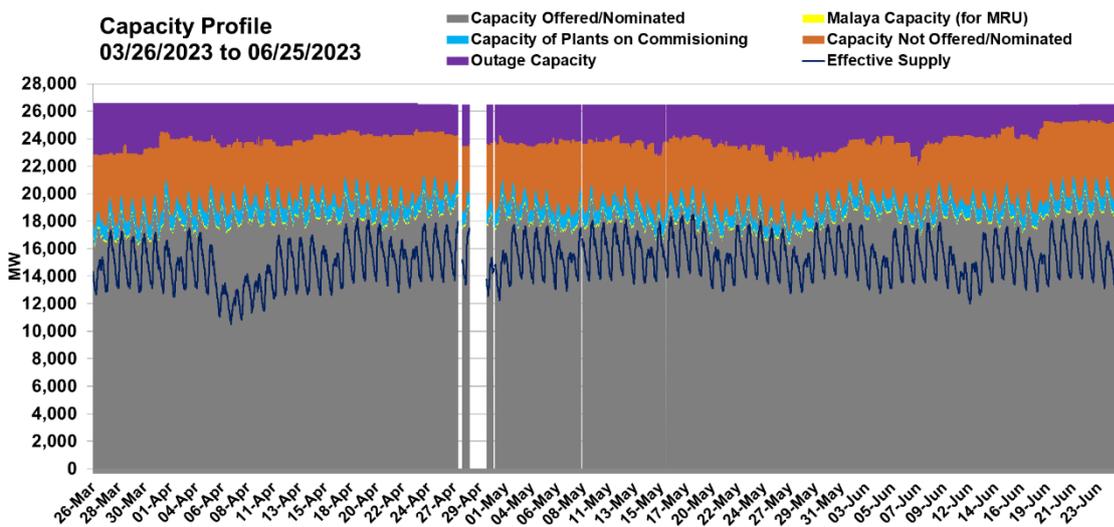


Figure 7: Capacity Profile by Component – Q2-2023

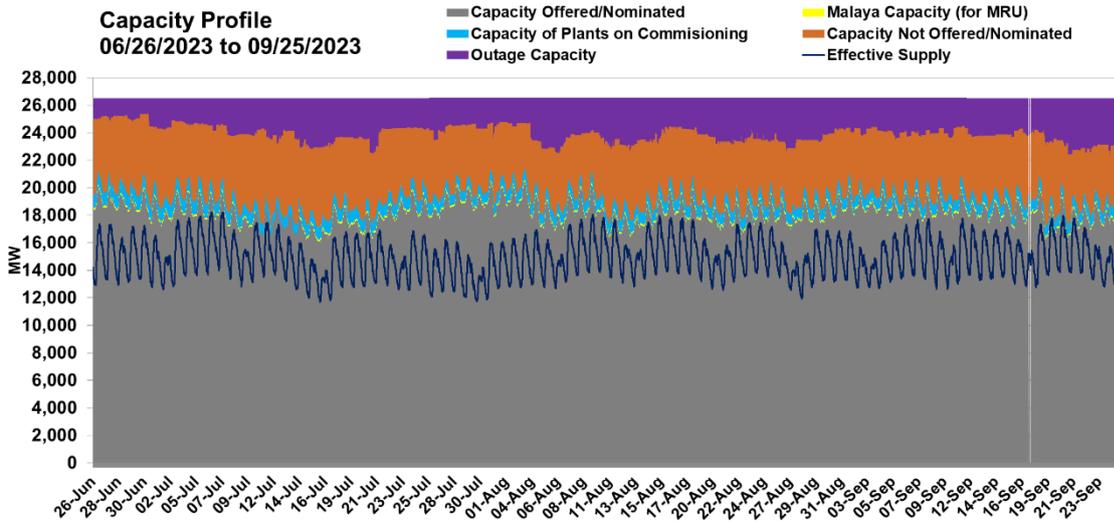


Figure 8: Capacity Profile by Component – Q3-2023

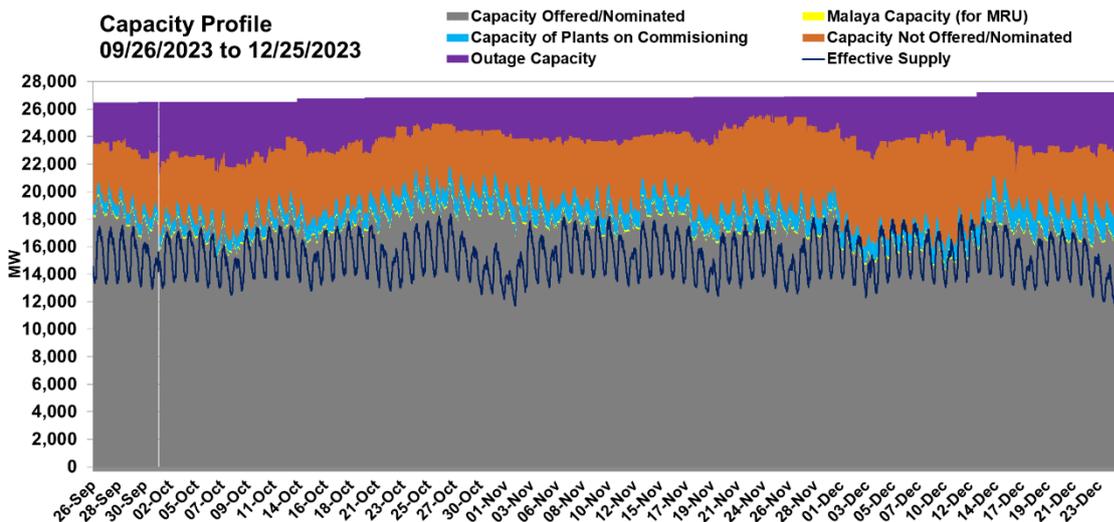


Figure 9: Capacity Profile by Component – Q4-2023

**iii. Capacities on Outage**

- The annual average capacity on outage has been generally observed to have decreased from the previous year by an average of 15% or an average of 2,966 MW from 3,493 MW last year.
- There were significantly lesser of events of various tropical storms this year compared to 2022 which among others, caused the damaged transmission lines and subsequently caused for the several generators to become unavailable.

- Coal plants consistently dominated the outage mix heavily affecting the grid’s power supply. Most of these are attributable to forced outage category.
- As anticipated, planned outages were higher during first quarter and latter part of the billing year or during the rainy season to maximize the anticipated low level of demand.
- Moreover, forced outages were still prevalent and accounted for the largest share of plant outages for the whole year, comprising a 55% of the total outage share during the review.
- Each season recorded the following average level of capacities on outage:
  - Q1 – 3,763 MW
  - Q2 – 2,584 MW
  - Q3 – 2,432 MW
  - Q4 – 3,112 MW

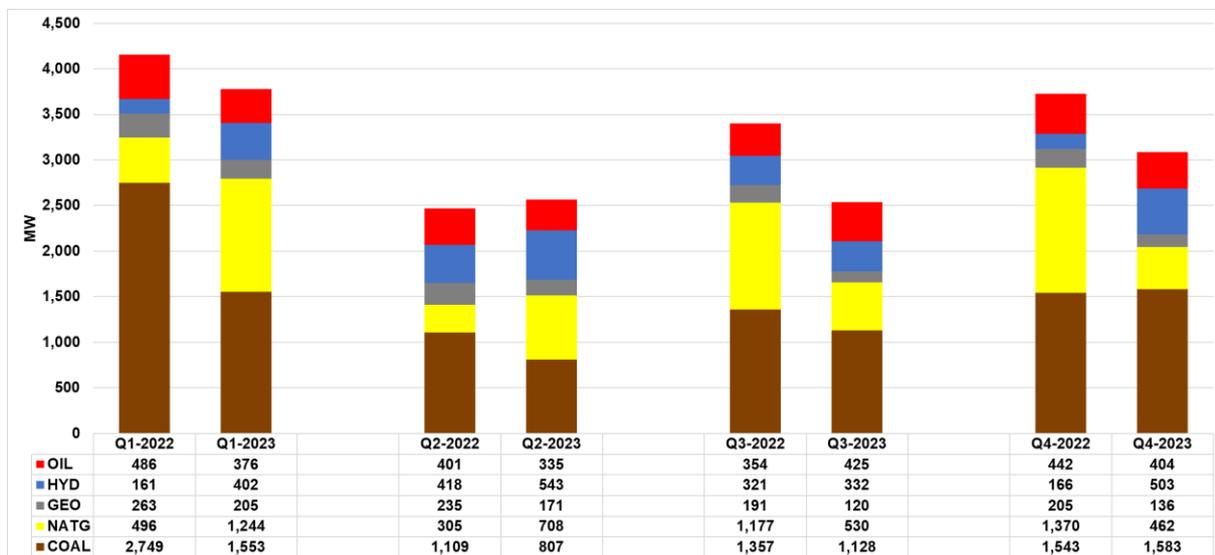


Figure 10: Capacity on Outage by Plant Type, 2023

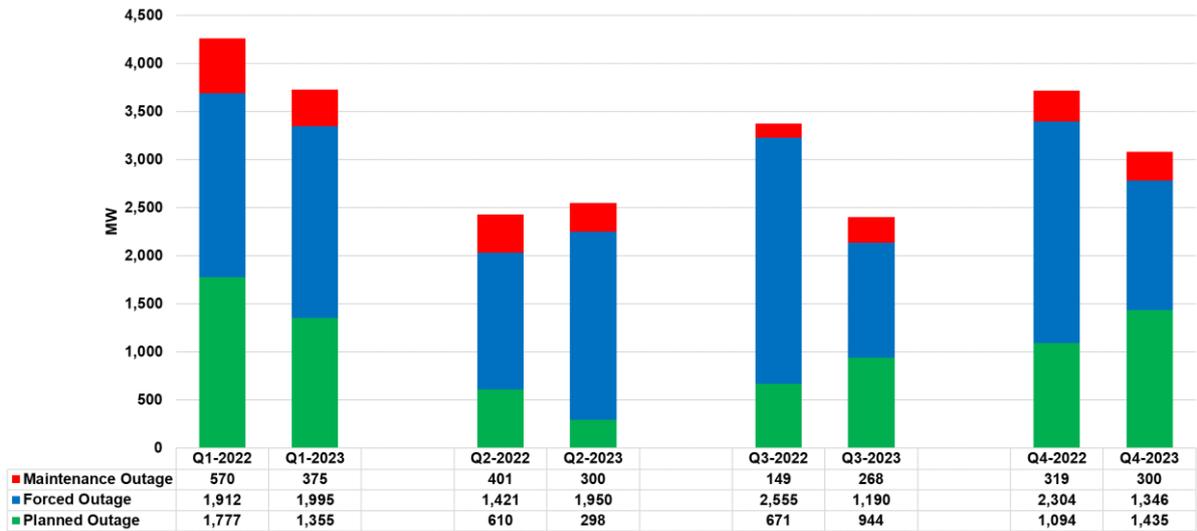


Figure 11: Capacity on Outage by Category, 2023

- On the list of major power plants (capacities greater than 100 MW) with total outage duration of more than a month, 35 out of 51 occurrences were caused by Coal-fired thermal power plants with forced outage as the main reason for the same, as shown in Table 3.
- About 63 days of the forced outages came from power plants with 51-60 years of age.

Table 2: Total Outage Days of Major Power Plants (> 30 days), as of 2023

Plant/Unit Name	Plant Type	MPG	Capacity (MW)	Age	Total No. of Outage Days			Total
					Forced	Maintenance	Planned	
Calaca 1	COAL	DMCI	240	39	16.3	21.7		38.0
Calaca 2	COAL	DMCI	300	39	33.7			33.7
Ilijan A1	NATG	SMC	190	21	143.8			143.8
Ilijan A1	NATG	SPC	190	21	45.6			45.6
*Ilijan A2	NATG	SMC	190	21	406.8			406.8
*Ilijan B1	NATG	SMC	190	21	681.3			681.3
*Ilijan B2	NATG	SMC	190	21	568.3			568.3
*Ilijan B3	NATG	SMC	220	21	568.6			568.6
Kalayaan 1	HYD	PSALM	180	41	0.2	37.0	10.3	47.5
Kalayaan 3	HYD	PSALM	180	19	24.2		23.0	47.2
Kalayaan 4	HYD	PSALM	180	19	22.9		82.9	105.9
Kepco Salcon 1	COAL	KPHI	103	13	18.6		35.4	54.0
Kepco Salcon 2	COAL	KPHI	103	12	192.8		135.3	328.1
*Malaya 1	OIL	SPC	300	48	364.0			364.0
*Malaya 1	OIL	BPC	300	48	364.0			364.0
Masinloc 1	COAL	SMC	315	25	0.6		74.7	75.2
Masinloc 2	COAL	SMC	344	25	13.8	10.1	23.2	47.1
Masinloc 3	COAL	SMC	335	4	23.1	1.8	10.0	34.8
Pagbilao 1	COAL	AP	382	27	4.6	3.7	26.4	34.7
Pagbilao 2	COAL	AP	382	27	13.1		25.1	38.2
Pagbilao 3	COAL	AP	420	6	4.0		28.3	32.4
PALM 1	COAL	JNRI	135	7	75.3			75.3
PEDC 3	COAL	GBPC	150	7	39.7	7.0		46.7
QPPL	COAL	QPPL	460	23	30.2		27.8	58.0
San Gabriel	NATG	FGC	420	7	12.7	34.2	18.4	65.3
San Lorenzo 2	NATG	FGC	265	21	8.8		31.7	40.5
San Roque 3	HYD	SMC	145	20		0.3	30.0	30.3
SBPL	COAL	SBPLC	455	4	40.1			40.1
SLPGC 1	COAL	SLPGC	150	8	315.0			315.0
SLPGC 2	COAL	SLPGC	149.6	8	84.4		35.8	120.2
SLTEC 1	COAL	AC	122	9	11.4		36.1	47.6
SLTEC 2	COAL	AC	124	8	19.8		31.5	51.3
Sta. Rita 1	NATG	FGC	257.3	23	3.6	3.0	27.4	34.0
Sual 1	COAL	SMC	647	24		9.4	37.3	46.6
Sual 2	COAL	SMC	647	24	4.1	91.8	22.7	118.6
THVI 2	COAL	AP	169	6	11.4		27.6	39.0
SMC 1	COAL	SMC	150	7	4.4	6.9	43.0	54.2
Ilijan A3	NATG	SMC	220	21	168.2			168.2
DCPP Unit 2	COAL	AP	150	7	5.5	160.3		165.8
SMF1 U1	COAL	SEC	118.5	2	73.3	5.5	142.5	221.3
FMP U2	COAL	FDC	135	7	523.7			523.7
GNPK U3	COAL	AC	151.3	4	273.7			273.7
MPGC U1	COAL	SMC	150	0	0.8	34.9		35.7
DCPP Unit 1	COAL	AP	151.4	8	13.7		123.4	137.1
GNPK U1	COAL	AC	151.9	4	64.8	416.9		481.6
STE U2	COAL	PSALM	116	2	280.3		31.1	311.4
STE U1	COAL	PSALM	116	2	19.9		131.1	151.0
FMP U3	COAL	FDC	135	7	32.8		14.8	47.5
SMF2 U2	COAL	SEC	118.5	2			222.0	222.0
GNPK U2	COAL	AC	151	4			122.6	122.6
GNPK U4	COAL	SMC	149.9	6		57.7		57.7

Note: Plants on red font and with an " \* " in their name are the plants that were on outage prior to the subject billing year.

- Generating units with age of 21-60 years were observed to have had long average forced outage days for the billing year.
- Contrary to last year, Power Plants aged 31-40 and 71-80 years have had the lowest outage days duration, averaging only at 16 and 0.4 days from about 130 days outage duration last year.
- Older generating units (51-80 years) all from hydro plants – Ambuklao HEPP, Binga HEPP, Angat HEPP, and Botocan HEPP – recorded very short average forced outage days from a

range of 0.4 to 10.4 days. However, Unit 1 of Ambuklao HEPP was noted to be on forced outage for about 14 days due to low water level.

- As a result, plants that have undergone rehabilitation were observed to have performed well and became available most of the time.

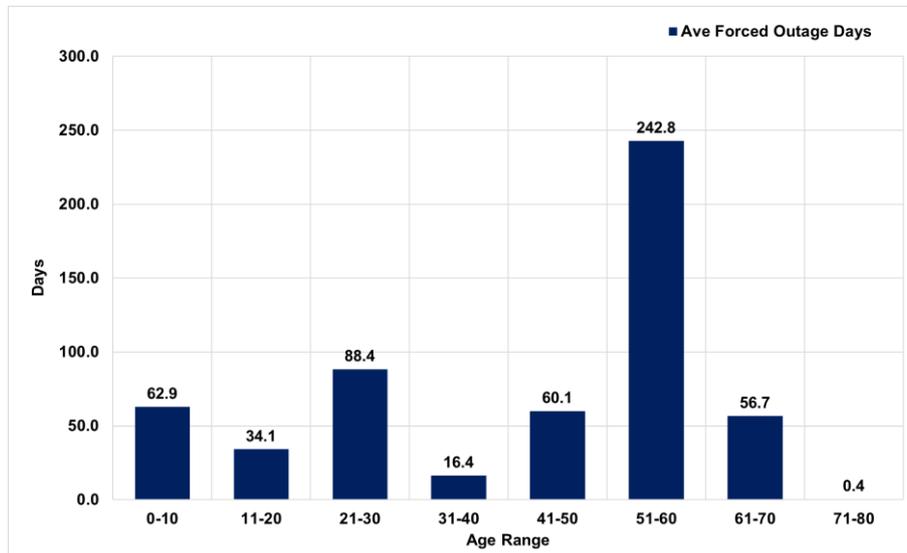


Figure 12: Average Forced Outage Days per Age Range of Generator Units, 2023

- Based on the size of plants, large plants (capacities greater than 100 MW) have had longer average outage days averaging at 94 days than small plants (capacities less than 100 MW) with an average of 72 days.
- Considering all generator outages, the following information were concluded:
  - For every 1 day of maintenance outage, there is approximately 21 days of forced outage.
  - For every 1 day of planned outage, there is approximately 2 days of forced outages.
  - For every 1 day of combined planned and maintenance outages, there is approximately 12 days of forced outages.

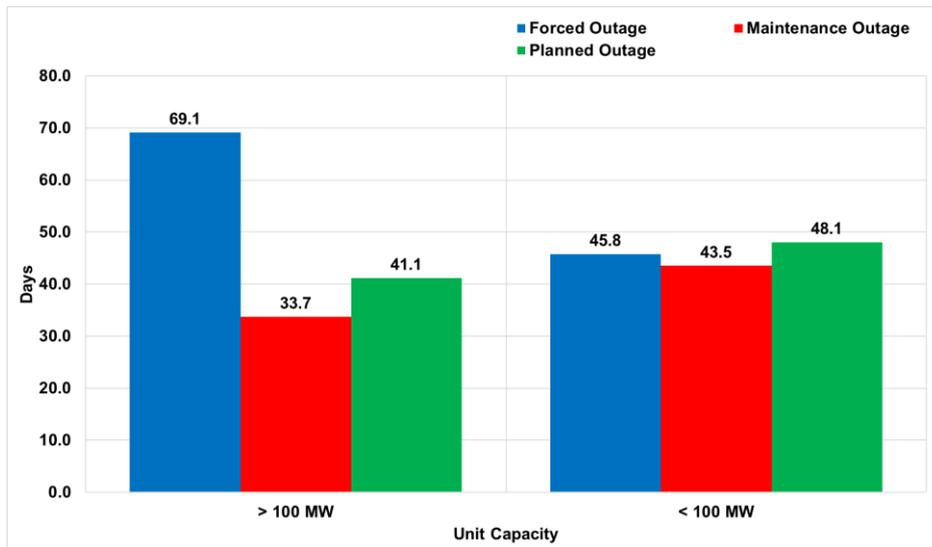


Figure 13: Average Outage Days Based on Unit Capacity, 2023

#### iv. Generation Mix

- Coal plants in the Luzon region comprised more than half of the entire generation mix in the grid despite having only around 45.4% share in registered capacity. The same was observed in Visayas and Mindanao.
- A similar reliance was observed for Natural gas plants where the share in generation mix was generally observed to have increased as compared to the capacity mix.
- The opposite trend was manifested by Hydro plants in Luzon and Visayas as majority of these capacities were offered at the higher price spectrum and were likewise dependent on the availability of water. Additionally, it is noteworthy that most of the large Hydro power plants are scheduled for reserve and may thereby be dispatched or not, as the case may be.

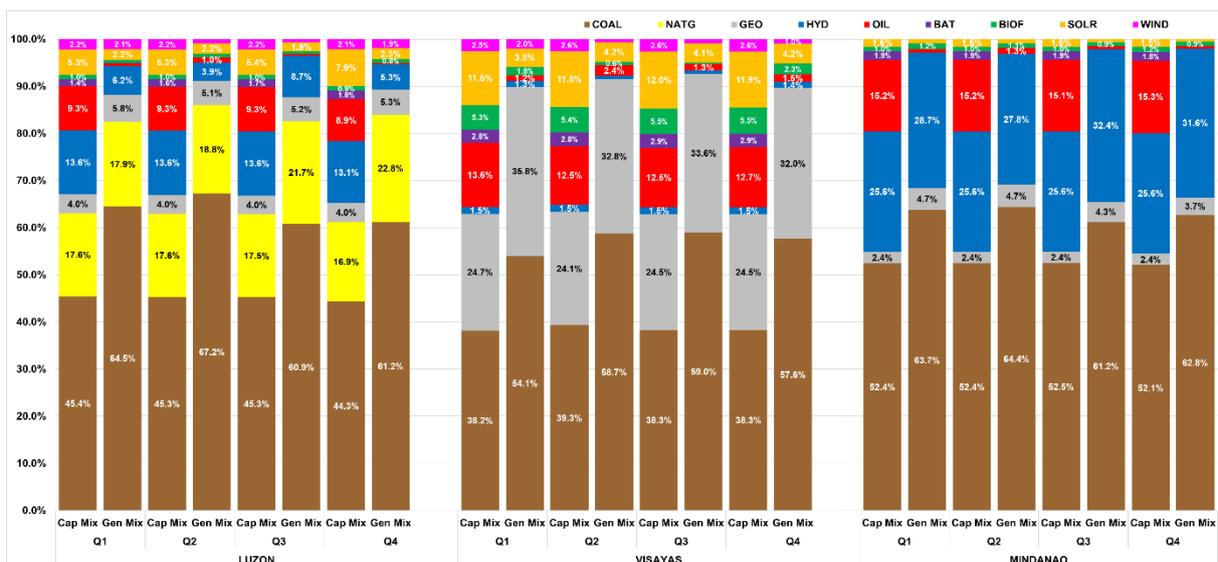


Figure 14: Capacity Mix vs Generation Mix - 2023

Note: The GESQ values used in the calculation are all positive values.

