

Market Assessment Report for 4th Quarter of 2024

26 September to 25 December 2024

March 2025

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

Document Information Classification: Public

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.

EXECUTIVE SUMMARY

As of the end of the fourth billing quarter in 2024, the total registered capacity in the WESM reached 29,962 megawatts (MW). This represents a 1.63% increase, or an addition of 480.70 MW compared to the 29,481.3 MW recorded as of 25 September 2024.

While the WESM recorded a total of 29,962MW registered capacity by the end of the quarter, there were instances of unavailability due to recorded outages, averaging at 4,312 MW or 14% of the total registered capacity. Additionally, capacities not offered/nominated in the market averaged at 4,558 MW or 15% of the total registered capacity, mainly attributable technical and resource constraints.

In terms of capacities on outage, an average increase of 181 MW or 4% was observed from the third quarter of 2024. Looking at a per plant type basis, coal power plants accounted for the largest share of total capacities on outage.

The overall demand for electricity on the system slightly decreased by an average of 2.3% during the covered period. This decline was expected given the higher number of holidays for the quarter and the cooler weather experienced during the rainy and cool dry seasons. This weather trend is consistent with that of the fourth quarter of 2023.

The load weighted average price during the fourth quarter of 2024 demonstrated a downward trajectory, attributable to a reduction in demand requirements, which resulted in prices of PHP 0/MWh and below.

All throughout the quarter, there were a total of 606 trading intervals with prices at PHP 0/MWh and below. Of these instances, 30% fell on 25 December 2024 (Christmas Day). This contributed to a significant 21% decrease in the monthly load weighted average price (LWAP) during the December billing month as compared to the November billing month. Regional prices at PHP 0/MWh and below occurred in: Luzon – 59 trading intervals; Visayas-Mindanao – 180 trading intervals; and Mindanao – 76 trading intervals.

Market Interventions (MIs) had its regular share in the pricing conditions throughout the billing months covered in this review. Recent interventions were due to force majeure events affecting a total of nine (9) trading intervals system-wide. This represents a 74% decrease from the previous quarter in terms of total affected trading interval.

Notably, during the fourth quarter of 2024, no critical congested transmission lines or equipment were observed. This in conjunction with the full energization of the 1,200 MW Cebu-Bohol Interconnection Project (CBIP) by the end of third quarter, resolved the congestion in the Bohol zone, which had been a bottleneck in the previous quarter.

On a per resource type basis, baseload power plants were the most frequently dispatched in the WESM, indicating the highest utilization levels among all power sources. Within this category, geothermal power plants had the highest utilization rates.

The load-market participants' spot market transactions experienced a slight increase during the fourth quarter of 2024, ranging from 16 to 27%, compared to only 17 to 25% in the previous quarter. This indicates that majority of total energy purchases remained covered by bilateral contracts.

Table of Contents

I.	Capacity Profile	1
A.	Registered Capacity	1
B.	Capacity not Offered/Nominated	2
II.	Power Plant Outages	3
A.	Capacities on Outage by Plant Type	3
B.	Capacities on Outage by Category	5
III.	Demand and Supply	7
IV.	Market Price Outcome	8
A.	Market Prices	8
B.	Price Distribution	11
C.	Congested Equipment	12
V.	Generator Offer Pattern	12
VI.	Market Pricing Conditions	14
A.	Pricing Error Notice (PEN)	15
B.	Price Substitution Methodology (PSM)	15
C.	Administered Price (AP)	15
D.	Secondary Price Cap (SPC)	15
VII.	Residual Supply	16
VIII.	Pivotal Suppliers	17
IX.	Capacity Factor	17
X.	Generation Mix	19
XI.	Market Concentration	19
A.	Market Share	19
B.	Herfindahl-Hirschman Index (HHI)	20
XII.	Spot Exposure	21

List of Figures

Figure 1.	Registered Capacity Mix, 3 rd and 4 th Quarter 2024	1
Figure 2.	Capacity Profile, 4 th Quarter 2024	2
Figure 3.	System: Capacity on Outage by Plant Type, 4 th Quarter 2024	3
Figure 4.	System: Capacity on Outage by Category, 4 th Quarter 2024	5
Figure 5.	Demand, Supply and Demand plus Reserve Schedule, 4 th Quarter 2024	7
Figure 6.	Market Price Trend, 4 th Quarter 2024	9
Figure 7.	Market Price Trend - Luzon, 4 th Quarter 2024	9
Figure 8.	Market Price Trend - Visayas, 4 th Quarter 2024	10
Figure 9.	Market Price Trend - Mindanao, 4 th Quarter 2024	10
Figure 10.	Price Distribution, 4 th Quarter 2024	11
Figure 11.	Coal Power Plants Offer Pattern – 3 rd and 4 th Quarter 2024	13
Figure 12.	Natural Gas Power Plants Offer Pattern – 3 rd and 4 th Quarter 2024	13
Figure 13.	Hydro Power Plants Offer Pattern – 3 rd and 4 th Quarter 2024	14
Figure 14.	Oil-based Power Plants Offer Pattern – 3 rd and 4 th Quarter 2024	14
Figure 15.	Monthly Pricing Condition for 4 th Quarter 2024	16
Figure 16.	Market RSI vs. Pivotal Suppliers, 4 th Quarter 2024	16
Figure 17.	Top 10 System-wide Pivotal Suppliers, 4 th Quarter 2024	17
Figure 18.	System Capacity Factor (Registered Capacity vs Actual Generation) – 4 th Quarter 2024	18

Figure 19. System Capacity Factor Per Resource Type (Registered Capacity vs Actual Generation) – 4 th Quarter 2024	19
Figure 20. Generation Mix (Based on Metered Quantity) – July to December 2024	19
Figure 21. Market Share by Major Participant Group based on Registered Capacity, Offered Capacity, Actual Generation, 4 th Quarter of 2024	20
Figure 22. HHI based by Major Participant Grouping, 4 th Quarter 2024	20
Figure 23. Daily Profile of Spot Market Exposure, 4 th Quarter 2024	21
Figure 24. Hourly Profile of Spot Market Exposure, 4 th Quarter 2024	21

List of Tables

Table 1. New Generation Facilities for 4 th Quarter of 2024	1
Table 2. Capacity Profile, 3 rd and 4 th Quarter 2024	2
Table 3. Monthly Capacity Profile, 4 th Quarter 2024	2
Table 4. Coal Power Plants on Outage by the End of 4 th Quarter of 2024	3
Table 5. Summary of Capacity on Outage, 3 rd Quarter of 2024	4
Table 6. Summary of Capacity on Outage, 4 th Quarter of 2024	4
Table 7. Monthly Outage Summary (October), 4 th Quarter 2024	4
Table 8. Monthly Outage Summary (November), 4 th Quarter 2024	5
Table 9. Monthly Outage Summary (December), 4 th Quarter 2024	5
Table 10. Outage Summary, by Outage Category, 3 rd Quarter 2024	6
Table 11. Outage Summary, by Outage Category, 4 th Quarter 2024	6
Table 12. Monthly Outage Summary, by Outage Category, October 2024	6
Table 13. Monthly Outage Summary, by Outage Category, November 2024	6
Table 14. Monthly Outage Summary, by Outage Category, December 2024	6
Table 15. Demand and Supply Summary, 3 rd Quarter 2024	7
Table 16. Demand and Supply Summary, 4 th Quarter 2024	7
Table 17. Monthly Demand and Supply Summary, October 2024	8
Table 18. Monthly Demand and Supply Summary, November 2024	8
Table 19. Monthly Demand and Supply Summary, December 2024	8
Table 20. Market Price Summary, 3 rd and 4 th Quarter 2024	9
Table 21. Monthly Market Price Summary, 4 th Quarter 2024	9
Table 22. Monthly Regional Price Summary, 4 th Quarter 2024	10
Table 23. Monthly Regional and Regional Zonal Prices, 4 th Quarter 2024	10
Table 24. Monthly Price Distribution, 4 th Quarter 2024	12
Table 25. Spot Exposure (Load) vs LWAP, Day Type, 4 th Quarter 2024	21

QUARTERLY MARKET ASSESSMENT REPORT

This quarterly report presents the assessment of the results of the WESM operations for the Fourth Billing Quarter of 2024, covering the period 26 September to 25 December 2024, and how the market performed compared with the previous quarter of the year.

I. Capacity Profile

A. Registered Capacity

As of the end of the fourth billing quarter in 2024, the total registered capacity in the WESM reached 29,962 megawatts (MW). This represents a 1.63% increase, or an addition of 480.70 MW compared to the 29,481.3 MW recorded as of 25 September 2024. The primary contributors to this growth were the recent additions of the following power plants:

Table 1. New Generation Facilities for 4th Quarter of 2024

Region	Plant Type	Registered Capacity (MW)	Facility Name
Luzon	Solar	48.1	Maragondon Solar Power Plant
Luzon	Solar	48.1	Tanauan Solar Power Plant
Luzon	Solar	46.2	Sto. Domingo Solar Power Plant (SDSPP)
Luzon	Solar	46.2	Gamu Solar Power Project
Luzon	Solar	37.8	Armenia Solar Power Project (SPP)
Luzon	Solar	30.9	Bongabon Solar Power Plant
Luzon	Solar	26.4	RASLAG IV Solar Power Project
Luzon	Solar	18.8	Bongabon Solar Power Project
Luzon	Solar	15.3	San Jose Solar Power Plant (SPP)
Luzon	Solar	5.0	Naic Solar Rooftop Power Plant (SRPP)
Luzon	Hydro	3.2	Man-asok Hydroelectric Power Plant (HEPP)
Visayas	Solar	137.4	Calatrava Solar Power Project (SPP)
Visayas	Solar	20.2	Dagohoy Solar Power Project
Mindanao	Oil	5.2	PBI Bunker C-Fired Diesel Power Plant Unit 1
Mindanao	Oil	5.2	PBI Bunker C-Fired Diesel Power Plant Unit 2

Additionally, changes in the registered capacities of four (4) hydro plants, three (3) solar plants, three (3) geothermal plants, two (2) biofuel plants, and one (1) battery plant resulted in a net change of 22.1 MW in registered capacity for this quarter. Meanwhile, one (1) oil and one (1) biofuel plant, ceased registration, with a total capacity of 35.4 MW.

Figure 1 further illustrates the registered capacity mix by plant type.

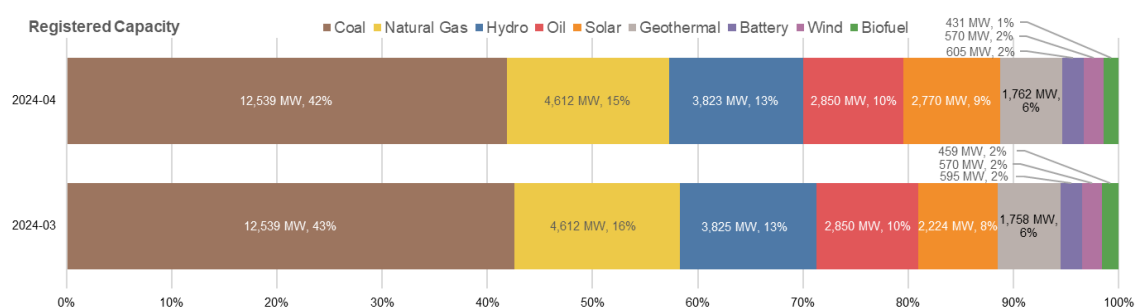


Figure 1. Registered Capacity Mix, 3rd and 4th Quarter 2024

QMAR-2024-04

B. Capacity not Offered/Nominated

While the WESM recorded a total of 29,962MW registered capacity by the end of the quarter, there were instances of unavailability due to recorded outages, averaging at 4,312 MW or 14% of the total registered capacity. Additionally, capacities not offered/nominated in the market averaged at 4,558 MW or 15% of the total registered capacity, mainly attributable technical and resource constraints.

Tables 2 and 3 present the breakdown of quarterly and monthly capacity profiles for the specified period while Figure 2 illustrates the breakdown of the total registered capacities.

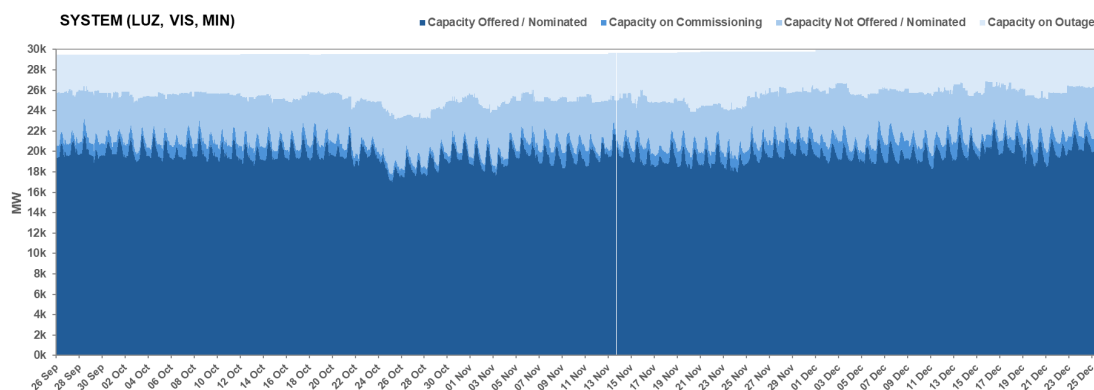


Figure 2. Capacity Profile, 4th Quarter 2024

Note: Missing portions represent the occurrence of Market Interventions/Market Suspensions

Table 2. Capacity Profile, 3rd and 4th Quarter 2024

	3rd Quarter 2024 (26 Jun to 25 Sep 2024)		4th Quarter 2024 (26 Sep to 25 Dec 2024)		% Average Change
	Average (in MW)	% of RegCap	Average (in MW)	% of RegCap	
Capacity on Outage	3,761	13%	4,312	14%	14.65% ▲
Capacity Not Offered / Nominated	4,628	16%	4,558	15%	1.51% ▼
Capacity on Commissioning	1,771	6%	1,119	4%	36.80% ▼
Malaya Capacity (for MRU)	130	0%	-	0%	100.00% ▼
Capacity Offered / Nominated	19,136	65%	19,689	66%	2.89% ▲

Table 3. Monthly Capacity Profile, 4th Quarter 2024

	October 2024 (26 Sep to 25 Oct 2024)		November 2024 (26 Oct to 25 Nov 2024)		December 2024 (26 Nov to 25 Dec 2024)	
	Average (in MW)	% of RegCap	Average (in MW)	% of RegCap	Average (in MW)	% of RegCap
Capacity on Outage	4,115	14%	4,861	16%	3,944	13%
Capacity Not Offered / Nominated	4,554	15%	4,433	15%	4,692	16%
Capacity on Commissioning	1,049	4%	997	3%	1,315	4%
Malaya Capacity (for MRU)	-	0.0%	-	0%	-	0%
Capacity Offered / Nominated	19,786	67%	19,328	65%	19,965	67%
Registered Capacity (end of the billing Month)	29,527	100%	29,772	100%	29,962	100%

II. Power Plant Outages¹

A. Capacities on Outage by Plant Type

In terms of capacities on outage, an average increase of 181 MW or 4% was observed from the third quarter of 2024.

Looking at a per plant type basis, coal power plants accounted for the largest share of total capacities on outage. Majority of coal plant outages within this period were attributable to forced shutdowns resulting from, among other things, technical failure. However, most of the coal plants on outage have already been in operation while several coal plants remained offline until the end of the review period, detailed in Table 4.

Table 4. Coal Power Plants on Outage by the End of 4th Quarter of 2024

Resource Name	Capacity (in MW)	Date Out
Luzon		
SLPGC CFB CFTPP 2	149.6	14 November 2024
Batangas CFTPP Plant 1	240	11 December 2024
Sual CFTPP 2	647	17 December 2024
Mariveles CFTPP 4	150	20 December 2024
ANDA Coal-Fired Power Plant	72	21 December 2024
Visayas		
KEPCO SPC Power Corporation Cebu CFTPP Unit 2	103	24 December 2024
Mindanao		
Malita Circulating Fluidized Bed Coal Fired Thermal Power Plant (CFB CFTPP) Unit 2	150	11 October 2024
PowerSource Philippines Energy Incorporated CFB	20	11 October 2024
Balingasag CFTPP Units 1-3	55	12 October 2024
GNPK's CFTPP Unit 3	151.3	15 October 2024
GNPK's CFTPP t Unit 2	151	15 December 2024
Minergy Power Corporation Coal Balingasag CFTPP Units 1-3	55	21 December 2024

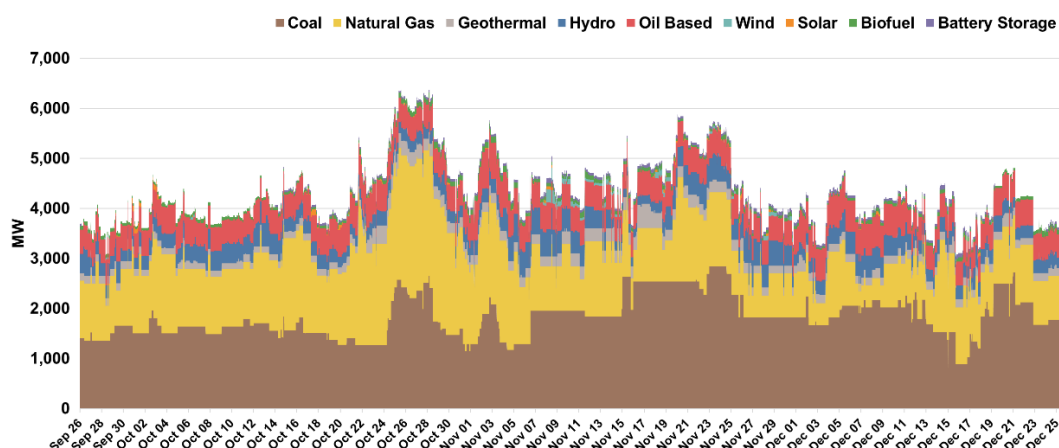


Figure 3. System: Capacity on Outage by Plant Type, 4th Quarter 2024

¹ Provided in Appendix A is the list of major plant outages

QMAR-2024-04

Outages from natural gas power plants represented the second largest share of the total outages, with most of their disruptions attributed to fuel or gas supply constraints and scheduled maintenance activities. Figure 3 shows the actual capacities on outage per trading interval, where it was observed that the peak outages occurred on 25 October 2024 at 6,424.75 MW when a 150 MW coal plant tripped due to seawater cooling trouble on top of the prevalent capacity on outage of coal and natural gas at 2,148.6MW and 2,489MW, respectively.

