Market Assessment Report for 3rd Quarter of 2024

26 June to 25 September 2024

December 2024

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

Document Information Classification: Public

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EXECUTIVE SUMMARY

The total registered capacity in the WESM reached 29,481.3 megawatts (MW). This represents a 4.16% increase, or an additional 1,176.9 MW compared to the 28,304.4 MW recorded on 25 June 2024.

While the WESM recorded its high registered capacity during the quarter, there were instances of unavailability due to recorded outages, averaging at 3,766 MW or 13% of the total registered capacity. Additionally, capacities not offered/nominated in the market averaged 4,632 MW or 16% of the total registered capacity.

In terms of capacities on outage by plant type, an average increase by 804 MW or 23% in capacities on outage was observed from the second quarter of 2024. On a per resource type basis, coal power plants accounted for the largest share of total capacities on outage.

The overall system demand for electricity decreased by an average of 6% during this period. This decline was expected given that the summer season concluded, and third quarter falls under the rainy season.

The market prices during the third quarter of 2024 significantly decreased compared to the previous quarter, primarily due to reduced demand requirements. Throughout the third quarter of 2024, there were noticeable price spikes during off-peak hours. Substantial portion of market prices during the third quarter of 2024, averaging between 53% and 82% of the total trading intervals, were observed within the PHP (0 to 5,000] MWh range. Market prices were mostly under normal pricing conditions for 24,689 trading intervals or at 93% of the time.

Secondary price cap (SPC) impositions were observed on a system-wide and regional manner. System-wide impositions affected a total of 198 trading intervals while regional impositions affected 3 trading intervals in Luzon region.

Market Interventions (MIs) during the period were due to threat to system security, emergency conditions, and force majeure affecting 34 trading intervals. This represents a significant 87% decrease from the previous quarter.

Congestion was observed in three critical transmission lines: the Maasin-Ubay line and Barotac Viejo-Dingle Lines 1 and 2. These lines experienced congestion for a total of 8,929 trading intervals, representing 34% of the total intervals in the quarter.

Among the baseload power plants, coal power plants remained with the highest utilization rate during the quarter holding the highest percentage share of registered capacity, consistently contribute the largest portion of electricity generation.

San Miguel Corporation (SMC) held the highest percentage share in registered capacity and offered capacity. This resulted in SMC to be the group with the highest percentage share in terms of actual generation.

The load-trading participants' spot market transactions declined in the third quarter of 2024, ranging from 17 to 25%, compared to only 20 to 31% in the previous quarter.

QUARTERLY MARKET ASSESSMENT REPORT

This quarterly report assesses the results of the WESM operations for the Third Billing Quarter of 2024, covering the period 26 June to 25 September 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 third billing quarter in 2024, the total registered capacity in the WESM reached 29,481.3 megawatts (MW). This represents a 4.16% increase, or an additional of 1,176.9 MW compared to the 28,304.4MW recorded as of 25 June 2024. The primary contributors to this growth were the recent additions of the following power plants:

Table 1. New Generation Facilities for 3rd Quarter of 2024

Region	Plant Type	Registered Capacity (MW)	Facility Name
Luzon	Natural Gas	440	Batangas Combined Cycle Power Plant Unit 2
Luzon	Natural Gas	440	Batangas Combined Cycle Power Plant Unit 3
Luzon	Coal	150	Mariveles Coal-fired Thermal Power Plant Unit 4
Luzon	Solar	49.5	Palauig Solar Power Project
Luzon	Oil	27.5	Calibu Bunker-C Fired Diesel Power Plant
Luzon	Oil	17.9	Tarlac City Bunker C-Fired Diesel Power Plant
Luzon	Hydro	4	Colasi Mini Hydroelectric Power Plant (MHEPP)
Visayas	Hydro	14.2	Upper Taft Hydroelectric Power Plant
Mindanao	Biofuel	12	Maramag, Bukidnon Biomass Cogeneration Plant
Mindanao	Hydro	11.9	Liangan Hydroelectric Power Project

Additionally, changes in the registered capacities of seven (7) hydro plants, four (4) natural gas plants, three (3) solar plants, three (3) oil-based plants, and one (1) for biofuel, coal, and geothermal plants resulted in a combined net total registered capacity of 9.9 MW for this quarter.

Figure 1 further illustrates the total registered capacity per plant type.

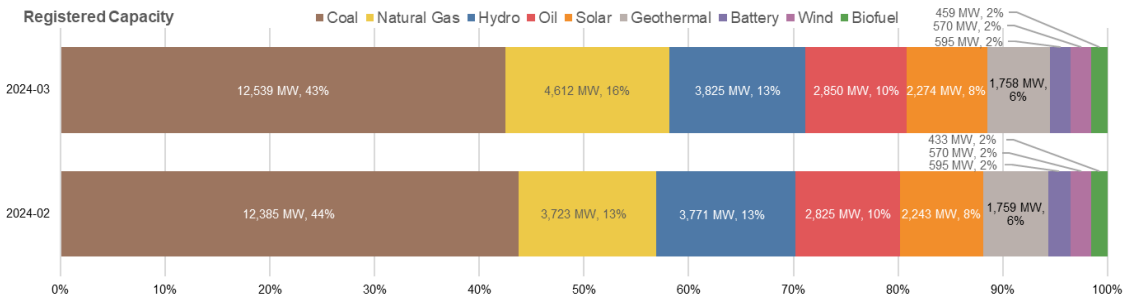

Figure 1. Registered Capacity, 2nd and 3rd Quarter 2024

B. Capacity not Offered/Nominated

While the WESM recorded a high registered capacity during the quarter, there were instances of unavailability due to recorded outages, averaging at 3,766 MW or 13% of the total registered capacity. Additionally, capacities ***not*** offered/nominated in the

market[1] averaged 4,632 MW or 16% of the total registered capacity, mainly attributable to the deration of power plants caused by, among other things, technical limitations.

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.

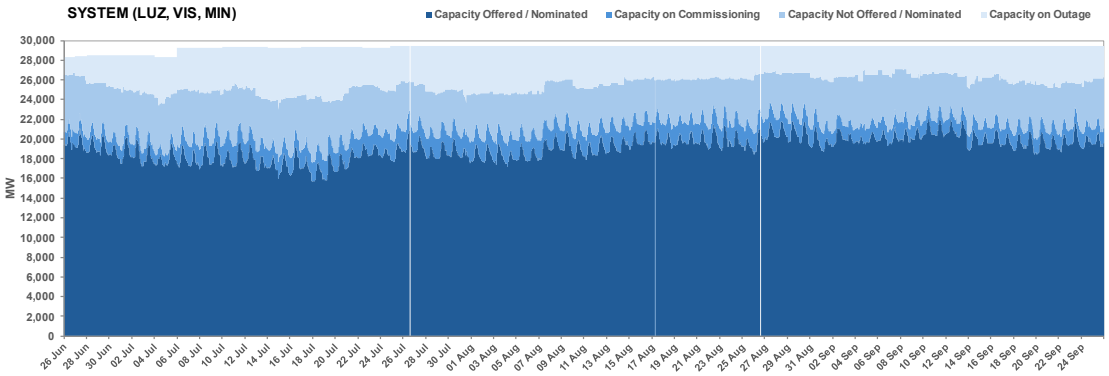

Figure 2. Capacity Profile, 3rd Quarter 2024
Note: Missing portions represent the existence of Market Interventions/Market Suspensions

Table 2. Capacity Profile, 2nd and 3rd Quarter 2024

	2nd Quarter 2024 (25 Mar to 25 Jun 2024)		3rd Quarter 2024 (25 Jun to 25 Sep 2024)		% Average Change
	Average (in MW)	% of RegCap	Average (in MW)	% of RegCap	
Capacity on Outage	3,131	11%	3,761	13%	20.14%▲
Capacity Not Offered / Nominated	4,429	16%	4,628	16%	4.50%▲
Capacity on Commissioning	1,343	5%	1,771	6%	31.83%▲
Malaya Capacity (for MRU)	142	0.5%	130	0.4%	8.49%▼
Capacity Offered / Nominated	18,977	67%	19,136	65%	0.84%▲

Table 3. Monthly Capacity Profile, 3rd Quarter 2024

	July 2024 (26 Jun to 25 Jul 2024)		August 2024 (26 Jul to 25 Aug 2024)		September 2024 (26 Aug to 25 Sep 2024)	
	Average (in MW)	% of Registered Capacity	Average (in MW)	% of Registered Capacity	Average (in MW)	% of Registered Capacity
Capacity on Outage	4,143	14%	3,961	13%	3,193	11%
Capacity Not Offered / Nominated	5,001	17%	4,299	15%	4,596	16%
Capacity on Commissioning	1,719	6%	2,009	7%	1,584	5%
Malaya Capacity (for MRU)	130	0.4%	-	0%	-	0%
Capacity Offered / Nominated	18,151	62%	19,158	65%	20,067	68%
Registered Capacity (end of the billing Month)	29,408	100%	29,455	100%	29,481	100%

II. Power Plant Outages[2]

A. Capacities on Outage by Plant Type

In terms of capacities on outage by plant type, an average increase by 804 MW or 23% in capacities on outage was observed from the second quarter of 2024. This trend suggests that the third quarter was a period when many plants undertook planned maintenance following the summer season.