## v. Capacity Factor<sup>6</sup>

- Capacity factor measures the instances when a generator is dispatched at certain levels of capacities vis-à-vis its registered capacities. Due to the baseload capabilities of the following plants, here are some observations during the billing year:
  - It is anticipated that Geothermal power plant will be posting with the highest utilization during the year when measured in terms of their metered quantity vis-à-vis the registered capacity noting that 57% of the total registered capacity of the Geothermal power plants were categorized as preferential/must dispatch units. During the period review, Geothermal plants had a capacity factor of 65-71% throughout the year.
  - Coal power plants, which topped the rank in terms of capacity and generation mix followed, and likewise dominated in terms of the computed capacity factor resulting in values around 58-69%, indicating that more than half of their total capacities were being dispatched for the entire billing year.
  - This was followed by Natural gas, which posted a capacity factor of 44.2-64.2% all throughout the period, consistent with their based load characteristics.
- Meanwhile, and as anticipated, hydro plants experienced low-capacity factors during the first half of the year due to hot dry season which subsequently led to the decrease in water supplies from their respective sources. Solar, wind, and biomass power plants, on the other hand, were able to take advantage of this situation and experienced increase on their outputs resulting in a capacity factor of 20%, 31%, and 25% respectively.
- Similar to last year, wind power plants regularly displayed high-capacity factor during the cooler months of first and last quarter of the year.
- Lastly, Battery Energy Storage facilities in the WESM, posted consistently low-capacity factors at 0.3%-3.9%, due to their relatively short-term operations which are effectively used as peaking capacities or as reserve provisions. On another note, Oil-based power plants' utilization rate was likewise low due to its consistent high-priced offers and its characteristic as peaking plants.

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<sup>6</sup> Capacity factor is the ratio between the total metered quantity and the total registered capacity.

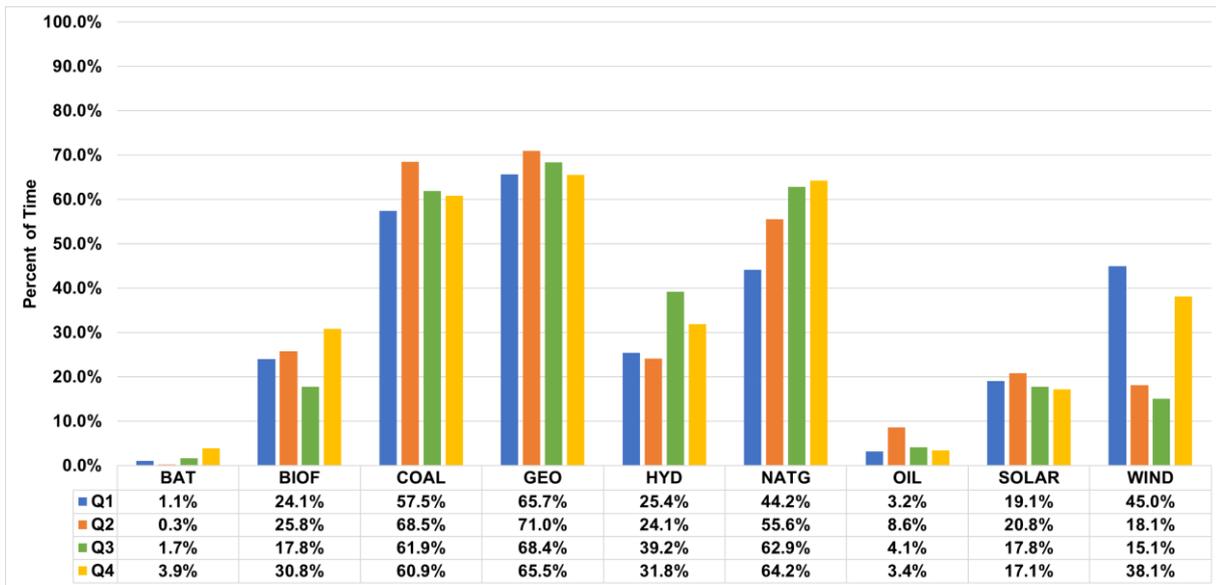


Figure 15: Quarterly Capacity Factor by Plant Type, 2023

Note: The GESQ values used in the calculation are all positive values

## B. Demand

- The demand forecast was expected to increase for the billing year, with the continuous growth in the country’s economic activities whereby even the education sector has already reverted to face-to-face classes. In Figure 17 it can be observed that demand level every quarter consistently increased as compared to last year. The overall annual increase of the demand level corresponded from 10,519 MW in 2022 to 12,929 MW in 2023.
- Similar for the 2022 billing year, the summer months for the billing year 2023 recorded the highest average demand. Nevertheless, the demand level during 3<sup>rd</sup> quarter came very close to 2<sup>nd</sup> quarter which is quite unusual as these months are considered to be under rainy season and is expected to have lower demand due to the cooler temperature.

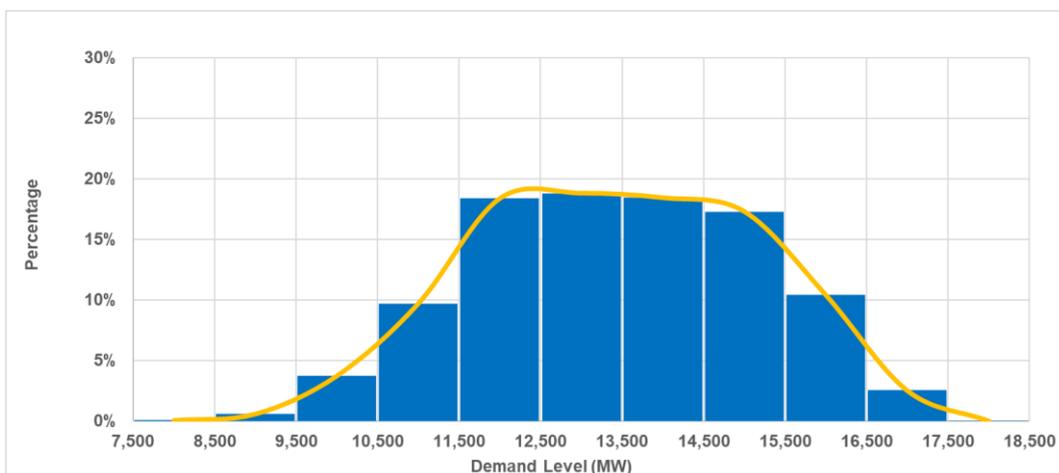


Figure 16: System Demand Frequency Distribution, 2023

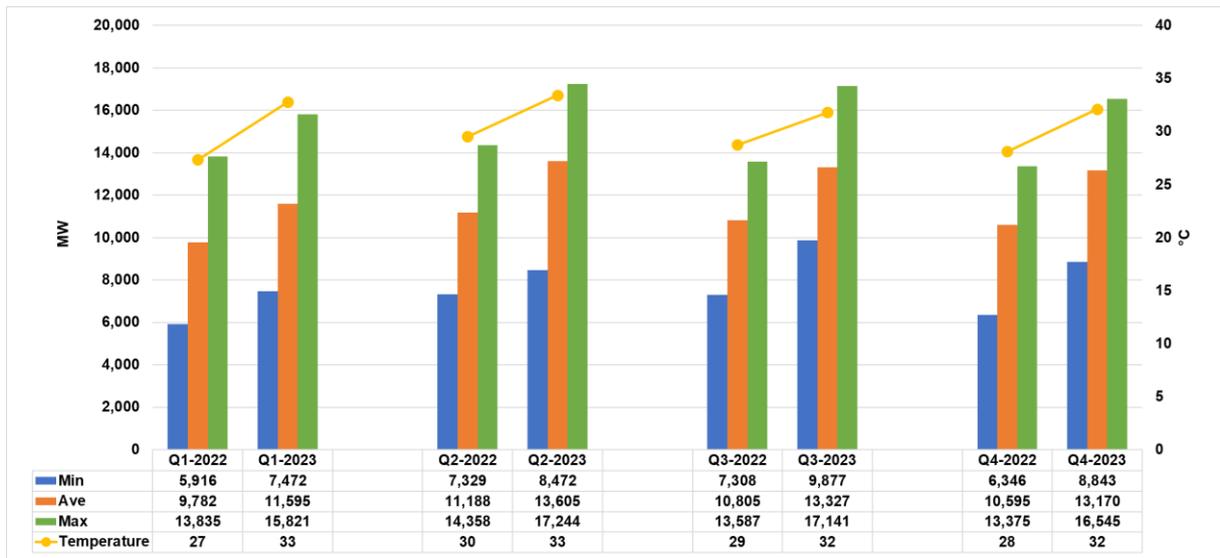


Figure 17: Demand and Temperature, 2022 vs 2023

- Using 2015 as the baseline, market data shows that there is sufficient margin between registered capacity and system demand across the 6-year horizon. However, for the billing year 2022 to 2023, the effective supply has been highly affected by the increasing levels of outages and ramp limited capacities, as it considers other technical limitations of the generators in the system.
- Notwithstanding the additional capacities from Mindanao, the supply pool was still highly affected by the high level of capacities on outage and the ramp limited capacities.

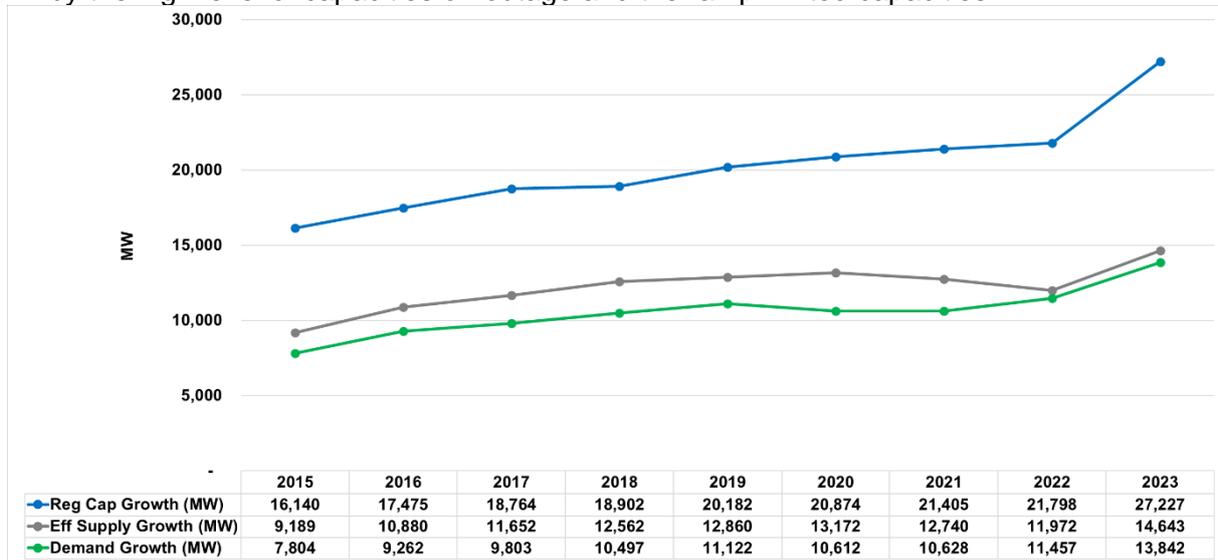


Figure 18: Growth Trend of Supply and Demand, 2015-2022

### C. Price

#### i. Price and Supply Margin

- The year-on-year comparison of Load-Weighted Average Price (LWAP) posted a decrease which means an improvement by an average of 18.3%, from PHP7,968/MWh in 2022 to PHP6,511/MWh in 2023. This value shift was driven by, among others, improvement in the level of capacities on outage of the plants, entry of the capacities from the plants in Mindanao, and the changes in the offer behavior of the trading participants, which subsequently affected the resulting market prices. While this is the case, it should be highlighted that intervening the market, by imposing APs, and capping market prices at the secondary price cap, may send wrong signals on the costs of electricity in the Philippines. This may affect the decision making of investors in the country and may hardly impact the country’s economy.
- As historically established, the trend in market outcomes, e.g. LWAP, as shown in Figure 19, is highly correlated with the supply margin.
- Ramping limitation, which is also a contributory factor for the supply pool likewise impact the resulting supply margin and subsequently, affected the market outcomes. Ramp limitation arises when generator power output is restricted from delivering its maximum offered capacity.
- As a result, slow ramping generators can only be scheduled based on their offered ramp rate, capacities and offered prices. To accommodate the demand requirement, the next more expensive offer block that can respond to the demand will be scheduled.

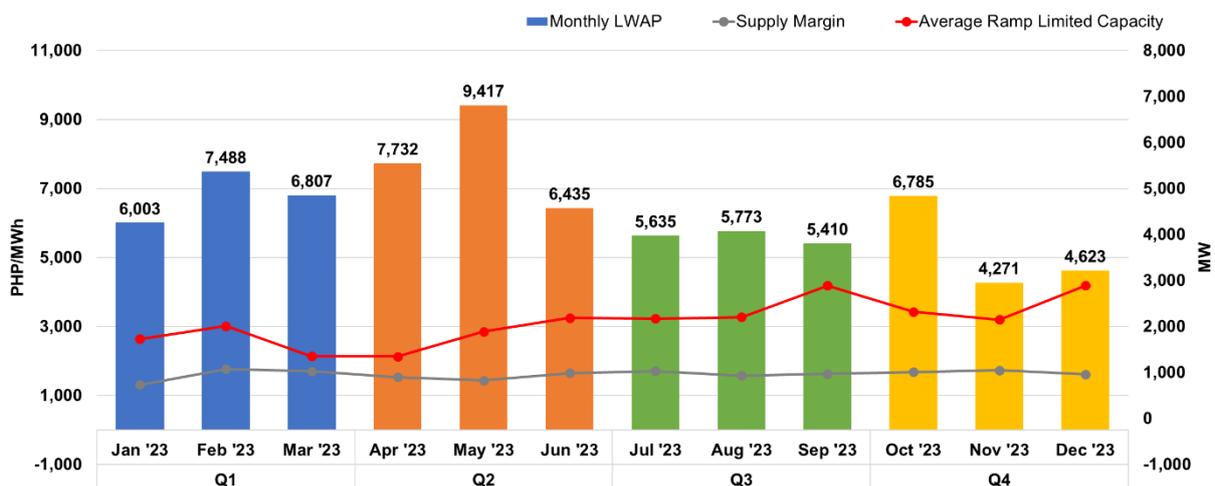


Figure 19: Monthly System LWAP and Supply Margin, Jan 2023 to Dec 2023

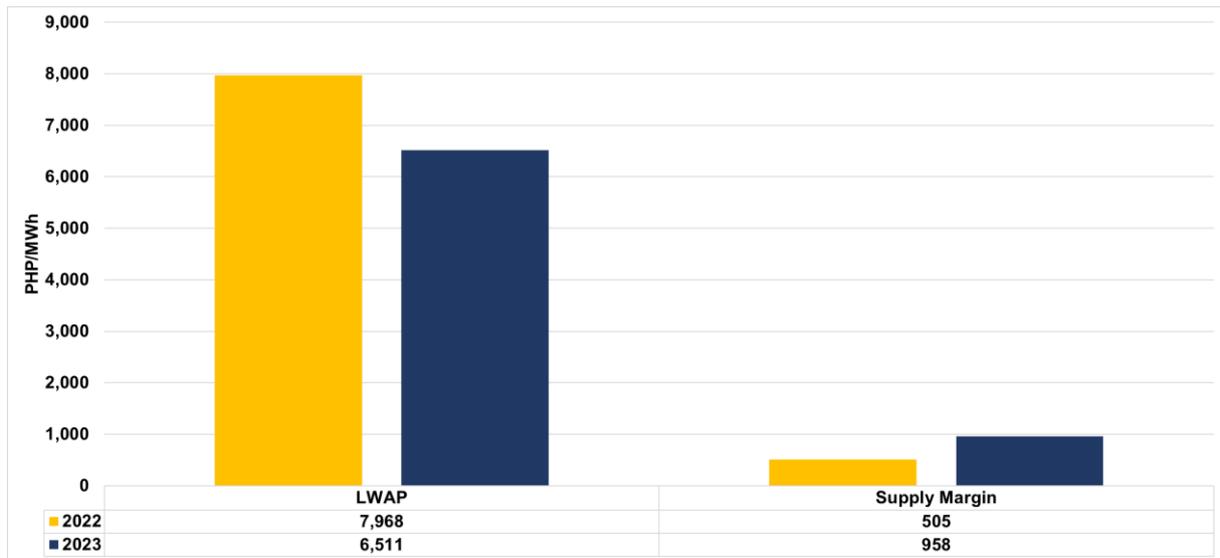


Figure 20: System LWAP and Average Supply Margin, 2022 vs 2023

- Average prices per quarter posted significantly lower levels during the tail-end of the 2023 billing period:

Table 3: Quarterly LWAP comparison, 2022 vs 2023

Quarter	Average LWAP 2022	Average LWAP 2023	Percent Change
Q1	PHP6,970/MWh	PHP6,815/MWh	-2%
Q2	PHP7,258/MWh	PHP7,827/MWh	8%
Q3	PHP8,604/MWh	PHP5,607/MWh	-35%
Q4	PHP8,982/MWh	PHP5,524/MWh	-39%

- One of the mainly correlated market function is the supply margin which experienced substantial increase during the review with the 4<sup>th</sup> quarter having the most increase. Figure 21 illustrates the comparison in market outcomes when compared to the previous billing period which shows the inversely proportional relationship between the supply margin and the market prices.

Table 4: Quarterly Average Supply Margin comparison, 2022 vs 2023

Quarter	Average Supply Margin 2022	Average Supply Margin 2023	Percent Change
Q1	539 MW	942 MW	75%
Q2	598 MW	908 MW	52%
Q3	493 MW	977 MW	98%
Q4	390 MW	1,028 MW	164%

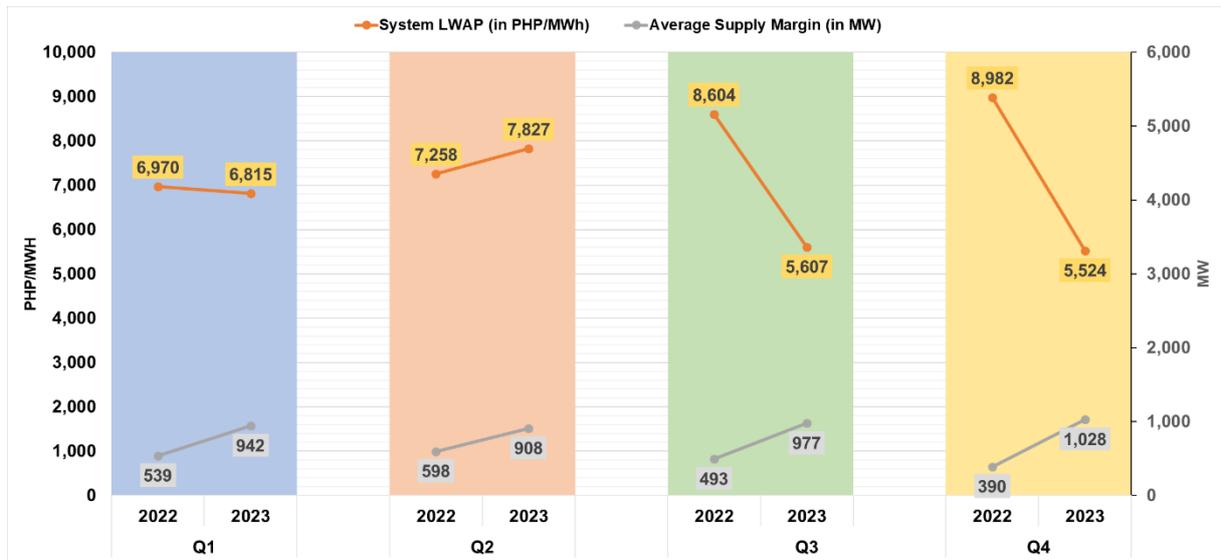


Figure 21: System LWAP and Average Supply Margin, 2022 vs 2023

- As shown in Figure 22 average price of peak hours during the 3<sup>rd</sup> quarter saw the greatest decrease by around 36.7% attributed to the increase in supply level following the full interconnection of the MVIP in May 2023.

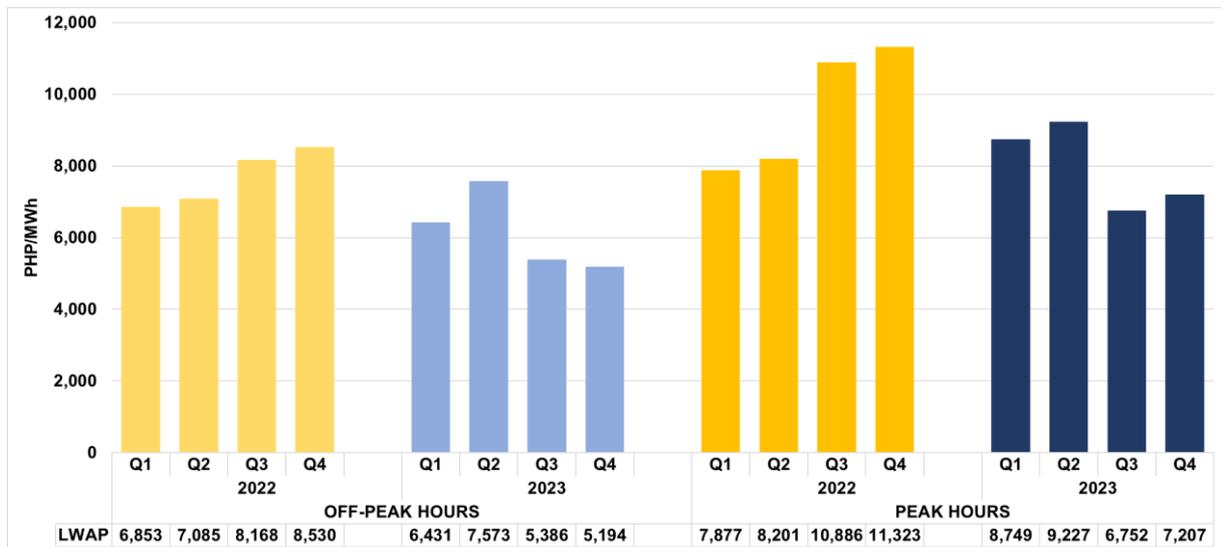


Figure 22: System LWAP Based on Hour Type, 2022 vs 2023

**ii. Price Distribution**

- Majority of the prices in 2023 lie within the PHP2,000/MWh to PHP6,000/MWh range as compared to last year when most were within the PHP4,000/MWh to PHP6,000/MWh range.
- Consistent with the discussion of prices above, 3<sup>rd</sup> and 4<sup>th</sup> quarter exhibited with the large decrease in the prices among other periods of the year.