When examining the data on a month-on-month basis, Table 8, November 2024 had the highest average monthly outage level, reaching 4,945 MW. During this period, eight (8) coal plant went on outage, with total rated capacity of 2,506.3MW. Among the eight, four (4) plants were due to forced outages, and two units each underwent planned and maintenance outages in conjunction with the prevailing natural gas plant outages, attributed to resource constraints and ongoing testing and commissioning.

Table 5. Summary of Capacity on Outage, 3rd Quarter of 2024

3rd Quarter 2024 (26 Jun to 25 Sep 2024)					
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Coal	277	6/26/2024 0:05	3,562	7/31/2024 13:15	1,650
Natural Gas	190	7/2/2024 23:25	2,429	9/14/2024 0:05	770
Geothermal	86	7/8/2024 6:00	472	8/21/2024 4:25	251
Hydro	339	9/6/2024 12:25	1,262	7/13/2024 10:00	674
Oil-based	482	8/28/2024 18:15	813	7/28/2024 16:00	564
Wind	37	8/27/2024 2:25	150	7/8/2024 5:35	102
Solar	2	8/8/2024 14:05	162	8/23/2024 18:05	43
Biofuel	41	8/26/2024 0:05	304	8/15/2024 5:20	135
Battery Storage	20	6/26/2024 0:05	150	8/21/2024 16:10	61

Table 6. Summary of Capacity on Outage, 4th Quarter of 2024

4th Quarter 2024 (26 Sep to 25 Dec 2024)						% Average Change
	Min		Max		Average	
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)	
Coal	730	12/15/2024 0:05	2,845	11/23/2024 0:25	1,826	10.67% ▲
Natural Gas	440	11/26/2024 15:10	3,048	10/21/2024 15:40	1,308	69.85% ▲
Geothermal	118	10/1/2024 15:40	484	11/16/2024 19:25	189	24.65% ▼
Hydro	161	11/15/2024 17:40	716	11/26/2024 13:25	335	50.21% ▼
Oil-based	467	10/9/2024 8:40	798	11/1/2024 10:15	528	6.28% ▼
Wind	19	11/7/2024 19:20	262	11/7/2024 23:35	82	19.64% ▼
Solar	2	11/28/2024 6:15	190	10/1/2024 1:55	40	5.69% ▼
Biofuel	25	12/2/2024 20:20	161	11/18/2024 16:45	69	49.15% ▼
Battery Storage	20	10/2/2024 8:45	110	11/8/2024 6:30	53	13.51% ▼

Table 7. Monthly Outage Summary (October), 4th Quarter 2024

October 2024 (26 Sep to 25 Oct 2024)					
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Coal	1,262	10/21/2024 9:20	2,573	10/25/2024 5:15	1,565
Natural Gas	703	9/28/2024 9:05	3,048	10/21/2024 15:40	1,469
Geothermal	118	10/1/2024 15:40	448	10/24/2024 10:35	159
Hydro	191	9/26/2024 23:05	629	10/13/2024 4:20	316
Oil-based	467	10/9/2024 8:40	669	10/21/2024 18:35	517
Wind	37	9/28/2024 5:50	54	9/26/2024 17:05	46
Solar	15	9/29/2024 6:30	190	10/1/2024 1:55	55
Biofuel	41	10/23/2024 7:05	112	10/25/2024 15:45	61
Battery Storage	20	10/2/2024 8:45	60	10/14/2024 18:00	41

Table 8. Monthly Outage Summary (November), 4th Quarter 2024

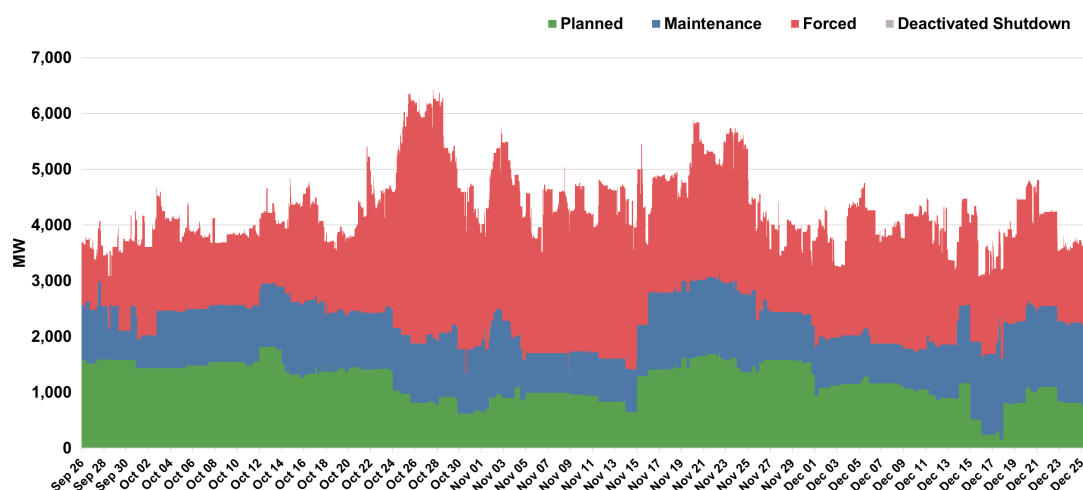
	November 2024 (26 Oct to 25 Nov 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Coal	1,144	10/31/2024 12:00	2,845	11/23/2024 0:25	2,053
Natural Gas	453	11/8/2024 22:15	2,683	10/26/2024 21:15	1,519
Geothermal	193	10/29/2024 0:35	484	11/16/2024 19:25	240
Hydro	161	11/15/2024 17:40	616	11/6/2024 14:55	353
Oil-based	483	10/26/2024 0:05	798	11/1/2024 10:15	527
Wind	19	11/7/2024 19:20	262	11/7/2024 23:35	88
Solar	5	10/31/2024 8:15	85	11/25/2024 19:05	30
Biofuel	40	11/20/2024 8:05	161	11/18/2024 16:45	84
Battery Storage	50	10/26/2024 21:00	110	11/8/2024 6:30	53

Table 9. Monthly Outage Summary (December), 4th Quarter 2024

	December 2024 (26 Nov to 25 Dec 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Coal	730	12/15/2024 0:05	2,717	12/21/2024 0:20	1,851
Natural Gas	440	11/26/2024 15:10	1,848	12/14/2024 5:40	927
Geothermal	141	12/21/2024 12:30	328	12/1/2024 6:50	168
Hydro	208	12/25/2024 1:10	716	11/26/2024 13:25	337
Oil-based	468	12/13/2024 12:55	700	12/4/2024 19:25	542
Wind	37	12/5/2024 9:10	134	11/30/2024 16:30	80
Solar	2	11/28/2024 6:15	69	12/17/2024 18:35	38
Biofuel	25	12/2/2024 20:20	139	12/8/2024 4:15	61
Battery Storage	50	11/27/2024 15:05	90	12/4/2024 6:20	58

B. Capacities on Outage by Category

In conjunction with the previous section, this part categorizes the outages observed during the billing quarter by category. Overall, net outages for the fourth quarter of 2024 increased by 14%, which was largely unplanned due to substantial growth in maintenance outages that surged by 82%, compared to the previous quarter. While the planned outage notably decreased by 26% indicating they finished their outage on time. However, maintenance outage category experienced significant growth.

**Figure 4. System: Capacity on Outage by Category, 4th Quarter 2024**

Tables 10 to 14 below show the quarterly and monthly breakdown of the outages in terms of outage categories.

Table 10. Outage Summary, by Outage Category, 3rd Quarter 2024

3rd Quarter 2024 (26 Jun to 25 Sep 2024)					
Min		Max		Average	
(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)	
Planned Outage	214	6/26/2024 4:25	2,728	7/15/2024 2:55	1,617
Maintenance Outage	55	8/17/2024 8:15	1,486	9/16/2024 8:05	586
Forced Outage	848	8/26/2024 21:20	3,817	7/31/2024 13:15	1,786

Table 11. Outage Summary, by Outage Category, 4th Quarter 2024

	4th Quarter 2024 (26 Sep to 25 Dec 2024)					% Average Change
	Min		Max		Average	
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)	
Planned Outage	145	12/17/2024 17:05	1,824	10/13/2024 7:15	1,192	26.24% ▼
Maintenance Outage	274	11/8/2024 22:15	2,027	12/17/2024 13:10	1,069	82.31% ▲
Forced Outage	906	9/27/2024 4:15	4,496	10/26/2024 9:30	2,050	14.77% ▲

Table 12. Monthly Outage Summary, by Outage Category, October 2024

October 2024 (26 Sep to 25 Oct 2024)					
Min		Max		Average	
(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)	
Planned Outage	818	10/25/2024 15:05	1,824	10/13/2024 7:15	1,453
Maintenance Outage	517	9/28/2024 9:05	1,495	10/14/2024 18:05	1,025
Forced Outage	906	9/27/2024 4:15	4,397	10/25/2024 14:00	1,635

Table 13. Monthly Outage Summary, by Outage Category, November 2024

November 2024 (26 Oct to 25 Nov 2024)					
Min		Max		Average	
(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)	
Planned Outage	623	10/29/2024 20:00	1,739	11/22/2024 9:55	1,090
Maintenance Outage	274	11/8/2024 22:15	1,524	11/2/2024 2:20	1,091
Forced Outage	1,410	11/16/2024 0:15	4,496	10/26/2024 9:30	2,679

Table 14. Monthly Outage Summary, by Outage Category, December 2024

December 2024 (26 Nov to 25 Dec 2024)					
Min		Max		Average	
(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)	
Planned Outage	145	12/17/2024 17:05	1,587	11/28/2024 10:20	1,037
Maintenance Outage	714	12/6/2024 0:15	2,027	12/17/2024 13:10	1,091
Forced Outage	1,012	11/27/2024 20:40	2,642	12/5/2024 9:20	1,814

QMAR-2024-04

III. Demand and Supply

The overall demand for electricity on the system slightly decreased by an average of 2.3% during the covered period. This decline was expected given the higher number of holidays for the quarter and the cooler weather experienced during the rainy and cool dry seasons. This weather trend is consistent with that of the fourth quarter of 2023.

As depicted in Figure 5, the interplay between effective supply, system demand, and demand with reserve requirement is shown per dispatch interval. Notably, even with high outage capacity levels this quarter, the effective supply remained sufficient to cover demand, resulting in no alert issuances.

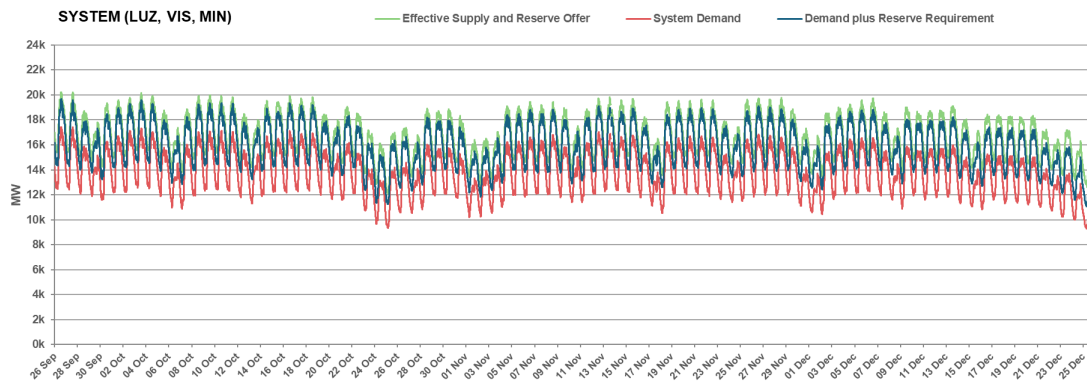


Figure 5. Demand, Supply and Demand plus Reserve Schedule, 4th Quarter 2024

Meanwhile, Tables 15 to 19 present a breakdown on statistics on the demand and effective supply.

Table 15. Demand and Supply Summary, 3rd Quarter 2024

3rd Quarter 2024 (26 Mar to 25 Jun 2024)					
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
System Demand	10,209	07/25/2024 3:50	17,858	08/21/2024 14:15	14,108
Reserve Schedule	868	07/19/2024 21:05	2,273	08/21/2024 7:20	1,642
Demand plus Reserve Schedule	11,400	07/29/2024 3:40	20,099	08/16/2024 13:40	15,751
Effective Supply	12,388	07/29/2024 3:45	20,781	08/16/2024 14:05	16,567

Table 16. Demand and Supply Summary, 4th Quarter 2024

4th Quarter 2024 (26 Sep to 25 Dec 2024)						% Average Change
	Min		Max		Average	
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)	
System Demand	9,286	12/25/2024 6:40	17,438	09/26/2024 14:10	13,791	2.30% ▼
Reserve Schedule	1,447	11/10/2024 5:05	2,274	11/21/2024 14:05	2,065	20.46% ▲
Demand plus Reserve Schedule	11,079	12/25/2024 6:40	19,684	09/26/2024 14:10	15,855	0.66% ▲
Effective Supply	12,078	10/25/2024 4:05	20,215	09/26/2024 13:50	16,729	0.97% ▲

Table 17. Monthly Demand and Supply Summary, October 2024

	October 2024 (26 Sep to 25 Oct 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
System Demand	9,318	10/25/2024 4:05	17,438	09/26/2024 14:10	14,141
Reserve Schedule	1,637	10/23/2024 5:25	2,271	10/03/2024 13:05	2,077
Demand plus Reserve Schedule	11,244	10/25/2024 4:05	19,684	09/26/2024 14:10	16,217
Effective Supply	12,078	10/25/2024 4:05	20,215	09/26/2024 13:50	17,014

Table 18. Monthly Demand and Supply Summary, November 2024

	November 2024 (26 Oct to 25 Nov 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
System Demand	10,179	11/01/2024 7:05	17,033	11/12/2024 14:20	13,817
Reserve Schedule	1,447	11/10/2024 5:05	2,274	11/21/2024 14:05	2,037
Demand plus Reserve Schedule	11,826	11/02/2024 6:20	19,093	11/12/2024 14:20	15,854
Effective Supply	12,821	11/02/2024 6:25	19,822	11/13/2024 14:05	16,640

Table 19. Monthly Demand and Supply Summary, December 2024

	December 2024 (26 Nov to 25 Dec 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
System Demand	9,286	12/25/2024 6:40	16,865	11/26/2024 14:00	13,414
Reserve Schedule	1,610	12/24/2024 6:45	2,271	12/11/2024 13:25	2,081
Demand plus Reserve Schedule	11,079	12/25/2024 6:40	19,119	11/26/2024 14:00	15,495
Effective Supply	12,587	12/25/2024 7:25	19,775	11/28/2024 14:25	16,537

IV. Market Price Outcome

A. Market Prices

The load weighted average price during the fourth quarter of 2024 demonstrated a downward trajectory, attributable to a reduction in demand requirements, which resulted in prices of PHP 0/MWh and below.

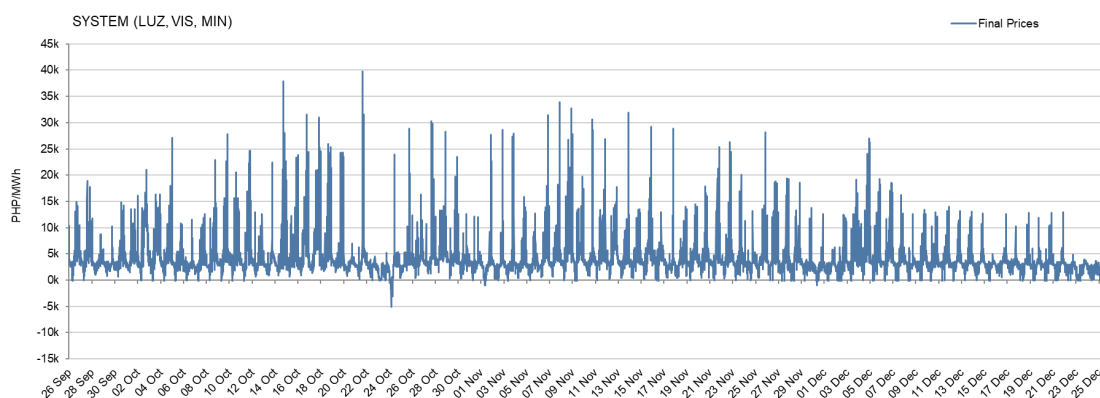
The monthly average prices exhibited fluctuating patterns, primarily influenced by the interplay between supply and demand in the system. Throughout the fourth quarter of 2024, there were noticeable price spikes during off-peak hours. Overall, the majority of the spikes were attributed to the increase in demand, decrease in offered capacity from hydro plants, and load nominations from Kalayaan for its pumping operations during off-peak hours ranging from 148 MW to 160 MW. Additionally, the opportunity costs from the co-optimization of energy and reserves contributed to these price fluctuations.