[1] Subject to compliance monitoring or investigation for possible non-compliance with the submission of offers under the WESM Rules
[2] Provided in Appendix A is the list of major plant outages

Looking at a per resource type basis, coal power plants accounted for the largest share of total capacities on outage. A significant portion of coal plant outages during this period resulted from unplanned shutdowns. However, most of the coal plants on outage have already been in operation. Furthermore, several of coal plants remained offline until the end of the review period, detailed in Table 4. In contrast, hydro power plants experienced notable improvements in capacity levels during the third quarter, aligning with the rainy season.

Table 4. Coal Power Plants on Outage by the End of 3rd Quarter of 2024

Resource Name	Capacity (in MW)	Date Out
01PETRON_G01	35	20 January 2024
10GNPK_U03	151.3	28 August 2024
11MINBAL_G01	55	07 September 2024
01SMC_G03	150	14 September 2024
03PAGBIL_G02	382	20 September 2024
10GNPK_U04	151	23 September 2024
13DCPP_U01	151.4	23 September 2024
01MSINLO_G03	335	24 September 2024

Outages in oil-based power plants were mainly driven by forced shutdowns caused by technical issues within the units. On the other hand, natural gas power plants represented a smaller share of the total outages, with most of their disruptions attributed to fuel or gas supply constraints and scheduled maintenance activities.

Overall, the incidents of plant outages showed a noticeable increase over the quarter, aligning with the directives from the Department of Energy (DOE) to schedule maintenance outages after the summer season. This timing is strategically chosen to minimize disruptions during the summer season when energy consumption peaks, largely due to the use cooling equipment. This approach focuses on improving the long-term reliability and stability of supply while mitigating potential operational challenges during periods of low demand.

When examining the data on a month-on-month basis, as shown in Table 6, July 2024 had the highest average monthly outage level, reaching 4,504 MW. However, this figure steadily declined over the quarter, reaching an average outage level of 3,285 MW by September 2024.

Meanwhile, Figure 3 below shows the actual capacities on outage per trading interval, where it was observed that the peak outages occurred on 14 July 2024 at 6,295.66 MW when a 668 MW coal plant tripped due to a deviation in temperature.

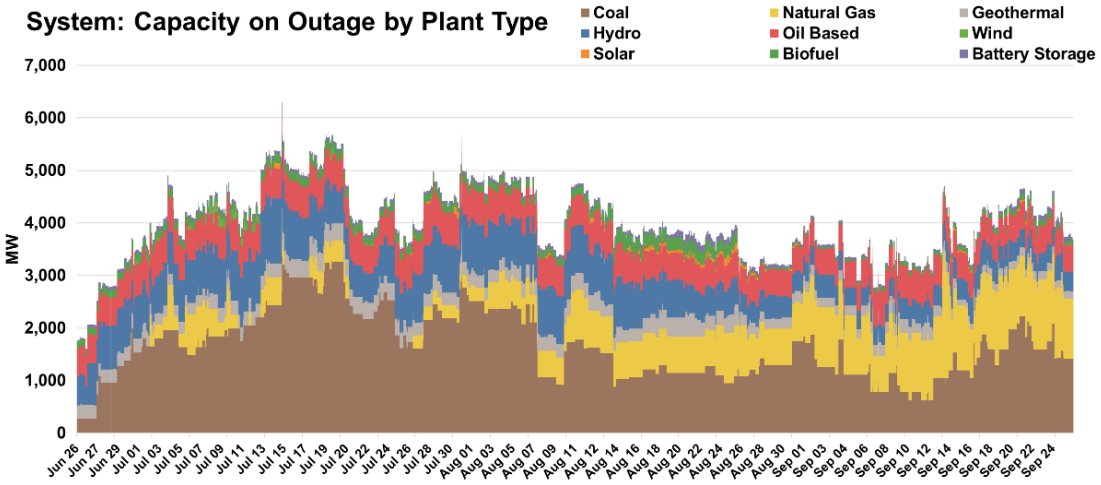

Figure 3. Plant Outage Capacity (by Plant Type), 3rd Quarter 2024

Table 5. Outage Summary, 2nd and 3rd Quarter of 2024

	2nd 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)
Coal	155	06/05/2024 22:55	2,870	05/26/2024 13:45	1,109
Natural Gas	46	05/23/2024 12:00	1,620	03/26/2024 0:05	454
Geothermal	60	06/15/2024 10:45	396	06/04/2024 15:00	218
Hydro	406	06/09/2024 9:10	1,696	04/21/2024 11:00	975
Oil-based	312	04/04/2024 14:50	805	06/02/2024 2:00	474
Wind	37	04/20/2024 6:35	91	04/20/2024 6:50	63
Solar	2	05/07/2024 12:50	157	06/20/2024 6:20	26
Biofuel	46	03/26/2024 0:05	179	06/05/2024 15:10	104
Battery Storage	20	03/26/2024 0:05	84	05/11/2024 5:15	24

	3rd Quarter 2024 (26 Jun to 25 Sep 2024)					% Average Change
	Min		Max		Average	
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)	
Coal	277	06/26/2024 0:05	3,562	07/31/2024 13:15	1,650	48.78%▲
Natural Gas	190	07/02/2024 23:25	2,429	09/14/2024 0:05	770	69.62%▲
Geothermal	86	07/08/2024 6:00	472	08/21/2024 4:25	251	15.28%▲
Hydro	339	09/06/2024 12:25	1,262	07/13/2024 10:00	674	30.91%▼
Oil-based	482	08/28/2024 18:15	813	07/28/2024 16:00	564	18.98%▲
Wind	37	08/27/2024 2:25	150	07/08/2024 5:35	102	61.94%▲
Solar	2	08/08/2024 14:05	162	08/23/2024 18:05	43	67.40%▲
Biofuel	41	08/26/2024 0:05	304	08/15/2024 5:20	135	30.68%▲
Battery Storage	20	06/26/2024 0:05	150	08/21/2024 16:10	61	152.05%▲

Table 6. Monthly Outage Summary, 3rd Quarter 2024

	July 2024 (26 Jun to 25 Jul 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Coal	277	06/26/2024 0:05	3,357	07/14/2024 23:35	2,006
Natural Gas	190	07/02/2024 23:25	1,055	07/04/2024 9:05	473
Geothermal	86	07/08/2024 6:00	424	07/14/2024 22:05	280
Hydro	361	06/27/2024 0:05	1,262	07/13/2024 10:00	816
Oil-based	511	07/22/2024 10:20	704	07/17/2024 14:50	583
Wind	54	07/01/2024 8:30	150	07/08/2024 5:35	117
Solar	3	07/04/2024 6:50	115	07/14/2024 5:55	18
Biofuel	127	07/08/2024 8:05	212	07/19/2024 11:30	151
Battery Storage	20	06/26/2024 0:05	80	07/01/2024 13:35	59

	August 2024 (26 Jul to 25 Aug 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Coal	879	08/14/2024 12:40	3,562	07/31/2024 13:15	1,641
Natural Gas	256	07/27/2024 0:05	961	08/24/2024 0:00	584
Geothermal	184	08/17/2024 23:10	472	08/21/2024 4:25	288
Hydro	416	08/21/2024 16:00	1,035	08/15/2024 8:15	818
Oil-based	487	08/24/2024 0:05	813	07/28/2024 16:00	583
Wind	54	08/15/2024 22:20	54	08/15/2024 22:20	54
Solar	2	08/08/2024 14:05	162	08/23/2024 18:05	59
Biofuel	124	08/08/2024 6:05	304	08/15/2024 5:20	188
Battery Storage	40	07/26/2024 6:05	150	08/21/2024 16:10	71

	September 2024 (26 Aug to 25 Sep 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Coal	626	09/10/2024 18:50	2,229	09/21/2024 0:05	1,313
Natural Gas	696	08/26/2024 3:00	2,429	09/14/2024 0:05	1,086
Geothermal	113	09/13/2024 19:40	342	09/12/2024 5:55	187
Hydro	339	09/06/2024 12:25	634	09/24/2024 18:50	391
Oil-based	482	08/28/2024 18:15	684	09/08/2024 9:35	526
Wind	37	08/27/2024 2:25	80	09/09/2024 12:45	64
Solar	5	09/10/2024 12:55	68	09/16/2024 13:10	39
Biofuel	41	08/26/2024 0:05	132	09/23/2024 20:25	67
Battery Storage	40	08/29/2024 6:05	90	09/20/2024 4:15	53

B. Capacities on Outage by Category

In conjunction with the previous section, this part categorizes the outages observed during the billing quarter by category. Net outages for the third quarter of 2024 increased by 24%, which was largely anticipated due to substantial growth in planned and maintenance outages that surged by 172% and 267%, respectively, compared to the previous quarter. This trend aligns with the DOE directives for post-summer maintenance activities. While these two categories of outages experienced significant growth, forced outages, in contrast, decreased notably by 28%.