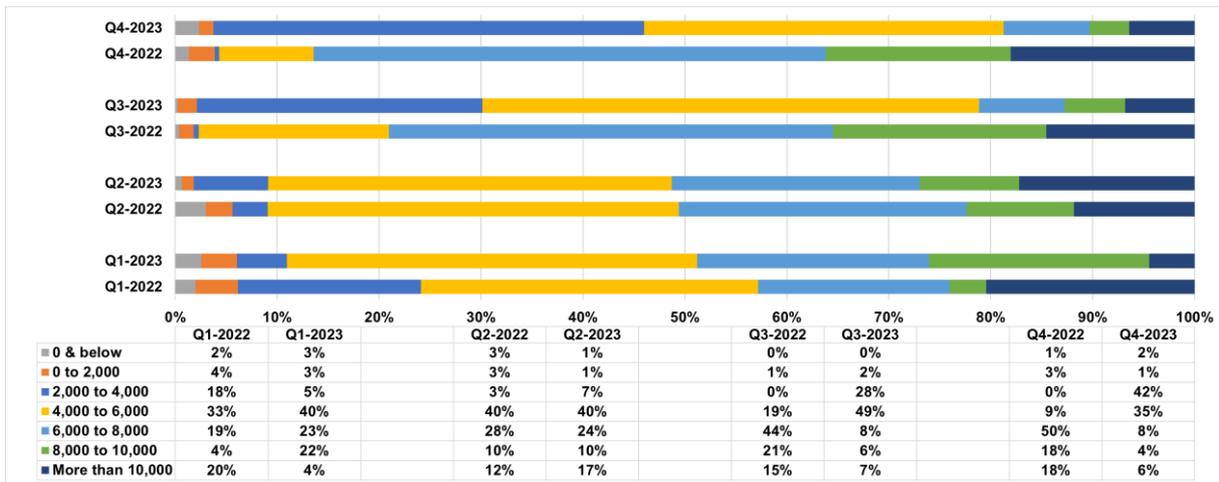


Figure 23: System LWAP Frequency Distribution, 2022 vs 2023

### iii. Hourly Price Profile

- On a per 5-minute resolution<sup>7</sup>, the 2023 price patterns show a significant increase from last year, mostly across the peak hours.
- Among all the billing quarters, 3<sup>rd</sup> and 4<sup>th</sup> quarter periods was observed to have typical trends from 2022. However, given the posted improvement in the supply margin during this period, price levels have significantly decreased, as observed in Figures 26-27.
- Throughout the billing quarters for the year 2023, market prices peaked at different trading intervals, indicating different patterns of interplay between the supply and demand

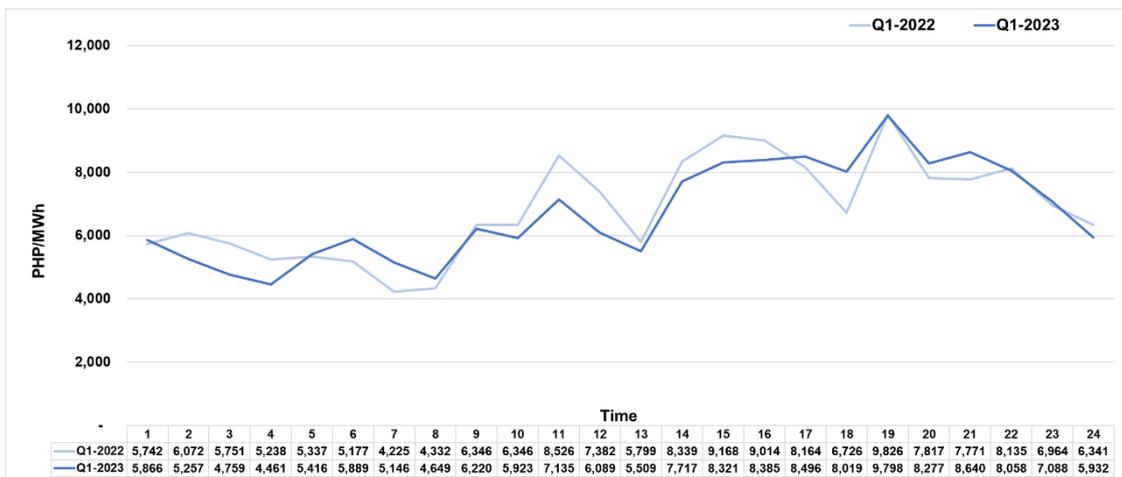


Figure 2425: System LWAP Hourly Curve, 2022 vs 2023, First Quarter

<sup>7</sup> The prices are computed on a per interval resolution to reflect the bona fide price outcome.

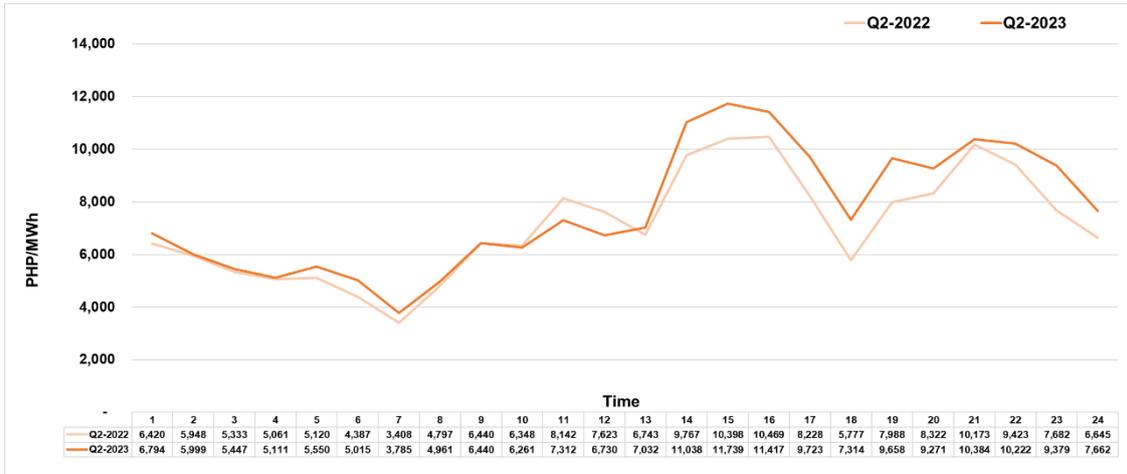


Figure 25: System LWAP Hourly Curve, 2022 vs 2023 Second Quarter

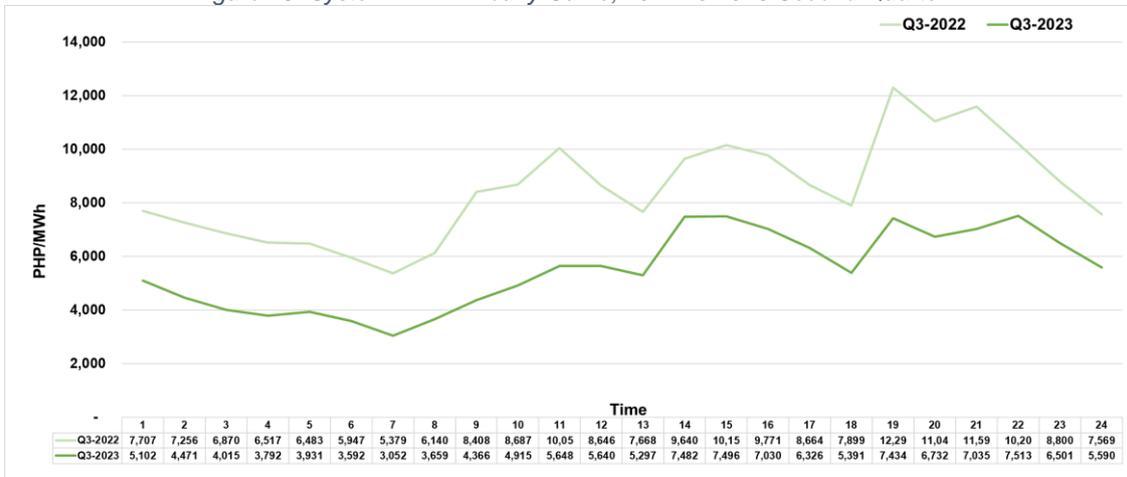


Figure 26: System LWAP Hourly Curve, 2022 vs 2023 Third Quarter

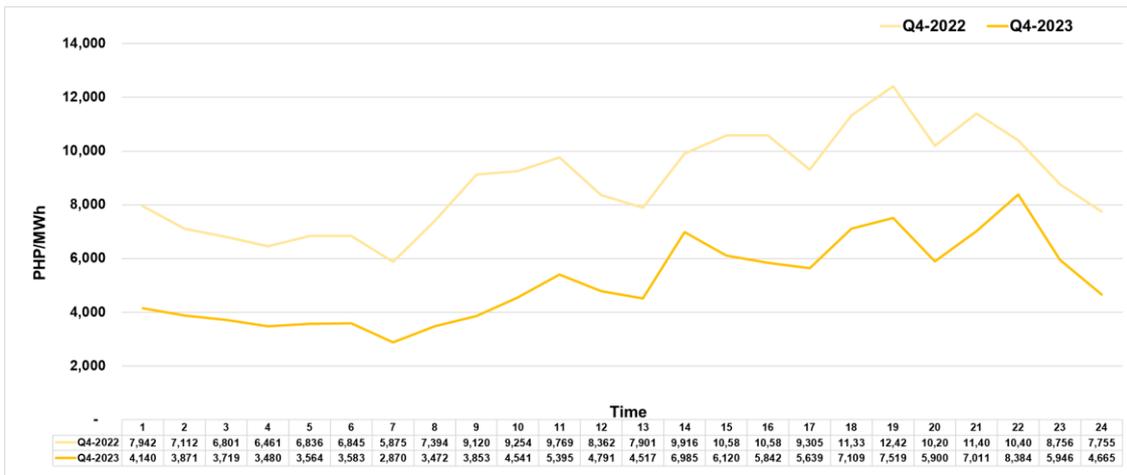


Figure 27: System LWAP Hourly Curve, 2022 vs 2023 Fourth Quarter

#### iv. Hourly Price Profile

- The Wholesale Electricity Spot Market (WESM) utilizes several market price conditions as a result of market optimization, or any pricing methodology used for certain conditions established by the Department of Energy (DOE) or the Energy Regulatory Commission (ERC).
- As shown in Figures 28 to 30 below, the market cleared under a normal pricing condition majority or 78% of the time (82,084 trading intervals for Luzon and 82,249 for Visayas), while about 96% of the time (84,305 trading intervals for Mindanao).
  - This was an increase from last year's 65-71% which was mainly attributable to the decreased issuances of secondary price cap this year.
- Congestions occurred at 6-6.3% of the time, an increase from 4-4.3% of the time last year, which may have contributed to the application of Price Substitution Methodology (PSM) to 6,696 and 6,343 trading intervals in Luzon and Visayas, respectively, while only 467 trading intervals in Mindanao. PSM was observed mainly during the summer season due to network congestions attributed to high demand situation from March to May 2023.
- Regional application of PSM occurred when the HVDC connecting either of the major region is unavailable.
- Intervals with pricing error notices remained at around 3% of the time for both Luzon (3,412 trading intervals) and Visayas (3,391 trading intervals) while it remained at 2% of the time (1,573 trading intervals) in Mindanao, mainly accounted as inappropriate input data.
- On the other hand, administered prices (AP) were issued during instances of market intervention and/or market suspension events which significantly decreased in Luzon from 0.2% (221 trading intervals) for the 2022 billing period to 0.1% (89 trading intervals) this period. At the same time, the Visayas region likewise posted a significant decrease, where issuances went down from 9%-0.8% (839 trading intervals from 9,493 trading intervals last year). For the Visayas region, intervals issued with AP posted as the highest among other regions due to total power failure in the Panay sub-grid that occurred in February 2023.
- Notable decrease in the trend of intervals issued with the secondary price cap was noted more evidently during the 3<sup>rd</sup> and 4<sup>th</sup> quarter. Statistics showed that 7% of the time, the cumulative price threshold of PHP9,000/MWh was breached using the calculated rolling average based on Generator-Weighted Average Price (GWAP) in Luzon and Visayas. This is a 17-18% decrease as compared to last year's 24-26% of the time imposition. Meanwhile, relatively lower instances of secondary price cap were noted in the Mindanao region due to relatively lower prices in the region as compared to Luzon and Visayas.
- Price separations between the Luzon, Visayas, and Mindanao grids were likewise present as a result of the congestions and unavailability of the High-Voltage Direct Current (HVDC) line in a number of instances for the covered period.
- Table 5 provides the summary of congested lines for the year 2023, with Maasin-Ubay line 1 topped with the frequent instances of congestion posting 30,121 congestion occurrences out of 105,120 trading intervals, or also equivalent to 29% of the time.

Table 5: Number of Market Intervention and Market Suspension, 2023

Line Name	Percent of Time for the entire Year
MAASIN-UBAY 138 kV LINE 1	29%
MEXICO-HERMOSA 230 kV LINE 2	6%
MEXICO-HERMOSA 230 kV LINE 1	5%
SAMBOAN-AMLAN 138 kV LINE 1	4%
CEBU-MANDAUE 138 kV LINE 1	2%
BACOLOD-BAROTAC 138 kV LINE 1	0.6%
HERMOSA-DUHAT 230 kV LINE 1	0.5%
HERMOSA-MALOLOS 230 kV LINE 1	0.5%
CEBU-MANDAUE 138 kV LINE 2	0.4%
BAUANG-BPPC 230 kV LINE 1	0.3%
BAUANG-LATRINI 230 kV LINE 1	0.1%
BAUANG-LATRINI 230 kV LINE 2	0.1%
COLON-CEBU 138 kV LINE 3	0.1%
COLON-CEBU 138 kV LINE 2	0.1%
MUNTINLUPA-BINAN 230 kV LINE 3	0.1%
MANDAUE-LAPULAPU 138 kV LINE 2	0.1%
AMLAN-MABINAY 138 kV LINE 2	0.1%
AMLAN-MABINAY 138 kV LINE 1	0.1%
KABANKALAN-MABINAY 138 kV LINE 1	0.1%
SNRAFAEL-EHVSJOS 230 kV LINE 1	0.05%
LALA-AURORA 138 kV LINE 1	0.04%
BALOI-AUROR 138 kV LINE 1	0.02%
BAKUN-BAUANG 230 kV LINE 1	0.02%
PGBILAO-PAGEHV 230 kV LINE 2	0.02%
LALA-AURORA 138 kV LINE 2	0.02%
KABANKALAN-MABINAY 138 kV LINE 2	0.02%
DOLORES-MLAYA 230 kV LINE 2	0.02%

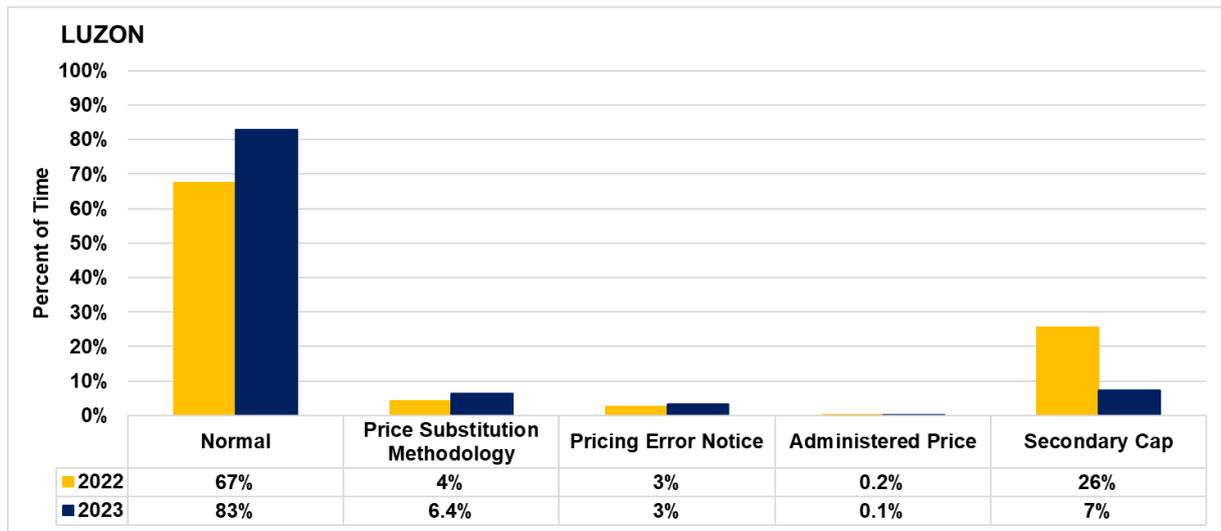


Figure 28 Summary of Pricing Conditions in Luzon, 2022 to 2023

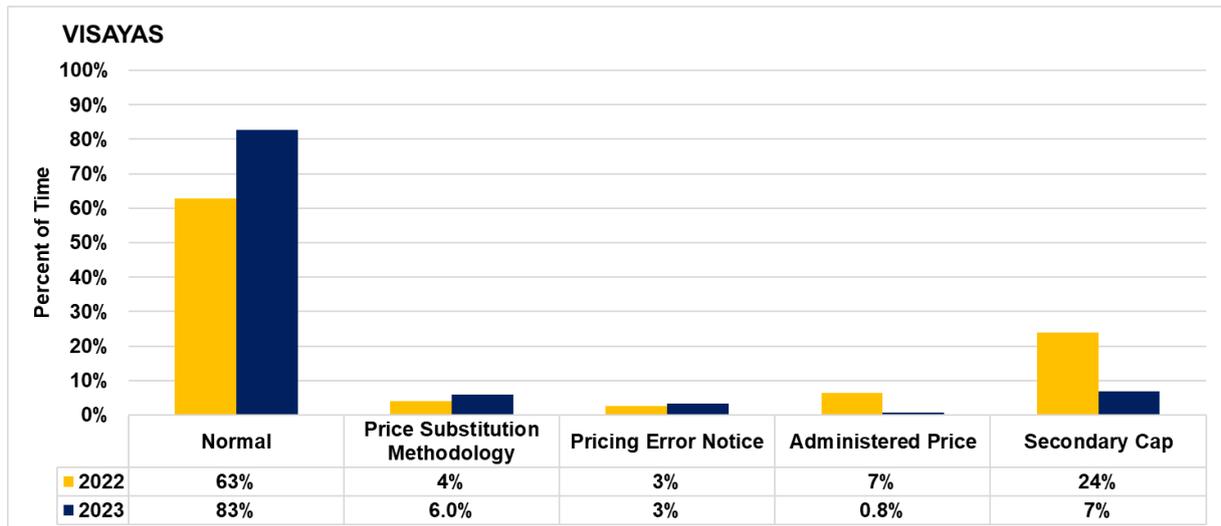


Figure 29: Summary of Pricing Conditions in Visayas, 2022 to 2023

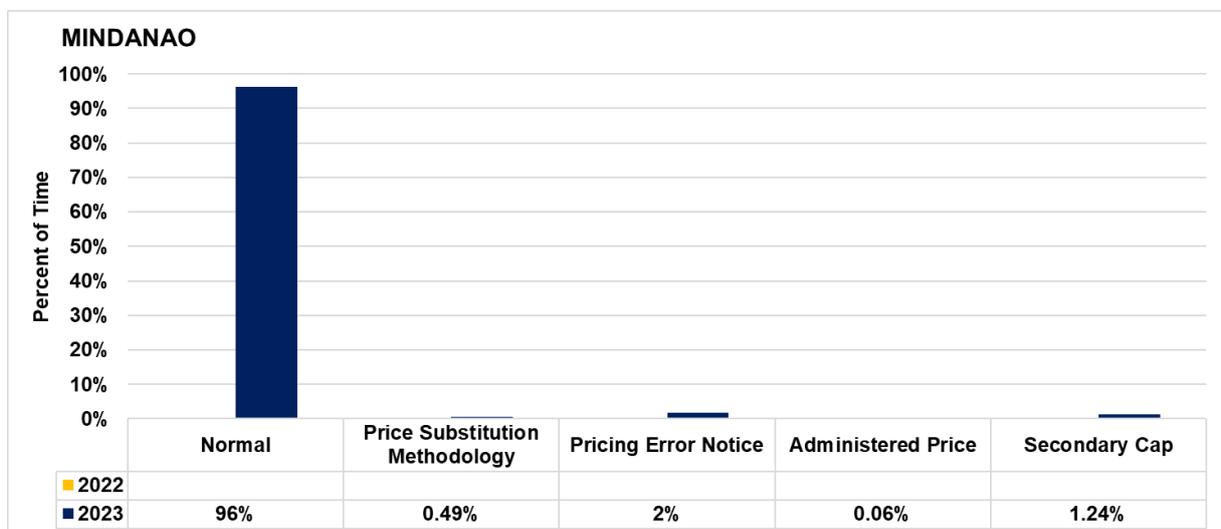


Figure 30: Summary of Pricing Conditions in Mindanao, 2022 to 2023  
Note: Mindanao data only became available in February 2023

- Table 6 below provides for intervals under market intervention caused by, among other things, Market Management System (MMS) stoppage, non-generation of real-time dispatch (RTD) schedule, or insufficient supply leading to manual load dropping. On the other hand, market suspension was issued by the ERC due to the onslaught of Typhoon Odette in accordance with the Chapter 6 of the WESM Rules.