During peak hours on 21 October 2024, the market experienced its highest price for the fourth quarter of 2024 at PHP 39,755/MWh, which is 29% lower compared to the previous quarter. This peak price coincided with tight supply due to the unplanned outages from the six (6) units of Ilijan, with a total capacity of 1,200 MW (Ilijan NGPP A1-A3 and B1-B3), which began at 1514h and lasted all day, except for the 190 MW Ilijan

QMAR-2024-04

Unit B2 which resumed at 2237h. Additional factors included an increase in demand during peak hours. Also, the Visayas-Mindanao High-Voltage Direct Current (HVDC) link reached its maximum capacity of 450 MW during these spikes, resulting in price separation for the Luzon and Visayas region.

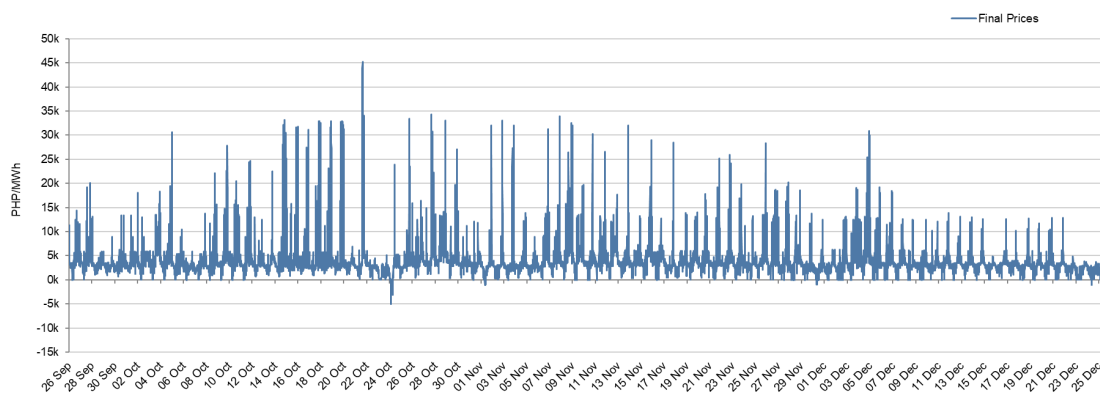
All throughout the quarter, there were a total of 606 trading intervals with prices at PHP 0/MWh and below. Of these instances, 30% fell on 25 December 2024 (Christmas Day). This contributed to a significant 21% decrease in the monthly load weighted average price (LWAP) during the December billing month as compared to the November billing month. Regional prices at PHP 0/MWh and below occurred in: Luzon – 59 trading intervals; Visayas-Mindanao – 180 trading intervals; and Mindanao – 76 trading intervals.

Figure 6. Market Price Trend, 4th Quarter 2024Table 20. Market Price Summary, 3rd and 4th Quarter 2024

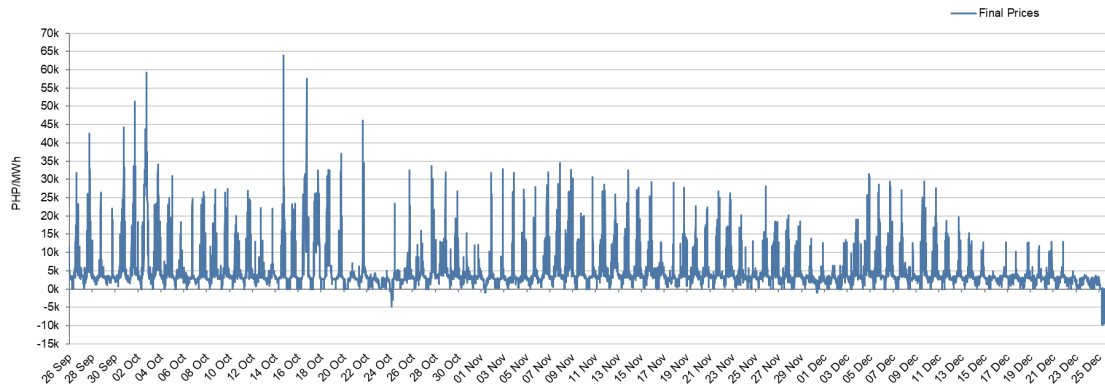
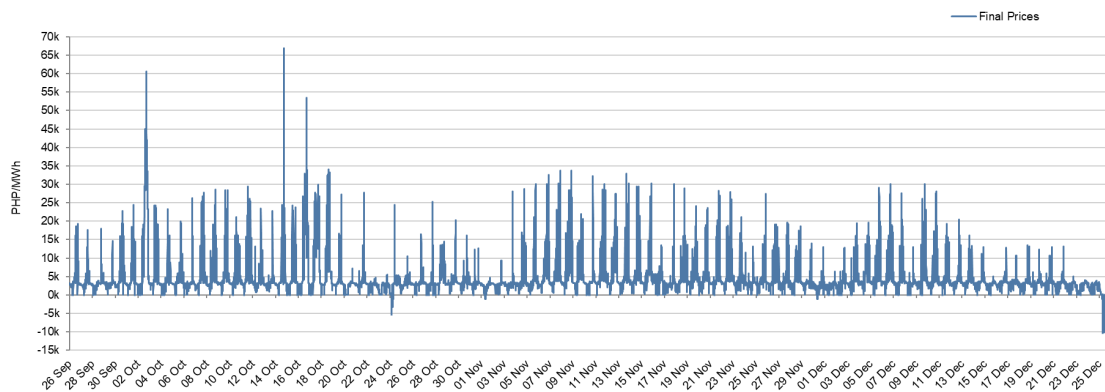
	3rd Quarter 2024 (26 Jun to 25 Sep 2024) (in PHP/MWh)			4th Quarter 2024 (26 Sep to 25 Dec 2024) (in PHP/MWh)			% Average Change
	Min	Max	Average	Min	Max	Average	
System	(10,146.17)	55,861.18	5,457.11	(9,930.21)	39,754.49	4,288.61	21.41% ▼

Table 21. Monthly Market Price Summary, 4th Quarter 2024

	October 2024 (26 Sep to 25 Oct 2024) (in PHP/MWh)			November 2024 (26 Oct to 25 Nov 2024) (in PHP/MWh)			December 2024 (26 Nov to 25 Dec 2024) (in PHP/MWh)		
	Min	Max	Average	Min	Max	Average	Min	Max	Average
System	(5,034.02)	39,754.49	4,613.74	(1,032.72)	33,938.87	4,602.59	(9,930.21)	27,008.21	3,639.04

Figure 7. Market Price Trend - Luzon, 4th Quarter 2024

QMAR-2024-04

Figure 8. Market Price Trend - Visayas, 4th Quarter 2024Figure 9. Market Price Trend - Mindanao, 4th Quarter 2024Table 22. Monthly Regional Price Summary, 4th Quarter 2024

	October 2024 (26 Sep to 25 Oct 2024)			November 2024 (26 Oct to 25 Nov 2024)			December 2024 (26 Nov to 25 Dec 2024)		
	Min	Max	Average	Min	Max	Average	Min	Max	Average
Luzon	(4,995.53)	45,243.74	4,027.32	(1,029.35)	34,355.09	4,374.35	(10,148.70)	30,865.02	3,435.92
Visayas	(4,926.16)	63,935.04	6,509.65	(1,010.79)	34,481.74	5,129.13	(9,729.18)	31,513.98	4,123.17
Mindanao	(5,282.51)	66,858.58	5,641.28	(1,072.37)	33,778.83	5,198.53	(10,157.60)	30,109.18	4,134.40

Table 23. Monthly Regional and Regional Zonal Prices, 4th Quarter 2024

	October 2024 (26 Sep to 25 Oct 2024) (in PHP/MWh)	November 2024 (26 Oct to 25 Nov 2024) (in PHP/MWh)	December 2024 (26 Nov to 25 Dec 2024) (in PHP/MWh)
Luzon	4,027.32	4,374.35	3,435.92
Northern Luzon	4,031.60	4,357.93	3,451.90
Metro Manila	4,104.99	4,443.11	3,488.60
South Luzon	3,991.53	4,306.28	3,408.06
Visayas	6,509.65	5,129.13	4,123.17
Bohol	7,313.57	5,257.95	3,940.22
Cebu	6,734.53	5,127.75	4,120.11
Leyte	6,870.38	5,154.89	3,200.71
Negros	6,813.10	5,183.97	4,111.68
Panay	6,973.55	5,489.49	4,364.20
Mindanao	5,641.28	5,198.53	4,134.40
North Central Mindanao	5,439.76	4,981.78	3,966.43
North-East Mindanao	6,122.36	5,546.65	4,363.32
North-West Mindanao	6,151.06	5,526.22	4,444.67
South-East Mindanao	5,814.38	5,308.20	4,134.96
South-West Mindanao	5,885.32	5,399.97	4,191.79
Lanao	5,160.69	4,651.90	3,806.82

Table 23 presents a detailed comparison between regional electricity prices and the corresponding zonal prices within each region. This comparison provides insights into the pricing dynamics at both regional and zonal levels.

Regional and zonal electricity prices varied, reflecting the impact of HVDC constraints, and transmission loss. For instance, in the October billing period, the Visayas region experienced price separation in the Bohol zone due to congestion on the Maasin-Ubay line and Corella transformer 1, which operated at its maximum capacity limit for brief periods (0.03% and 1% of the time, respectively). This limited access to cheaper supply and increased reliance on costly local generation. Moreover, following the full energization of the 1,200MW Cebu-Bohol Interconnection Project (CBIP) on 27 September 2024, fewer instances of nodal price separation was observed in the Bohol zone throughout the fourth quarter, effectively addressing congestion in the Leyte-Bohol corridor.

These events underscore the critical need for robust transmission infrastructure. This infrastructure is essential for efficient energy distribution and price stability across regions, mitigating bottlenecks and reducing price disparities. Furthermore, a deep understanding of regional market conditions, infrastructure, and operational factors is crucial for identifying opportunities to enhance efficiency, optimize resource allocation, and address electricity price disparities between zones.

B. Price Distribution

During the fourth quarter of 2024, as illustrated in Figure 10, LWAP were predominantly low, with 74% to 83% of trading intervals showing prices within PHP 0/MWh to 5,000/MWh {PHP (0,5000)/MWh}. This highlights the relatively low-price levels prevalent throughout the quarter influenced by lower demand, high available supply and lower price offers. The observed price distribution effectively encapsulates the reasons for lower average prices during the quarter, emphasizing the impact of adequate supply and moderate demand on market stability.

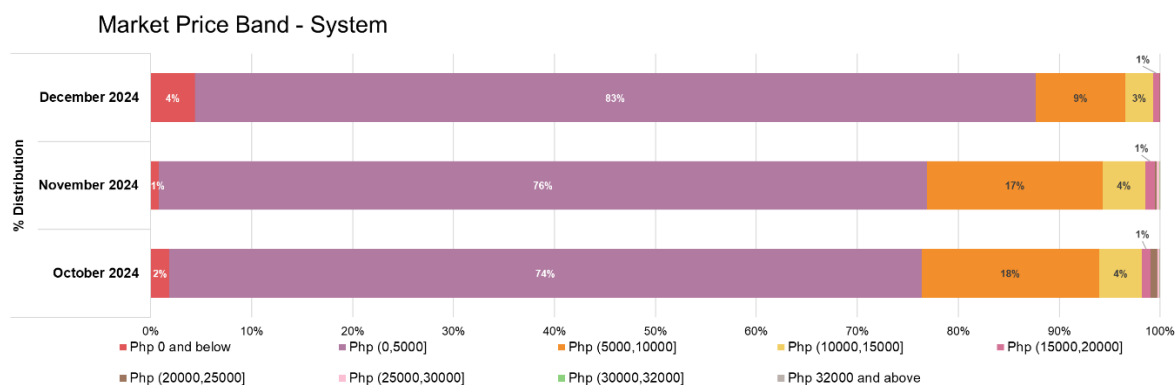


Figure 10. Price Distribution, 4th Quarter 2024

Table 24 presents the tabular distribution of offer prices for the billing months covered in this quarter.

Table 24. Monthly Price Distribution, 4th Quarter 2024

Price Range (Php/MWh)	% Distribution		
	October 2024	November 2024	December 2024
Php 0 and below	2%	1%	4%
Php (0,5000]	74%	76%	83%
Php (5000,10000]	18%	17%	9%
Php (10000,15000]	4%	4%	3%
Php (15000,20000]	1%	1%	1%
Php (20000,25000]	1%	0%	0%
Php (25000,30000]	0%	0%	0%
Php (30000,32000]	0.1%	0.0%	0.0%
Php 32000 and above	0.06%	0.02%	0.00%

C. Congested Equipment

Grid equipment congestion significantly impacts electricity delivery by limiting access to cheaper power supplies. When the grid is congested, transmitting electricity from low-cost generators to high-demand areas becomes challenging, leading to supply constraints and higher prices and result price separation. Conversely, infrastructure upgrades or optimized power flow, which alleviate congestion, can increase supply availability and potentially stabilize or reduce prices.

Notably, during the fourth quarter of 2024, no critical congested transmission lines or equipment were observed. This in conjunction with the full energization of the 1,200 MW Cebu-Bohol Interconnection Project (CBIP) by the end of third quarter, resolved the congestion in the Bohol zone, which had been a bottleneck in the previous quarter. Appendix B provides a summary of line and equipment congestion for the fourth quarter of 2024.

V. Generator Offer Pattern

This section examines generator-trading participants' offer patterns, as submitted to the WESM via the Market Participant Interface (MPI), in accordance with WESM Rules Clause 3.5, and accounts for generators experiencing outages.

Figure 11 shows that coal power plant offer patterns remained consistent with the previous quarter, with 81% of offers at PHP 0/MWh and below. This indicates a strong commitment to bilateral contracts. Coal plants prioritize fulfilling these contracts, often offering capacity at minimal cost in the spot market to ensure dispatch and minimize underutilization, thus stabilizing revenue.

Moreover, a coal plant transitioned to submitting market offers during the fourth quarter, upon completion of testing and commissioning and the commencement of its commercial operations.

QMAR-2024-04

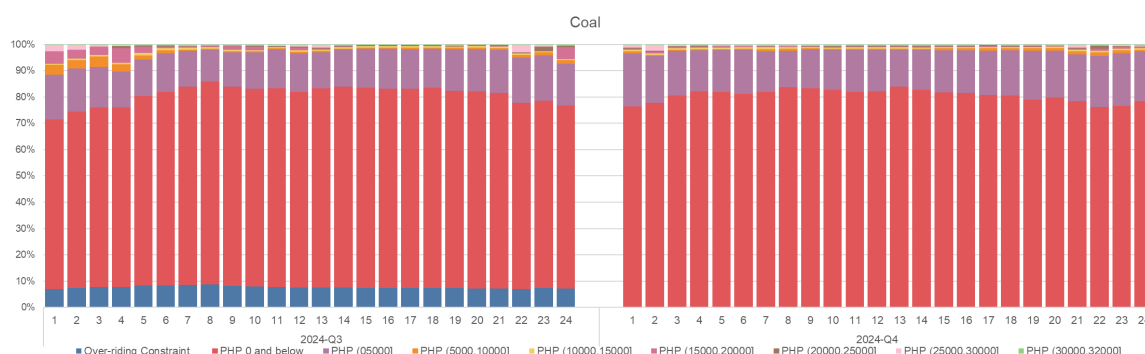


Figure 11. Coal Power Plants Offer Pattern – 3rd and 4th Quarter 2024

Similar to coal power plants, natural gas power plants exhibit a similar offering pattern, with 84% of their offers concentrated at PHP 0/MWh and below which strongly suggests that a substantial portion of their capacity is committed under bilateral contracts. As a baseload plant, specific buyers, such as distribution utilities or large industrial consumers.

This strategy ensures revenue streams for natural gas power plants, regardless of spot market price volatility. Additionally, this offering behavior reflects the critical role of natural gas plants in providing stable and reliable power, often as baseload or mid-merit generators, to meet demand as stipulated in their agreements.

Moreover, comparing to the previous quarter, natural gas power plants offered more capacity at lower prices this quarter, on average. This is mainly due to the return to operation of a 600MW plant with a bilateral contract following non-availability due to resource constraints.