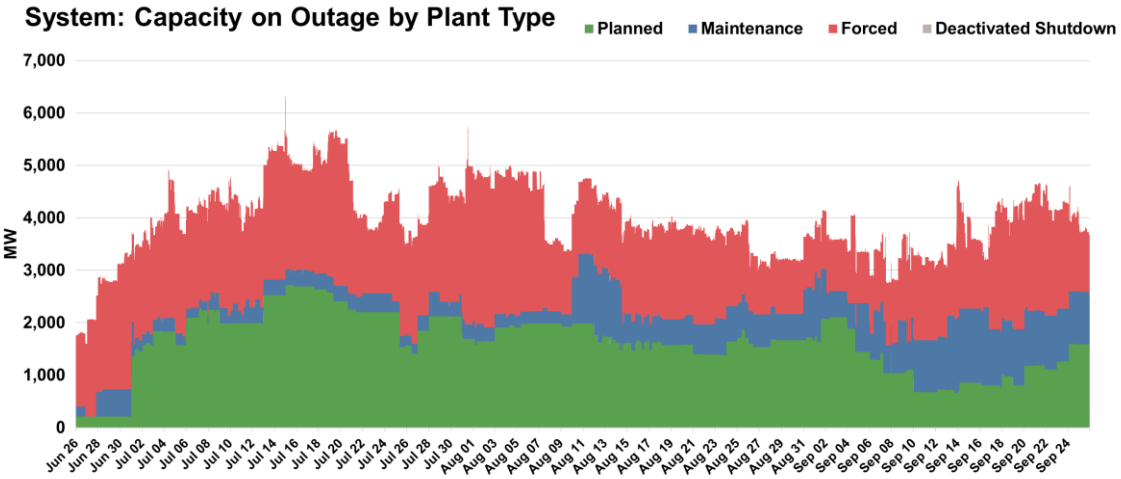

Figure 4. Plant Outage Capacity (by Outage Category), 3rd Quarter 2024

Tables 7 and 8 below show the quarterly and monthly breakdown of the outages in terms of outage categories.

Table 7. Outage Summary, by Outage Category, 2nd and 3rd Quarter 2024

	2nd Quarter 2024 (26 March to 25 June 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Planned Outage	39	05/26/2024 4:50	1,545	03/26/2024 0:05	595
Maintenance Outage	2	04/06/2024 11:55	1,235	03/27/2024 0:00	159
Forced Outage	1,261	03/27/2024 19:35	5,488	05/26/2024 15:35	2,475

	3rd Quarter 2024 (26 June to 25 September 2024)					% Average Change
	Min		Max		Average	
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)	
Planned Outage	214	06/26/2024 0:05	2,728	07/15/2024 2:55	1,617	171.77%▲
Maintenance Outage	55	08/17/2024 8:15	1,486	09/16/2024 8:05	586	267.95%▲
Forced Outage	848	08/26/2024 21:20	3,817	07/31/2024 13:15	1,786	27.83%▼

Table 8. Monthly Outage Summary, by Outage Category, 3rd Quarter 2024

	July 2024 (26 Jun to 25 Jul 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Planned Outage	214	06/26/2024 0:05	2,728	07/15/2024 2:55	1,834
Maintenance Outage	137	07/06/2024 21:05	673	07/01/2024 6:15	303
Forced Outage	1,195	07/22/2024 23:55	3,478	07/14/2024 23:35	2,015

	August 2024 (26 Jul to 25 Aug 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Planned Outage	1,345	08/21/2024 16:00	2,121	07/28/2024 0:15	1,754
Maintenance Outage	55	08/17/2024 8:15	1,325	08/10/2024 14:05	521
Forced Outage	1,191	08/09/2024 11:05	3,817	07/31/2024 13:15	1,903

	September 2024 (26 Aug to 25 Sep 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Planned Outage	660	09/13/2024 16:45	2,108	09/02/2024 9:05	1,269
Maintenance Outage	490	09/03/2024 16:05	1,486	09/16/2024 8:05	917
Forced Outage	848	08/26/2024 21:20	2,760	09/19/2024 2:35	1,447

III. Demand and Supply Situation

The overall demand for electricity on the system decreased by an average of 6% during the covered period. This decline was expected given that the summer season concluded and the rainy season[3] started in the third quarter.

Although the registered capacity of the power plants increased, it is important to highlight that the effective supply[4] is varies depeding on the actual demand. This indicates that even with an increase in registered capacity, a decline in demand led to a proportional decrease in effective supply. The power available for utilization at any given moment is directly affected by changes in demand, highlighting the dynamic interplay between supply and demand within the energy sector.

Figure 5 shows the interplay, on a per dispatch interval basis, between the effective supply, the system demand, and the demand including the reserve schedules. It is worthy noting that the resumption of the reserve market on 05 August 2024 caused an increase in effective supply and reserve offer, as well as the demand plus reserve requirement, with an average increase of 1,000 MW.

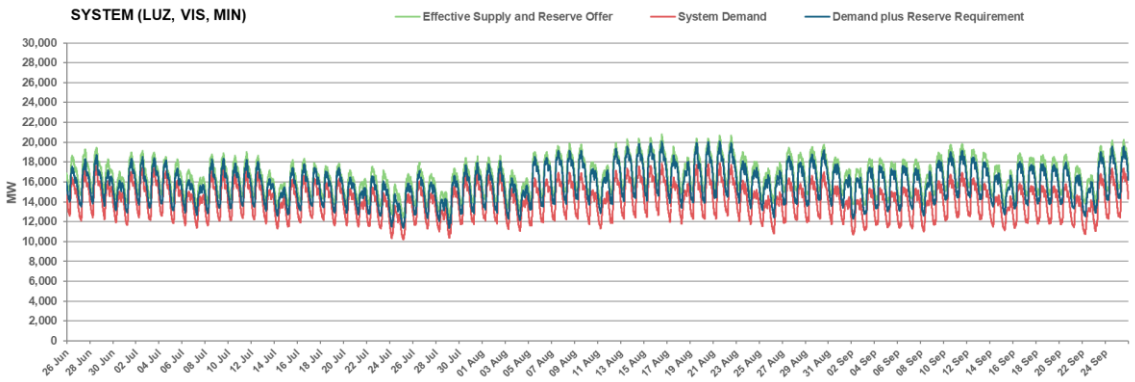

Figure 5. Demand, Supply and Demand plus Reserve Schedule, 3rd Quarter 2024

Meanwhile, Tables 9 and 10 present a breakdown on statistics on the demand, effective supply, and supply margin.

Table 9. Demand and Supply Summary, 2nd and 3rd Quarter 2024

	2nd 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	9,678	03/30/2024 6:05	19,229	04/24/2024 14:30	15,007
Reserve Schedule	458	04/18/2024 16:05	2,230	03/26/2024 13:05	1,191
Demand plus Reserve Schedule	11,105	03/30/2024 7:05	20,556	05/09/2024 14:30	16,197
Effective Supply	11,902	03/30/2024 7:00	21,031	05/09/2024 14:00	16,913

[3] PAGASA: (1) the rainy season, from June to November; and (2) the dry season, from December to May. The dry season may be subdivided further into (a) the cool dry season, from December to February; and (b) the hot dry season, from March to May.

[4] Calculated for each 5-minute trading interval as the sum of the offered capacity of all scheduled generators considering their offered ramp rates, nominated loading level of nonscheduled generators and projected output of preferential dispatch generators, adjusted for any over-riding constraints imposed by the System Operator (SO), and reserve offers. Output of generators on testing and commissioning were considered based on the over-riding constraints imposed by the SO.