Table 6: Number of Market Intervention and Market Suspension, 2023

Calendar Year 2023			
Number of Market Intervention/Suspension per Intervals		Reasons for Market Intervention	
No. of Intervals	Initiated by:		
27	SO initiated in Luzon	Tripping of Bolo-Masinloc 230kV line 2 that subsequently led for the tripping of various power plants.	
6		Unimplementable RTD schedule	
2	SO initiated in Visayas	Implementation of MLD to prevent overloading of Cebu-Mandaue 138kV Line 1	
8		Due to Manual Load Dropping (MLD) implementation to prevent overloading of Amlan-Samboan 138kV Line 1	
47		Critical Loading of 138kV Cebu Mandaue Transmission Line 1	
134		Panay Island Black-out and Isolation from the Grid	
17		Implemented Manual Load Dropping (MLD) to prevent Over Loading of 138kV Cebu-Mandaue Transmission Line 1	
109		Due to Multiple tripping of power plants in Panay and Negros sub-grids.	
434		Due to unimplementable RTD brought about by multiple tripping of power plants	
32		Due to implementation of MLD brought about by an undervoltage situation at the Negros sub-grid	
4		SO initiated in Mindanao	Implemented Manual Load Dropping (MLD) to prevent Over Loading of 138kV Aurora-Baloi Transmission Line
6		SO initiated in Luzon and Visayas	Meter Data Error
8	SO initiated in Visayas and Mindanao	Force Majeure and Threat to System Security	
37	SO initiated in Luzon, Visayas and Mindanao	Unimplementable RTD schedule	
1	MO initiated in Luzon, Visayas and Mindanao	No RTD generated due to database-related error experienced during the implementation of database configuration changes	
1		RTD Market Run failed due to MPI transfer data error	
1		Inability of the MMS to produce RTD results on account of the failure of MDOM solver software.	
9		Failure of publication of Market Results in the MO Archive Repository (MOAR)	
2		Stoppage of RTD Run arising from the software failure of the Bld Transfer Program to provide complete input data to the MDOM	

- In Luzon and Visayas, the 4<sup>th</sup> quarter of the year recorded the most share of normal market pricing outcomes. This is brought about by the ample supply margin caused by among others, the high availability of generators and lower demand consumption due to cooler temperature and observance of long holidays, minimizing any pricing or external intervention in the WESM. This contrasts with the

operations in Mindanao wherein the market was, majority of the time, under normal pricing condition for each observed quarter.

- Secondary price cap issuances were mostly prevalent during the 2<sup>nd</sup> quarter of the year when the summer months of the year fall under. During these times, higher demand consumption was observed leading to the thinning of supply margin which likewise affects the resulting market prices, and thereby triggering the cap.
- Similarly, PSM was issued mostly during the 2<sup>nd</sup> quarter of the year as the system requires more demand thereby maximizing the utilization of the transmission systems resulting in congested lines.

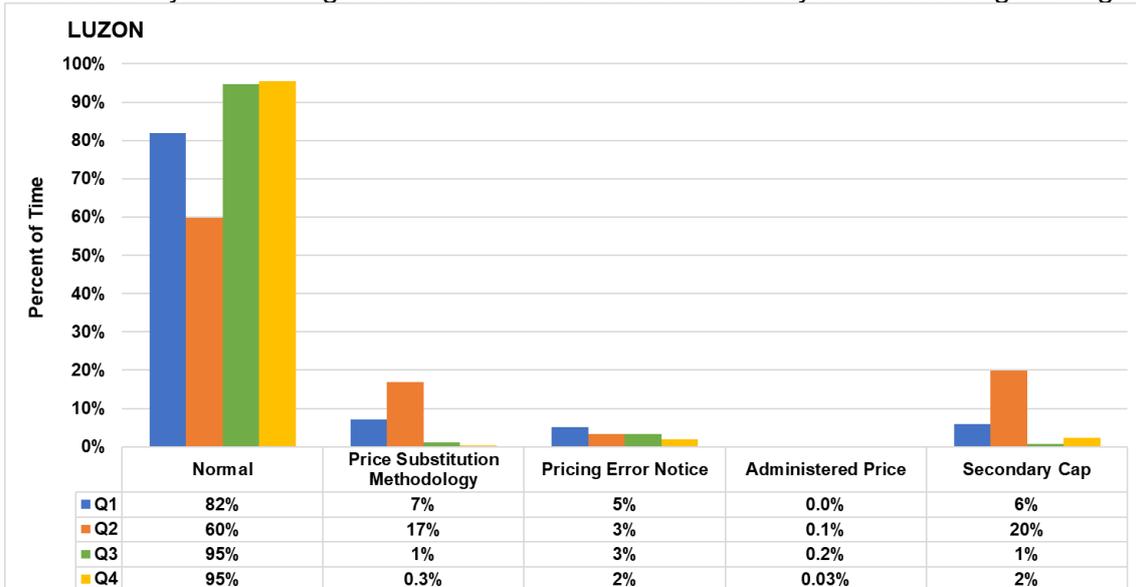


Figure 31: Quarterly Summary of Pricing Conditions in Luzon, 2023

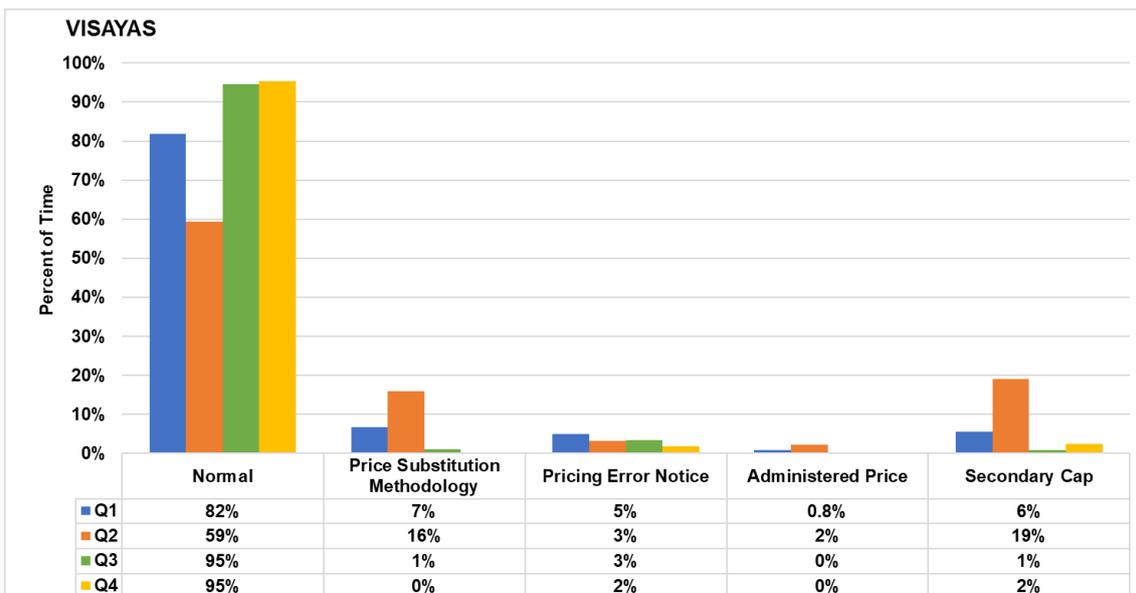


Figure 32: Quarterly Summary of Pricing Conditions in Visayas, 2023

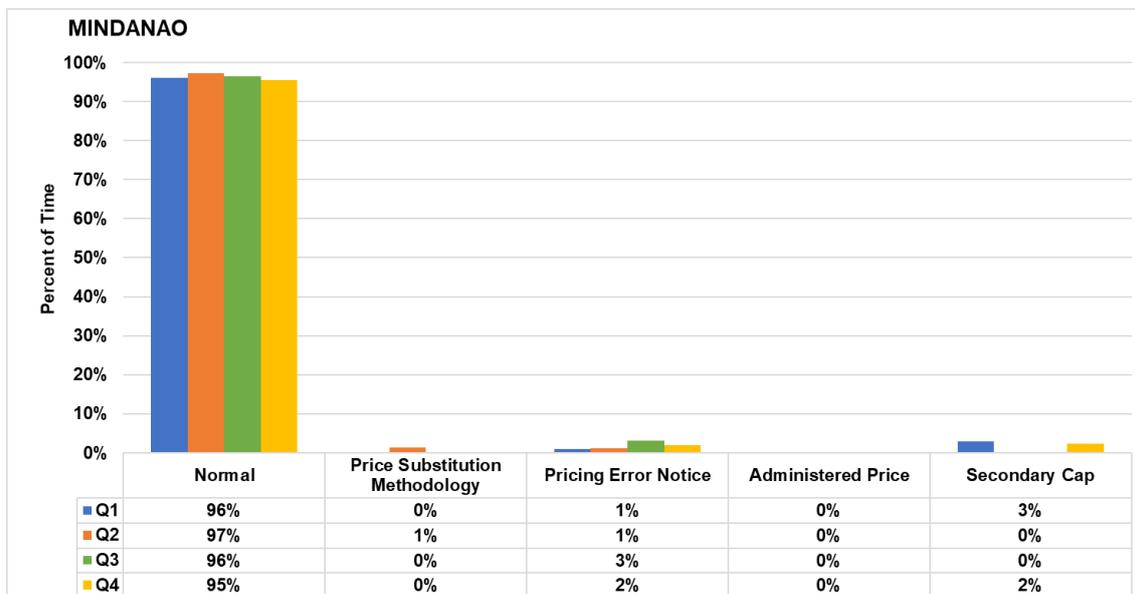


Figure 33: Quarterly Summary of Pricing Conditions in Mindanao, 2023

### III. Generator Trading Behavior

- The trading behavior of WESM participants highly affected the resulting market price outcomes in the WESM.
- In this report, the offer prices of the generators for each trading intervals were directly used to determine whether there had been changes in the behavior of WESM trading participants when compared to the previous billing year.
- Consistent with the previous billing year, Coal and Natural gas power plants were among the cheapest resource types offering more than half of its capacities in the market at an average price below PHP0/MWh for the entire year.
- On the contrary, it was observed that throughout the year, notwithstanding the decrease in the high offered prices of Hydro and Oil-based plants, they remained to be the most expensive to supply power to the grid due to limited supply and higher fuel costs, respectively.
- Noting the cheaper offered prices of Coal and Natural gas, the grid relied on these baseload power plants, causing them to be dispatched more frequently.
- On another note, it can be also observed that offered prices of Natural gas power plants increased noting the shift to liquefied natural gas as their new source of supply.

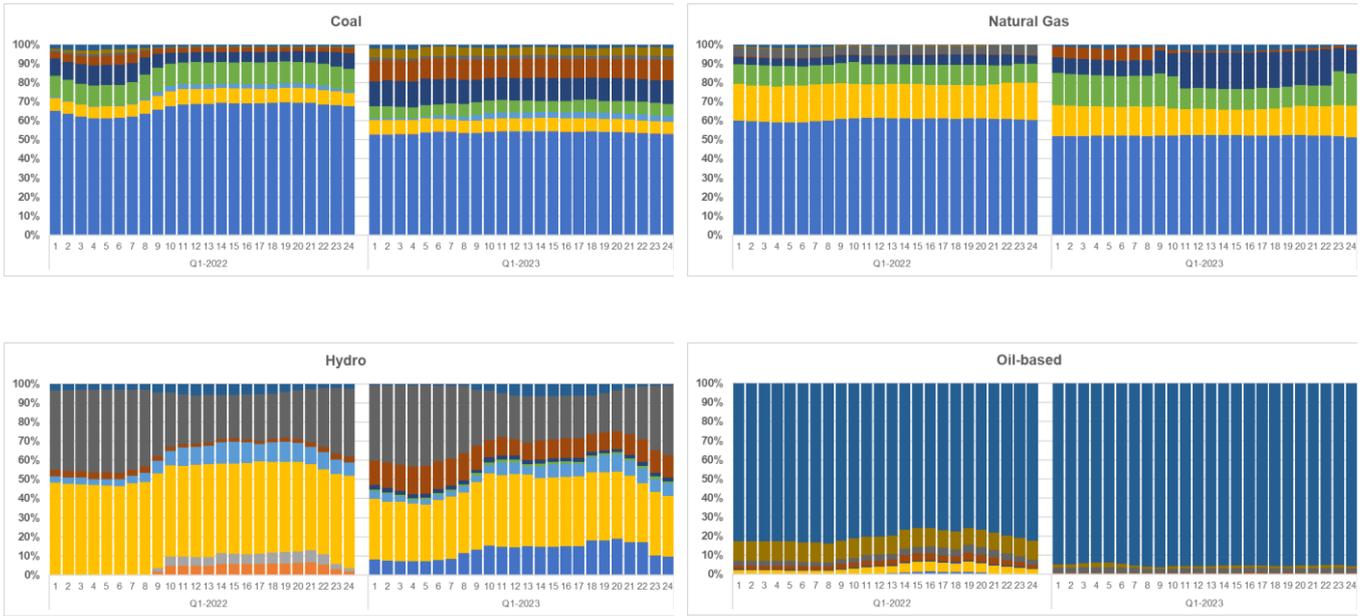


Figure 34: Average Offer Prices Based on Plant Type, 2022 and 2023, 1<sup>st</sup> Quarter

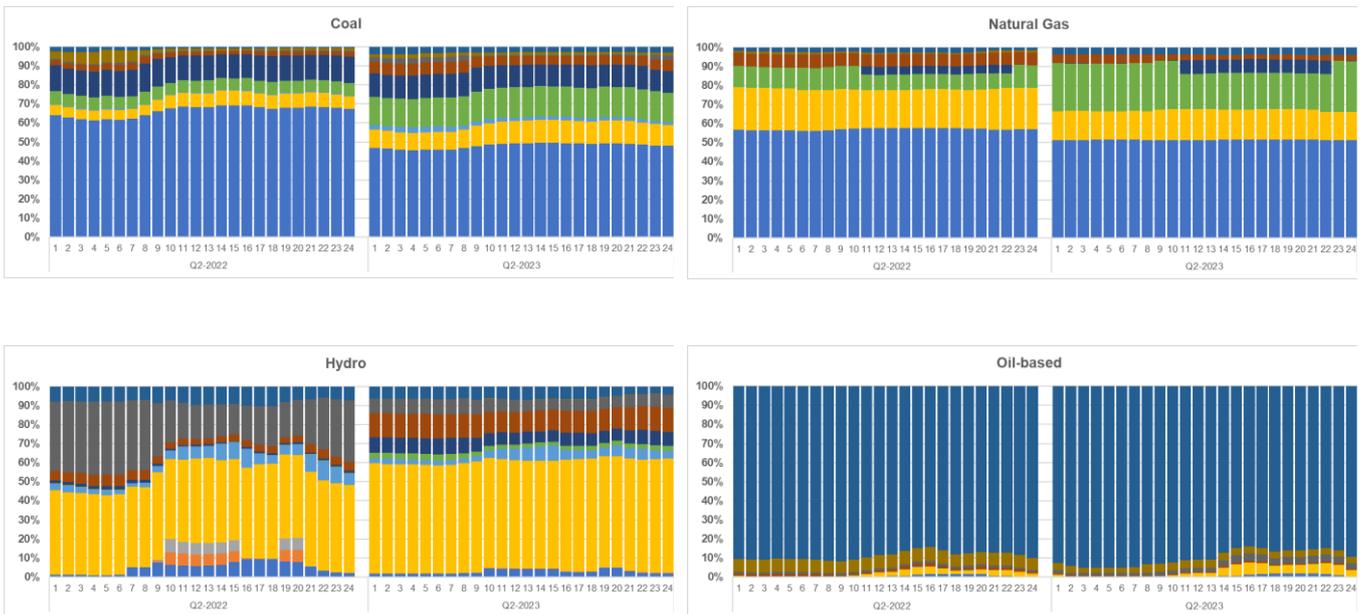
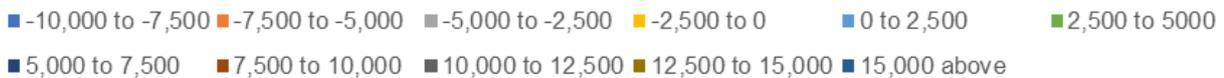


Figure 35: Average Offer Prices Based on Plant Type, 2022 and 2023, 2<sup>nd</sup> Quarter



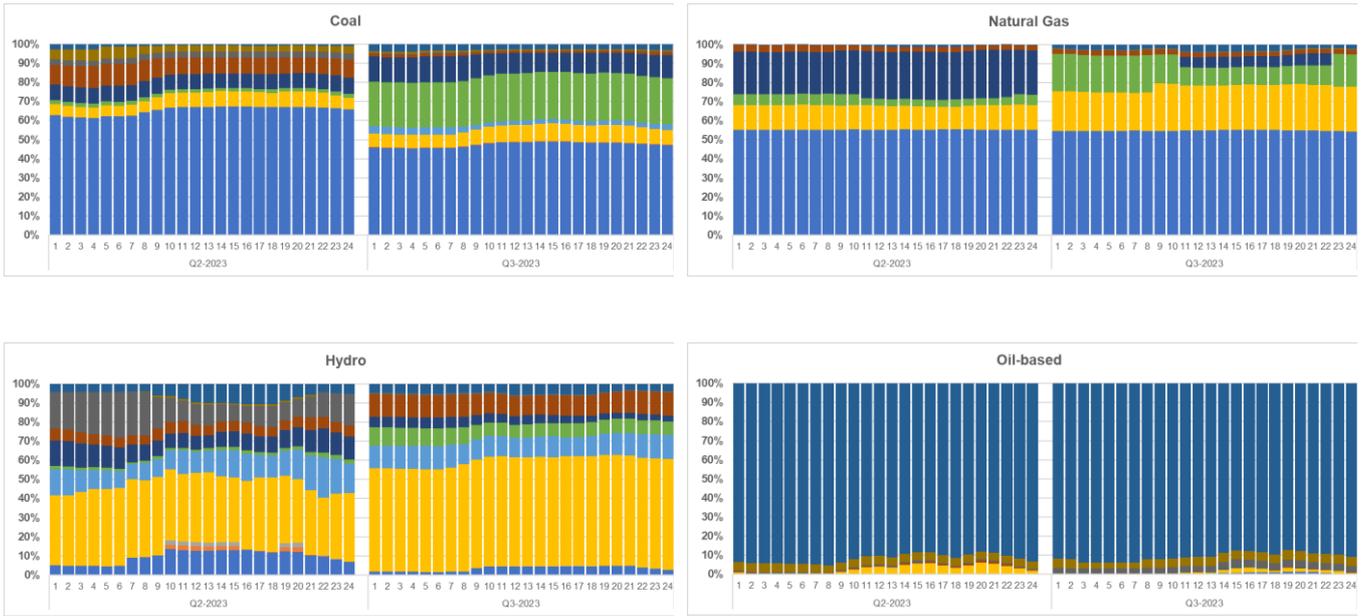


Figure 36: Average Offer Prices Based on Plant Type, 2022 and 2023, 3<sup>rd</sup> Quarter

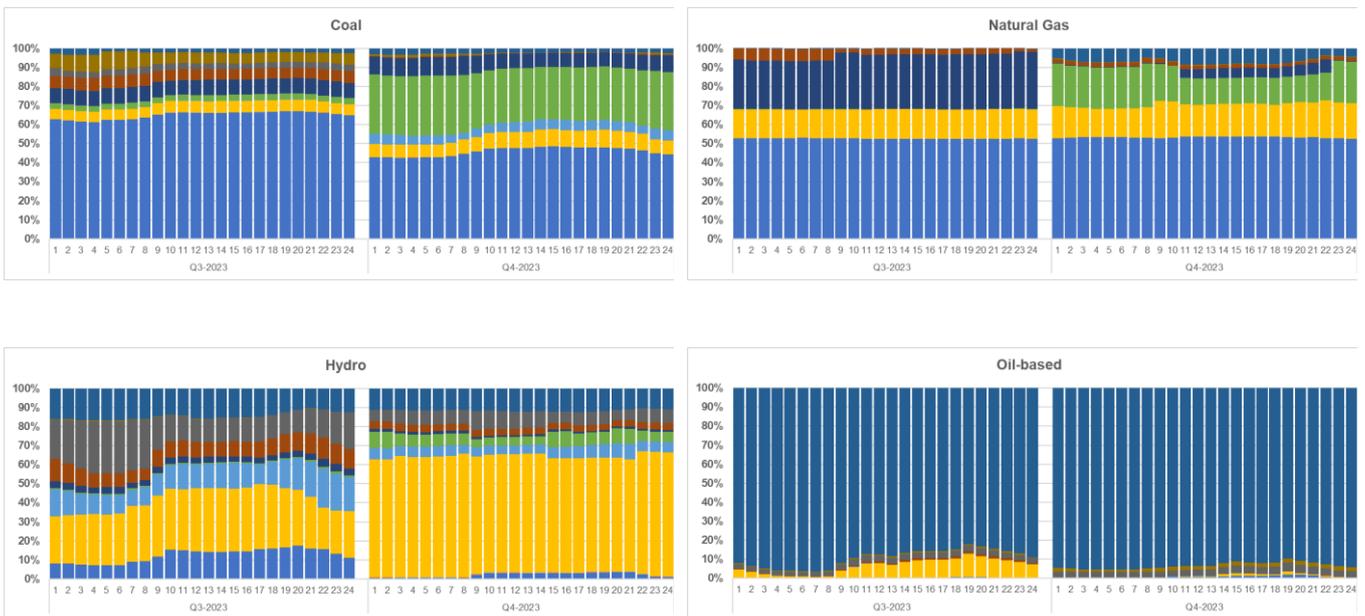


Figure 37: Average Offer Prices Based on Plant Type, 2022 and 2023, 4<sup>th</sup> Quarter

- -10,000 to -7,500
- -7,500 to -5,000
- -5,000 to -2,500
- -2,500 to 0
- 0 to 2,500
- 2,500 to 5000
- 5,000 to 7,500
- 7,500 to 10,000
- 10,000 to 12,500
- 12,500 to 15,000
- 15,000 above

## IV. Competitiveness Analysis

### A. Residual Supply Index (RSI)<sup>8</sup>

- In 2023, percentage of RSIs above 100 significantly went down to 3% from 15% during the 1<sup>st</sup> quarter of 2023. However, during the onset of the rainy season, it went up to 26% further establishing the relationship of high market prices during instances when low RSIs were observed.
- The average market prices for intervals with RSI below 100% was PHP6,731/MWh while it was PHP3,695/MWh for the intervals with RSI above 100% for the billing year.