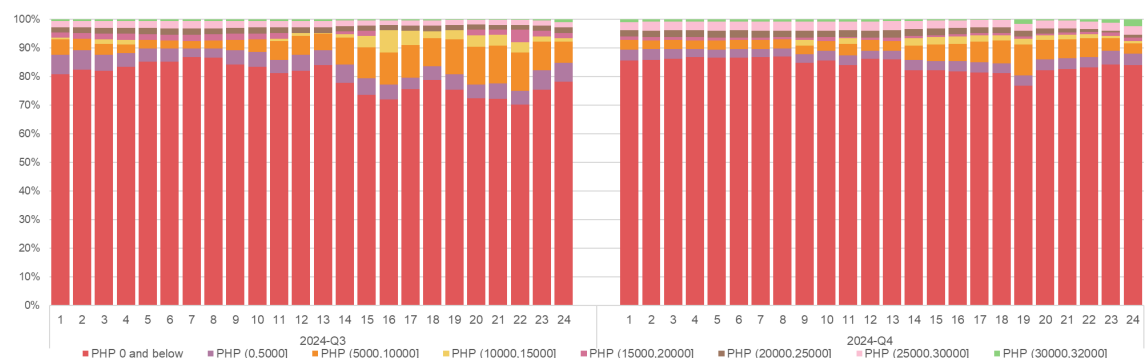


Figure 12. Natural Gas Power Plants Offer Pattern – 3rd and 4th Quarter 2024

Hydro power plant offer behavior, as shown in Figure 13, has slight variation.

QMAR-2024-04

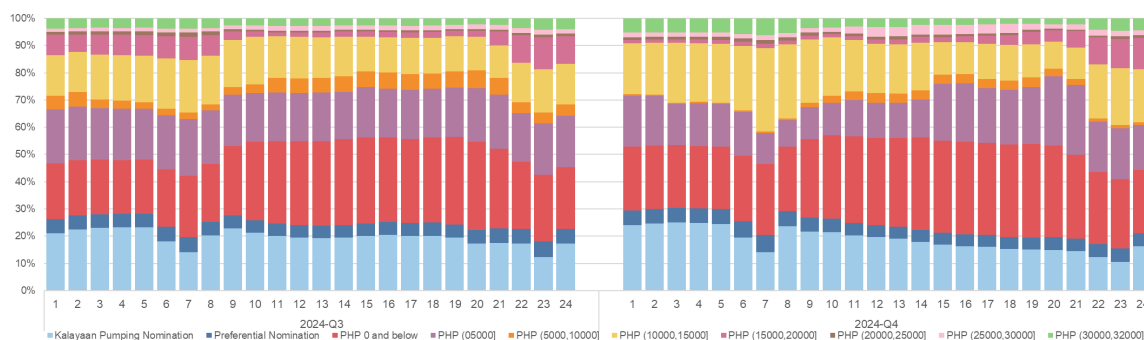


Figure 13. Hydro Power Plants Offer Pattern – 3rd and 4th Quarter 2024

Moving to oil-based power plants, it has been established that they offer their available capacity at higher price levels compared to other plant types, primarily due to their inherently higher operational costs. Additionally, these power plants are typically categorized as peaking power plants and are designed to operate during peak demand periods, when fast-ramping plants are necessary to immediately meet the uptick in the demand requirements.

Reflecting the high cost of fuel, oil-based power plants predominantly submitted offers at higher price points. A clear shift in offer distribution occurred: offers within the PHP 30,000–32,000/MWh range increased by an average of 14% (coming from lower price ranges), while offers within the PHP 25,000–30,000/MWh range remained at 21%, collectively demonstrating a substantial increase in overall pricing. Similar to hydro plants, participants manage their offers while ensuring system reliability by balancing their commitments between energy and reserve markets offering their capacity based on market conditions, available capacity, and anticipated demand.

Notwithstanding the elevated prices associated with oil-based plants, offers at PHP 0/MWh and below were offered and covered by bilateral contractual agreements.

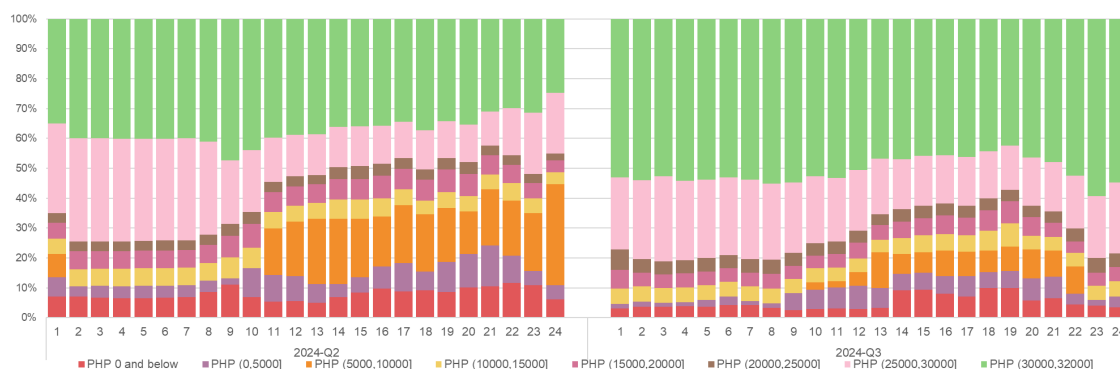


Figure 14. Oil-based Power Plants Offer Pattern – 3rd and 4th Quarter 2024

VI. Market Pricing Conditions

During the fourth quarter of 2024, the WESM was mostly normal pricing conditions for 25,259 trading intervals or at 96% of the time. However, other intervals were placed under various market pricing adjustment/correction as follows:

A. Pricing Error Notice (PEN)²

There were 357 total trading intervals observed with system-wide PEN issuances during the fourth quarter which were related to inappropriate input data that subsequently affected the market outcomes.

B. Price Substitution Methodology (PSM)³

Due to extreme cases of congestion in the electricity transmission network, PSM was implemented on a system-wide basis, affecting a total of 327 trading intervals. This means that the prices for certain transactions were adjusted to address extreme price separations due to network congestion occurrences. Additionally, regional PSMs occurred when the HVDC links are on outage or unavailable, which are connecting the main regions and will thereby result in isolation and price separations.

C. Administered Price (AP)

Market Interventions (MIs) had its regular share in the pricing conditions throughout the billing months covered in this review. Recent interventions were due to force majeure events affecting a total of nine (9) trading intervals system-wide. This represents a 74% decrease from the previous quarter in terms of total affected trading interval.

Moreover, regional impositions of AP due to SO declaration of MI in Visayas, affecting a total of 19 trading intervals, was due to unimplementable real-time dispatch (RTD) schedule. The Administered Prices (APs) during the MI event in Visayas were observed to be higher as compared to prices before the incident.

D. Secondary Price Cap (SPC)⁴

In accordance with the ERC Issuance on the imposition of the SPC, there were recorded regional impositions in the market during the period in review. The HVDC line connecting Luzon and Visayas regions was on outage from 14 October 2024 at 0806h to 20 October 2024 at 1218h for its annual preventive maintenance schedule (APMS). This outage prevented inter-regional power transfer and resulting in higher prices in the Visayas and Mindanao region breaching the PHP 9,000/MWh rolling average for 72-hours. Regional impositions of SPC applied to the regions affected. This affected a total of 235 total trading intervals.

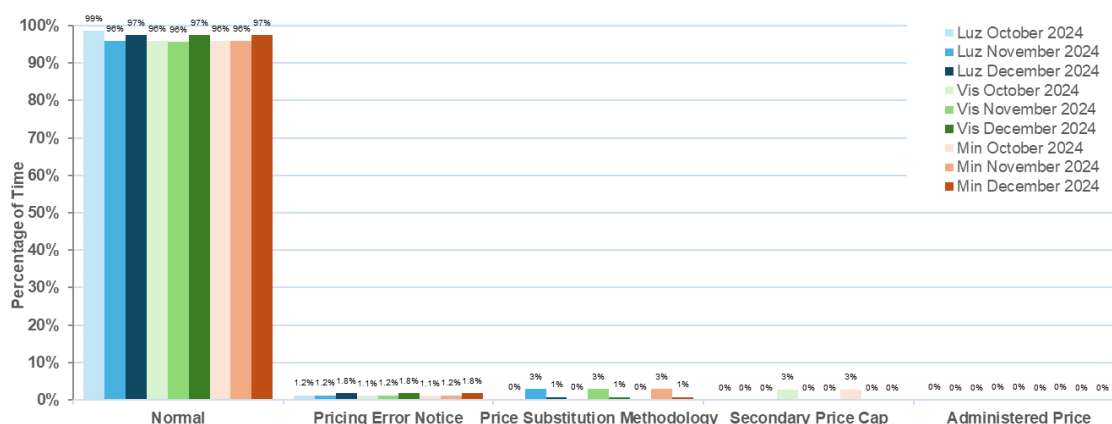
Figure 15 details the monthly price data for the fourth quarter of 2024.

² Section 5 of the Price Determination Methodology provides that the Market Operator (MO) performed a pricing re-run upon issuance of pricing error notice, notwithstanding the application of an automatic pricing re-run.

³ Section 6.2.5 of the Price Determination Methodology provides the price substitution methodology 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.

⁴ ERC Resolution No. 7 Series of 2021, if the Cumulative Price Threshold (CPT) was breach on the 72nd hours regional/islanding, Secondary Price Cap (SPC) will be imposed

QMAR-2024-04

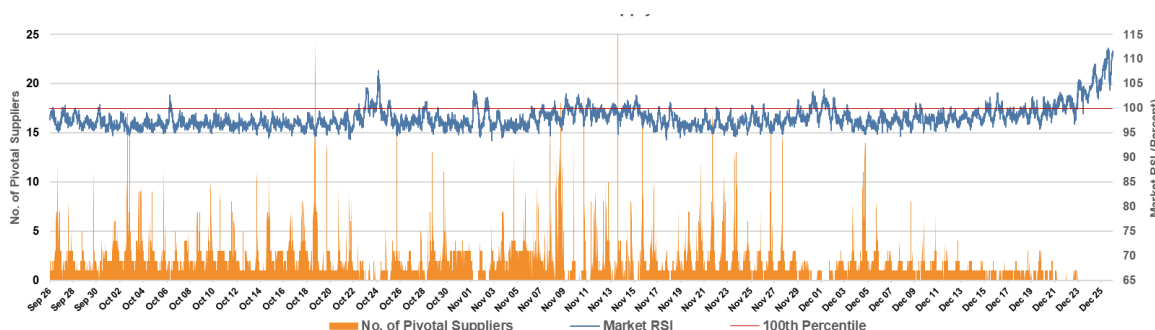
Figure 15. Monthly Pricing Condition for 4th Quarter 2024

VII. Residual Supply

Market Residual Supply Index (Market RSI)⁵ plotted against the corresponding number of pivotal supplier/s in the market is shown in Figure 16.

During the period in review, the market resulted in RSIs ranging from 91.61% to 112.24%, averaging at 98.07%. The average market prices for intervals with RSI below 100% was PHP 4,598/MWh, while those with RSIs above 100% averaged at PHP 1,993/MWh. Moreover, it is also worth noting that when the maximum RSI was at 112.24%, the price was at negative PHP 6,601.14/MWh, while when the RSI is at its minimum at 91.61%, the price was at PHP 28,653.77/MWh, underscoring the correlation between the supply, demand and prices.

The increase in instances of RSIs above 100% was primarily driven by the decline in demand from 23 to 25 December, which contributed to approximately 3% of the total rise in RSI. The reduced demand led to negative prices and continued to occur towards the end of the billing period resulting in increased market RSIs.

Figure 16. Market RSI vs. Pivotal Suppliers, 4th Quarter 2024

⁵ For a generator, the Residual Supply Index (RSI) is a dynamic continuous index measured as 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 100% indicates the presence of pivotal generator/s or supplier/s.

VIII. Pivotal Suppliers⁶

Provided in Figure 17 are the top 10 system-wide pivotal suppliers in the market during the billing quarter in review. GNP Dinginin Coal-Fired Thermal Power Plant (CFTPP) was noted to be a pivotal plant for the 4th quarter similar with the previous quarters of 2024 with 75.08% of the time over a total of 21,261 trading intervals for the fourth quarter. A pivotal plant is one whose capacity is essential to meeting demand at a given time. Without its contribution, the grid could face shortages or instability. Notably, the top pivotal supplier also belongs to the leading market participant group, Aboitiz Power (AP).

Meanwhile, within the San Miguel Corporation (SMC) group, four (4) power plants are classified as system-wide pivotal sources of energy supply in the market. Among them, Masinloc CFTPP and Ilijan NGPP stand out as system-wide pivotal suppliers, accounting for 37.05% and 35.05% of the total trading intervals, respectively. This substantial contribution plays a key role in the group's energy supply strategy, highlighting the plant's strategic importance in meeting demand and maintaining a stable electricity supply in the market.

Additionally, it is worth noting that seven (7) out of the ten (10) pivotal suppliers were coal-fired power plants, while two (2) were natural gas power plants, and one (1) was a hydro power plant.

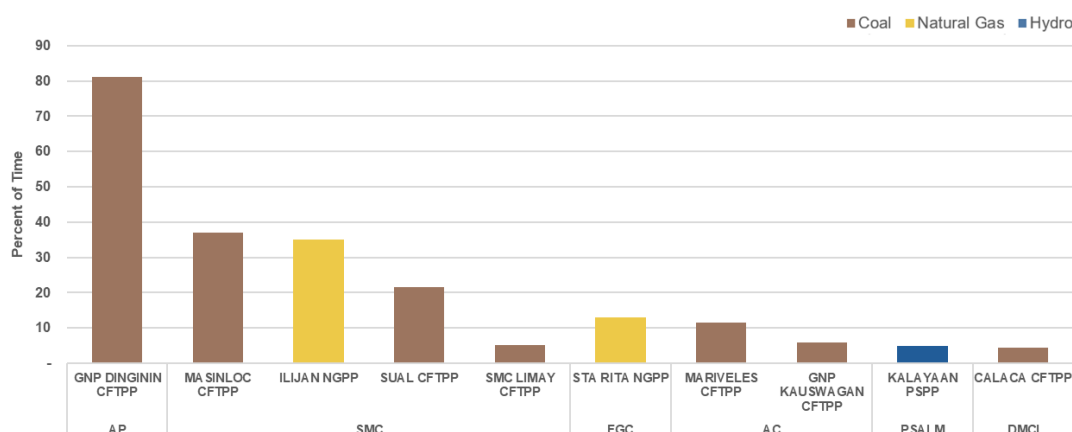


Figure 17. Top 10 System-wide Pivotal Suppliers, 4th Quarter 2024

IX. Capacity Factor

The Capacity Factor, a metric used to assess how efficiently a generating plant produce one billing month based on its metered output, measured at an average of 45% during the period under review which is slightly lower than the 46% from the previous quarter.

On a resource-type basis, baseload power plants were the most frequently dispatched in the WESM, indicating the highest utilization levels among all power sources. Within this category, geothermal power plants had the highest utilization rates, as illustrated in Figure 18. The increased utilization of geothermal energy was due to the preventive maintenance of several large coal-fired power plants, which temporarily lowered coal generation capacity, along with the priority dispatch classification of geothermal plants.

⁶ The Pivotal Supply Index (PSI) measures how critical a particular generator is in meeting the total demand at a particular time. It is a binary variable (1 for pivotal and 0 for not pivotal) which measures the frequency that a generating is pivotal for a particular period.

As a result, geothermal plants played a crucial role in maintaining a stable energy supply and compensating for the reduced coal power output during this period.

It was also noted that hydro power plants experienced an increase in capacity factor compared to the previous quarter surpassing the natural gas power plants which has consistently placed at the third highest capacity factor. The rainy season during the third and fourth quarters led to the abundant water supply levels⁷, enabling hydro plants to operate more efficiently and enhance their capacity factors. Meanwhile, the decline in the capacity factor of natural gas power plants was attributed to resource constraints and the outage of several large natural gas facilities due to fuel gas supply restriction by Batangas LNG terminal.

Furthermore, biofuel and wind power plants are expected to show an increasing trend in their capacity factors during the fourth quarter. This growth is primarily driven by two key factors: 1) northeast monsoon (Amihan), which prevails during the fourth quarter that brings stronger and more consistent wind patterns. These favorable wind conditions enhance the efficiency and output of wind power plants, allowing them to generate more electricity and achieve higher capacity factors for wind power plants; and 2) the harvest season for biofuels during this period ensures an abundant supply of feedstock, such as sugarcane, coconut, and other biomass materials used in biofuel production. The availability of these raw materials enables biofuel power plants to operate at higher efficiency levels, leading to increased utilization and higher capacity factors for biofuel plants.

These seasonal factors collectively enhance the performance of biofuel and wind energy sources and with the priority dispatch categorization for biofuel and must dispatch for wind, strengthening their contribution to the electricity supply during the fourth quarter. This upward trend also aligns with historical data for both power types.

Consistent with the earlier discussion regarding reduced demand during the fourth quarter, oil power plants experienced a decrease in their capacity factor. This demand reduction also influence power plant capacity factors for scheduled generation.