	3rd Quarter 2024 (26 Mar to 25 Jun 2024)					% Average Change
	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	6.37%▼
Reserve Schedule	868	07/19/2024 21:05	2,273	08/21/2024 7:20	1,642	27.50%▲
Demand plus Reserve Schedule	11,400	07/29/2024 3:40	20,099	08/16/2024 13:40	15,751	2.84%▼
Effective Supply	12,388	07/29/2024 3:45	20,781	08/16/2024 14:05	16,567	2.09%▼

Table 10. Monthly Demand and Supply Summary, 3rd Quarter 2024

	July 2024 (26 Jun to 25 Jul 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	17,597	06/28/2024 14:00	14,138
Reserve Schedule	868	07/19/2024 21:05	1,508	06/29/2024 8:15	1,171
Demand plus Reserve Schedule	11,401	07/25/2024 3:55	18,735	06/28/2024 14:00	15,309
Effective Supply	12,406	07/25/2024 3:55	19,485	06/28/2024 14:05	16,136

	August 2024 (26 Jul to 25 Aug 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
System Demand	10,385	07/29/2024 3:40	17,858	08/21/2024 14:15	14,328
Reserve Schedule	904	07/28/2024 20:10	2,273	08/21/2024 7:20	1,716
Demand plus Reserve Schedule	11,400	07/29/2024 3:40	20,099	08/16/2024 13:40	16,043
Effective Supply	12,388	07/29/2024 3:45	20,781	08/16/2024 14:05	16,800

	September 2024 (26 Aug to 25 Sep 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
System Demand	10,672	09/02/2024 3:45	17,370	09/25/2024 14:25	13,862
Reserve Schedule	1,575	09/03/2024 3:50	2,253	09/10/2024 14:10	2,024
Demand plus Reserve Schedule	12,318	09/02/2024 3:45	19,586	09/25/2024 14:25	15,886
Effective Supply	13,615	09/15/2024 6:55	20,259	09/25/2024 14:30	16,750

IV. Market Price Outcome

A. Market Prices

The market prices in the third quarter of 2024 significantly decreased compared to the previous quarter, primarily due to reduced demand requirements.

The monthly average prices exhibited fluctuating patterns, primarily influenced by the interplay between supply and demand in the system. Throughout the third quarter of 2024, there were noticeable price spikes during off-peak hours. The majority of the spikes were attributed to the increase in demand, decrease in offered capacity from hydro plants, load nominations from Kalayaan for its pumping operations during off-peak hours, observed capacity ranging from 190 MW to 450 MW offered by hydro plants, with prices ranging from PHP 30,000/MWh to PHP 32,000/MWh during the evening off-peak hours. Additionally, the opportunity costs from the co-optimization of energy and reserves contributed to these price fluctuations.

During peak hours on 13 August 2024, the market experienced its highest price for the third quarter of 2024 at PHP 55,861/MWh, which is 34% higher compared to the

previous quarter. This peak price coincided with a decrease in offered capacity from hydro plants and load nominations from Kalayaan for its pumping operations during off-peak hours.

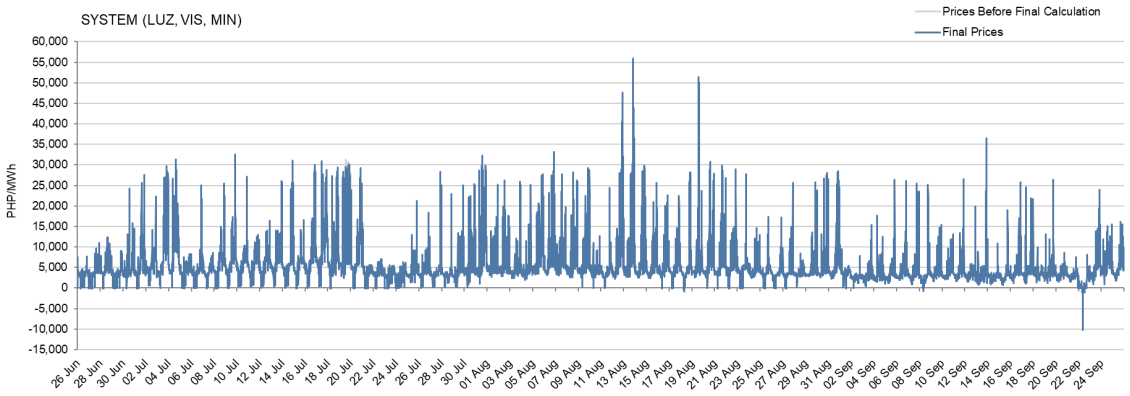

Figure 6. Market Price Trend, 3rd Quarter 2024

Table 11. Market Price Summary, 3rd Quarter 2024

	2nd Quarter 2024 (26 Mar to 25 Jun 2024) (in PHP/MWh)			3rd Quarter 2024 (26 Jun to 25 Sep 2024) (in PHP/MWh)			% Average Change
	Min	Max	Average	Min	Max	Average	
System	-10,208.41	41,617.33	7,466.57	- 10,146.17	55,861.18	5,457.11	26.91%▼

Table 12. Monthly Market Price Summary, 3rd Quarter 2024

	July 2024 (26 Jun to 25 Jul 2024) (in PHP/MWh)			August 2024 (26 Jul to 25 Aug 2024) (in PHP/MWh)			September 2024 (26 Aug to 25 Sep 2024) (in PHP/MWh)		
	Min	Max	Average	Min	Max	Average	Min	Max	Average
System	- 78.48	32,548.09	6,183.31	- 799.82	55,861.18	6,200.01	- 10,146.17	36,461.00	4,011.43