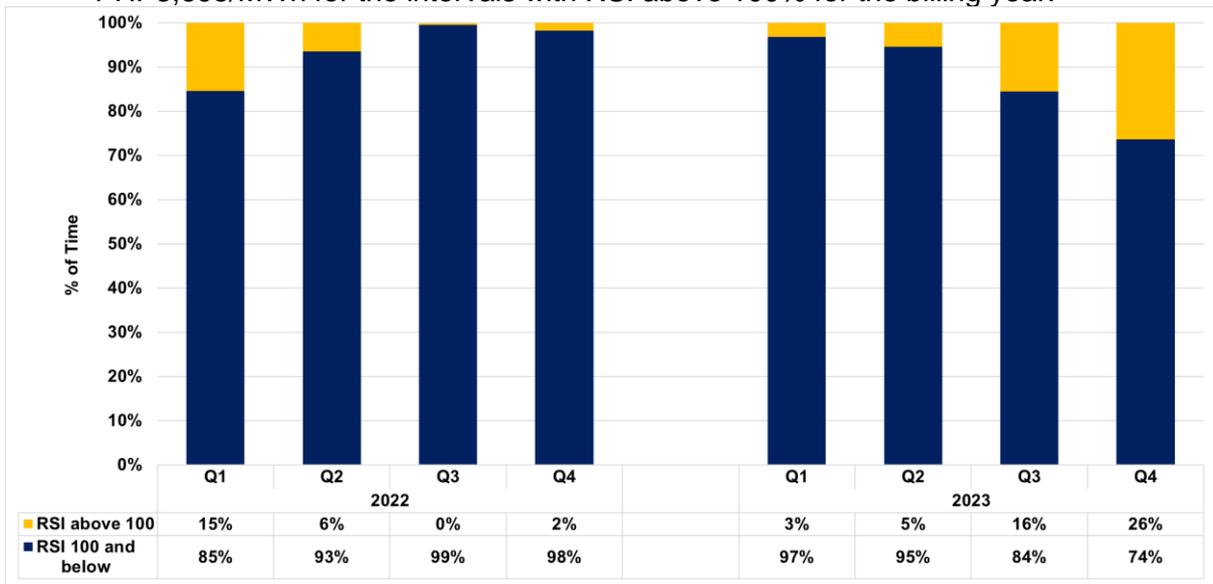


Figure 38: Market RSI, 2022 vs 2023

### B. Pivotal Suppliers

- Out of 105,120 trading intervals, GNP Dinginin Coal Power Plant topped the list of the pivotal suppliers during the subject period for almost 80% or nearly 83,000 intervals.
- With the high level of system demand and low supply levels during the period, this translated to a high number of pivotal suppliers.

<sup>8</sup> The Residual Supply Index (RSI) is a dynamic continuous index measured as the ratio of the available generation without that generator to the total generation required to supply the demand. The Market RSI is measured as the lowest RSI among all generators in the market. A Market RSI less than 100% indicates the presence of pivotal generator/s or supplier/s.

Table 7: Top Pivotal Suppliers, 2023

Rank	Plant	Major Participant Group	Capacity (MW)	Frequency	% of Time
1	GNP DINGININ CFTPP	AP	1,336	82,912	78.9%
2	STARITA NGPP	FGC	1,042.5	42,371	40.3%
3	SUAL CFTPP	SMC	1,294	40,730	38.7%
4	MASINLOC CFTPP	SMC	1,023	30,284	28.8%
5	PAGBILAO CFTPP	AP	1,184	20,502	19.5%
6	MARIVELES CFTPP	AC	632	16,701	15.9%
7	SMC LIMAY CFTPP	SMC	600	15,123	14.4%
8	KALAYAAN PSPP	PSALM	735.6	12,892	12.3%
9	SBPLC CFTPP	SBPLC	455	11,375	10.8%
10	CALACA CFTPP	DMCI	540	9,191	8.7%

### C. Market Share and Herfindahl-Hirschman Index (HHI)<sup>9</sup>

- Across all quarters the WESM remained to be dominated by the four (4) major participant groupings based on registered capacity: San Miguel Corporation (SMC), Aboitiz Power Corporation (AP), First Gen Corporation (FGC), and Power Sector Assets and Liabilities Management Corporation (PSALM).
- The combined shares of all four major firms comprised more than 60% of the system's registered, offered, and actual generation.

<sup>9</sup> The HHI measures the degree of market concentration, considering the relative size and distribution of participants in the monitored market. It is calculated as the sum of squares of the participant's market share. The following are the widely used HHI screening numbers: the HHI approaches zero when the market has very large number of participants with each having a relatively small market share. In contrary, the HHI increases as the number of participants in the market decreases, and the disparity in the market shares among the participants increases. The following are the widely used HHI screening numbers: (1) when HHI is less than 1,000 the market is not concentrated; (2) in the range of 1,000 to 1,800 the market is moderately concentrated; (3) greater than 1,800 to 2,500 the market is concentrated; and (4) greater than 2,500 the market is highly concentrated and signals lack of competition in the market.

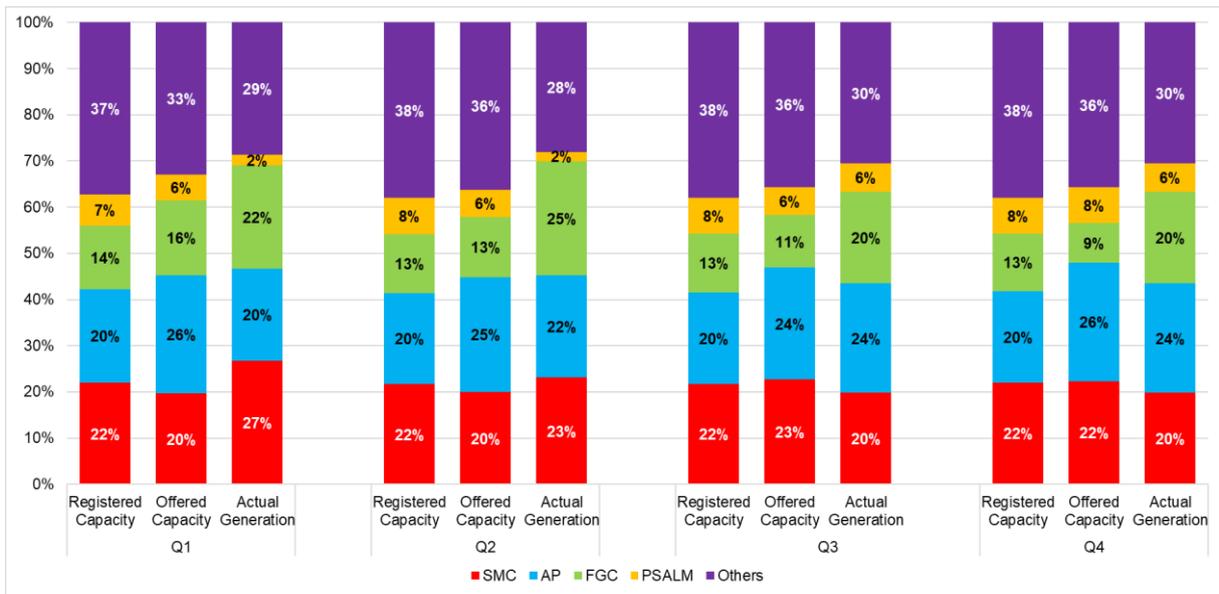


Figure 39: Market Share, 2023

- Correspondingly, the HHIs per dispatch interval, indicated a moderately concentrated market based on registered capacities for all intervals in 2023.

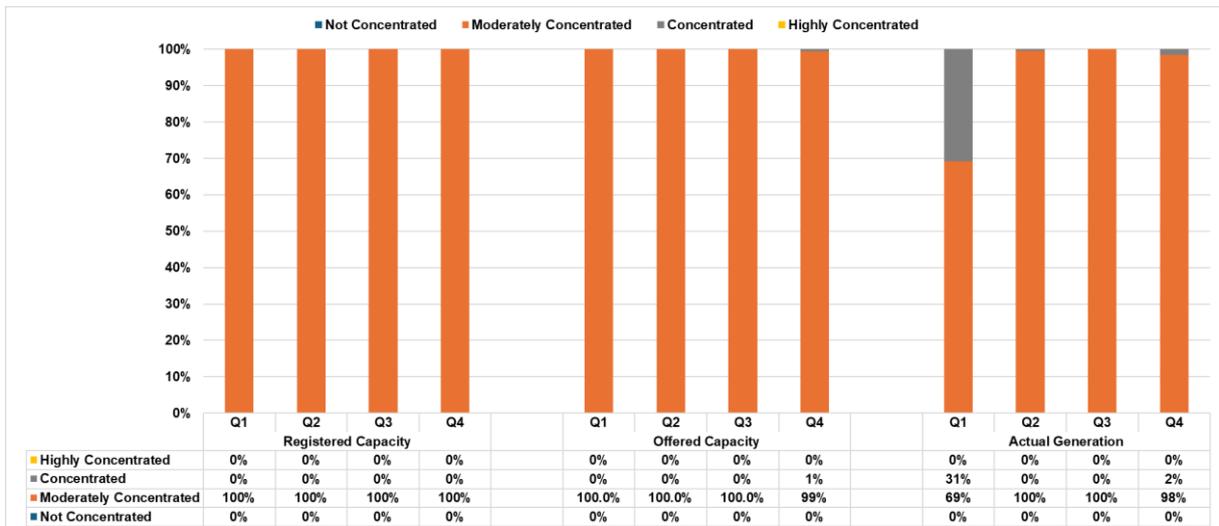


Figure 40: Herfindahl-Hirschman Index, 2023

## V. Spot Market Transactions

### A. Spot Exposure

- Total energy transactions (in MWh) increased by 21% following the increasing level of demand and the expiration of the contracts, which exposed the participants to more volatile prices in

the spot market. It was also observed that the composition of spot and bilateral contract quantities posted significant changes when compared to the 2022 billing period.

- Although most of the capacities were still covered by bilateral contracts, the spot market transaction of trading participants during the billing period was noted at 19.7%, an increase from last year's only 13%.
- This signals the need for the Distribution Utilities to enter into contracts through compliance with Competitive Selection Process (CSP) to avoid exposure to the volatile prices of the WESM.

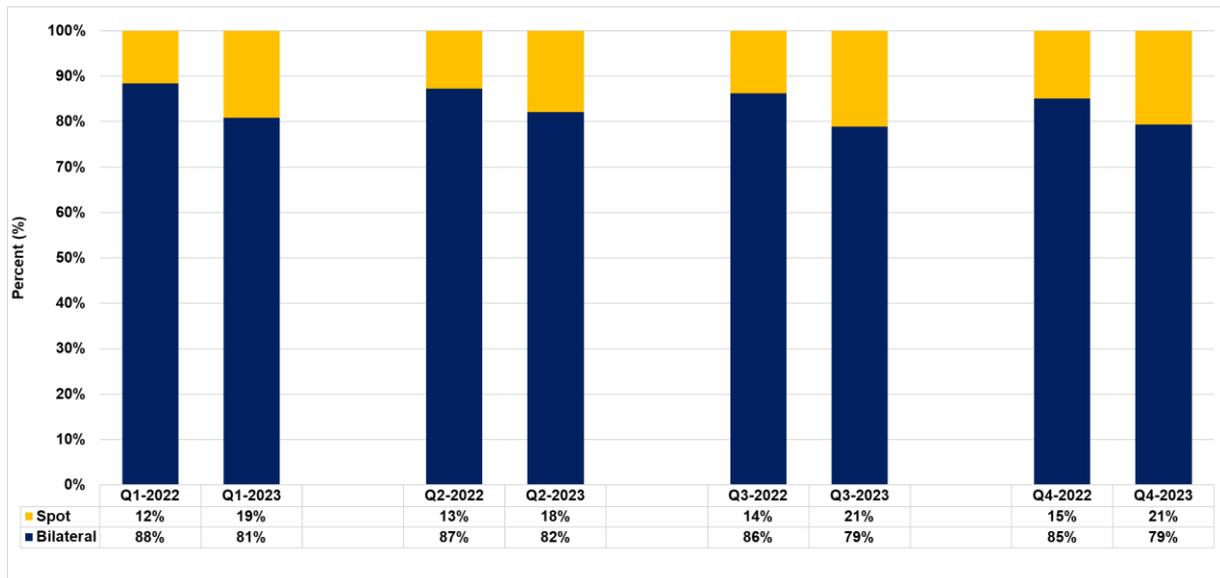


Figure 41: Spot Market Exposure, 2022 to 2023

- While spot exposure this year was relatively higher when compared to last year, it was however observed that spot exposure was lower during peak hours, indicating that consumers were more assured of fixed prices brought by bilateral contracts which reduced the risk of exposure in volatile prices during peak hours.
- Unlike last year where the spot exposure was relatively high during the 2<sup>nd</sup> quarter or the onset of summer season, spot exposure profile during the period in review was observed to be high during the 3<sup>rd</sup> and 4<sup>th</sup> quarter of the year.

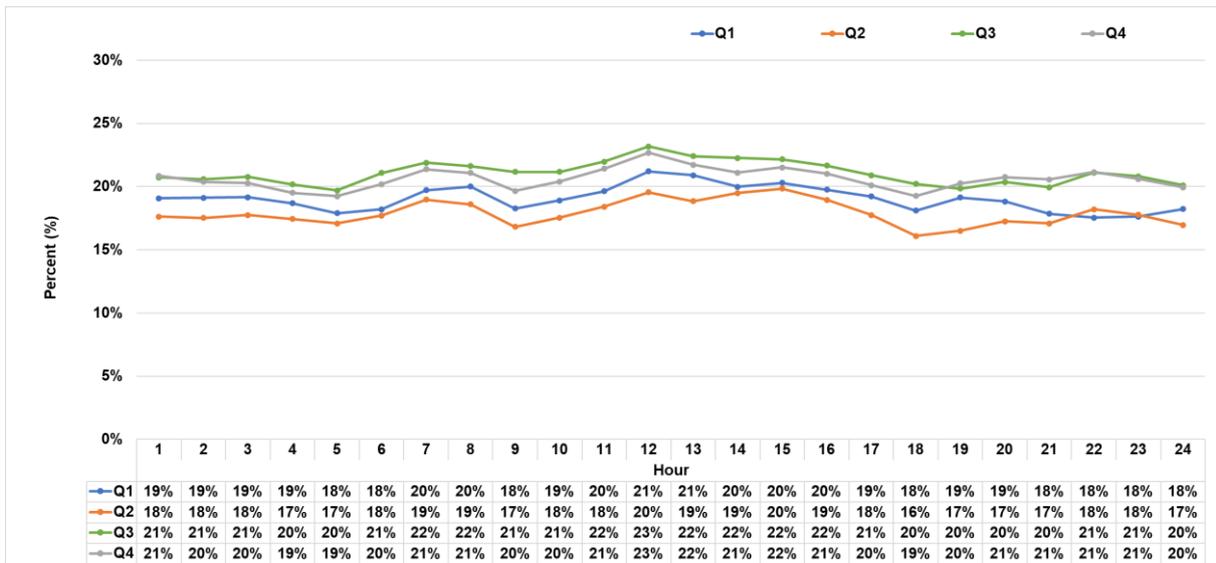


Figure 42: Hourly Generator Spot Market Exposure, 2023

### B. Energy Trading Amount (ETA)<sup>10</sup> Share

- Aboitiz Power Corporation (AP) held the top spot in terms of ETA at a high of 30% share with a corresponding 24% spot exposure and likewise dominated the market in terms of overall actual generation.
- On the other hand, San Miguel Corporation (SMC) recorded high actual generation and spot exposure percentages, but effectively had lower ETA shares, as these plants were highly covered by BCQ.
- Despite having lower registered capacity, First Gen Corporation (FGC) recorded high actual generation as most of these plants are categorized as preferential/must dispatch units.

<sup>10</sup> The Energy Trading Amount refers to the amount of revenue from spot market transactions excluding quantities that are declared by the generators as covered by bilateral power supply contracts, which are settled outside the WESM. The ETA share of a major participant group is measured as a percentage of its ETA over the ETA of all participants during the period.