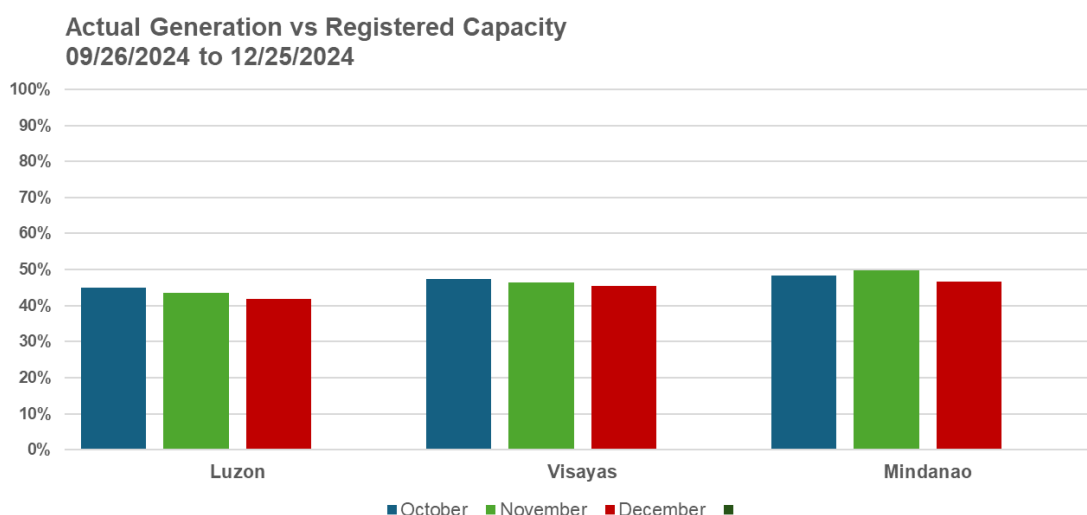


Figure 18. System Capacity Factor (Registered Capacity vs Actual Generation) – 4th Quarter 2024

⁷ PAG-ASA Dam Information: <https://www.pagasa.dost.gov.ph/flood>

QMAR-2024-04

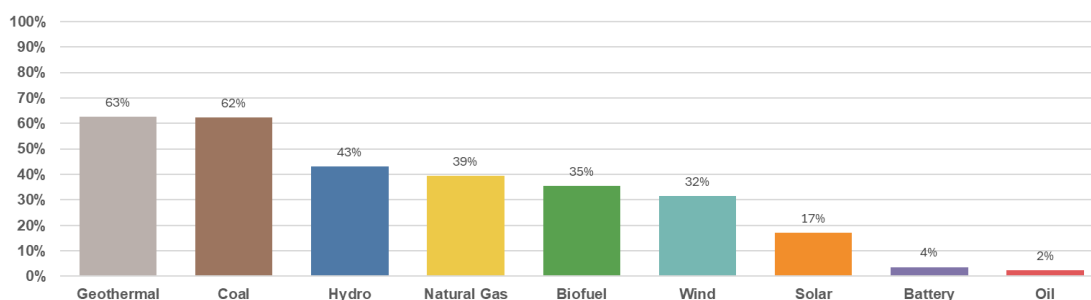


Figure 19. System Capacity Factor Per Resource Type (Registered Capacity vs Actual Generation) – 4th Quarter 2024

X. Generation Mix

Coal power plants, which hold the largest share of registered capacity, consistently generated the highest portion of electricity across all monthly billing periods. During the review period, they contributed to more than half of the total generation mix. This dominance highlights the country's heavy reliance on coal as a primary energy source, emphasizing its crucial role in the power generation sector.

Moreover, renewable energy sources accounted for 27% of the total generation mix, marking a 3% increase from the previous quarter. This growth aligns with the rising capacity factors of hydro, wind, and biofuel power plants and in attaining the Department of Energy commitment to cleaner energy, the PDP 2023-2050 adopted the national renewable energy (RE) power generation mix target of 35% by 2030.

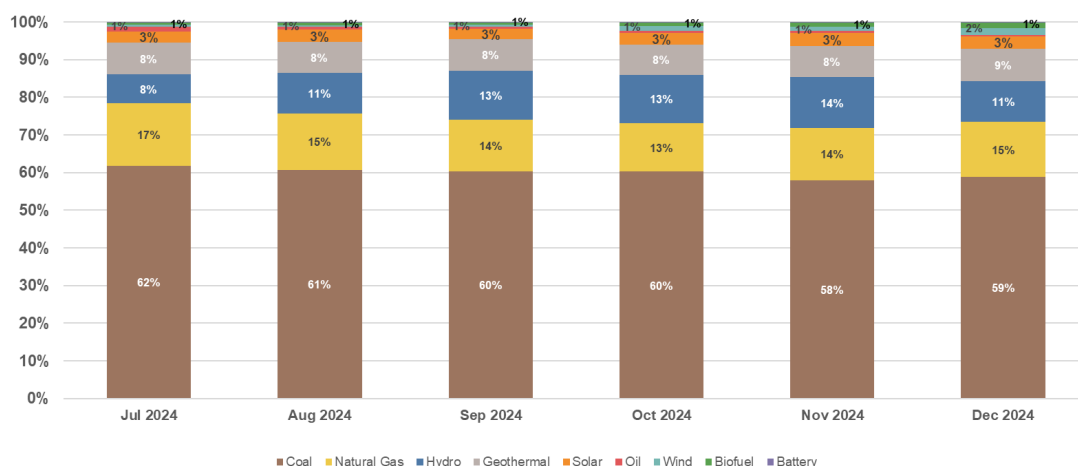


Figure 20. Generation Mix (Based on Metered Quantity) – July to December 2024

XI. Market Concentration

A. Market Share

In terms of market share, five (5) major participant groups continued to dominate based on registered capacity, offered capacity, and actual generation. Among them, SMC held the largest share in registered capacity, reinforcing its strong market presence. SMC also led in offered capacity, indicating that its power plants were more readily available and operational during the review period. The high level of offered capacity reflects its ability to effectively meet market demand. As a result, SMC recorded the highest percentage share in actual generation, demonstrating that a significant portion of its offered capacity was successfully dispatched.

However, AP had the highest spot market exposure, indicating that a significant portion of SMC traded energy was allocated to bilateral contracts. Only 37% of AP's total metered quantity was exposed to the spot market, accounting for 31% of the total spot market exposure. Figure 21 also highlights the disparity between the percentage share per Energy Trading Amount (ETA) and spot market exposure, influenced by variation in market prices.

The competitive dynamics of this integrated market are evident in the distinctions between registered, offered, and actual generation capacity. Generator strategies and operational efficiencies play a significant role in determining market share and power output.

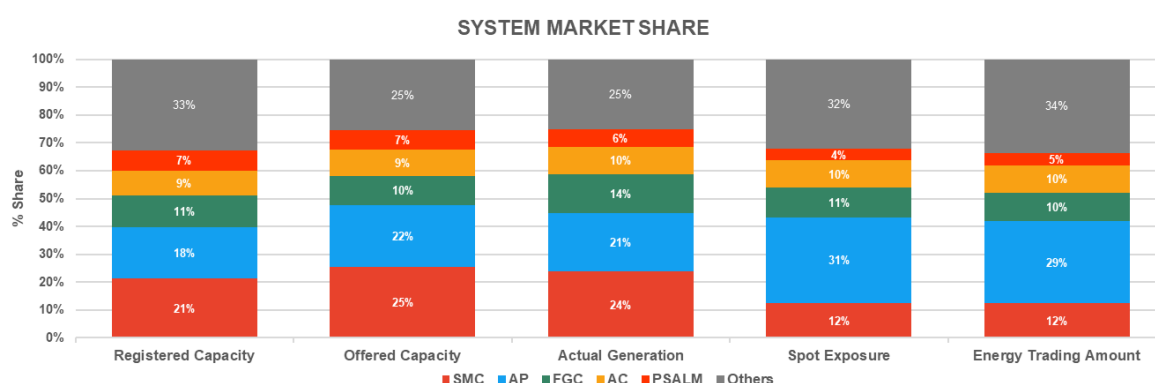


Figure 21. Market Share by Major Participant Group based on Registered Capacity, Offered Capacity, Actual Generation, 4th Quarter of 2024

B. Herfindahl-Hirschman Index (HHI)

The Herfindahl-Hirschman Index (HHI) for major participant groups indicated a non-concentrated market in the fourth quarter of 2024 across registered capacity, offered capacity, spot exposure, and metered quantity. Furthermore, despite AP holding a significant 31% share of the market, the overall market remained at a non-concentrated level.

It was also noted that three major participant groups consistently accounted for more than 50% of the Metered Quantity (MQ) share. This was driven by their frequent dispatch, which in turn influenced the overall market concentration.

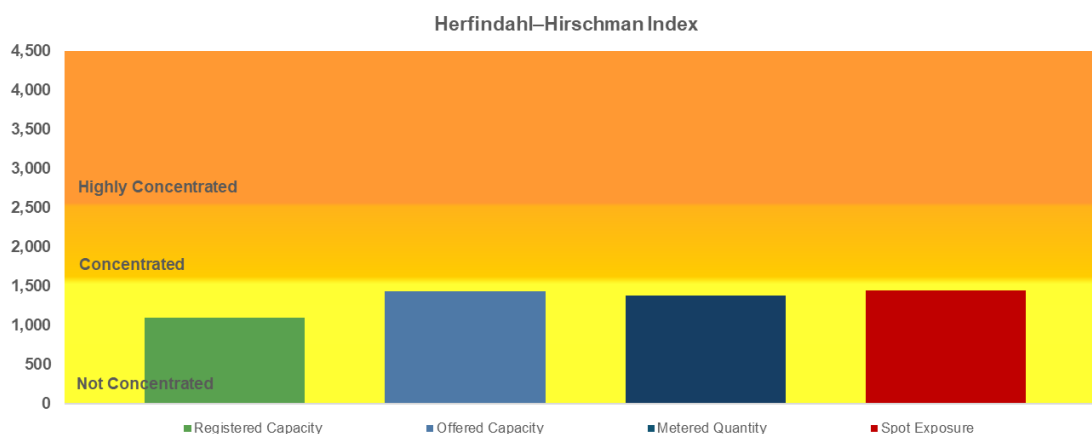


Figure 22. HHI based by Major Participant Grouping, 4th Quarter 2024

XII. Spot Exposure

The load-market participants' spot market transactions experienced a slight increase during the fourth quarter of 2024, ranging from 16 to 27%, compared to only 17 to 25% in the previous quarter. This indicates that majority of total energy purchases remained covered by bilateral contracts.

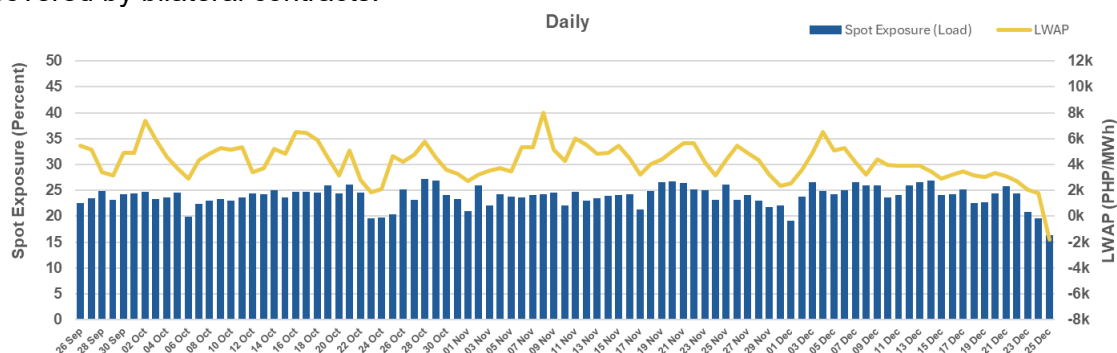


Figure 23. Daily Profile of Spot Market Exposure, 4th Quarter 2024

Table 25 highlights a direct relationship between the spot exposure of load-market participants and the load-weighted average price. A slight variance in spot exposure between different day types is observed, reinforcing the earlier discussion that majority of traded energy remains dependent on bilateral contracts. Meanwhile, spot prices show a significant disparity between day types, with higher market prices recorded on weekdays.

Table 25. Spot Exposure (Load) vs LWAP, Day Type, 4th Quarter 2024

Day Type	Average Spot Exposure (Load) (% Share)	LWAP (in PHP/MWh)
Weekdays	24.09	4,704.72
Weekends/Holidays	23.46	3,347.64

Figure 24 illustrates the hourly fluctuations in spot exposure alongside the corresponding average hourly prices. It shows that spot exposure peaks at 0700h, 1200h, 1500h, and 2000h. However, these peaks in spot exposure are associated with lower prices. Notably, a sharp increase in spot prices was observed between 1800h and 1900h, likely due to the absence of solar power generation thereby requiring dispatch of more expensive power plants. Following this surge, prices begin to decline starting at 2000h.