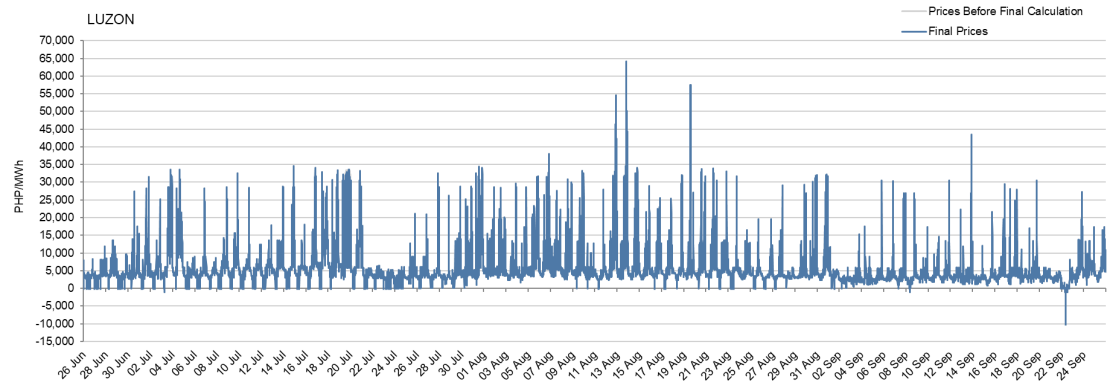

Figure 7. Market Price Trend - Luzon, 3rd Quarter 2024

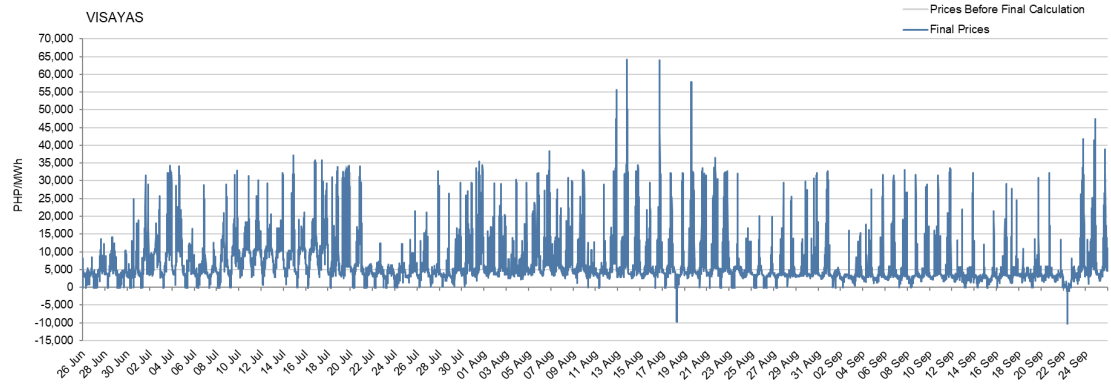

Figure 8. Market Price Trend - Visayas, 3rd Quarter 2024

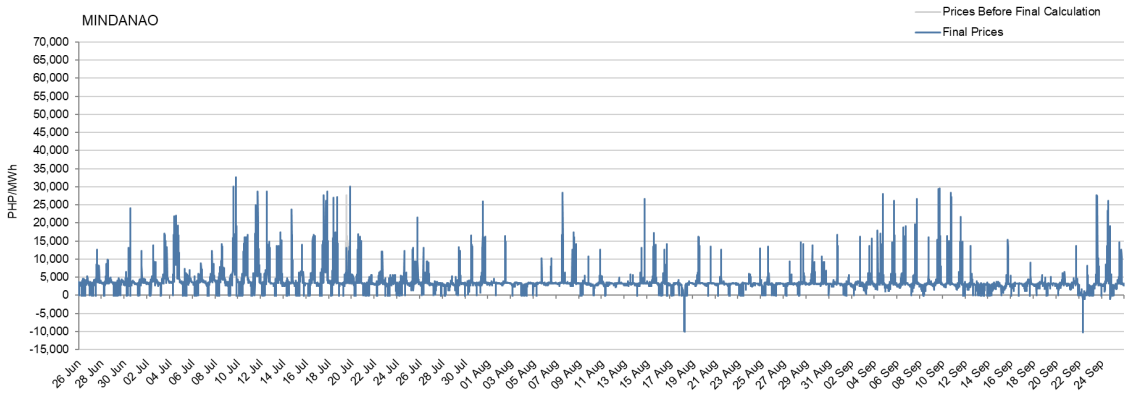

Figure 9. Market Price Trend - Mindanao, 3rd Quarter 2024

Table 13. Monthly Regional Price Summary, 3rd Quarter 2024

	July 2024 (26 Jun to 25 Jul 2024) (in PHP/MWh)			August 2024 (26 Apr Jul to 25 Aug 2024) (in PHP/MWh)			September 2024 (26 Aug to 25 Sep 2024) (in PHP/MWh)		
	Min	Max	Average	Min	Max	Average	Min	Max	Average
Luzon	- 1,062.88	34,643.25	5,917.44	- 1.02	64,170.83	6,515.00	- 10,146.17	43,469.29	3,923.31
Visayas	- 1.05	37,206.83	7,498.29	- 9,665.11	64,238.77	7,331.06	- 10,146.17	47,380.99	4,830.85
Mindanao	- 100.63	32,567.87	4,666.24	- 9,936.30	28,285.83	3,458.46	- 10,146.17	29,513.60	3,639.43

Table 14. Monthly Regional and Regional Zonal Prices, 3rd Quarter 2024

	July 2024 (26 Jun to 25 Jul 2024) (in PHP/MWh)	August 2024 (26 Jul to 25 Aug 2024) (in PHP/MWh)	September 2024 (26 Aug to 25 Sep 2024) (in PHP/MWh)
Luzon	6,139.56	6,515.00	3,923.31
Northern Luzon	6,172.44	6,464.57	3,761.50
Metro Manila	6,163.07	6,629.20	5,675.16
South Luzon	5,873.28	6,336.08	6,647.55
Visayas	7,788.63	7,331.06	4,830.85
Bohol	12,318.51	12,167.08	5,784.88
Cebu	6,090.87	6,838.29	5,628.08
Leyte	6,343.07	7,680.48	5,902.45
Negros	6,195.63	6,891.04	5,784.64
Panay	13,136.15	7,327.00	5,883.33
Mindanao	4,850.82	3,458.46	3,639.43
North Central Mindanao	4,564.40	3,224.06	3,488.18
North-East Mindanao	5,049.51	3,683.55	3,945.61
North-West Mindanao	5,233.16	3,689.12	3,974.75
South-East Mindanao	4,775.82	3,394.23	3,655.19
South-West Mindanao	4,831.67	3,457.39	3,721.79
Lanao	4,482.30	3,131.93	3,352.27

Table 14 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.

The data reveals variations in final regional prices, highlighting the influence of localized factors on electricity costs. These factors may include differences in generation mix, transmission constraints, and demand patterns specific to each zone. For example, zones with abundant low-cost generation resources may exhibit lower prices, while those experiencing congestion may have higher prices. During the July billing period, the Visayas region saw significant price separation in the Panay zone due to congestion on the Barotac Viejo-Dingle Lines 1 and 2, which were operated at its peak capacity at 23% and 19% of the time, respectively. This limited electricity flow, isolating Panay from cheaper supply sources and forcing reliance on higher-cost local generation, driving up prices.

These events highlight the need for reliable transmission infrastructure to ensure efficient energy distribution and stable prices across regions to address such bottlenecks and reduce price disparities.

Understanding regional market conditions, infrastructure, and operational factors that contribute to price variability within the broader region is critical for identifying opportunities to improve efficiency, optimize resource allocation, and potentially address disparities in electricity pricing across zones.

B. Price Distribution

As shown in Figure 10, a substantial portion of market prices during the third quarter of 2024, averaging between 53% and 82% of the total trading intervals, were observed within the PHP (0 to 5,000]MWh range. This trend indicates that for most of the quarter, electricity prices remained relatively low, reflecting a market dynamic shaped by the balance between supply and demand.

This pricing behavior underscores how seasonal factors and the operational efficiency of the power sector influence market outcomes. The observed price distribution effectively encapsulates the reasons for lower average prices during the quarter, emphasizing the impact of adequate supply and moderated demand on market stability.

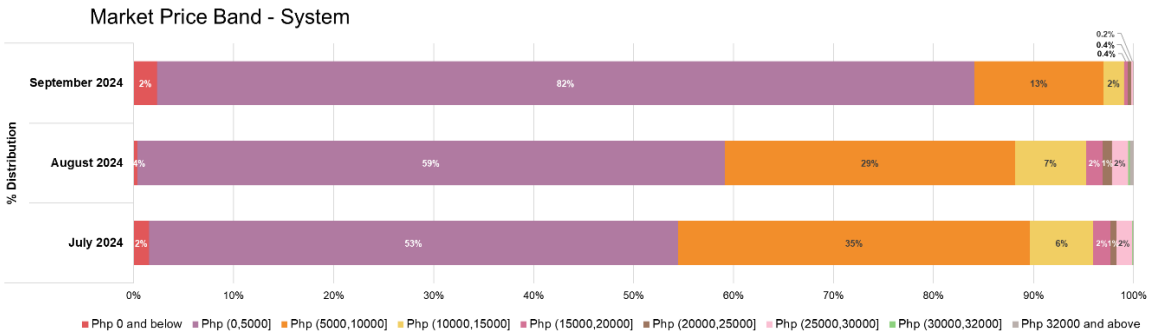

Figure 10. Price Distribution, 3rd Quarter 2024

Table 15 presents the tabular distribution of offer prices for the billing months covered in this quarter.

Table 15. Monthly Price Distribution, 3rd Quarter 2024

Price Range (Php/MWh)	% Distribution		
	July 2024	August 2024	September 2024
Php 0 and below	2%	0.4%	2%
Php (0,5000]	53%	59%	82%
Php (5000,10000]	35%	29%	13%
Php (10000,15000]	6%	7%	2%
Php (15000,20000]	2%	2%	0.4%
Php (20000,25000]	1%	1%	0.4%
Php (25000,30000]	2%	2%	0.2%
Php (30000,32000]	0.1%	0.2%	-
Php 32000 and above	0.02%	0.3%	0.01%

C. Congested Equipment

Grid equipment congestion can significantly impact the delivery of electricity, particularly limiting the availability of cheaper power supplies. When the grid is congested, it becomes challenging to transmit electricity from low-cost generators to areas of high demand, resulting in supply constraints. This limitation typically drives up electricity prices as demand exceeds the restricted supply. Conversely, alleviating grid congestion by upgrading infrastructure or optimizing power flow can increase supply availability, which may help stabilize or reduce prices.

During the third quarter of 2024, congestion was observed in three critical transmission lines: the Maasin-Ubay line and Barotac Viejo-Dingle Lines 1 and 2. These lines experienced congestion for a total of 8,929 trading intervals, representing 34% of the total intervals in the quarter. Congestion rates for these lines were recorded at 18% for Maasin-Ubay and 8% each for Barotac-Dingle Lines 1 and 2. These bottlenecks highlight areas of the grid that require attention to improve transmission efficiency and ensure the reliable delivery of electricity. Appendix B provides a detailed list of all equipment that experienced congestion during this period, offering further insights into the affected infrastructure.

V. Generator Offer Pattern

This portion of the report discusses the offer pattern of the generator-trading participants based on their submitted offers to the WESM through the Market Participant Interface, and in compliance with Clause 3.5 of the WESM Rules. The offer pattern does not take into account generators that are on outage.

As illustrated in Figure 11, the offer patterns of coal power plants remained relatively unchanged compared to the previous quarter. The majority (73%) of coal power plant offers were concentrated at or below PHP 0/MWh, indicating that a significant portion of their generation capacity is committed to bilateral contracts. These contracts are pre-arranged agreements between power producers and off-takers, such as distribution utilities or large industrial customers, to supply electricity at fixed terms and prices.