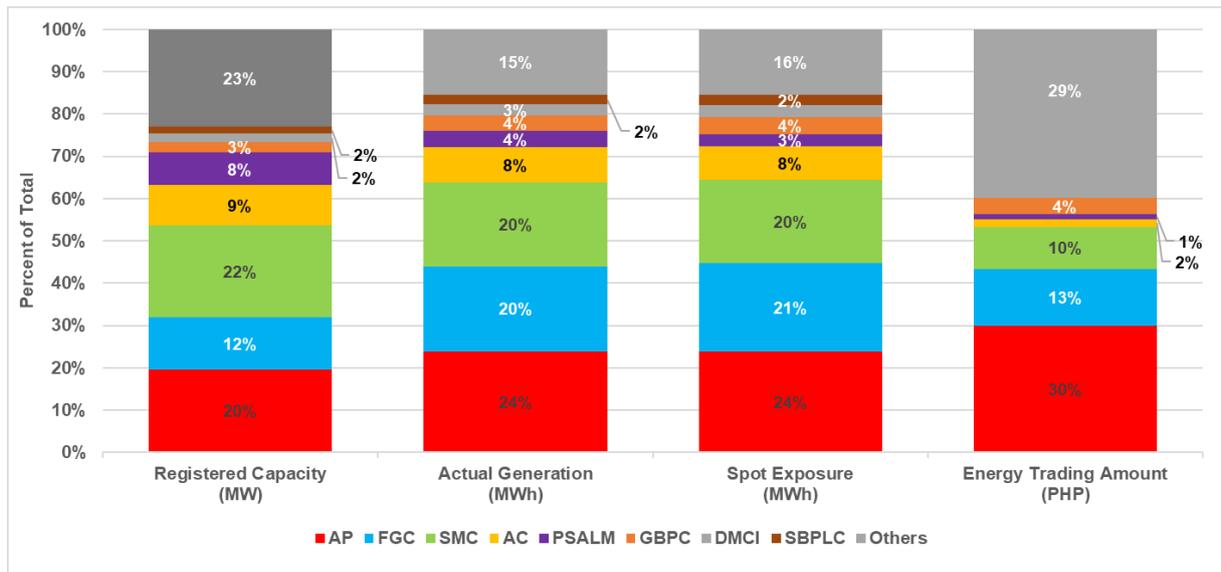


Figure 43: Energy Trading Amount and Spot Exposure, 2023

## Annex A. Major Plant Outages

Region	Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks	Date Commissioned/ Commercial Operation	Total No. of Trading Intervals
<b>LUZON</b>										
LUZON	BIOP	IPower 2	10.8	25-Jun-23		182.33	Forced Outage	To repair main de-ashing screw conveyor.	01 December 2017	96
LUZON	BIOP	IPower 1	10.8	25-Jun-23		182.33	Forced Outage	To repair main de-ashing screw conveyor	01 October 2014	96
LUZON	BIOP	GFI	15.8	19-Aug-23		127.75	Maintenance Outage	Off season maintenance shutdown	01 March 2013	13,824
LUZON	BIOP	GZREC	10.8	09-Oct-23		76.63	Forced Outage	Affected by the tripping of CalacaSan-Falima 69kV line.	01 November 2019	775
LUZON	BIOP	IPEC	18	01-Oct-23		85.00	Planned Outage	Planned outage until October 21 2023.	01 July 2015	6,048
LUZON	BIOP	GZREC	10.8	07-Sep-23	20-Sep-23	12.59	Forced Outage	IDF Problem.	01 November 2019	3,626
LUZON	BIOP	CBEC	13.5	24-Jul-23	18-Aug-23	25.45	Planned Outage	Planned outage until August 7 2023.	01 September 2019	7,328
LUZON	BIOP	IPower 2	10.8	05-Jul-23	02-Oct-23	89.11	Forced Outage	Unplanned shutdown due to ash system problem.	01 December 2017	25,662
LUZON	COAL	SLPGC 1	150	17-Jun-23		190.50	Forced Outage	Tripped from 90MW load. Turbine trip due to axial displacement high.	01 July 2016	2,448
LUZON	COAL	SBPL	455	05-Jun-23	18-Jun-23	12.86	Forced Outage	Tripped due to high turbine vibration.	01 October 2019	3,702
LUZON	COAL	MPGC U1	150	21-May-23	08-Jun-23	18.71	Maintenance Outage	Conducted Load Rejection Test	11 March 2023	5,390
LUZON	COAL	SLPGC 1	150	15-May-23	14-Jun-23	30.04	Forced Outage	Emergency shutdown due to suspected tube leak at heat recovery area.	01 July 2016	8,651
LUZON	COAL	Calaca 1	240	01-May-23	13-May-23	11.60	Forced Outage	Emergency shutdown due to boiler tube leak.	01 September 1984	3,340
LUZON	COAL	ANDA 1	72	30-Mar-23	14-Apr-23	15.31	Maintenance Outage	Maintenance outage to facilitate repair of governing valve seat.	01 September 2016	4,410
LUZON	COAL	QPPL	460	17-Mar-23	28-Mar-23	10.87	Forced Outage	Emergency shutdown due to boiler tube leak.	01 May 2000	3,131
LUZON	COAL	SMC 4	150	20-Feb-23	11-Mar-23	19.76	Planned Outage	On Planned Outage until March 13 2023	01 July 2019	5,692
LUZON	COAL	SLTEC 2	124	10-Feb-23	23-Feb-23	13.07	Forced Outage	Leak at boiler lag expansion bellow valve	01 February 2016	3,765
LUZON	COAL	QPPL	460	20-Jan-23	17-Feb-23	27.83	Planned Outage	Planned Outage.	01 May 2000	8,015
LUZON	COAL	SMC 2	150	17-Jan-23	07-Feb-23	21.69	Planned Outage	Planned Outage.	01 September 2017	6,246
LUZON	COAL	Pagbilao 3	420	14-Jan-23	11-Feb-23	28.33	Planned Outage	Planned Outage.	01 March 2018	8,161
LUZON	COAL	SLPGC 2	149.6	07-Jan-23	12-Feb-23	35.71	Planned Outage	Planned Outage until February 17 2022	01 July 2016	10,286
LUZON	COAL	SLPGC 1	25	27-Dec-22	19-Feb-23	53.65	Forced Outage	Unplanned outage due to boiler tube leak	01 July 2016	15,451
LUZON	COAL	SLTEC 2	124	17-Dec-22	23-Jan-23	28.54	Planned Outage	On planned outage until January 31 2023.	01 February 2016	8,219
LUZON	COAL	Masinloc 1	315	23-Dec-22	10-Mar-23	74.67	Planned Outage	Planned outage until February 21 2023.	01 June 1998	21,505
LUZON	COAL	GN Power 2	316	15-Oct-22	14-Jan-23	19.00	Planned Outage	General maintenance outage.	01 May 2013	5,472
LUZON	COAL	ANDA 1	72	01-Dec-22	05-Jan-23	10.17	Planned Outage	Planned Outage.	01 September 2016	2,928
LUZON	COAL	SMC 3	150	01-Dec-22	19-Dec-22	18.10	Planned Outage	Planned Outage until December 22 2023.	01 March 2018	5,213
LUZON	COAL	SBPL	455	01-Dec-22	23-Dec-22	22.69	Planned Outage	Planned outage as per GOP until January 19 2024.	01 October 2019	7,200
LUZON	COAL	Sual 2	647	30-Nov-23	23-Dec-23	22.69	Planned Outage	Planned Outage until December 30 2023.	01 October 1999	6,534
LUZON	COAL	SBPL	455	27-Nov-23		27.00	Forced Outage	Emergency shutdown due boiler tube leak.	01 October 2019	865
LUZON	COAL	SLPGC 2	149.6	07-Nov-23		47.31	Forced Outage	Affected by the tripping of CalacaSLPGC 230kV Line 1 Calaca 230kV Bus 2 and SLPGC 230kV Bus 1	01 July 2016	6,212
LUZON	COAL	Calaca 1	240	27-Oct-23	18-Nov-23	21.68	Maintenance Outage	Maintenance outage until November 16 2023.	01 September 1984	9,941
LUZON	COAL	SLPGC 1	150	19-Oct-23		10.10	Forced Outage	OP B and Primary Air Fan high vibration.	01 July 2016	2,910
LUZON	COAL	Sual 1	647	13-Oct-23	20-Nov-23	37.25	Planned Outage	Planned Outage until November 28 2023.	01 October 1999	10,728
LUZON	COAL	Calaca 1	300	30-Sep-23	13-Oct-23	12.81	Forced Outage	Tripped due to boiler tube leak	01 September 1984	3,689
LUZON	COAL	Sual 2	647	28-Sep-23		87.11	Maintenance Outage	Maintenance outage until 0600H of October 2 2023.	01 October 1999	319
LUZON	COAL	GNP Dinginini 1	668	21-Sep-23	13-Oct-23	22.01	Planned Outage	Planned outage until October 14 2023.	21 January 2022	6,339
LUZON	COAL	SLPGC 2	149.6	16-Sep-23	15-Oct-23	28.13	Forced Outage	Unplanned outage due to coal coking.	01 July 2016	8,100
LUZON	COAL	SMC 1	150	10-Aug-23	22-Sep-23	42.97	Planned Outage	Planned Outage until September 24 2023.	01 May 2017	12,376
LUZON	COAL	Pagbilao 2	382	05-Aug-23	30-Aug-23	25.06	Planned Outage	On planned outage until September 03 2023.	01 March 1996	7,217
LUZON	COAL	Masinloc 3	335	30-Jul-23	15-Aug-23	16.54	Forced Outage	Emergency shutdown due to coal reclaiming constraints brought by strong winds and heavy rains that poses safety issues.	01 December 2020	4,763
LUZON	COAL	MPGC U1	150	26-Jul-23	12-Aug-23	16.22	Maintenance Outage	Testing and commissioning until July 31 2023	11 March 2023	4,672
LUZON	COAL	SLTEC 1	122	26-Jul-23	31-Aug-23	36.15	Planned Outage	Planned outage until September 4 2023.	01 April 2015	10,410
LUZON	COAL	Masinloc 2	344	07-Jul-23	31-Jul-23	23.19	Planned Outage	Planned Outage until July 28 2023. Extended Outage until July 30 2023.	01 June 1998	6,680
LUZON	COAL	Pagbilao 1	382	01-Jul-23	27-Jul-23	26.40	Planned Outage	On Planned Outage until July 30 2023.	01 March 2018	7,604
LUZON	COAL	SLPGC 1	150	17-Jun-23	16-Aug-23	59.53	Forced Outage	Tripped from 90MW load. Turbine trip due to axial displacement high.	01 July 2016	14,696
LUZON	GEO	MGPP 2	12	23-Jun-23		184.67	Maintenance Outage	Relocation of MGI s TL and stub poles affected by SLEX-TR4 construction.	01 May 2018	768
LUZON	GEO	MGPP 1	20	23-Jun-23		184.67	Maintenance Outage	Relocation of MGI s TL and stub poles affected by SLEX-TR4 construction.	01 February 2014	768
LUZON	GEO	Bacman 1	60	12-Mar-23	01-Apr-23	20.89	Planned Outage	Planned Outage.	01 September 1993	6,017
LUZON	GEO	Twi 5	57	04-Jan-23	12-Feb-23	39.88	Maintenance Outage	Overhauling.	01 January 1979	11,488
LUZON	GEO	Twi 1	60	30-Nov-21		364.00	Forced Outage	Steam supply diverted to Unit 2.	01 January 1979	6,248
LUZON	GEO	Maiban 1	57	12-Nov-23		42.88	Forced Outage	Tripped from 42MW load.	01 April 1979	248
LUZON	GEO	Maiban 7	20	22-Aug-23	16-Sep-23	25.03	Forced Outage	MAKBAND D UNIT 7 SHUTDOWN DUE TO HIGH TURBINE VIBRATION	01 April 1979	7,209
LUZON	GEO	Maiban 1	57	05-Aug-23	14-Sep-23	40.20	Maintenance Outage	Generator unit overhaul.	01 April 1979	11,578
LUZON	GEO	Bacman 3	19.2	25-Jul-23		152.36	Forced Outage	Affected by the outage of Bacman 230kV Bus 2.	01 September 1993	105
LUZON	GEO	Twi 1	60	30-Nov-21		364.00	Forced Outage	Steam supply diverted to Unit 2.	01 January 1979	52,704
LUZON	HYD	San Roque 3	145	28-May-23	15-Jun-23	18.00	Planned Outage	APM until June 16 2023.	01 May 2003	5,183
LUZON	HYD	San Roque 2	145	28-May-23	15-Jun-23	18.00	Planned Outage	APM until June 16 2023.	01 May 2003	5,183
LUZON	HYD	San Roque 1	145	28-May-23	15-Jun-23	18.00	Planned Outage	APM until June 16 2023.	01 May 2003	5,183
LUZON	HYD	Masiway	12	11-May-23	17-Jun-23	37.17	Maintenance Outage	Maintenance Outage	01 January 1981	10,704
LUZON	HYD	Ambuklao 1	37.5	03-May-23	15-May-23	11.98	Maintenance Outage	Planned Outage.	01 December 1956	3,450
LUZON	HYD	Paritabangan 2	60	02-May-23	16-May-23	14.82	Maintenance Outage	Planned Outage.	01 December 2010	4,268
LUZON	HYD	Paritabangan 1	60	27-Apr-23	15-May-23	18.89	Maintenance Outage	Planned Outage.	01 December 2010	5,439
LUZON	HYD	San Roque 3	145	24-Apr-23	06-May-23	12.00	Planned Outage	Planned outage as per GOP.	01 May 2003	3,456
LUZON	HYD	Magat 4	97	11-Apr-23	10-May-23	29.35	Planned Outage	Planned outage until May 10 2023.	01 October 1983	8,452
LUZON	HYD	Magat 3	97	11-Apr-23	10-May-23	29.37	Planned Outage	Planned outage until May 10 2023.	01 October 1983	8,458
LUZON	HYD	Ambuklao 1	37.5	31-Mar-23	12-Apr-23	11.19	Forced Outage	Due to low water reservoir	01 December 1956	3,223
LUZON	HYD	Calayaan 1	14	17-Mar-23	19-Apr-23	27.68	Planned Outage	Planned outage until March 26 2023.	01 October 2002	8,032
LUZON	HYD	Magat 2	97	16-Mar-23	20-Apr-23	35.88	Planned Outage	Planned outage until April 20 2023.	01 August 1983	10,332
LUZON	HYD	Magat 1	97	16-Mar-23	20-Apr-23	35.81	Planned Outage	Planned outage until April 20 2023.	01 August 1983	10,312
LUZON	HYD	Binga 4	35	16-Feb-23	02-Mar-23	13.68	Planned Outage	Planned Outage.	01 January 1960	3,941
LUZON	HYD	Binga 3	35	16-Feb-23	01-Mar-23	13.49	Planned Outage	Planned Outage.	01 January 1960	3,885
LUZON	HYD	Kalayaan 4	180	02-Feb-23	24-Feb-23	22.62	Forced Outage	Heavy water leak at spherical valve trunnion.	01 May 2004	6,514
LUZON	HYD	Kalayaan 3	180	02-Feb-23	25-Feb-23	23.43	Forced Outage	Heavy water leak at spherical valve trunnion.	01 May 2004	6,562
LUZON	HYD	Angat M 4	50	14-Feb-22		364.00	Planned Outage	Planned Outage.	01 October 1967	52,416
LUZON	HYD	Angat M 3	50	02-Nov-21		364.00	Forced Outage	Draw-out of Main Unit 3 generator breaker.	01 October 1967	52,416
LUZON	HYD	Kalayaan 1	180	28-Nov-23		27.00	Maintenance Outage	Maintenance outage.	01 August 1962	864
LUZON	HYD	Angat M 2	50	06-Nov-23		48.67	Planned Outage	Total Plant shutdown (Planned Outage)	01 October 1967	14,112
LUZON	HYD	Angat M 2	50	06-Nov-23		48.67	Planned Outage	Total Plant shutdown (Planned Outage)(RECLASSIFIED FROM FORCE / OMC OUTAGE)	01 October 1967	1,192
LUZON	HYD	Angat M 1	50	06-Nov-23		48.67	Planned Outage	Total Plant shutdown (Planned Outage)	01 October 1967	14,304
LUZON	HYD	Kalayaan 3	180	26-Sep-23	18-Oct-23	22.97	Planned Outage	Planned outage until October 20 2023.	01 May 2004	6,616
LUZON	HYD	Kalayaan 4	180	04-Sep-23	21-Nov-23	78.96	Planned Outage	Planned outage until November 24 2023.	01 May 2004	22,739
LUZON	HYD	Masiway	12	27-Aug-23	10-Sep-23	13.82	Forced Outage	Cut-off of NAIDR due to heavy rain in down stream area.	01 January 1981	3,981
LUZON	HYD	San Roque 2	145	26-Jun-23	08-Jul-23	11.97	Planned Outage	Planned Outage until July 26 2023.	01 May 2003	3,448
LUZON	HYD	Angat M 4	50	14-Feb-22		364.00	Planned Outage	Planned Outage.	01 October 1967	52,704
LUZON	HYD	Angat M 3	50	02-Nov-21		364.00	Forced Outage	Draw-out of Main Unit 3 generator breaker.	01 October 1967	52,704
LUZON	NATG	Iijan A2	190	08-Jun-23		199.39	Forced Outage	Emergency shutdown due to Blade Path Temperature auto stop.	01 June 2002	5,000
LUZON	NATG	Iijan B3	220	05-Jun-22	31-May-23	156.67	Forced Outage	Under (c) of 1.1.2.2.1.5 of Article I Section 1 (Unit State Classification) of ERC Resolution 17 s2013	01 June 2002	5,684
LUZON	NATG	Iijan B2	190	05-Jun-22	01-Jun-23	157.36	Forced Outage	Under (c) of 1.1.2.2.1.5 of Article I Section 1 (Unit State Classification) of ERC Resolution 17 s2013.	01 June 2002	5,883
LUZON	NATG	Iijan B1	190	02-May-22	31-May-23	156.48	Forced Outage	Under (c) of 1.1.2.2.1.5 of Article I Section 1 (Unit State Classification) of ERC Resolution 17 s2013.	01 June 2002	5,610
LUZON	NATG	Iijan A3	220	13-Feb-23	03-Jun-23	110.01	Forced Outage	Under (c) of 1.1.2.2.1.5 of Article I Section 1 (Unit State Classification) of ERC Resolution 17 s2013	01 June 2002	6,601
LUZON	NATG	Iijan A2	190	13-Feb-23	31-May-23	106.11	Forced Outage	Under (c) of 1.1.2.2.1.5 of Article I Section 1 (Unit State Classification) of ERC Resolution 17 s2013	01 June 2002	5,479
LUZON	NATG	Iijan A1	190	11-Feb-23	02-Jun-23	111.71	Forced Outage	Under (c) of 1.1.2.2.1.5 of Article I Section 1 (Unit State Classification) of ERC Resolution 17 s2013.	01 June 2	

Region	Plant Type	Plant/Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks	Date Commissioned/Commercial Operation	Total No. of Trading Intervals
<b>LUZON</b>										
LUZON	OIL	Ingrid 6	28	09-Jan-23	30-Jan-23	21.00	Planned Outage	Planned outage as per GOP until 2400H of January 29, 2023.	04 October, 2021	6,047
LUZON	OIL	Ingrid 5	22	09-Jan-23	30-Jan-23	21.00	Planned Outage	Planned outage as per GOP until 2400H of January 29, 2023.	04 October, 2021	6,047
LUZON	OIL	Ingrid 4	22	09-Jan-23	30-Jan-23	21.00	Planned Outage	Planned outage as per GOP until 2400H of January 29, 2023.	04 October, 2021	6,047
LUZON	OIL	Ingrid 3	22	09-Jan-23	30-Jan-23	21.00	Planned Outage	Planned outage as per GOP until 2400H of January 29, 2023.	04 October, 2021	6,047
LUZON	OIL	Ingrid 2	28	09-Jan-23	30-Jan-23	21.00	Planned Outage	Planned outage as per GOP until 2400H of January 29, 2023.	04 October, 2021	6,047
LUZON	OIL	SLPGC 4	25	10-Feb-22		364.00	Forced Outage	Due to low turbine tube of supply. EMOP deregistration effective on August 25, 2022.	01 March, 2018	52,416
LUZON	OIL	SLPGC 3	25	22-Jan-22		364.00	Forced Outage	Declared unavailable due to turbine tube oil sump metal chips detected. EMOP deregistration effective on August 25, 2022.	01 March, 2018	52,416
LUZON	OIL	MCITPP	25	29-Sep-21		364.00	Forced Outage	Tripped from 141MW due to turbine bearing shaft vibration. EMOP deregistration effective December 26, 2021.	01 January, 1993	43,200
LUZON	OIL	Malaya 1	300	03-May-19		364.00	Forced Outage	Declared unavailable due to motorization of unit generator caused by the non-opening of phase B of PCB 8-05CB08MAL.	01 August, 1975	52,416
LUZON	OIL	Limay 8	90	16-Oct-23	14-Nov-23	29.65	Planned Outage	To conduct B7-Inspection of its Steam Turbine/Generator and cleaning of Main Cooling Water System.	01 December, 1994	8,251
LUZON	OIL	TMO Unit 2	51.5	10-Feb-22	23-Sep-23	12.00	Maintenance Outage	Maintenance outage.	01 November, 2013	3,455
LUZON	OIL	Limay 3	60	07-Aug-23	21-Sep-23	45.00	Planned Outage	To conduct C-inspection (Major Overhauling) until September 20, 2023.	01 May, 1993	12,959
LUZON	OIL	SLPGC 4	25	10-Feb-22		364.00	Forced Outage	Due to low turbine tube of supply. EMOP deregistration effective on August 25, 2022.	01 March, 2018	52,704
LUZON	OIL	SLPGC 3	25	22-Jan-22		364.00	Forced Outage	Declared unavailable due to turbine tube oil sump metal chips detected. EMOP deregistration effective on August 25, 2022.	01 March, 2018	52,704
LUZON	OIL	Malaya 1	300	03-May-19		364.00	Forced Outage	Declared unavailable due to motorization of unit generator caused by the non-opening of phase B of PCB 8-05CB08MAL.	01 August, 1975	52,704
LUZON	SOLR	GIGASOLS 3	50.5	27-Sep-23		88.52	Forced Outage	Affected by the outage of Botoian-Candelaria 69kW line.	05 July, 2021	4,896
LUZON	SOLR	GIGASOLS 3	50.5	27-Sep-23		88.52	Forced Outage	Affected by the outage of Botoian-Candelaria 69kW line.	05 July, 2021	1,877
LUZON	WIND	Caerispisan 1	81	17-Oct-23		68.73	Maintenance Outage	Transformer maintenance.	01 November, 2014	1,093
LUZON	WIND	Caerispisan 1	81	07-Jul-23	27-Jul-23	20.48	Maintenance Outage	Affected by the planned outage of Laoag-Pagudpud(NLREC) Wind Farm 115kW line.	01 November, 2014	5,803
LUZON	WIND	BWPC	80	06-Jul-23	31-Jul-23	25.25	Maintenance Outage	Maintenance until July 30, 2023.	01 March, 2021	7,272
<b>VISAYAS</b>										
VSAYAS	BAT	Kabankalan Bat	20	19-Apr-23		249.36	Forced Outage	Auto-tripped due to Damaged 13.8kV PCB	26 January, 2022	19,399
VSAYAS	BAT	Kabankalan Bat	20	19-Apr-23	07-Jul-23	78.70	Forced Outage	Auto-tripped due to Damaged 13.8kV PCB	26 January, 2022	3,266
VSAYAS	BIOP	CABE 1	23.5	16-May-23		222.95	Maintenance Outage	Offline - end of milling.	01 October, 2019	8,913
VSAYAS	BIOP	SCBE	7.4	31-Mar-23		260.55	Maintenance Outage	Offline - ongoing plant testing.	01 February, 2009	2,049
VSAYAS	BIOP	SCBE	7.4	02-Feb-23	16-Mar-23	41.71	Maintenance Outage	Offline - conduct turbine inspection.	01 February, 2009	12,013
VSAYAS	BIOP	South Negros	25	12-Dec-22	20-Jun-23	176.52	Forced Outage	Offline due to unavailability of bagasse.	12 September, 2019	50,837
VSAYAS	BIOP	SCBE	7.4	06-May-22	13-Jan-23	18.45	Forced Outage	Offline due to internal problem	01 February, 2009	5,312
VSAYAS	BIOP	South Negros	25	08-Dec-23		16.98	Maintenance Outage	Weekly maintenance.	12 September, 2019	5,178
VSAYAS	BIOP	NTNEGB 1	25	09-Dec-23		18.57	Forced Outage	Shutdown due to tube leak.	01 October, 2019	5,637
VSAYAS	COAL	Keppo 3	9.5	27-Nov-23		27.62	Maintenance Outage	Weekly maintenance.	01 November, 2010	5,865
VSAYAS	BIOP	HPCO 2	9.5	20-Oct-23	13-Nov-23	24.35	Maintenance Outage	Weekly maintenance.	01 February, 2015	3,078
VSAYAS	BIOP	HPCO	9.5	25-Sep-23		90.71	Maintenance Outage	Offline - weekly maintenance.	01 February, 2015	1,069
VSAYAS	COAL	TPC-Sang 1	82	24-Jun-23		184.00	Forced Outage	Cut-out to facilitate boiler tube leak problem	01 October, 2015	576
VSAYAS	COAL	TPC-Sang 3	40.36	19-Jul-22		364.00	Forced Outage	MANUALLY CUT-OUT TPC SANGI TG4 DUE TO INSUFFICIENT STEAM SUPPLY AFTER SYNCHRONIZATION OF TGS AT 1510H	01 October, 2015	6,336
VSAYAS	COAL	TPC-Sang 2	20.38	19-Jul-22		364.00	Forced Outage	MANUALLY CUT-OUT TPC SANGI TG4 DUE TO INSUFFICIENT STEAM SUPPLY AFTER SYNCHRONIZATION OF TGS AT 1510H	01 October, 2015	6,336
VSAYAS	COAL	PEDC 1	83.7	21-Apr-23	09-May-23	16.63	Maintenance Outage	Under PMS	01 April, 2011	3,938
VSAYAS	COAL	PEDC 2	83.7	21-Apr-23		247.95	Planned Outage	Under PMS	01 April, 2011	1,426
VSAYAS	COAL	PEDC 1	83.7	20-Feb-23	27-Apr-23	66.11	Forced Outage	Affected by a Grid disturbance at 1106H	01 November, 2010	17,650
VSAYAS	COAL	PALM 1	135	20-Feb-23	30-Apr-23	69.03	Forced Outage	Affected by a Grid disturbance at 1106H	01 August, 2016	19,880
VSAYAS	COAL	PEDC 3	150	14-Feb-23	17-Mar-23	31.83	Forced Outage	Under investigation	01 December, 2016	9,168
VSAYAS	COAL	Malibog 1	83.7	23-Jan-23	11-Feb-23	18.97	Forced Outage	PMS	01 November, 2010	5,865
VSAYAS	COAL	THM 2	169	15-Jan-23	11-Feb-23	27.62	Planned Outage	APMS ECD 02-09-23 0000H	01 September, 2019	7,565
VSAYAS	COAL	TPC-Sang 1	82	18-Nov-23	07-Dec-23	19.67	Forced Outage	EMERGENCY SHUTDOWN DUE TO SUSPECTED BOILER TUBE LEAK	01 October, 2015	5,684
VSAYAS	COAL	Keppo Salcon 2	103	06-May-23	05-Nov-23	182.59	Forced Outage	MANUALLY SHUTDOWN DUE TO BOILER TUBE LEAK	01 March, 2011	123
VSAYAS	COAL	CECD 1	82	28-Oct-23	18-Nov-23	21.00	Planned Outage	UNIT CUT-OUT FROM THE SYSTEM TO FACILITATE ANNUAL PMS MAJOR OVERHAUL (GOMP & MAINTENANCE OUTAGE); ECD: 11/17/2023 0000H	01 April, 2010	5,473
VSAYAS	COAL	CECD 1	82	28-Oct-23		58.00	Planned Outage	UNIT CUT-OUT FROM THE SYSTEM TO FACILITATE ANNUAL PMS MAJOR OVERHAUL (GOMP & MAINTENANCE OUTAGE); ECD: 11/17/2023 0000H	01 April, 2010	288
VSAYAS	COAL	Keppo Salcon 2	103	06-May-23		190.30	Forced Outage	MANUALLY SHUTDOWN DUE TO BOILER TUBE LEAK	01 January, 2011	208
VSAYAS	COAL	CECD 3	82	29-Sep-23		86.24	Forced Outage	Manually shutdown due to possible boiler tube leak	01 January, 2011	208
VSAYAS	COAL	Keppo Salcon 2	103	16-Sep-23	21-Oct-23	35.29	Planned Outage	Manually shutdown for scheduled APMS Duration 40 Days	01 March, 2011	9587
VSAYAS	COAL	CECD 2	82	04-Sep-23	04-Oct-23	30.13	Planned Outage	AMPS - Conduct of Major Turbine Overhaul(MOH) in accordance with the Approved 2023 GOMP Harmonization	01 June, 2010	8678
VSAYAS	COAL	Keppo Salcon 1	103	02-Aug-23	06-Sep-23	35.39	Planned Outage	APMS	01 November, 2010	10,192
VSAYAS	GEO	Upper Mahiao 2	32	28-Apr-23	19-Jun-23	51.42	Maintenance Outage	Due to reverse power	01 July, 1997	14810
VSAYAS	GEO	Malibog 2	73	21-Jan-23		337.99	Maintenance Outage	CUT OUT	01 July, 1997	49,626
VSAYAS	GEO	Upper Mahiao 2	32	23-Nov-22	30-Mar-23	94.67	Maintenance Outage	Emergency shutdown due to problem in control valve	01 July, 1997	27,263
VSAYAS	GEO	Leyte 2	39.3	12-Oct-23		73.70	Maintenance Outage	Scheduled total plant shutdown and load rejection testing.	01 June, 1983	288
VSAYAS	GEO	PGPPI Unit 2	37.47	21-Nov-23		34.00	Maintenance Outage	PGPPI U2 tripped due to tripping of hot well pump during shutdown process. Scheduled total plant shutdown at 0000H.	01 August, 1983	10,080
VSAYAS	GEO	Leyte 3	40.2	08-Nov-23	19-Nov-23	11.16	Maintenance Outage	Due to steam deficiency.	01 June, 1983	3,214
VSAYAS	GEO	Malibog 3	72	22-Oct-23	01-Nov-23	10.74	Maintenance Outage	Minor PMS	01 July, 1997	3,093
VSAYAS	GEO	PGPPI Unit 3	35.5	18-Oct-23	02-Dec-23	45.63	Maintenance Outage	Planned maintenance activity	01 August, 1983	13,146
VSAYAS	GEO	PGPPI Unit 2	37.47	14-Sep-23	23-Oct-23	39.77	Maintenance Outage	Planned maintenance	01 August, 1983	11,452
VSAYAS	GEO	PGPPI Unit 1	37.5	11-Aug-23	07-Sep-23	27.26	Maintenance Outage	Shutdown due to PMS.	01 August, 1983	7,859
VSAYAS	GEO	Malibog 2	72	21-Jan-23	29-Jun-23	159.04	Maintenance Outage	CUT OUT	01 July, 1997	8767
VSAYAS	HYD	THC 1	15.9	23-Oct-23	09-Nov-23	16.98	Forced Outage	Affected by the auto-tripping of 69kV Taft Feeder	24 February, 2023	127
VSAYAS	HYD	THC	15.9	23-Oct-23		62.54	Forced Outage	Affected by the auto-tripping of 69kV Taft Feeder	24 February, 2023	4476
VSAYAS	HYD	THC	15.9	22-Aug-23		126.43	Forced Outage	Affected by the tripping of 69kV Taft feeder	24 February, 2023	893
VSAYAS	OIL	TPV1.3	6.8	23-Mar-23	10-Apr-23	17.92	Forced Outage	Emergency cut-out due to main bearing temperature high	01 August, 1977	5181
VSAYAS	OIL	TPV1.3	6.8	09-Feb-23	21-Mar-23	39.73	Forced Outage	EMERGENCY CUT-OUT DUE TO GAS LEAK AT HORIZONTAL BELLOWAS A8	01 August, 1977	11,444
VSAYAS	OIL	TPV1.3	6.8	12-Oct-22	09-Feb-23	45.90	Forced Outage	UNIT TRIPPED DUE TO ERRATIC MAIN BEARING NO. 7 SUDDEN HIGH TEMPERATURE INDICATION	01 August, 1977	13,219
VSAYAS	OIL	TPV1.1	6.7	12-Dec-22	02-Feb-23	38.59	Forced Outage	EMERGENCY CUT-OUT DUE TO HEAVY WATER LEAK AT CHARGE-AIR COOLING WATER RETURN PIPELINE	01 August, 1977	11,114
VSAYAS	OIL	PB101 Unit 1	6	15-Nov-22	30-Jan-23	35.68	Maintenance Outage	Extended maintenance outage	26 February, 2022	10,276
VSAYAS	OIL	CPCC 9	6.5	11-Dec-23	25-Dec-23	14.00	Planned Outage	Scheduled PMS	26 June, 2021	2,304
VSAYAS	OIL	CPCC 7	6.5	11-Dec-23		14.00	Planned Outage	Scheduled PMS ECD December 17, 2023 0001H	26 June, 2021	2,304
VSAYAS	OIL	CPCC 7	6.5	17-Nov-23		37.67	Planned Outage	On PMS ECD Dec. 11, 2023	26 June, 2021	2,992
VSAYAS	OIL	East Asia 1	11.5	10-Nov-23		44.21	Maintenance Outage	On PMS - ECD Nov. 12, 2023 1900H	26 June, 2021	349
VSAYAS	OIL	Isabel 5	15.1	05-Nov-23		49.49	Forced Outage	Due to fuel system failure.	21 March, 2022	718
VSAYAS	OIL	Isabel 4	10.17	05-Nov-23		49.49	Forced Outage	Due to fuel system failure.	21 March, 2022	2,189
VSAYAS	OIL	PB101 Unit 4	6	25-Oct-23		60.22	Forced Outage	Auto-tripped due to line fault.	01 January, 1978	2,979
VSAYAS	OIL	PB101 Unit 1	6	25-Oct-23		60.22	Forced Outage	Auto-tripped due to line fault.	01 January, 1978	2,969
VSAYAS	OIL	PDPP3 C	12	28-Sep-23		87.27	Forced Outage	cut off allen bolt of exhaust flange cyl b3	01 March, 2005	783
VSAYAS	OIL	PDPP3 H	13	26-Sep-23		89.32	Forced Outage	Excessive water leak Cyl A1	01 March, 2005	93
VSAYAS	OIL	CPCC 7	6.5	02-Sep-23	16-Sep-23	14.55	Planned Outage	Preventive Maintenance ECD September 19, 2023	26 June, 2021	4191
VSAYAS	WIND	SLWind	54	05-Jul-23		172.65	Maintenance Outage	Conducted preventive maintenance	01 December, 2014	16,235
<b>MINDANAO</b>										
MINDANAO	BAT	MACO BAT1	20	28-Sep-23		87.50	Forced Outage	Trip while generating/sending to the Grid by 20MW.	25 August, 2023	576
MINDANAO	BAT	MACO BAT1	20	28-Sep-23		87.50	Forced Outage	Trip while generating/sending to the Grid by 20MW.	25 August, 2023	1,298
MINDANAO	BIOP	BFI B10MASS U1	5.7	19-May-23	10-Jun-23	21.40	Forced Outage	FO due to induced draft fan problem. ETC June 10, 2023	08 May, 2018	6,164
MINDANAO	BIOP	14TACUR	6	22-Apr-23	08-May-23	15.70	Forced Outage	SPGI was not able to start (from unplanned outage) due to boiler problem.	18 August, 2021	4,522
MINDANAO	BIOP	14TACUR	6	08-Feb-23	27-Mar-23	47.98	Maintenance Outage	PMS (Non-GOMP), ETC March 11, 2023.	18 August, 2021	138,116
MINDANAO	BIOP	LBPOWER U1	6	05-Dec-23		20.00	Forced Outage	Maintenance of feed pump, ETC 7 Dec 2023 2359.	30 September, 2022	288
MINDANAO	BIOP	LBPOWER U1	6	05-Dec-23		20.00	Maintenance Outage	Maintenance of feed pump, ETC 7 Dec 2023 2359.	30 September, 2022	576
MINDANAO	BIOP	14TACUR	6	17-Nov-23		37.32	Forced Outage	Emergency tripped initiated by the plant due to strong earthquake.	18 August, 2021	382
MINDANAO	BIOP	LSK U1	15	01-Nov-23	16-Nov-23	15.50	Forced Outage	Online from Outside Management Control due to fuel shortage. ETC November 16, 2023.	01 May, 2018	1143
MINDANAO	BIOP	BFI B10MASS U1	5.7	05-Nov-23	16-Nov-23	11.34	Maintenance Outage	PMS (Non-GOMP), ETC Nov. 15, 2023. Expected time to cut-in at 0000H of Nov. 16, 202		