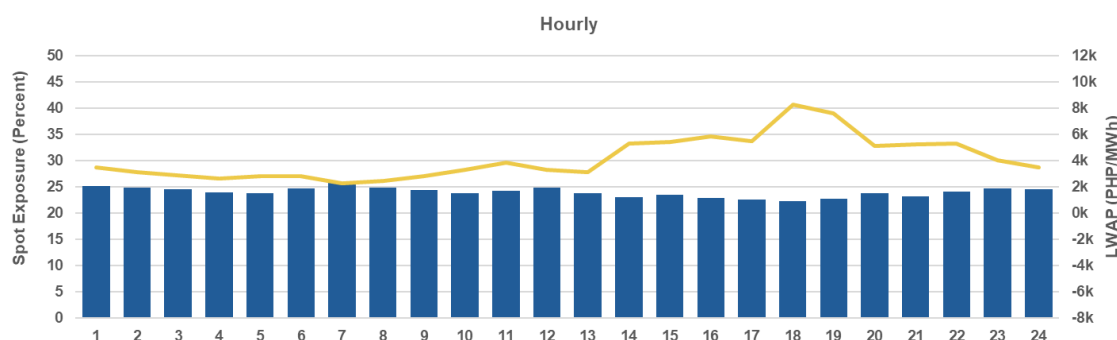


Figure 24. Hourly Profile of Spot Market Exposure, 4th Quarter 2024

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Luzon							
BAT	CONCEPCION BES	50	9/20/2024 4:01	9/26/2024 4:01	6	Maintenance Outage	Annual PMS of switchyard and BESS
BAT	LUMBAN BESS	50	10/26/2024 20:43	12/19/2024 8:18	54	Forced Outage	Affected by the outage of DU during the passage of Typhoon Kristine draining their backup power of the controls of
BAT	LUMBAN BESS	50	12/24/2024 0:16			Maintenance Outage	Ongoing testing and commissioning.
BAT	MAGAPIT BESS	40	12/14/2024 6:06	12/16/2024 21:30	2	Forced Outage	Affected by the shutdown of Tuguegarao-Magapit 69kV Line.
BIOF	GFI	15.8	12/21/2024 9:11			Maintenance Outage	Repair and Maintenance outage
BIOF	CBEC	13.5	9/26/2024 0:04	10/23/2024 1:34	27	Maintenance Outage	Maintenance Outage
BIOF	BT2020COGEN	13	10/6/2024 15:00	10/10/2024 21:27	4	Forced Outage	Emergency Shutdown due to high turbine vibration.
BIOF	GIFTC	12	12/13/2024 23:00	12/15/2024 1:27	2	Forced Outage	Tripped
BIOF	IPOWER 2	10.8	11/1/2024 12:01	11/5/2024 15:26	4	Forced Outage	Affected by the auto reclosing of Cabanatuan-Fatima 69kV line.
BIOF	GRASSGOLD	10.8	11/23/2024 2:11	11/25/2024 16:01	2	Forced Outage	Emergency shutdown due to turbine control panel trouble.
BIOF	IPOWER	10.8	11/25/2024 19:01	11/27/2024 9:21	2	Maintenance Outage	Maintenance outage to correct steam leak at pressure reducer until November 27, 2024.
BIOF	GIFTC2	6	9/24/2024 0:02	9/26/2024 0:26	2	Maintenance Outage	Maintenance shutdown.
BIOF	VSGRIP	5.4	10/21/2024 12:01	10/23/2024 7:01	2	Forced Outage	Emergency shutdown due to flash handling system trouble.
BIOF	VSGRIP	5.4	11/12/2024 4:31	11/14/2024 8:01	2	Forced Outage	Ash handling problem
BIOF	LA SUERTE	5.1	12/22/2024 13:13			Forced Outage	Unplanned Outage reason for outage yet to be declared.
BIOF	BBEC	5	11/16/2024 18:43	11/19/2024 13:26	3	Forced Outage	Affected by the tripping of Naga-Lagonoy 69kV line due to typhoon PEPITO.?
BIOF	ACN	3.2	10/30/2024 17:53	11/28/2024 13:10	29	Forced Outage	Unplanned outage. Reason for verification with plant.
BIOF	TRUST BIO	1.7	11/25/2024 15:57	11/29/2024 3:31	4	Forced Outage	Emergency shutdown to conduct tuning due to high Hydrogen Sulfide content of Biogas Supply.
COAL	DINGININ 1	668	11/6/2024 12:00	11/15/2024 17:50	9	Forced Outage	Emergency shutdown due to boiler tube leak.
COAL	SUAL 1	647	11/14/2024 23:31	12/14/2024 23:59	30	Planned Outage	Planned Outage.
COAL	SUAL 2	647	12/17/2024 23:40			Planned Outage	Planned shutdown until January 17, 2025.
COAL	SBPL	455	11/16/2024 0:01	11/25/2024 16:57	9	Maintenance Outage	Maintenance outage from November 16 - 25, 2024
COAL	SBPL	455	12/17/2024 0:00	12/22/2024 20:25	5	Forced Outage	Steam Leak at hot reheat.
COAL	PBL3	420	11/22/2024 18:25	11/25/2024 0:54	3	Forced Outage	Emergency shutdown due to excessive build-up of bottom ash in boiler lower furnace
COAL	PBL2	382	9/20/2024 0:35	12/1/2024 0:00	72	Planned Outage	Planned Outage until November 30, 2024.
COAL	PBL1	382	10/24/2024 16:00	10/26/2024 9:31	2	Forced Outage	Boiler tube leak.
COAL	PBL2	382	12/1/2024 0:01	12/11/2024 14:30	10	Forced Outage	Extended outage
COAL	MSLC3	335	9/24/2024 1:56	10/23/2024 23:59	29	Planned Outage	Planned outage until October 23, 2024.
COAL	CLC2	300	10/24/2024 6:26	10/31/2024 7:05	7	Forced Outage	Main fuel trip.
COAL	CLC1	240	10/24/2024 8:32	10/28/2024 5:07	4	Forced Outage	Emergency shutdown due to coal silo trouble.
COAL	CLC1	240	12/11/2024 1:34			Maintenance Outage	Maintenance Outage until January 9, 2025.
COAL	SCPC 3	150	9/14/2024 4:06	10/25/2024 14:48	41	Planned Outage	Planned Outage until October 29, 2024.
COAL	MPGC 2	150	9/29/2024 4:34	10/21/2024 9:07	22	Forced Outage	Tripped due to high furnace pressure.
COAL	SLPGC 1	150	10/9/2024 1:33	10/16/2024 13:13	7	Forced Outage	Boiler furnace water wall tube leak
COAL	SLPGC 1	150	10/24/2024 11:42	10/31/2024 11:39	7	Forced Outage	Emergency shutdown due to low vacuum on main turbine condenser.
COAL	SCPC 2	150	10/24/2024 22:39	10/26/2024 4:19	2	Forced Outage	Gas air heater motor trouble.
COAL	MPGC 1	150	10/25/2024 4:41	10/29/2024 4:59	4	Forced Outage	Trip while on emergency shutdown due to Seawater cooling trouble.
COAL	MPGC 1	150	11/1/2024 1:01	11/3/2024 23:59	2	Maintenance Outage	On Maintenance Outage until November 3, 2024.
COAL	MPGC 2	150	11/1/2024 16:00	11/3/2024 15:58	2	Maintenance Outage	Maintenance outage related to the shutdown of Mariveles-MPGC 500KV line 1.
COAL	MPGC 4	150	11/1/2024 20:00	11/3/2024 14:24	2	Maintenance Outage	Maintenance outage related to the shutdown of Mariveles-MPGC 500KV line 1.
COAL	MPGC 1	150	11/4/2024 0:00	11/22/2024 1:26	18	Forced Outage	Extended outage
COAL	SCPC	150	12/3/2024 23:51	12/6/2024 18:31	3	Forced Outage	Emergency shutdown due to clogging of sea water line
COAL	MPGC 4	150	12/3/2024 23:04			Forced Outage	Corrective maintenance on main steam line.
COAL	SLPGC 2	149.6	10/24/2024 10:15	11/4/2024 8:03	11	Forced Outage	The unit tripped. Cause of outage is under investigation.
COAL	SLPGC 2	149.6	11/14/2024 22:51			Maintenance Outage	Maintenance outage
COAL	SLTEC 2	124	10/24/2024 23:46	10/29/2024 17:05	5	Forced Outage	Tripped due to low condenser vacuum.
COAL	SLTEC 1	122	10/31/2024 0:01	11/3/2024 16:43	3	Forced Outage	Unplanned outage to facilitate the correction of low condenser vacuum.
COAL	ANDA(APC2)	72	12/21/2024 0:05			Planned Outage	Planned shutdown until January 10, 2024.
COAL	PETRON 3	35	12/0/2024 17:26	11/17/2024 7:45	302	Forced Outage	High furnace pressure and main steam piping rupture.
GEO	TW 2	60	10/22/2024 8:57	10/24/2024 12:04	2	Forced Outage	Tripped due to actuation of generator motorina
GEO	TW 5	57	11/16/2024 18:22	11/18/2024 22:52	2	Forced Outage	On house load as contingency measure to the passage of typhoon PEPITO.
GEO	TW 6	56.8	11/9/2024 0:02	11/26/2024 20:30	17	Maintenance Outage	Declared unavailable to facilitate essential repairs on the hot well on Transformer.
GEO	PALAYAN BINARY	31	9/17/2024 13:49	10/1/2024 15:26	14	Forced Outage	Trouble in switchyard.
GEO	BACMAN3	20	11/16/2024 6:07	11/18/2024 13:51	2	Forced Outage	Contingency measure to Typhoon Pepito.
GEO	TIWI C BINARY	16.7	10/14/2024 18:08	12/20/2024 18:15	67	Maintenance Outage	Unit shutdown to the facilitate cleaning of vaporizer and preheater. The unit is under test and commissioning.
GEO	TIWI C BINARY	16.7	12/22/2024 20:41	12/24/2024 15:56	2	Forced Outage	Emergency shutdown due to system (pipeline) hammering. On commissioning test.
GEO	MB O2	3	12/25/2024 14:14			Forced Outage	Tripped due to loss of feedback power.
HYD	KAL 4	185	11/26/2024 0:00	11/30/2024 16:35	4	Planned Outage	Planned outage until November 30, 2024.
HYD	KAL 3	184.6	11/19/2024 0:00			Planned Outage	Planned outage until November 23, 2024.
HYD	KAL 1	183	9/19/2024 0:00	9/27/2024 22:10	8	Forced Outage	Extended Outage until October 2, 2024
HYD	KAL 3	181.4	11/19/2024 0:00	11/23/2024 23:59	4	Planned Outage	Planned outage until November 23, 2024.
HYD	KAL 1	181.1	11/4/2024 0:01	11/8/2024 23:59	4	Planned Outage	Semi Annual Maintenance until November 9, 2024.
HYD	KAL 1	181.1	11/9/2024 0:00	11/13/2024 22:24	4	Planned Outage	Planned outage until November 13, 2024.
HYD	MAG 1	97	10/12/2024 4:04	10/14/2024 19:56	2	Maintenance Outage	Maintenance outage due to excessive leak at transformer 1
HYD	PAN 1	60	10/7/2024 10:33	10/10/2024 18:30	3	Planned Outage	Planned outage.
HYD	PAN 2	60	10/11/2024 9:30	10/14/2024 15:50	3	Planned Outage	Planned Outage until October 14, 2024.
HYD	ANG M U4	50	2/14/2022 0:00	12/20/2024 9:01	1040	Planned Outage	Planned outage.
HYD	ANG M U1	50	6/28/2024 8:01			Maintenance Outage	Replacement of Main Unit No.1 in relation to the ongoing AHEPP Modernization and Rehabilitation Project
HYD	CAL U2	14	11/4/2024 8:00	11/8/2024 23:00	4	Planned Outage	Planned outage until Nov 8, 2024.
HYD	CAL U1	14	11/4/2024 8:00	11/8/2024 23:00	4	Planned Outage	Planned Outage until Nov. 8, 2024.
HYD	MAS	12	12/16/2024 11:55	11/19/2024 11:18	2	Forced Outage	Tripped due to AVR control error.
HYD	MATUNO	8.7	11/17/2024 15:45	11/19/2024 11:18	2	Forced Outage	Affected by Bayombong-Matuno 69kV Line tripping.
HYD	ANG A U2	6	11/6/2023 0:01			Planned Outage	Total Plant shutdown (Planned Outage)
HYD	NIA	6	10/22/2024 15:50	11/4/2024 10:08	13	Forced Outage	Suspension of IDR due to typhoon KRISTINE.
HYD	TIBAG	5.8	10/24/2024 2:00	11/1/2024 19:15	8	Forced Outage	Affected by Transmission line tripping due to passage of TC Kristine.
HYD	INARIHAN	1.6	10/22/2024 4:29	11/26/2024 8:48	35	Forced Outage	Affected by the outage of CASURECO.
HYD	L LABAYAT	1.5	10/24/2024 2:00			Forced Outage	Affected by line tripping due to TC Kristine
HYD	L LABAYAT	1.4	10/24/2024 2:00	11/1/2024 16:53	8	Forced Outage	Affected by line tripping due to TC Kristine
HYD	BOTCN	0.8	11/11/2024 0:00	11/15/2024 18:25	4	Planned Outage	On Planned Outage until November 15, 2024.
NATG	EERI2	440	8/10/2024 12:02	10/30/2024 10:37	81	Maintenance Outage	Maintenance outage after steam blowing. The unit is under test and commissioning.
NATG	EERI1	440	9/9/2024 14:47	9/28/2024 15:00	19	Maintenance Outage	Under testing and commissioning.
NATG	EERI1	440	9/30/2024 18:21	10/4/2024 20:00	4	Forced Outage	Oil leak on bearing of GT. On commissioning Test
NATG	EERI3	440	10/2/2024 16:56			Maintenance Outage	Under test and commissioning.
NATG	EERI1	440	10/14/2024 15:18	10/17/2024 7:37	3	Forced Outage	Tripped due to cold-reheat inlet and outlet pressure high-high.
NATG	EERI1	440	10/20/2024 20:43	11/5/2024 11:57	16	Forced Outage	Demi water supply shortage. On Commissioning Test
NATG	EERI2	440	10/30/2024 15:55	11/1/2024 8:49	2	Maintenance Outage	Under test and commissioning.
NATG	EERI2	440	11/1/2024 9:25	11/3/2024 8:24	2	Forced Outage	The unit tripped while on test and commissioning.
NATG	EERI2	440	11/3/2024 8:49	11/6/2024 10:18	3	Forced Outage	On commissioning
NATG	EERI2	440	11/1/2024 11:51	11/13/2024 4:22	2	Forced Outage	High conductivity of hot well.
NATG	EERI1	440	11/1/2024 12:48	11/14/2024 19:39	3	Forced Outage	On commissioning.
NATG	EERI2	440	11/16/2024 8:33	11/18/2024 15:25	2	Forced Outage	Tripped due to high condenser conductivity.
NATG	EERI2	440	11/19/2024 21:22	11/26/2024 14:59	7	Forced Outage	Tripped due to HP bypass valve signal error.
NATG	EERI2	440	11/30/2024 18:34	12/2/2024 17:46	2	Forced Outage	Tripped due to HP Bypass signal error. On test and commissioning.
NATG	EERI1	440	12/3/2024 17:04	12/5/2024 12:50	2	Forced Outage	Tripped due to high pressure steam high
NATG	EERI2	440	12/3/2024 20:29	12/6/2024 11:33	3	Forced Outage	Tripped due to erratic main steam bypass
NATG	EERI2	440	12/9/2024 1:33	12/12/2024 15:58	3	Forced Outage	Tripped due to bypass valve trouble. On commissioning test.
NATG	EERI1	440	12/13/2024 18:40			Maintenance Outage	Unit shutdown as part of testing and commissioning.
NATG	SAN LO 50	265	10/18/2024 23:33	10/21/2024 17:51	3	Forced Outage	Emergency shutdown due to steam leak and transformer cooling system trouble.
NATG	SAN LO 60	265	12/13/2024 23:54	12/15/2024 23:59	2	Planned Outage	Planned Outage until December 15, 2024.
NATG	SAN LO 50	265	12/19/2024 23:54	12/22/2024 20:04	3	Planned Outage	Planned Outage from December 20 - 22, 2024
NATG	ST. RITA 30	263	9/18/2024 0:15	10/29/2024 19:44	41	Planned Outage	Planned Outage until November 1, 2024.
NATG	ST. RITA 40	263	10/1/2024 23:58	10/13/2024 23:59	2	Planned Outage	Planned outage October 12 – 13, 2024
NATG	ST. RITA 40	263	10/14/2024 0:00	10/17/2024 20:38	3	Maintenance Outage	Maintenance outage from October 14 – 20, 2024
NATG	ST. RITA 20	263	10/22/2024 6:12	11/1/2024 1:49	20	Forced Outage	Tripped due to activation of unit protection
NATG	ST. RITA 30	263	11/12/2024 17:08	11/14/2024 11:55	3	Planned Outage	Under test and commissioning after major overhaul.
NATG	ST. RITA 30	263	12/12/2024 6:19	12/14/2024 17:51	2	Forced Outage	The unit tripped. The cause of tripping is still under investigation.
NATG	ILLUAN B3	220	10/25/2024 9:09	10/29/2024 20:15	4	Forced Outage	Emergency shutdown due to gas supply problem.
NATG	ILLUAN A1	190	10/22/2024 22:41	10/28/2024 13:47	6	Forced Outage	Emergency shutdown due to Gas Supply restriction.