This offer pattern suggests that coal power plants prioritize fulfilling their contractual obligations, often offering their capacity at minimal or zero cost in the spot market to ensure their contracted supply is dispatched. This strategy minimizes the risk of underutilization while maintaining compliance with their bilateral commitments, thereby stabilizing their revenue streams despite fluctuations in spot market prices.

Furthermore, one coal plant that had completed its testing and commissioning following the issuance of Final Certificate of Approval to Connect (FCATC) and began submitting nominations on 22 April 2024. However, its commercial operations only commenced on 26 September 2024 to which 8% of the total coal offered capacity.

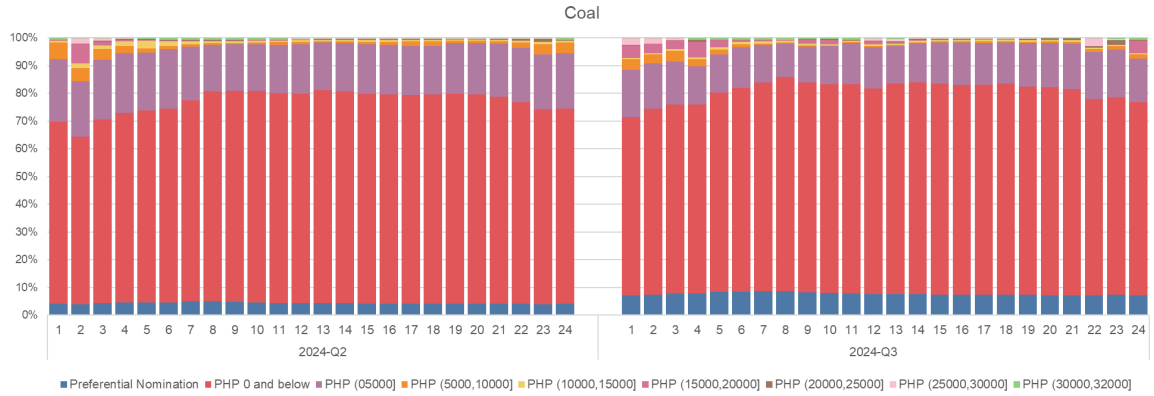

Figure 11. Coal Power Plants Offer Pattern – 2nd and 3rd Quarter 2024

Similar to coal power plants, natural gas power plants exhibit a similar offering pattern, with 89% of their offers concentrated at or below PHP 0/MWh which strongly suggest that a substantial portion of their capacity is committed under bilateral contracts. As a base plant, specific buyers, such as distribution utilities or large industrial consumers, agreeing to a fixed price for electricity over a defined period.

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 consistent demand as stipulated in their agreements.

Moreover, comparing to the previous quarter, natural gas power plants tended to offer their capacity at slightly higher prices this quarter, as illustrated in Figure 12.

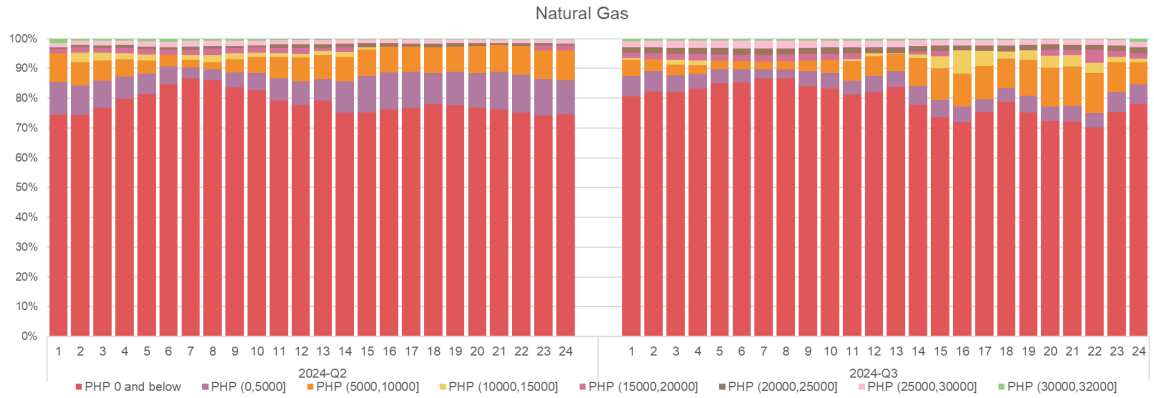

Figure 12. Natural Gas Power Plants Offer Pattern – 2nd and 3rd Quarter 2024

The offer behavior of hydro power plants, as presented in Figure 13, underwent noticeable changes during the third quarter of 2024. With increased water reserves due to the rainy season, hydro plants tended to offer at lower prices, reflecting improved availability compared to the preceding summer quarter.

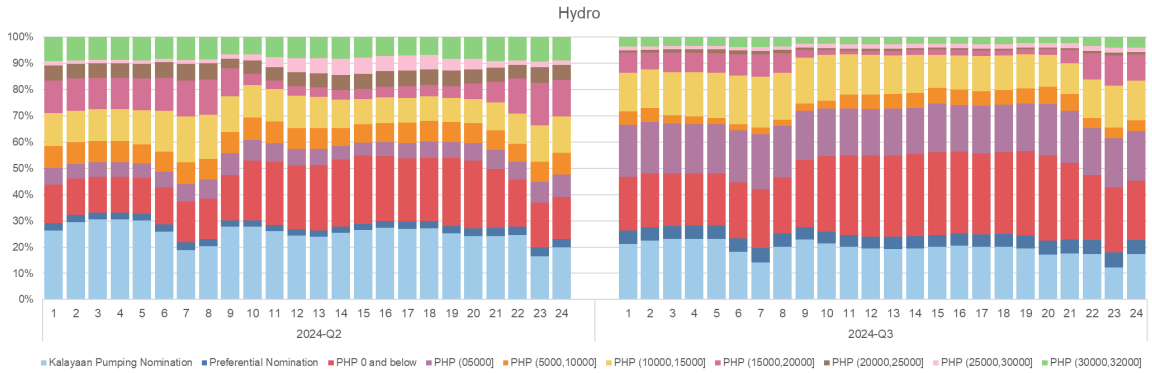

Figure 13. Hydro Power Plants Offer Pattern – 2nd and 3rd Quarter 2024

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 electricity prices tend to be higher.

The majority of offers from oil-based power plants were concentrated at the higher end of the price spectrum, reflecting the typically high cost of generating electricity from oil due to fuel expenses. A slight shift in offer distribution was observed, with an average of 9% of offers moving from the PHP (25,000–30,000] range to the PHP (30,000–32,000] range, indicating a slight upward adjustment in pricing.

Figure 14 highlights a notable trend over the second and third quarters of 2024: a small percentage of oil-based power plant capacity was offered at PHP 0/MWh or below. This unusual behavior, despite the high fuel costs associated with oil-based generation, suggests a strategic approach by these power plants to manage their operations.

Upon further validation, it was found that these plants adjusted their offers to cover their minimum initial loading (Pmin) requirements. By doing so, they avoided shutting down their units, a decision likely driven by the higher costs and operational challenges of restarting after a shutdown. In some cases, the financial loss from selling electricity at negative prices may have been deemed less burdensome than the costs associated with bringing the plant back online. This behavior underscores the importance of operational cost management and the balancing act power producers face between financial viability and system reliability.

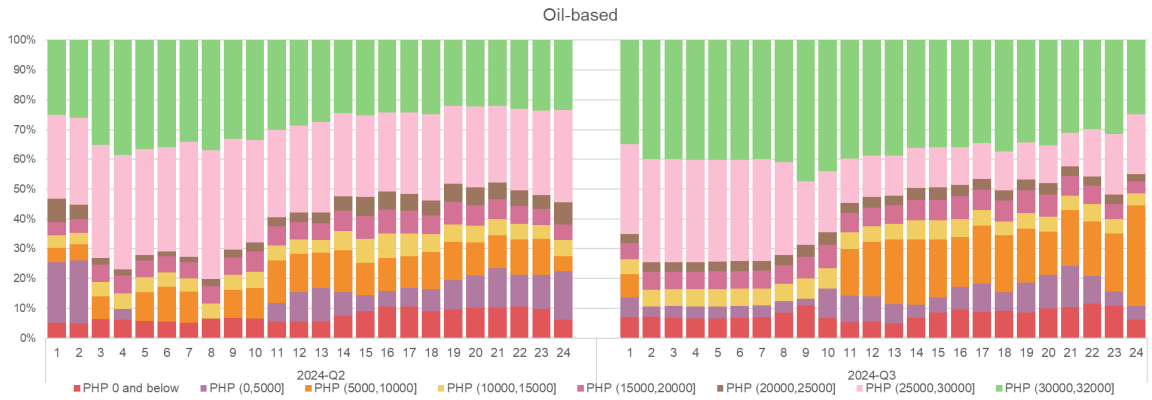

Figure 14. Oil-based Power Plants Offer Pattern – 2nd and 3rd Quarter 2024

VI. Market Pricing Conditions

During the third quarter of 2024, the WESM was mostly under normal pricing conditions for 24,689 trading intervals or at 93% of the time. However, other intervals were placed under various market pricing conditions as follows:

A. Pricing Error Notice (PEN) [5]

There were 764 total trading intervals observed with system-wide PEN issuances during the third quarter which were related to inappropriate input data that subsequently affected the market outcomes.