Region	Plant Type	Plant/Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks	Date Commissioned/ Commercial Operation	Total No. of Trading Intervals
<b>MINDANAO</b>										
MINDANAO	COAL	FMP U2	135	01-Feb-22	16-May-23	141.74	Forced Outage	Extended PMS, ETC May 05 2023.	17 October, 2016	14802
MINDANAO	COAL	GNPK U3	151.3	23-Mar-23	07-Apr-23	15.06	Forced Outage	Manually shutdown due to suspected Boiler Tube Leak. ETC None.	03 December, 2019	4343
MINDANAO	COAL	RFP U3	135	17-Feb-23	15-Mar-23	29.39	Forced Outage	Emergency shutdown due to tube leak of boiler air pre-heater primary air fan system. ETC March 15 2023.	17 October, 2016	7801
MINDANAO	COAL	MCC U3	55	28-Jan-23	23-May-23	115.03	Maintenance Outage	Maintenance schedule (Non-GOP) from January 28 to March 13 2023 extended until May 29 2023.	01 September, 2017	29671
MINDANAO	COAL	GNPK U1	151.9	26-Jan-23	25-Mar-23	57.03	Forced Outage	A Non-Nomination	01 May, 2019	16423
MINDANAO	COAL	GNPK U4	151.4	19-Jan-23	16-Feb-23	27.85	Forced Outage	A Non-Nomination	01 October, 2020	6127
MINDANAO	COAL	GNPK U3	151.3	29-Nov-22	26-Jan-23	31.68	Forced Outage	A Non-Nomination	03 December, 2019	136
MINDANAO	COAL	FMP U2	135	01-Feb-22	16-May-23	364.00	Forced Outage	Extended PMS, ETC April 16 2023.	17 October, 2016	13824
MINDANAO	COAL	SMF1 U1	118.5	13-Dec-23	11-14	Forced Outage	Forced outage. Tripped with a 30.31MW load. Cause Turbine High Vibration.	15 June, 2021	576	
MINDANAO	COAL	SMF1 U1	118.5	13-Dec-23	11-14	Forced Outage	SEC 1 (SMF1) tripped with a 30.31MW load. Cause Turbine High Vibration. (Unplanned Outage).	15 June, 2021	2921	
MINDANAO	COAL	SMF1 U1	118.5	03-Dec-23	13-Dec-23	10.19	Forced Outage	Cut-in from FO. Unplanned Outage. Cause Turbine High vibration.	15 June, 2021	216
MINDANAO	COAL	SMF1 U1	118.5	03-Dec-23	21-44	Forced Outage	Unplanned Outage. Cause Turbine High vibration.	15 June, 2021	2719	
MINDANAO	COAL	SMF1 U1	118.5	29-Nov-22	26.00	Forced Outage	PMS (GOMP), ETC Nov. 28 2023. Extended ETC Nov. 30 2023.	15 June, 2021	576	
MINDANAO	COAL	SMF1 U1	118.5	29-Nov-22	25.65	Forced Outage	MCC COAL (MCC Balingasag) tripped. Indication Earth switch close feedback. Unplanned Outage.	01 September, 2017	1052	
MINDANAO	COAL	SMF1 U1	118.5	07-Nov-22	47.50	Planned Outage	PMS (GOMP), ETC Nov. 28 2023. Extended ETC Nov. 30 2023.	15 June, 2021	288	
MINDANAO	COAL	MCC U1	55	18-Nov-23	28-Nov-23	10.11	Forced Outage	Unplanned Outage. Tube leak at superheater of the boiler.	01 September, 2017	2677
MINDANAO	COAL	MCC U1	55	18-Nov-23	36.82	Forced Outage	Unplanned Outage. Initial cause suspected tube leak at superheater.	01 September, 2017	236	
MINDANAO	COAL	STE U1	116	07-Nov-23	48.00	Planned Outage	PMS (GOMP), ETC November 13 2023.	12 October, 2021	864	
MINDANAO	COAL	SMF1 U1	118.5	07-Nov-23	47.50	Planned Outage	PMS (GOMP), ETC November 28 2023.	15 June, 2021	5194	
MINDANAO	COAL	GNPK U1	151.9	03-Nov-23	19.29	Planned Outage	PMS (GOMP), ETC November 22 2023.	02 December, 2019	3348	
MINDANAO	COAL	SMF1 U1	118.5	07-Nov-23	47.50	Planned Outage	Planned Outage. PMS (GOMP) ETC 11.28.2023 2359H	15 June, 2021	721	
MINDANAO	COAL	STE U1	116	07-Nov-23	48.00	Planned Outage	Planned outage - GOMP. ETC Nov 13 2023 at 2359H.	12 October, 2021	864	
MINDANAO	COAL	GNPK U2	151	03-Nov-23	51.67	Planned Outage	PMS (GOMP REV. 03), ETC 11-22-2023 2359H.	02 December, 2019	1152	
MINDANAO	COAL	GNPK U2	151	03-Nov-23	51.67	Planned Outage	PMS (GOMP REV. 03), ETC 11-22-2023 2359H.	02 December, 2019	768	
MINDANAO	COAL	MAKITA CFTPP	149.9	01-Nov-23	54.00	Maintenance Outage	PMS (Non-GOMP), ETC: 05 Nov. 2023	26 July, 2017	298	
MINDANAO	COAL	GNPK U1	151.9	20-Sep-23	24-Oct-23	34.15	Planned Outage	PMS (Non-GOMP) ETC: October 30 2023. Completed October 24 2023 1352H.	01 May, 2019	8166
MINDANAO	COAL	MCC U1	55	28-Sep-23	17-Oct-23	19.42	Maintenance Outage	Online from PMS (Non-GOMP). ETC: October 17 2023.	01 September, 2017	123
MINDANAO	COAL	SMF2 U2	118.5	11-Oct-23	74.00	Planned Outage	PMS (GOMP), ETC November 1 2023.	15 June, 2021	1440	
MINDANAO	COAL	SMF2 U2	118.5	11-Oct-23	74.00	Planned Outage	PMS (GOMP), ETC: November 1 2023.	15 June, 2021	4320	
MINDANAO	COAL	SMF2 U2	118.5	11-Oct-23	74.00	Planned Outage	PMS(GOMP), ETC: November 1 2023.	15 June, 2021	1	
MINDANAO	COAL	DCPP Unit 1	151.4	17-Sep-23	11-Oct-23	24.44	Planned Outage	PMS (GOMP), ETC: October 11 2023.	18 September, 2015	707
MINDANAO	COAL	SMF1 U1	118.5	20-Sep-23	90.00	Planned Outage	PMS (GOMP) ETC: October 30 2023.	01 September, 2017	1122	
MINDANAO	COAL	STE U2	116	01-Oct-23	84.14	Forced Outage	Emergency shutdown due to Boiler Fouling. No ETC.	12 October, 2021	1152	
MINDANAO	COAL	STE U1	116	01-Oct-23	84.14	Forced Outage	Emergency shutdown due to Boiler Fouling. No ETC.	12 October, 2021	288	
MINDANAO	COAL	GNPK U1	151.9	20-Sep-23	95.57	Maintenance Outage	PMS (Non-GOMP) ETC October 30 2023.	01 May, 2019	2502	
MINDANAO	COAL	STE U2	116	01-Oct-23	84.14	Forced Outage	Emergency shutdown due to Boiler Fouling. (Unplanned Outage).	12 October, 2021	40	
MINDANAO	COAL	MCC U1	55	28-Sep-23	87.99	Maintenance Outage	PMS (Non-GOMP), ETC: October 17 2023.	01 September, 2017	3198	
MINDANAO	COAL	MCC U1	55	28-Sep-23	87.99	Maintenance Outage	PMS (Non-GOMP), ETC: October 17 2023.	01 September, 2017	1728	
MINDANAO	COAL	MCC U1	55	28-Sep-23	87.99	Maintenance Outage	Planned Outage. Non-GOMP. ETC October 17 2023.	01 September, 2017	287	
MINDANAO	COAL	DCPP Unit 2	150	22-Aug-23	26-Sep-23	35.35	Maintenance Outage	Synchronized back from Planned Outage. PMS ETC 10/21/2023 2359H.	02 February, 2016	104
MINDANAO	COAL	GNPK U1	151.9	20-Sep-23	95.57	Maintenance Outage	Planned Outage. (PMS) ETC 10/30/2023 2359H.	01 May, 2019	2880	
MINDANAO	COAL	GNPK U1	151.9	20-Sep-23	96.00	Maintenance Outage	Planned Outage. (PMS) ETC 10/30/2023 2359H.	01 May, 2019	576	
MINDANAO	COAL	FMP U3	135	17-Sep-23	14.80	Planned Outage	PMS (GOMP), ETC October 02 2023.	17 October, 2016	4281	
MINDANAO	COAL	FMP U3	135	17-Sep-23	90.90	Planned Outage	PMS (GOMP), ETC October 11 2023.	18 September, 2015	6332	
MINDANAO	COAL	MCC U2	55	01-Sep-23	11-Sep-23	10.99	Maintenance Outage	PMS (Non-GOMP), ETC September 20 2023	01 September, 2017	3165
MINDANAO	COAL	FMP U1	135	26-Aug-23	08-Sep-23	13.76	Planned Outage	PMS (GOMP), ETC September 9 2023	17 October, 2016	3961
MINDANAO	COAL	DCPP Unit 2	150	22-Aug-23	124.98	Maintenance Outage	Planned Outage. PMS ETC 10/01/2023 2359H	02 February, 2016	10076	
MINDANAO	COAL	STE U2	116	20-Jul-23	06-Aug-23	18.00	Planned Outage	For PMS(GOMP), ETC August 6 2023	12 October, 2021	5194
MINDANAO	COAL	STE U1	116	04-Jul-23	01-Aug-23	28.34	Planned Outage	PMS(GOMP) ETC July 31 2023.	12 October, 2021	6166
MINDANAO	GEO	MTAPO 1	50	05-Dec-22	22-Dec-22	17.85	Planned Outage	Cut in from PMS (GOMP).	01 December, 1996	245
MINDANAO	GEO	MTAPO 1	50	05-Dec-22	20.00	Planned Outage	PMS (GOMP), ETC 22 Dec 2023 2359H.	01 December, 1996	4896	
MINDANAO	HYD	PG4 U3	75	24-Jun-23	183.67	Maintenance Outage	PMS(Non-GOMP) starting 06/24/2023 0800H unit was on forced outage prior. ETC 06/28/2023.	01 December, 1985	288	
MINDANAO	HYD	PG4 U3	75	24-Jun-23	Forced Outage	Forced outage. Indication high cold air temperature. No ETC.	01 December, 1985	192		
MINDANAO	HYD	PG4 U2	75	03-Jun-23	23-Jun-23	20.22	Planned Outage	PMS (GOMP), ETC June 25 2023	01 December, 1985	5624
MINDANAO	HYD	AG6 U1	31.5	24-May-23	214.30	Forced Outage	Emergency shutdown due to governor oil pump failure. Unplanned Outage	03 July, 1953	3303	
MINDANAO	HYD	AG4 U3	52.7	23-May-23	02-Jun-23	10.13	Planned Outage	PMS(GOMP), ETC July 7 2023.	01 March, 1985	2017
MINDANAO	HYD	AG6 U2	31.1	11-Apr-23	06-May-23	25.03	Planned Outage	PMS (GOMP), ETC May 8 2023.	03 July, 1953	7209
MINDANAO	HYD	PG4 U1	75	23-Mar-23	04-May-23	42.34	Planned Outage	APMS(GOMP), ETC 05/06/2023 at 0759H.	01 December, 1985	11413
MINDANAO	HYD	AG2 U2	60	01-Apr-23	59.20	Maintenance Outage	Cut-in (Test and Commissioning) from PMS(Non-GOMP), ETC March 31 2023.	02 February, 1985	1902	
MINDANAO	HYD	13DVAQ0	52.2	21-Mar-23	03-Apr-23	13.20	Maintenance Outage	SIBULAN B Unit 1 & Unit 2 on PMS. ETC April 3 2023.	16 February, 2014	3802
MINDANAO	HYD	AG6 U1	6.6	13-Mar-23	02-Apr-23	20.50	Maintenance Outage	PMS (Non-GOMP), ETC April 03 2023 0700H.	25 September, 2001	16532
MINDANAO	HYD	AG1 U1	35	03-Mar-23	17-Mar-23	14.52	Planned Outage	PMS(GOMP), ETC March 17 2023.	01 June, 1992	4183
MINDANAO	HYD	AG6 U1	31.5	24-Feb-23	303.62	Maintenance Outage	PMS(Non-GOMP), ETC Feb.28.2023.	03 July, 1953	467	
MINDANAO	HYD	AG1 U2	35	16-Feb-23	02-Mar-23	14.37	Planned Outage	PMS (GOMP), ETC March 02 2023.	01 June, 1979	4137
MINDANAO	HYD	AG2 U1	60	01-Feb-23	30-Mar-23	56.89	Maintenance Outage	PMS(Non-GOMP), ETC March 31 2023	01 March, 1985	16385
MINDANAO	HYD	AG2 U2	60	01-Feb-23	326.60	Maintenance Outage	PMS(Non-GOMP), ETC March 31 2023	02 February, 1985	15149	
MINDANAO	HYD	AG6 U1	60	01-Feb-23	57.51	Maintenance Outage	PMS(Non-GOMP), ETC March 31 2023	03 July, 1953	16532	
MINDANAO	HYD	AG7 U1	26.1	05-Nov-23	20-Dec-23	45.36	Planned Outage	Planned Outage - PMS (GOMP)	01 March, 1985	210
MINDANAO	HYD	AG6 U4	25	20-Nov-23	19-Dec-23	29.62	Planned Outage	PMS (GOMP), ETC December 19 2023. Forced Outage starting December 20 2023 /0001H - requested extension to December 21 2023.	03 July, 1953	287
MINDANAO	HYD	AG1 U1	35	01-Dec-23	23.66	Planned Outage	PMS (GOMP), ETC December 30 2023.	01 June, 1992	3744	
MINDANAO	HYD	PG4 U2	75	11-Dec-23	13.67	Planned Outage	Planned outage - GOMP. ETC December 17 2023 2359H.	01 December, 1985	480	
MINDANAO	HYD	AG6 U2	27.5	28-Nov-23	08-Dec-23	10.46	Planned Outage	Online. PMS (GOMP), ETC December 13 2023.	02 February, 1985	228
MINDANAO	HYD	AG6 U1	27.5	28-Nov-23	23.66	Planned Outage	AG6 U2 Unit 2 HEF tripped. Indication 86T Trip.	02 February, 1985	3359	
MINDANAO	HYD	AG1 U1	35	01-Dec-23	23.66	Planned Outage	PMS(GOMP), ETC December 30 2023.	01 June, 1992	1152	
MINDANAO	HYD	AG6 U2	27.5	28-Nov-23	26.66	Planned Outage	PMS (GOMP), ETC December 13 2023.	02 February, 1985	2784	
MINDANAO	HYD	PG4 U3	75	26-Nov-23	28.75	Planned Outage	Drawdown activity (GOMP). (Planned Outage)	01 December, 1985	504	
MINDANAO	HYD	AG6 U1	27.5	08-Nov-23	21-Nov-23	13.21	Planned Outage	Synchronized back from PMS (GOMP), ETC November 23 2023.	02 February, 1985	157
MINDANAO	HYD	AG6 U1	25	20-Nov-23	34.62	Planned Outage	PMS (GOMP), ETC December 19 2023.	03 July, 1953	8244	
MINDANAO	HYD	SB1 B U1	14	17-Nov-23	37.62	Forced Outage	Manually shutdown. To facilitate plant runner inspection. Follow RTD.	16 February, 2014	468	
MINDANAO	HYD	MNI U3	15.45	06-Nov-23	48.70	Planned Outage	PMS (GOMP), ETC November 17 2023.	02 July, 2018	1152	
MINDANAO	HYD	TU2 U2	8.1	10-Nov-23	44.78	Forced Outage	Due to insufficient Water Supply. Outside Management Control Outage.	19 February, 2014	288	
MINDANAO	HYD	TU2 U2	8.1	10-Nov-23	44.78	Forced Outage	Forced outage due to insufficient Water Supply. Unplanned Outage.	19 February, 2014	225	
MINDANAO	HYD	APC G01	24.8	03-Nov-23	51.33	Maintenance Outage	PMS (Non-GOMP), ETC November 13 2023.	28 July, 2023	576	
MINDANAO	HYD	AG7 U1	26.1	05-Nov-23	49.62	Planned Outage	PMS (GOMP), ETC December 31 2023.	01 March, 1983	1152	
MINDANAO	HYD	AG6 U1	27.5	08-Nov-23	46.67	Planned Outage	PMS (GOMP), ETC November 23 2023.	02 February, 1985	2880	
MINDANAO	HYD	AG4 U3	52.7	06-Nov-23	48.67	Planned Outage	PMS (GOMP), ETC November 14 2023.	01 March, 1985	288	
MINDANAO	HYD	AG6 U1	27.5	08-Nov-23	46.67	Planned Outage	Planned outage / GOMP ETC Nov. 23 2023 at 0801H.	02 February, 1985	480	
MINDANAO	HYD	AG4 U3	52.7	06-Nov-23	48.67	Planned Outage	Planned Outage. GOMP ETC 11.14.2023 0801H	01 March, 1985	1056	
MINDANAO	HYD	PG4 U3	75	04-Nov-23	50.67	Planned Outage	PMS (GOMP), ETC 10 Nov 2023 2359H.	01 December, 1985	1152	
MINDANAO	HYD	APC G01	24.8	03-Nov-23	51.33	Maintenance Outage	Planned Outage. Scheduled Equipment Inspection and PMS (Non-GOMP), ETC 11.13.2023 0800H.	28 July, 2023	1152	
MINDANAO	HYD	AG7 U1	26.1	05-Nov-23	49.62	Planned Outage	Planned Outage (GOMP), ETC 12.31.2023 2359H.	01 March, 1983	1332	
MINDANAO	HYD	TALOMO 1 HEP	11.4	05-Nov-23	49.68	Forced Outage	Unplanned Outage. Shutdown due to insufficient water supply (outside management control).	01 October, 1988	196	
MINDANAO	HYD	PG4 U3	75	04-Nov-23						