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Luzon							
NATG	ILIJAN B1	190	10/24/2024 10:04	10/29/2024 18:23	5	Forced Outage	Emergency tripped due to gas supply trouble.
NATG	ILIJAN B2	190	10/25/2024 9:27	10/29/2024 14:45	4	Forced Outage	Emergency shutdown due to gas supply problem.
NATG	ILIJAN B2	190	10/29/2024 17:10	10/31/2024 7:25	2	Forced Outage	To swap with Ilijan B1
NATG	ILIJAN B1	190	11/1/2024 17:29	11/4/2024 10:18	3	Forced Outage	Unit tripped due to actuation of generator lockout protection.
NATG	ILIJAN B1	190	11/18/2024 21:56	11/21/2024 1:11	3	Forced Outage	Gas supply restriction.
OIL	MAL 1	300	5/3/2019 18:21			Forced Outage	Declared unavailable due to motorization of unit generator caused by the non-opening of phase B of PCB 8-
OIL	MAL 2	130	7/24/2024 21:24			Forced Outage	Tripped due to loss prime of CWP
OIL	BPPC S3	70	11/1/2024 6:01	11/4/2024 16:07	3	Maintenance Outage	Maintenance outage
OIL	BPPC S2	70	11/1/2024 6:01	11/4/2024 16:07	3	Maintenance Outage	Maintenance outage
OIL	BPPC S1	70	11/1/2024 6:01	11/4/2024 16:07	3	Maintenance Outage	Maintenance outage
OIL	LIMAY-U5	60	10/4/2024 1:55	10/6/2024 15:06	2	Forced Outage	Affected by the tripping of Main Unit Transformer.
OIL	LIMAY-U5	60	10/19/2024 0:01	10/24/2024 17:55	5	Planned Outage	Planned outage until October 25, 2024.
OIL	TRANS A	48	12/16/2024 8:00	12/23/2024 16:10	7	Maintenance Outage	Total plant shutdown until December 23, 2024 due to condensate line tapping.
OIL	INGRID 4	28	12/1/2024 8:29	12/11/2024 6:54	10	Planned Outage	Planned Outage until December 11, 2024
OIL	INGRID 6	28	12/1/2024 8:29	12/5/2024 20:00	4	Planned Outage	Planned Outage until December 10, 2024
OIL	INGRID 4	28	12/1/2024 8:29	12/5/2024 20:00	4	Planned Outage	Planned Outage until December 10, 2024
OIL	INGRID 1	28	12/1/2024 8:29	12/5/2024 20:00	4	Planned Outage	Planned Outage until December 10, 2024
OIL	INGRID 6	28	12/5/2024 20:00	12/11/2024 6:04	6	Forced Outage	Declared early unit availability from Planned Outage. Plant availability now affected by Malaya-Ingrid 230kV Line 2
OIL	INGRID 1	28	12/5/2024 20:00	12/11/2024 6:04	6	Forced Outage	Declared early unit availability from Planned Outage. Plant availability now affected by Malaya-Ingrid 230kV Line 2 outage.
OIL	INGRID 5	22	12/1/2024 8:29	12/5/2024 20:00	4	Planned Outage	Planned Outage until December 10, 2024
OIL	INGRID 3	22	12/1/2024 8:29	12/5/2024 20:00	4	Planned Outage	Planned Outage until December 10, 2024
OIL	INGRID 2	22	12/1/2024 8:29	12/5/2024 20:00	4	Planned Outage	Planned Outage until December 10, 2024
OIL	INGRID 5	22	12/5/2024 20:00	12/11/2024 6:04	6	Forced Outage	Declared early unit availability from Planned Outage. Plant availability now affected by Malaya-Ingrid 230kV Line 2
OIL	INGRID 3	22	12/5/2024 20:00	12/11/2024 6:04	6	Forced Outage	Declared early unit availability from Planned Outage. Plant availability now affected by Malaya-Ingrid 230kV Line 2
OIL	INGRID 2	22	12/5/2024 20:00	12/11/2024 6:04	6	Forced Outage	Declared early unit availability from Planned Outage. Plant availability now affected by Malaya-Ingrid 230kV Line 2
WIND	BALAOI WIND	80	11/7/2024 23:18			Forced Outage	Affected by Laoag-Balaoi Windfarm 115kV Line tripping.
WIND	CAPA II	50	11/7/2024 22:09	12/3/2024 14:57	26	Forced Outage	Overspeed tripping due to TS Marce
WIND	NWIND 1	32.4	11/7/2024 15:44	11/10/2024 11:19	3	Forced Outage	Affected by Laoag-Bangui Wind Farm 69kV Line tripping
WIND	NWIND 2	18.8	11/7/2024 15:44	11/10/2024 15:55	3	Forced Outage	Affected by Laoag-Bangui Wind Farm 69kV Line tripping.
Visayas							
BIOF	VMCI U0	35	10/23/2024 17:14	11/5/2024 13:05	13	Forced Outage	VMCI isolate from the grid due to tripping of their 13.8kV Breaker. Generator shutdown at 1726H to conduct plant
BIOF	VMC U01 U0	35	10/23/2024 17:14			Forced Outage	VMCI isolate from the grid due to tripping of their 13.8kV Breaker. Generator shutdown at 1726H to conduct plant
BIOF	URC U1	30	9/23/2024 20:19	10/3/2024 13:30	10	Forced Outage	Shutdown end of trial run.
BIOF	NNBP U1	25	5/22/2024 15:59			Forced Outage	Insufficient fuel supply (bagasse).
BIOF	NNBP U1	25	11/24/2024 3:50	11/26/2024 8:15	2	Forced Outage	Shutdown due to conveyor problem.
BIOF	NNBP U1	25	11/29/2024 9:33	12/2/2024 12:22	3	Forced Outage	Shutdown at 0933H due to conveyor problem.
BIOF	NNBP U1	25	12/4/2024 18:55			Forced Outage	Emergency shutdown due to boiler problem.
BIOF	SCBP U0	19.5	9/13/2024 14:40	9/30/2024 10:31	17	Forced Outage	Emergency offline due to poor fuel quality.
BIOF	SCBP U0	19.5	10/4/2024 18:26	10/7/2024 11:50	3	Forced Outage	Shutdown to conduct repair of primary flow meter and leak at STS body flash tank.
BIOF	URC U2	16	9/23/2024 20:12	9/30/2024 16:48	7	Forced Outage	Shutdown end of trial run.
BIOF	CABI U0	12	10/28/2024 14:59	12/2/2024 14:00	35	Forced Outage	End of plant test run.
BIOF	HPC U2 U0	9.5	9/7/2024 16:19	9/29/2024 5:45	22	Forced Outage	Shutdown after plant test run.
BIOF	HPC U2 U0	9.5	11/2/2024 8:56	11/4/2024 17:13	2	Forced Outage	Shutdown due to weekly maintenance.
BIOF	HPC U2 U0	9.5	12/23/2024 14:10			Forced Outage	Shutdown due to weekly maintenance.
BIOF	CASA U1	8	9/30/2024 15:32	11/18/2024 16:09	49	Forced Outage	Factory test run of Cogen plant
BIOF	SCBI U0	7.4	3/31/2023 10:35			Forced Outage	Plant shutdown
BIOF	CASA 2 U1	7	4/15/2024 12:38			Forced Outage	Due to internal trouble
BIOF	CASA 2 U1	7	4/15/2024 12:44			Forced Outage	Due to internal trouble
BIOF	CASA 2 U1	7	11/7/2024 22:09			Forced Outage	Due to internal trouble
BIOF	VMC U0	2.5	4/21/2024 16:20			Forced Outage	Weekly maintenance.
BIOF	HPC U1 U0	2	11/12/2023 20:00			Forced Outage	Defective auxiliary of vibration meter.
COAL	PEDC U3	150	10/27/2024 0:30	12/6/2024 0:00	40	Maintenance Outage	PMS-major overhauling
COAL	PEDC U3	150	12/6/2024 0:01	12/13/2024 14:15	7	Forced Outage	Additional essential maintenance works on generator.
COAL	KSKP U0	103	10/16/2024 4:41	10/19/2024 11:41	3	Forced Outage	Emergency shutdown due to possible boiler tube leak
COAL	KSKP U2	103	12/24/2024 5:42			Forced Outage	Unit emergency shutdown due to tube leak
COAL	CEDC U1	83.2	12/5/2024 4:50	12/11/2024 16:56	6	Forced Outage	Steam drum low
GEO	MALITBOG U2	77.5	7/8/2024 5:43			Forced Outage	Due to high vibration
GEO	NASULO U0	47.5	10/22/2024 16:06	10/28/2024 14:14	6	Forced Outage	Affected by tripping of Amlan-Nasuji 138kV Line 1 and Line 2.
GEO	PGPP1 U1	37.5	12/19/2024 7:32	12/21/2024 2:15	2	Forced Outage	Emergency shutdown due to steam leak.
GEO	PGPP1 U3	35.5	9/12/2024 0:10	11/17/2024 20:46	66	Forced Outage	emergency shutdown at 0010H to conduct inspection of the turbine rotor due to high bearing no.1 vibration.
GEO	UMPP U3	32	10/2/2024 15:43			Forced Outage	due to steam deficiency
GEO	UMPP U2	30	10/23/2024 8:21			Maintenance Outage	Emergency repair of air-cooled condenser
GEO	UMPP U4	27.5	10/23/2024 8:25			Maintenance Outage	Emergency repair of air-cooled condenser
GEO	PGPP2 SOG2 U0	20	10/22/2024 16:06	10/24/2024 19:45	2	Forced Outage	Affected by tripping of Amlan-Nasuji 138kV Line 1 and Line 2.
GEO	PGPP2 SOG1 U0	20	10/22/2024 16:06	10/24/2024 17:06	2	Forced Outage	Isolated due to tripping of Amlan-Nasuji 138kV Line 1 and Line 2.
GEO	PGPP2 SOG1 U0	20	10/24/2024 19:47	10/27/2024 12:14	3	Forced Outage	Auto-tripped due to opening of breaker 52SG1.
GEO	PGPP2 SOG2 U0	20	10/25/2024 20:45	10/27/2024 9:35	2	Forced Outage	Isolate from the grid due to tripping of 52SGN AND 52OK.
GEO	PGPP2 OKOY U0	19.5	10/22/2024 16:06	10/24/2024 20:06	2	Forced Outage	Affected by tripping of Amlan-Nasuji 138kV Line 1 and Line 2.
GEO	MALITBOG BCP U0	13.35	10/24/2024 9:30			Forced Outage	Due to activation of low vacuum indication.
GEO	BAGO BINARY U1	4.7	9/24/2024 19:57			Forced Outage	Turbine tripped under test and commissioning.
GEO	BILIRAN U1	1	10/5/2024 4:39			Forced Outage	Turbine high vibration trip
HYD	THC U3	5.1	9/3/2024 12:24	10/24/2024 8:58	51	Forced Outage	Affected by the tripping of 69kV Taft feeder.
HYD	THC U2	5.1	9/3/2024 12:24	10/4/2024 13:47	31	Forced Outage	Affected by the tripping of 69kV Taft feeder.
HYD	THC U2	5.1	11/15/2024 19:27	11/25/2024 7:04	10	Forced Outage	Due to unbalanced current.
HYD	THC U2	5.1	11/25/2024 18:28	11/27/2024 17:04	2	Forced Outage	Affected by normalization of Taft Feeder
HYD	THC U3	5.1	12/12/2024 22:13	12/14/2024 22:35	2	Forced Outage	installation of differential protection relay
HYD	THC U1	5	10/23/2024 22:45			Forced Outage	Due to Low water level.
HYD	UPPER TAFT U3	4.7	10/29/2024 13:03	11/3/2024 8:27	5	Forced Outage	Insufficient water intake
HYD	UPPER TAFT U2	4.7	10/30/2024 9:03	11/1/2024 7:58	2	Forced Outage	Changeover of unit from 2 to 1. (Insufficient water supply)
HYD	UPPER TAFT U1	4.7	11/1/2024 7:51	11/5/2024 9:04	4	Forced Outage	Affected by Paranas-Quinapondan tripping.
HYD	UPPER TAFT U3	4.7	11/3/2024 20:44	11/6/2024 6:16	3	Forced Outage	Emergency outage due to grease leakage caused by a mechanical fault (Under test and commissioning).
HYD	UPPER TAFT U2	4.7	11/5/2024 8:58	11/10/2024 9:14	5	Forced Outage	Insufficient water intake. (Under test and commissioning)
HYD	UPPER TAFT U1	4.7	11/6/2024 6:12			Forced Outage	Insufficient water intake. (Under test and commissioning)
HYD	UPPER TAFT U3	4.7	11/7/2024 21:15	11/12/2024 6:10	5	Forced Outage	Insufficient water intake. (Under test and commissioning)
HYD	UPPER TAFT U1	4.7	11/10/2024 9:14	11/17/2024 9:04	7	Forced Outage	Change unit. Under test and commissioning.
HYD	UPPER TAFT U2	4.7	11/12/2024 6:10	11/15/2024 13:09	3	Forced Outage	Change unit. Under test and commissioning.
HYD	UPPER TAFT U3	4.7	11/15/2024 13:02	11/21/2024 6:31	6	Forced Outage	Change unit (under test and commissioning).
HYD	UPPER TAFT U2	4.7	11/17/2024 9:00	11/19/2024 0:40	2	Forced Outage	Change unit. Under test and commissioning.
HYD	UPPER TAFT U1	4.7	11/19/2024 0:31	11/25/2024 18:52	6	Forced Outage	Affected by tripping of Taft Feeder
HYD	UPPER TAFT U2	4.7	11/21/2024 6:32	11/29/2024 10:04	8	Forced Outage	Under test & commissioning
HYD	UPPER TAFT U3	4.7	11/25/2024 18:31	11/30/2024 14:14	5	Forced Outage	Affected by normalization of Taft Feeder. Under test and commissioning
HYD	UPPER TAFT U3	4.7	12/4/2024 6:00	12/8/2024 15:07	4	Forced Outage	Affected by pre-arranged maintenance activity at Paranas-Quinapondan 69kV Line. (Under test and commissioning)
HYD	UPPER TAFT U2	4.7	12/13/2024 20:20	12/15/2024 6:42	2	Forced Outage	Under test and commissioning
HYD	UPPER TAFT U1	4.7	12/15/2024 6:11	12/17/2024 2:56	2	Forced Outage	Affected by pre-arranged maintenance activity of 69kV Sta. Rita-Quinapondan line.
HYD	UPPER TAFT U1	4.7	12/23/2024 0:03			Forced Outage	Due to cutting of flat bar at trash rack and connection of lifting rod for the flushing gate. (Under test and commissioning)
HYD	UPPER TAFT U2	4.7	12/23/2024 0:04			Forced Outage	Due to cutting of flat bar at trash rack and connection of lifting rod for the flushing gate. (Under test and commissioning)
HYD	UPPER TAFT U3	4.7	12/23/2024 0:05			Forced Outage	Due to cutting of flat bar at trash rack and connection of lifting rod for the flushing gate. (Under test and commissioning)