B. Price Substitution Methodology (PSM)[6]

Due to extreme cases of congestion in the electricity transmission network, PSM was implemented on a system-wide basis, affecting a total of 799 trading intervals. This means that the prices for certain transactions were adjusted to address extreme price separations due network congestion occurrences. Additionally, regional PSMs occurred when the High-Voltage Direct Current (HVDC) link is on outage connecting the main regions thereby resulting in both isolation and price separations. Regional PSM was noted to have been imposed in Luzon, impacting 11 trading intervals with the outage of the Luzon-Visayas HVDC link.

C. Administered Price (AP)

Market Interventions (MIs) have had their regular share in the pricing conditions throughout the billing months covered in this review. Most interventions were due to threat to system security or emergency conditions and force majeure events affecting a total of 34 trading intervals system-wide. This represents a significant 87% decrease from the previous quarter. During the period, the calculated AP were used by the Market Operator (MO) to settle spot market transactions during MI.

Moreover, regional imposition of AP due to SO declaration of MI in Visayas, with 22 total trading intervals affected due to Manual Load Dropping (MLD) implementation to prevent the overloading of Ubay-Maasin 138kV Line.

D. Secondary Price Cap (SPC)[7]

In accordance with the ERC Issuance on the imposition of the SPC, there were recorded system-wide and regional impositions observed in the market. System-wide impositions affected a total of 198 trading intervals which significantly lower by 95% when compared to the previous quarter. Moreover, regional impositions only affected 3 trading intervals in Luzon.

[5] 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.

[6] 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.

[7] 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

The application of SPC tends to mitigate high market prices and caps the generator settlement price at PHP 6,245/MWh, but with provisions allowing the affected generators to file for additional compensation.

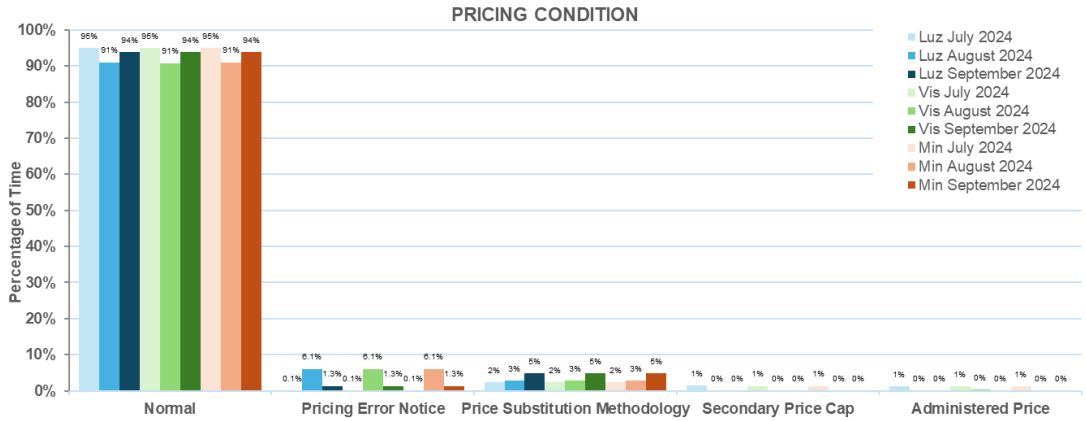

Figure 15. Monthly Pricing Condition for 3rd Quarter 2024

VII. Residual Supply

Figure 16 shows the hourly trend of the Market Residual Supply Index (Market RSI)[8] plotted against the corresponding number of pivotal supplier/s in the market.

During the period in review, the market resulted in RSIs ranging from 92.83% to 105.21%, averaging at 97.65%. The average market prices for intervals with RSI below 100% was PHP 5,720/MWh, while those with RSIs above 100% was at PHP 2,570/MWh. Moreover, it is also worth noting that when the maximum RSI was at 105.21%, the price was at zero, while when the RSI is at its minimum of 92.83%, the price was at PHP 32,548/MWh, underscoring the correlation between the supply and prices.

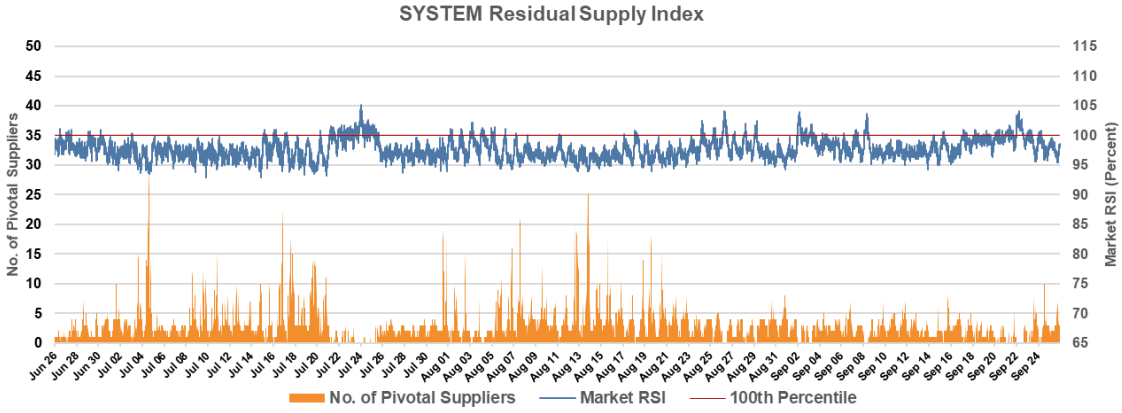

Figure 16. Market RSI vs. Pivotal Suppliers, 3rd Quarter 2024

[8] 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 Suppliers[9]

Provided in Figure 17 are the top 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 first three quarters of 2024 for 75.08% of the time over a total of 26,496 trading intervals. A pivotal plant is one whose capacity is required to meet the demand at a specific time. Without the contribution of such a supplier, the grid may experience shortages or instability. It is worthy to note that the top pivotal supplier is likewise under the top market participant group which is the Aboitiz Power (AP). Meanwhile, under the SMC group, there are four power plants considered as pivotal source of energy supply in the market. Among these, Ilijan NGPP traded in 74.34% of trading intervals, thus contributing significantly to the group's supply strategy regarding energy provision. This shows that this plant is strategically important in fulfilling demand to ensure a stable electricity supply during operations in the market.

Additionally, it is important to highlight that seven out of ten pivotal suppliers were coal-fired power plants, while the three remaining plants were natural gas power plants.

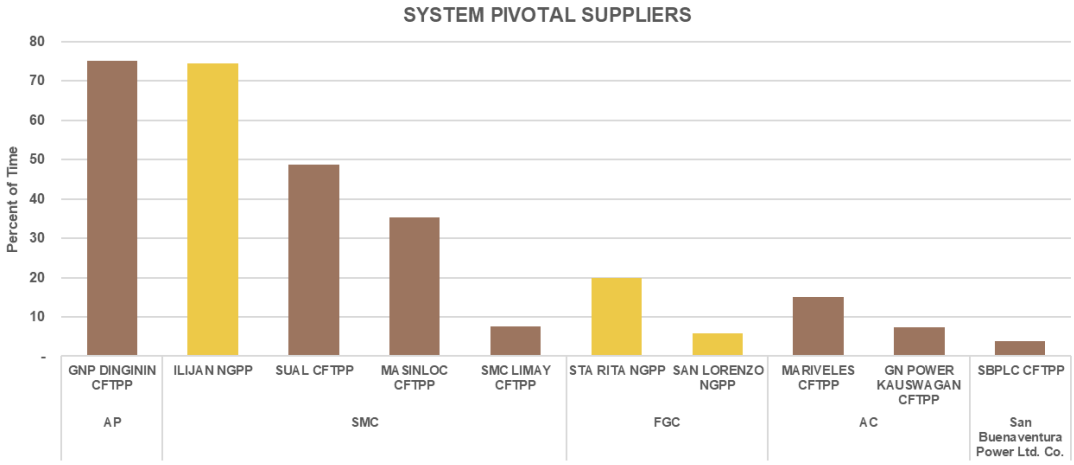

Figure 17. Top Pivotal Suppliers, 3rd Quarter 2024

IX. Capacity Factor

The Capacity Factor, a metric used to assess how efficiently a generating plant operates during each dispatch interval based on its metered output, measured at around 46% during the period under review.