Region	Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks	Date Commission/ Commercial Operation	Total No. of Trading Intervals
<b>MINDANAO</b>										
MINDANAO	HYD	AG7 U2	15	01-Jul-23	19-Jul-23	18.03	Planned Outage	PMS (GOMP), ETC July 20 2023.	01 March, 1983	5194
MINDANAO	HYD	AG6 U1	31.5	24-May-23		214.30	Forced Outage	Emergency shutdown due to governor oil pump failure. Unplanned Outage.	03 July, 1983	8646
MINDANAO	OIL	WMPC Unit 4	10.7	01-May-23		237.08	Forced Outage	Tripped due to generator earth fault. Unplanned Outage. ETC October 20 2023.	13 December, 2015	8928
MINDANAO	OIL	WMPC Unit 4	10.7	01-May-23		237.08	Forced Outage	Tripped due to generator earth fault. Unplanned Outage. ETC July 24 2023.	13 December, 2015	6937
MINDANAO	OIL	WMPC Unit 4	10.7	02-Apr-23	17-Apr-23	15.14	Forced Outage	Unplanned outage. Indication Generator differential alarm.	13 December, 2015	4361
MINDANAO	OIL	WMPC Unit 5	10.7	09-Mar-23		290.13	Forced Outage	Declared unavailable starting 2100H March 9 2023 due to Cylinder A6 Exhaust Gas Leak. ETC 1600H March 10 2023.	13 December, 2015	37
MINDANAO	OIL	TMI U2	50	01-Dec-23		24.00	Maintenance Outage	PMS (Non-GOMP), ETC Dec. 14 2023. Extended to Dec. 18 2023.	06 February, 2010	864
MINDANAO	OIL	TMI U2	50	01-Dec-23		24.00	Forced Outage	PMS (Non-GOMP), ETC Dec. 14 2023. Extended to Dec. 18 2023.	06 February, 2010	575
MINDANAO	OIL	WMPC Unit 10	10.2	06-Dec-23		18.29	Forced Outage	Forced Outage. Indication Turbo charger shock pulse alarm turbine side.	13 December, 2015	85
MINDANAO	OIL	WMPC Unit 4	10.2	02-Dec-23		22.44	Forced Outage	Declared forced outage due to exhaust gas leak in cylinder A2.	13 December, 2015	127
MINDANAO	OIL	TMI U2	50	01-Dec-23		24.00	Maintenance Outage	PMS (Non-GOMP), ETC December 14 2023.	06 February, 2010	2016
MINDANAO	OIL	WMPC Unit 10	10.2	01-Dec-23		24.00	Forced Outage	Extended GOMP Outage. No ETC.	13 December, 2015	1440
MINDANAO	OIL	TMI U2	50	01-Dec-23		24.00	Forced Outage	PMS (Non-GOMP), ETC December 14 2023.	06 February, 2010	1728
MINDANAO	OIL	WMPC Unit 4	10.2	20-Nov-23		34.57	Forced Outage	Tripped due to High Temp. Low Pressure (HTLP) Stop.	13 December, 2015	166
MINDANAO	OIL	WMPC Unit 4	10.2	17-Nov-23		37.56	Forced Outage	Forced Outage. Indication Oil Mist Concentration High Stop.	13 December, 2015	450
MINDANAO	OIL	WMPC Unit 4	10.2	08-Nov-23		46.62	Forced Outage	Forced Outage Indication HT water leak. No ETC.	13 December, 2015	1152
MINDANAO	OIL	WMPC Unit 4	10.2	08-Nov-23		46.62	Forced Outage	Forced Outage Indication HT water leak.	13 December, 2015	288
MINDANAO	OIL	WMPC Unit 10	10.2	16-Oct-23	30-Nov-23	46.00	Planned Outage	PMS (GOMP), ETC November 30 2023.	13 December, 2015	6047
MINDANAO	OIL	WMPC Unit 10	10.2	16-Oct-23		70.00	Planned Outage	PMS (GOMP), ETC 30 Nov, 2023.	13 December, 2015	1152
MINDANAO	OIL	WMPC Unit 10	10.7	16-Oct-23		70.00	Planned Outage	PMS (GOMP), ETC 30 Nov, 2023.	13 December, 2015	864
MINDANAO	OIL	WMPC Unit 10	10.7	16-Oct-23		70.00	Planned Outage	PMS (GOMP), ETC November 30 2023.	13 December, 2015	1152
MINDANAO	OIL	WMPC Unit 4	10.7	01-May-23	18-Oct-23	169.58	Forced Outage	Declared available from Forced outage due to generator earth fault. Unplanned Outage. ETC.	13 December, 2015	143
MINDANAO	OIL	WMPC Unit 10	10.7	16-Oct-23		70.00	Planned Outage	PMS (GOMP), ETC: November 30 2023.	13 December, 2015	3168
MINDANAO	OIL	TMI U2	50	17-Oct-23		69.00	Maintenance Outage	PMS (Non-GOMP), ETC 10/19/2023 2359H.	01 March, 2010	576
MINDANAO	OIL	MEG U2	6.4	09-Oct-23		77.00	Maintenance Outage	PMS (Non-GOMP), ETC: October 23 2023	01 December, 2014	864
MINDANAO	OIL	MEG U1	6.4	02-Oct-23		84.00	Maintenance Outage	PMS (Non-GOMP), ETC: October 13 2023 extended until October 23 2023.	01 December, 2014	288
MINDANAO	OIL	MEG U1	6.4	02-Oct-23		84.00	Maintenance Outage	PMS (Non-GOMP), ETC: October 13 2023 extended until October 23 2023.	01 December, 2014	1152
MINDANAO	OIL	WMPC Unit 5	10.7	06-Oct-23		79.45	Forced Outage	Tripped due to turbo charger B-bank vibration alarm. Unplanned Outage. No ETC.	13 December, 2015	576
MINDANAO	OIL	WMPC Unit 4	10.7	01-May-23		237.08	Forced Outage	Tripped due to generator earth fault. Unplanned Outage. ETC: October 20 2023.	13 December, 2015	864
MINDANAO	OIL	TMI U1	12	12-Oct-23		74.00	Maintenance Outage	PMS (Non-GOMP), ETC: October 16 2023 2359H	01 March, 2010	576
MINDANAO	OIL	WMPC Unit 4	10.2	02-Oct-23		237.08	Forced Outage	Tripped due to generator earth fault. Unplanned Outage. ETC: October 20 2023.	13 December, 2015	864
MINDANAO	OIL	WMPC Unit 5	10.2	06-Oct-23		79.45	Forced Outage	Tripped due to turbo charger B-bank vibration alarm. Unplanned Outage. No ETC.	13 December, 2015	1152
MINDANAO	OIL	WMPC Unit 5	10.2	06-Oct-23		79.45	Forced Outage	Tripped due to turbo charger B-bank vibration alarm. Unplanned Outage.	13 December, 2015	864
MINDANAO	OIL	WMPC Unit 5	10.2	06-Oct-23		79.44	Forced Outage	WMPC declared unavailable.	13 December, 2015	128
MINDANAO	OIL	WMPC Unit 10	10.2	04-Oct-23		81.39	Forced Outage	Emergency shutdown due to found out exhaust gas leak for further verification. Unplanned Outage.	13 December, 2015	114
MINDANAO	OIL	WMPC Unit 4	10.2	01-May-23		237.08	Forced Outage	Tripped due to generator earth fault. Unplanned Outage. ETC: October 20 2023.	13 December, 2015	5472
MINDANAO	OIL	WMPC Unit 10	10.7	31-Jul-23	16-Aug-23	16.09	Forced Outage	Tripped due to waterleak. Unplanned Outage. No ETC.	13 December, 2015	4922
MINDANAO	OIL	WMPC Unit 4	10.7	01-May-23		237.08	Forced Outage	Tripped due to generator earth fault. Unplanned Outage. ETC: October 20 2023.	13 December, 2015	25632
MINDANAO	SOLR	ADG U0	25	17-Aug-23		129.18	Forced Outage	Unable to generate due to damage main switchgear at line 1. Unplanned Outage. No ETC.	01 December, 2019	6048
MINDANAO	SOLR	ADG U0	20	17-Aug-23	21-Dec-23	125.89	Forced Outage	Unable to generate due to damage main switchgear at line 1 to replace feeder cable of line 1. Unplanned Outage. No ETC.	01 December, 2019	30207
MINDANAO	HYD	AG7 U2	15	02-Oct-23		83.62	Planned Outage	PMS (GOMP), ETC: October 8 2023.	01 March, 1983	576
MINDANAO	HYD	AG7 U2	15	02-Oct-23		83.62	Planned Outage	PMS (GOMP), ETC: October 8 2023.	01 March, 1983	756

### Annex B. Plants with Increase/Decrease Capacity, 2023

Plant Type	Market Participant Name	Node ID	Capacity		
			Dec-2023	Feb-2023	Change
<b>New Registered Plants</b>					
BAT	Bataan Solar Energy Inc.	01BTSOLEN_BAT	0.5	0	0.5
	SN Aboitiz Power - Magat, Inc.	01MAGAT_BAT	24	0	24
BIOF	Libertad Power and Energy Corporation	09LIBPOWR_G01	6	0	6
COAL	Mariveles Power Generation Corporation	01MPGC_U01	150	0	150
		01MPGC_U02	150	0	150
GEO	Bac-Man Geothermal Inc.	03PALAYAN_G01	30.97	0	30.97
HYD	Hydrocore Corp.	01IBULAO_G01	6	0	6
	Matuno River Development Corporation	01MATUNO_G01	8.7	0	8.7
	BEHMC Lower Labayat Hydropower Corp.	03LWERLAB_G01	1.5	0	1.5
OIL	Tibag Hydropower Corporation	03TIBAG_G01	5.8	0	5.8
	GT-Energy Corp.	04CLBYBNK_G01	11.2	0	11.2
SOLR	Greencore Power Solutions 3, Inc.	01ARAYSOL_G02	30.8	0	30.8
	Natures Renewable Energy Devt. (NAREDCO) Corporation	01CAGYSOL_G01	115	0	115
	PV Sinag Power Inc.	01CAYBSOL_G01	75.1	0	75.1
	Pavi Green Bataan Renewable Energy, Inc.	01PAVGSOL_G01	16.2	0	16.2
	Santa Cruz Solar Energy Inc.	01SNMARSOL_G01	326.4	0	326.4
	Trustpower Corporation	01TRUSTSOL_G01	15.4	0	15.4
	PH Renewables, Inc.	02PNGYSOL_G01	71.6	0	71.6
WIND	Bayog Wind Power Corp.	01BALWIND_G01	80	0	80
<b>SUB-TOTAL:</b>			<b>1,125.2</b>		

Plants that Increased Capacity					
BAT	SMGP BESS Power Inc.	01LAMAO_BAT	50	20	30
COAL	Masinloc Power Co. Ltd.	01MSINLO_G01	344	315	29
GEO	Energy Development Corporation	14MTAPO_U01	51.4	50	1.4
HYD	Angat Hydropower Corporation	01ANGAT_A	19.6	18	1.6
	Labayat 1 Hydropower Corporation	03UPLAB_G01	3.5	3.3	0.2
	Power Sector Assets & Liabilities Managem	10AGUS7_U02	25.3	15	10.3
	Euro Hydro Power (Asia) Holdings, Inc.	14MARBEL_U01	0.5	0.4	0.1
OIL	Toledo Power Company	05CARMENDPP_U01	10.1	10	0.1
		05CARMENDPP_U02	10.1	10	0.1
		05CARMENDPP_U03	10.2	10	0.2
SOLR	Monte Solar Energy, Inc.	06MNTSOL_G01	14.5	14.4	0.1
<b>SUB-TOTAL:</b>					<b>73.1</b>
Plants that Decreased Capacity					
BAT	SMGP BESS Power Inc.	01SNMAN_BAT	50	60	-10
COAL	Toledo Power Company	05TPC_G02	82	142.7	-60.7
	GNPower Kauswagan Ltd. Co.	10GNPK_U04	151	151.4	-0.4
GEO	AP Renewables Inc.	03TIWI_C	113.8	114	-0.2
		04LEYTE_A	490.1	538	-47.9
	Energy Development Corporation	06NASULO_G01	47.5	48.3	-0.8
	Green Core Geothermal, Inc.	06PAL1A_G01	110.5	112.5	-2
		06PAL2A_U03	19.5	20	-0.5
Energy Development Corporation	14MTAPO_U03	3.6	3.7	-0.1	
HYD	Hedcor Sabangan, Inc.	01SABANG_G01	14.2	15	-0.8
	Agusan Power Corporation	12LKMAINIT_G01	24.8	24.9	-0.1
	Euro Hydro Power (Asia) Holdings, Inc.	14ALMADA_G01	2.6	2.8	-0.2
OIL	Therma Power-Visayas, Inc.	05TPVI_U01	5.5	6.7	-1.2
		05TPVI_U02	5.5	6.7	-1.2
		05TPVI_U03	5.5	6.8	-1.3
		05TPVI_U04	5.5	6.8	-1.3
		05TPVI_U05	5.5	6.8	-1.3
		05TPVI_U06	5.5	6.8	-1.3
	King Energy Generation Inc. -Panaon	09PANABNK_U01	7.8	7.9	-0.1
	Western Mindanao Power Corporation	09WMP_C01	10.2	10.7	-0.5
		09WMP_C02	10.2	10.7	-0.5
		09WMP_C03	10.2	10.7	-0.5
		09WMP_C04	10.2	10.7	-0.5
		09WMP_C05	10.2	10.7	-0.5
		09WMP_C06	10.2	10.7	-0.5
		09WMP_C07	10	10.7	-0.7
		09WMP_C08	10.1	10.7	-0.6
09WMP_C09		10.2	10.7	-0.5	
09WMP_C10	10.2	10.7	-0.5		
Nickel Asia Corporation	12NACSUR_G01	10.7	10.9	-0.2	
SOLR	Energy Development Corporation (additional	01BURGOS_G02	3.4	3.7	-0.3
	Energy Development Corporation (additional	01BURGOS_G03	2.2	2.7	-0.5
	Citicore Renewable Energy Corporation	01CLASOL_G01	19.1	19.8	-0.7
	Mirae Asia Energy Corporation	01MAEC_G01	16	16.3	-0.3
	Energy Logics Philippines, Inc.	01PASQSOL_G01	92.4	96	-3.6
	RASLAG Corp.	01RASLAG_G03	13.4	15	-1.6
WIND	Northwind Power Development Corporation	01NWIND_G01	32.4	33	-0.6
	Northwind Power Development Corporation	01NWIND_G02	18.8	18.9	-0.1
<b>SUB-TOTAL:</b>					<b>-144.8</b>
Ceased Registration					
OIL	Panay Power Corporation	08PPC1_A	0	31.5	-31.5
		08PPC1_B	0	31.5	-31.5
	AC Energy Philippines, Inc.	05PHNPB3_G01	0	24	-24
		08STBAR_PB2	0	24	-24
<b>SUB-TOTAL:</b>					<b>-111.0</b>
Deregistered					
SOLR	Cosmo Solar Energy, Inc.	08COSMO_G01	0	5.7	-5.7
<b>SUB-TOTAL:</b>					<b>-5.7</b>
<b>GRAND TOTAL:</b>					<b>936.97</b>

## DEFINITIONS, REFERENCES, AND INTERPRETATION

- Pricing Error Notice (PEN)
  - A pricing algorithm in the market and are categorized according to cause, as either Network congestion pricing errors or non-congestion pricing errors. Pricing error notice shall be issued only for the market run where the pricing error is determined by the Market Operator to have occurred.
- Secondary Price Cap (SPC)
  - A preventive mitigating measure instituted by the ERC to avoid excessive high market prices through its imposition on succeeding intervals, upon breach of PHP9,000/MWh Rolling Average of the generator-weighted average price (GWAP) for a running period of 3 days or 864 5-minute intervals. In this case, market prices are capped at PHP6,245/MWh.
- Administered Price (AP)
  - Administered price determination methodology which shall be implemented by the Market Operator to impose administered prices on dispatch intervals under market suspension or market intervention.
  - Administered price shall be established by the Market Operator in accordance with guiding principles as set forth by the WESM rules.
- Generator/Producer Surplus
  - Represents the difference between the price a generator receives and their willingness to sell for each quantity.
  - Daily average price of the producer/generator surplus is derived from the daily weighted average price of all the generator trading participants during peak and off-peak hours. Increase and decrease in the daily weighted average price depend on the generator schedule per dispatch interval.
- Pivotal Suppliers
  - The market measures how critical a particular generator is in meeting the total demand at a particular time, taking into consideration the variables that change dynamically, mainly demand (energy withdrawn), required spinning (or operational) reserve and generation availability.
- Residual Supply Index
  - Measures the ratio of the available generation without a Generator to the total generation (including operational reserve) required to supply the demand. It is likewise essential in determining whether there are pivotal suppliers in an interval.
- Price Substitution Methodology (PSM)
  - A pricing algorithm that shall be implemented in all the regions where the WESM is in operation. In cases where a region/s has no interconnection with other regions, or has no exchange of power with other regions, this region/s shall be separately assessed for the application of the price substitution methodology.
  - The price substitution methodology shall apply to a dispatch interval when the trigger factor exceeds the threshold, which shall be set at 0.2, subject to annual review.

- The dispatch schedules arrived at in the original (constrained) market solution for the relevant dispatch interval will stand and will be the basis for dispatch by the System Operator irrespective of the results of the unconstrained solution. Redispatch of generation units will be implemented by the System Operator in accordance with relevant provisions of the WESM Rules and Market Manuals, the Philippine Grid Code and other relevant rules, regulations, issuances, guidelines, and procedures.
- Ramp Limited Capacity
  - Generator restricted capacities due to the plants' intrinsic ramp rates.
  - Ramp rate is essentially the speed at which a generator can increase (ramp up) or decrease (ramp down) generation. Generating units have different characteristics, making some more suited to supplying certain needed functions.
- Energy Trading Amount
  - The energy trading amount for a trading participant and settlement interval shall be determined using the final energy dispatch prices for that node, the gross energy settlement quantities, and bilateral contract quantities for that node in the dispatch intervals within the same settlement interval.