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Visayas							
HYD	Villasiga U1	3.6	10/16/2024 17:17	10/18/2024 15:05	2	Forced Outage	Affected by the line fault along San Jose - Bugasong - SUWECO 69 kV Line
HYD	Villasiga U2	3.6	10/24/2024 14:44	10/26/2024 14:28	2	Forced Outage	affected by line fault
HYD	Villasiga U2	3.6	12/4/2024 10:26	12/11/2024 18:40	7	Forced Outage	Failure of Transformer Protection
HYD	SMHC U1	1.25	12/25/2024 23:59			Forced Outage	Overtime of drain pumps.
HYD	Villasiga U3	0.9	10/24/2024 14:44	10/26/2024 14:31	2	Forced Outage	affected by line fault
HYD	Villasiga U3	0.9	10/26/2024 23:39			Forced Outage	cut-out due to flash flood
HYD	AHEP U2	0.45	10/22/2024 19:19	10/24/2024 19:24	2	Forced Outage	Tripped due to internal Plant trouble.
HYD	AHEP U1	0.45	10/22/2024 19:19	10/24/2024 19:20	2	Forced Outage	Tripped due to internal Plant trouble.
OIL	EAUC U1	11.5	5/13/2024 22:55			Forced Outage	CYLINDER NO. 7 CRANKCASE EXPLOSION
OIL	EAUC U2	11	10/13/2024 7:01	11/3/2024 7:00	21	Planned Outage	Conduct 5 000 types preventive maintenance
OIL	EAUC U2	11	11/23/2024 7:00	11/25/2024 7:55	2	Planned Outage	To conduct the piston and liner replacement preventive maintenance
OIL	TPC (Carmen) U4	10	8/24/2024 0:00			Forced Outage	Detached connecting rods and crank shaft for machining
OIL	TPC (Carmen) U3	10	10/2/2024 6:45	10/5/2024 7:02	3	Forced Outage	Unavailable due to corrective action
OIL	TPC (Carmen) U1	10	11/18/2024 0:00	11/22/2024 15:17	4	Planned Outage	Shutdown request of Toledo Power Company Carmen Diesel Power Plant DG1 (TPC-CDPP DG1) to conduct Preventive Maintenance Schedule from November 18-22, 2024 (Per DOE approved GOMP CY2024).
OIL	TPC (Carmen) U3	10	11/30/2024 10:26	12/3/2024 16:23	3	Forced Outage	Corrective maintenance of right turbo charger
OIL	PB104 U3	7	9/24/2024 17:37	9/27/2024 4:00	3	Forced Outage	Malfunction of turbo charger right side.
OIL	PB104 U3	7	10/22/2024 6:01	10/24/2024 17:36	2	Planned Outage	Planned outage 10k PMS.
OIL	CENPRI U5	6.7	10/29/2024 0:01	11/6/2024 17:30	8	Forced Outage	To conduct servicing of lube oil jacket water shell and tube type cooler.
OIL	CPCC U6	6.5	9/7/2024 0:01	10/4/2024 14:00	27	Maintenance Outage	Maintenance outage (awaiting DOE Rev2 approval as GOMP) affected by Main Transformer 1 replacement to conduct Smoke Stack Repair ECD Oct 1 2024 2359H.
OIL	CPCC U3	6.5	9/7/2024 0:01	9/28/2024 16:00	21	Maintenance Outage	Maintenance outage (awaiting DOE Rev2 approval as GOMP) affected by Main Transformer 1 replacement to conduct 97 500 ERH - 1 500 H Type PMS. ECD Oct 1, 2024 2359H.
OIL	CPCC U9	6.5	9/28/2024 9:01	10/4/2024 14:00	6	Maintenance Outage	Affected by Main Transformer 1 Replacement
OIL	CPCC U8	6.5	9/28/2024 9:01	10/4/2024 14:00	6	Maintenance Outage	Affected by Main Transformer 1 Replacement
OIL	CPCC U8	6.5	11/1/2024 0:01			Planned Outage	To conduct 90 000H Piston replacement + 81 000 ERH - 3 000H Type PMS
OIL	CPCC U8	6.5	11/26/2024 0:01			Forced Outage	To conduct 90 000H Piston replacement + 81 000 ERH - 3 000H [Maintenance EXTENDED]
OIL	PB101 U2	6	9/28/2024 10:20	10/9/2024 11:04	11	Forced Outage	Metallic particles on lube oil magnetic filter
OIL	PB101 U4	6	10/1/2024 5:45	10/4/2024 16:04	3	Forced Outage	Emergency maintenance of 42MVA Main Transformer
OIL	PB101 U3	6	10/1/2024 5:45	10/4/2024 16:04	3	Forced Outage	Emergency maintenance of 42MVA Main Transformer
OIL	PB101 U1	6	10/1/2024 5:45	10/4/2024 16:04	3	Forced Outage	Emergency maintenance of 42MVA Main Transformer
OIL	TPVI U3	5.5	10/28/2024 21:53	11/8/2024 13:06	11	Forced Outage	Unable to cut-in unit due to main bearing #9 temperature high
OIL	TPVI U1	5.5	10/28/2024 21:53			Forced Outage	Unable to cut-in unit due to main bearing #6 temperature high
OIL	CENPRI U2	4.5	10/8/2024 0:01	10/19/2024 16:56	11	Maintenance Outage	Planned maintenance outage due to smokestack replacement.
SOLR	SACASUN U0	46.8	10/19/2024 19:09			Forced Outage	Shutdown of 69KV San Carlos - Sacasun Line
Mindanao							
BAT	MSS U0	20	11/25/2024 9:18	11/27/2024 14:03	2	Forced Outage	Maintenance Outage (ETC Nov. 27, 2024, 1500H)
BAT	MBS U1	20	11/29/2024 9:01	12/1/2024 23:58	2	Forced Outage	PMS(Non-GOMP).
BIOF	LSK U1	15	10/28/2024 9:18	11/17/2024 23:59	20	Forced Outage	Plant shutdown due to scarcity of fuel supply. ETC Nov. 11, 2024. (OMC Outage)
BIOF	BBI U0	12.4	10/25/2024 23:10			Forced Outage	Forced Outage. Fault to be determined by BBI. (OMC Outage)
BIOF	SPG U1	6	12/5/2024 8:59	12/16/2024 12:54	11	Forced Outage	Emergency shutdown due to abnormal boiler parameters brought by wet fuel. Forced Outage.
BIOF	LPE U1	6	12/12/2024 15:14	12/15/2024 12:03	3	Forced Outage	Auto-tripped. Cause Economizer tube leakage. ETC December 21, 2024
BIOF	BBM U1	5.7	6/29/2024 17:00	10/3/2024 22:01	96	Forced Outage	Repair works along feeding system is ongoing. (Forced Outage)
BIOF	BBM U0	5.7	10/8/2024 15:56			Forced Outage	Auto-tripped due to SOCOTECO 1 69KV(SRB)line power outage. (OMC Outage)
BIOF	BBM U0	5.7	10/8/2024 15:56			Forced Outage	Tripped due to SOCOTECO 1 69KV(SRB)line power outage.
BIOF	CSC U1	3.4	3/11/2024 23:59	11/20/2024 8:50	254	Forced Outage	Shutdown from Testing and Commissioning Phase. (Forced Outage)
COAL	GKP U1	151.9	12/5/2024 0:03	12/10/2024 15:01	5	Forced Outage	PMS (Non-GOMP). ETC December 09, 2024.
COAL	GKP U1	151.9	12/11/2024 23:07	12/14/2024 21:52	3	Forced Outage	Emergency Shutdown due to Boiler tube leak. ETC Dec. 13, 2024. (Forced Outage)
COAL	DCP U1	151.4	9/23/2024 12:15	9/28/2024 23:59	5	Forced Outage	Tripped due to boiler tube leak. (Forced outage)
COAL	DCP U1	151.4	9/29/2024 0:00	10/13/2024 9:41	14	Forced Outage	PMS - Non GOMP. (Forced outage last September 23, 2024 due to boiler tube leak. ETC October 22, 2024.
COAL	GKP U3	151.3	8/28/2024 0:04	9/30/2024 20:25	33	Planned Outage	(PMS-GOMP). ETC October 07, 2024
COAL	GKP U3	151.3	10/15/2024 22:02			Forced Outage	Force Outage. Emergency shutdown to conduct high- and low-pressure bypass valve calibration and servicing. (ETC 0800H Oct. 16, 2024)
COAL	GKP U3	151.3	11/23/2024 0:09	12/2/2024 3:15	9	Forced Outage	PMS (Non-GOMP). ETC December 2, 2024.
COAL	GKP U1	151	9/23/2024 0:00	10/14/2024 6:28	21	Planned Outage	PMS (GOMP). Note From Non-GOMP to GOMP. ETC October 1, 2024.
COAL	GKP U2	151	12/15/2024 2:01			Forced Outage	PMS(Non-GOMP). GN Power Kauswagan U2 shutdown. ETC December 25, 2024
COAL	DCP U2	150	9/28/2024 18:34	10/7/2024 13:51	9	Forced Outage	Auto-tripped due to boiler tube leak. ETC October 4, 2024.
COAL	MCO U2	150	10/11/2024 1:12			Forced Outage	Auto-tripped. Indication Failure of induced draft fan. ETC November 25, 2024. (Forced Outage)
COAL	MCO U2	150	10/11/2024 1:12			Forced Outage	Tripped. Indication Failure of induced draft fan. ETC November 25, 2024
COAL	MCO U2	150	10/11/2024 1:12			Forced Outage	Tripped. Indication Induced draft fan. NO ETC yet
COAL	DCP U2	150	11/2/2024 0:00	11/24/2024 14:08	22	Forced Outage	(Planned Outage PMS-Non-GOMP). ETC November 15, 2024
COAL	FMP U3	135	10/5/2024 0:33	10/11/2024 16:02	6	Forced Outage	Emergency S D due to primary Air Preheater (APH) tube leak. (Forced Outage). ETC 10 12 2024
COAL	FMP U2	135	10/14/2024 17:44	10/18/2024 18:15	4	Forced Outage	Tripped. Ind Generator Overcurrent. Emergency shutdown request to facilitate repair of boiler air preheater tube leak (Forced Outage) ETC October 19-20, 2024
COAL	FMP U2	135	10/20/2024 13:57	10/27/2024 15:23	7	Forced Outage	Forced outage Suspected furnace bed agglomeration. ETC Oct. 24, 2024.
COAL	FMP U3	135	10/28/2024 4:04	12/17/2024 14:46	50	Planned Outage	(Planned Outage GOMP). ETC Dec. 10, 2024 2359H
COAL	STE U1	116	11/5/2024 0:00	11/11/2024 12:05	6	Planned Outage	PMS(GOMP). ETC November 12, 2024.
COAL	STE U2	116	11/16/2024 0:00	11/22/2024 11:04	6	Planned Outage	Planned Outage (PMS-GOMP)
COAL	STE U2	116	12/7/2024 0:00	12/12/2024 23:38	5	Forced Outage	Emergency shutdown due to boiler tube leak. ETC December 12, 2024 (Forced Outage)
COAL	MCC U1	55	9/7/2024 0:03	9/26/2024 9:20	19	Planned Outage	PMS (GOMP). ETC September 26, 2024
COAL	MCC U3	55	10/12/2024 0:10			Forced Outage	PMS(Non-GOMP) ETC Oct. 27, 2024 at 0600H
COAL	MCC U3	55	10/12/2024 0:10	10/27/2024 13:44	15	Maintenance Outage	PMS(Non-GOMP) ETC Oct. 27, 2024 at 0600H
COAL	MCC U1	55	12/21/2024 16:04			Forced Outage	Plant shutdown due to suspected tube leak at economizer 2
COAL	PPE U1	20	10/11/2024 6:34			Forced Outage	Auto-tripped. Cause for verification. (Forced Outage)
COAL	PPE U1	20	10/11/2024 6:34			Forced Outage	Forced Outage. Cause for verification.
GEO	MA3 U1	3.6	10/12/2024 10:49	10/18/2024 15:26	6	Forced Outage	Tripped. Indication for verification. (Unplanned Outage)
GEO	MA3 U1	3.6	10/29/2024 4:01	10/31/2024 8:18	2	Forced Outage	Mt. Apo U3 was on Emergency S D due to Acid Leak at Static Mixer. (Forced Outage)
GEO	MA3 U1	3.6	11/18/2024 0:00	11/22/2024 13:17	4	Forced Outage	Extended GOMP. Original ETC Nov. 19, 2024.
GEO	MA3 U1	3.6	12/2/2024 13:36	12/4/2024 0:47	2	Forced Outage	Auto-tripped. Ind Low expansion ratio. (Unplanned Outage)
HYD	PG4 U3	75	10/28/2024 7:08	11/12/2024 8:08	15	Forced Outage	Installation testing & commissioning of intake gate hydraulic actuator. (Maintenance Outage)
HYD	PG4 U2	75	11/18/2024 8:03			Planned Outage	Planned outage - GOMP.
HYD	PG4 U2	75	11/18/2024 8:03	11/22/2024 8:39	4	Planned Outage	Planned outage - GOMP. ETC November 24, 2024.
HYD	PG4 U2	75	11/22/2024 9:39	11/24/2024 8:04	2	Planned Outage	Shutdown due to excessive vibration. Under GOMP schedule from Nov. 18 to 24, 2024.
HYD	PG4 U2	75	11/24/2024 15:35	11/26/2024 10:40	2	Forced Outage	Emergency shutdown Minor adjustment of Governor control.
HYD	PG4 U3	75	12/5/2024 5:00	12/11/2024 5:53	6	Planned Outage	PMS (GOMP). ETC December 11, 2024.
HYD	AG2 U2	60	9/27/2024 8:04	10/13/2024 12:26	16	Planned Outage	PMS (GOMP). ETC October 13, 2024.
HYD	AG2 U1	60	11/22/2024 8:43	12/8/2024 23:59	16	Planned Outage	PMS-GOMP. ETC December 8, 2024.
HYD	AG2 U1	60	12/9/2024 0:00	12/16/2024 14:16	7	Forced Outage	Extended GOMP. ETC Dec. 10, 2024
HYD	AG2 U3	60	12/17/2024 8:06	12/25/2024 0:32	8	Planned Outage	PMS (GOMP). ETC December 25, 2024
HYD	AG4 U2	52.7	10/5/2024 8:05	10/15/2024 14:55	10	Planned Outage	(PMS - GOMP). ETC 10 26 2024 @0800H.
HYD	AG4 U1	52.7	10/31/2024 8:10	11/18/2024 11:10	18	Planned Outage	(PMS - GOMP). ETC November 25, 2024
HYD	AG4 U3	52.7	12/5/2024 10:01	12/11/2024 21:00	6	Planned Outage	PMS (GOMP). ETC December 13, 2024
HYD	AG4 U1	52.7	12/13/2024 16:25			Forced Outage	Auto-tripped caused by SEL 700G Gen Protection Relay. (Forced Outage). ETC Jan 20, 2025.
HYD	AG4 U1	52.7	12/13/2024 16:25			Forced Outage	Auto-tripped triggered by SEL 700G (Generator Protection Relay). (Forced Outage)
HYD	AG6 U3	50	11/26/2024 9:03	11/29/2024 19:27	3	Planned Outage	Planned Outage NON-GOMP. ETC (November 29, 2024)
HYD	AG6 U5	43.8	12/2/2024 9:01	12/9/2024 21:30	7	Planned Outage	PMS(GOMP). ETC December 11, 2024

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Mindanao							
HYD	AG6 U4	40	9/2/2024 9:02	10/28/2024 17:02	56	Planned Outage	(PMS-GOMP). ETC October 31, 2024
HYD	AG1 U1	35	9/24/2024 8:19	9/27/2024 23:59	3	Forced Outage	PMS (Non-GOMP). ETC September 27, 2024
HYD	AG1 U2	35	10/1/2024 8:07	10/19/2024 13:27	18	Maintenance Outage	(PMS - GOMP). Planned Outage (ETC Dec 31, 2024)
HYD	AG1 U1	35	12/12/2024 8:02	12/20/2024 15:07	8	Planned Outage	PMS(GOMP). ETC January 1, 2025
HYD	AG1 U2	35	12/21/2024 8:02			Planned Outage	Agus 1 Unit 2 HEP shutdown. Planned Outage (PMS-GOMP). ETC December 31, 2024
HYD	AG6 U2	34.5	10/1/2024 9:06	10/11/2024 20:56	10	Maintenance Outage	(PMS-Semi Annual) GOMP. Installation of Pressure indicators at the Servo cylinders. (ETC October 15 2024)
HYD	AG6 U1	34.5	10/17/2024 9:18	10/31/2024 23:59	14	Planned Outage	Planned Outage PMS (ETC Oct. 31, 2024, 2359H)
HYD	AG6 U1	34.5	11/1/2024 0:00	11/6/2024 19:18	5	Forced Outage	Extended GOMP Outage. ETC November 10, 2024
HYD	AG6 U1	34.5	12/3/2024 9:04	12/8/2024 14:20	5	Planned Outage	Planned outage. GOMP. ETC December 8, 2024.
HYD	AG5 U1	27.5	10/16/2024 8:04	10/29/2024 15:36	13	Planned Outage	PMS(GOMP). ETC, November 1, 2024
HYD	AG5 U2	27.5	11/20/2024 8:06	11/30/2024 16:30	10	Planned Outage	PMS - GOMP. ETC, December 15, 2024.
HYD	AG5 U2	27.5	11/30/2024 16:31	12/12/2024 19:06	12	Forced Outage	Declared available starting Nov. 30, 2024, at 1630H.Remaining works at Agus 5 S Y under P&E to be completed on Dec. 15, 2024.
HYD	AG7 U1	26.1	11/4/2024 18:13	11/10/2024 10:14	6	Planned Outage	PMS(GOMP). ETC November 11, 2024
HYD	AG7 U2	25.3	10/14/2024 7:01	10/19/2024 15:36	5	Planned Outage	PMS(GOMP). ETC October 22, 2024
HYD	AG7 U2	25.3	11/23/2024 9:02	12/18/2024 10:13	25	Planned Outage	PMS(GOMP). ETC December 31, 2024
HYD	AG7 U2	25.3	12/19/2024 1:27	12/23/2024 9:19	4	Planned Outage	Part of GOMP Activity. GOMP from November 23 to December 30, 2024.
HYD	MN1 U3	16.2	12/24/2024 8:28			Forced Outage	Emergency shutdown to conduct repair of penstock. (Unplanned Outage) ETC December 27, 2024
HYD	MN1 U4	16.2	12/24/2024 8:32			Forced Outage	Emergency shutdown to conduct repair of penstock. (Unplanned Outage) ETC December 27, 2024
HYD	SBL B U1	14	9/22/2024 16:30	9/26/2024 17:08	4	Forced Outage	Plant on shutdown. Inspection and replacement of drive end bearing. (Forced Outage)
HYD	SBL B U1	14	11/26/2024 12:30			Forced Outage	Plant remained shutdown to conduct run out check of DE journal of the shafting. (Forced Outage)
HYD	MN2 U3	6.8	11/11/2024 8:01	11/14/2024 10:35	3	Planned Outage	Semi-Annual PMS Turbine Inspection
HYD	TU2 U1	5.5	11/25/2024 8:54			Forced Outage	Plant shutdown due to runout check of runner and bearing check-up check the RTD placements and clearance verification.
HYD	NBT U0	3	9/2/2024 10:01			Forced Outage	Plant shutdown due to weir repair. No ETC. (Forced Outage)
HYD	NBT U0	3	9/2/2024 10:01			Forced Outage	Plant shutdown due to weir repair. ETC December 02, 2024. (Forced outage)
HYD	ALP U0	2.6	7/28/2024 8:05			Forced Outage	Plant on shutdown. Generating Units 1 & 2 were totally damaged by landslide. (Forced Outage)
HYD	MHP U0	0.5	9/13/2024 13:20			Forced Outage	Emergency shutdown due to bearing temperature rising. (Forced Outage)
HYD	TL1 U2	0.5	10/29/2024 0:01			Forced Outage	Plant isolated due to insufficient water supply. (OMC Outage)
OIL	TM2 U1	50	10/16/2024 0:01	10/19/2024 17:41	3	Planned Outage	Planned Outage PMS GOMP (ETC 2359H Oct. 19, 2024)
OIL	TM2 U2	50	10/20/2024 0:20	10/23/2024 19:14	3	Planned Outage	PMS(GOMP) – ETC (October 23, 2024)
OIL	KEG U0	10.6	4/15/2024 15:05			Forced Outage	Failed to synchronize due to low SF6 Pressure on PCB. (Forced Outage)
OIL	WMP U9	10.2	10/2/2024 14:52	10/4/2024 8:15	2	Forced Outage	Auto-tripped due to HT water temperature high. (Forced Outage)
OIL	WMP U9	10.2	10/2/2024 14:52			Forced Outage	Indication HT water temperature high (Unplanned Outage)
OIL	WMP U9	10.2	10/21/2024 0:01			Planned Outage	(PMS-Non-GOMP). ETC December 05, 2024.
OIL	WMP U9	10.2	10/21/2024 0:01	12/13/2024 12:42	53	Planned Outage	PMS-Non-GOMP. ETC December 05, 2024.
OIL	WMP U1	10.2	10/31/2024 20:25	11/8/2024 16:10	8	Forced Outage	WMPC Unit 1 declared forced outage due to HT low pressure stop.
OIL	WMP U10	10.2	11/23/2024 18:12	11/25/2024 10:37	2	Forced Outage	Isolated while running as RPS. Cause Forced outage of Zamboanga - WMPC 138kV Line 2
OIL	MEG U1	6.4	11/4/2024 0:00	11/18/2024 23:59	14	Planned Outage	PMS(GOMP). ETC November 18, 2024
OIL	MEG U2	6.4	11/19/2024 0:01			Planned Outage	PMS. ETC December 3, 2024

QMAR-2024-04

Appendix B. Congested Equipment

Equipment Name	Trading Interval	Percent of Time
CEBU_TO_NEGROS	238	1%
5MNDUE_TR1	192	1%
7CORELL_TR1	159	1%
3STRO_3CLA1	142	1%
6KABAN_TR1	116	0.4%
1HERM_1DUH1	101	0.4%
5MNDUE_TR2	63	0.2%
1HERM_1MAL1	61	0.2%
1MEXI_1HER1	56	0.2%
1SRAF_1SJO1	52	0.2%
5DAAN_4TAB2	45	0.2%
5LAPU_TR2	37	0.1%
3TAYA_3MBA2	34	0.1%
1BAUA_1LAT2	32	0.1%
1BAUA_1LAT1	28	0.1%
1SNRAFA_TR2	24	0.1%
1SNRAFA_TR1	20	0.1%
1MEXI_1HER2	18	0.1%

Equipment Name	Trading Interval	Percent of Time
2ZAPOTE_TR4	14	0.05%
3STROSA_TR4	9	0.03%
1SUP_TR1	8	0.03%
4MAAS_7UBA1	8	0.03%
2QUEZ_2ARA1	7	0.03%
3MKBNB_TR4	6	0.02%
6BCOLOD_TR2	6	0.02%
LEYTE_TO_CEBU	6	0.02%
1MPGC_TR4	4	0.02%
1SNTGO_TR2	3	0.01%
3MKBNA_TR2	3	0.01%
3BINA_3CLA1	2	0.01%
6PGPP1_TR1	2	0.01%
11JASA_12NAS1	1	0.004%
1CNCEPCN_TR2	1	0.004%
1MPGC_TR2	1	0.004%
1MPGC_TR3	1	0.004%