In a resource type basis, baseload power plants were dispatched most frequently in the WESM, reflecting the highest utilization levels. Under this category, as shown in Figure 18, coal power plants recorded the highest utilization rates, consistent with the previous quarter. This marks a shift from prior quarters, where geothermal power plants typically led in utilization rates.

It was observed that only hydro and battery power plants showed an increase compared to the previous month. This trend is expected for hydro plants, as the previous quarter coincided with the summer season, a time when water levels are typically lower, limiting

[9] 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.

their operational capacity. With the onset of the rainy season, water levels increased, allowing hydro plants to operate more effectively, thereby boosting their capacity factors.

For the conventional power plants, such as coal, natural gas and oil-based power plants, the decline in capacity factors during this quarter can be attributed to two primary factors. First, there was a decrease in overall demand, which reduced the need for their dispatch. Second, many of these plants underwent scheduled maintenance during this period, further lowering their operational availability. Together, these factors contributed to the reduced capacity utilization of conventional plants compared to the previous quarter.

Furthermore, solar power plants are expected to see a decline in their capacity factors during the rainy season. The recorded capacity factor of 18 for the third quarter of 2024 represents a 6.5% decrease when compared to the previous quarter.

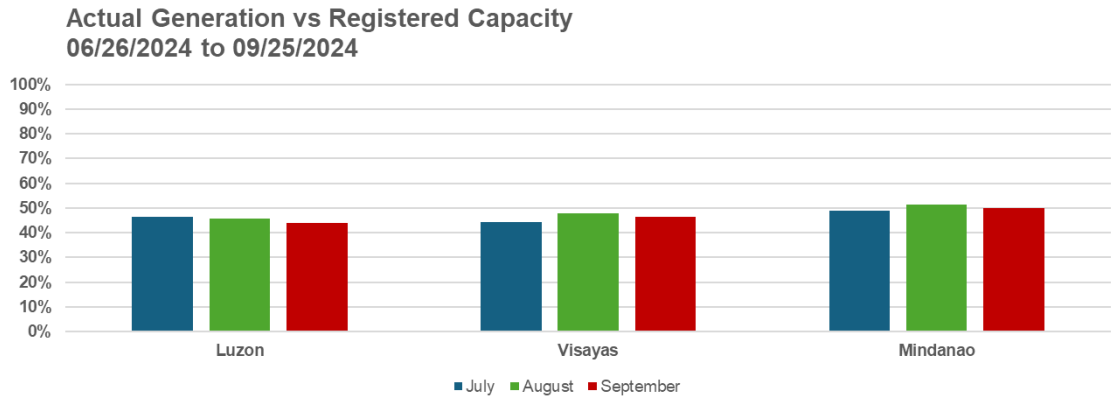

Figure 18. System Capacity Factor (Registered Capacity vs Actual Generation) – 3rd Quarter 2024

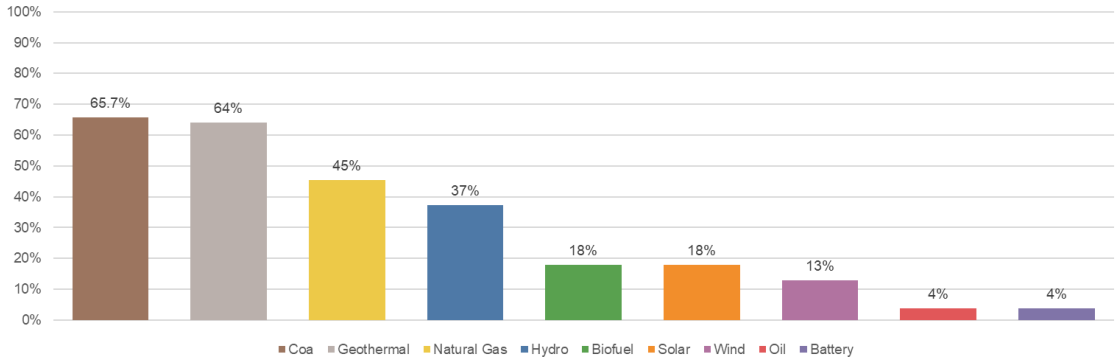

Figure 19. System Capacity Factor Per Resource Type (Registered Capacity vs Actual Generation) – 3rd Quarter 2024

X. Generation Mix

Coal power plants, held the highest percentage share of registered capacity, consistently contribute the largest portion of electricity generation across all monthly billing periods. During the period under review, they accounted for more than half of the total generation mix. This dominance underscores the country's significant dependence on coal as a primary energy source, reflecting its role as a cornerstone of the power generation sector.

The heavy dependence on coal is because it offers relatively stable baseload power with a guarantee of a continued and predictable supply of electricity. On the other hand, dependence has to be seen in terms of environmental sustainability because it does contribute heavily to greenhouse gases. As the country balances energy security with

environmental imperatives the DOE's commitment towards a cleaner energy transition, the national renewable energy power generation mix target of 35% by 2030 and the aspirational target of 50% by 2040.

Moreover, the average generation mix for all RE resources was 10.6%. This marks a decrease from 18.6% in the previous quarter which was primarily due to the reduced output of almost all RE plants. Additionally, the consistent high percentage share of coal and natural gas power plants further contributed to the overall reduction of RE generation in the generation mix.

The figures indicate a level of challenge in the shift towards renewable sources of energy, which is propelled by the fact that sources which are non-renewable, particularly base load power plants like coal and natural gas, remain included in the energy mix. It has driven the generation mix which consequently gives way to hurdles for sustainability and carbon reduction according to the Philippine Energy Plan.

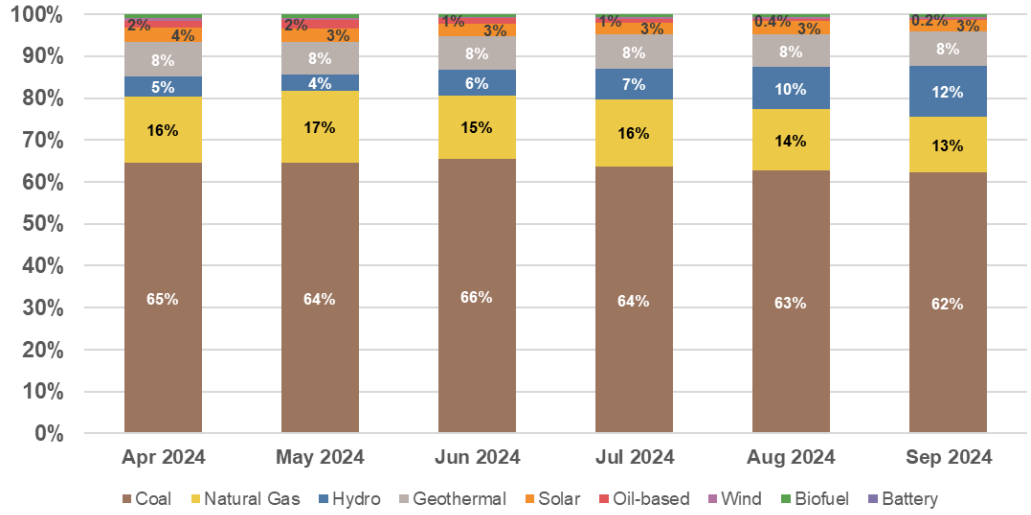

Figure 20. Generation Mix (Based on Metered Quantity) – April to September 2024

XI. Market Concentration

A. Market Share

The integrated electricity market of Luzon, Visayas, and Mindanao continues to be dominated by five major participant groups, based on registered capacity, offered capacity, and actual generation. Among these, San Miguel Corporation (SMC) held the highest percentage share in registered capacity, indicating their dominant position in the market. SMC also had the higher percentage in terms of offered capacity, suggesting that their power plants have been more readily available and operational this quarter in review. The higher capacity offered indicates their ability to meet market demands more effectively during this period. This resulted in SMC to be the group with the highest percentage share in terms of actual generation, suggesting that most of its offered capacity has been dispatched.

However, AP led in terms of spot exposure in the market which suggests that most of SMC's traded energy was tied to bilateral contracts, with a 35% exposed to the spot market of its total metered quantity, resulting in a 14% of the total spot exposure. Figure 21 also illustrates the disparity between the percentage share per Energy Trading Amount (ETA) and spot market exposure, due to varying resulting market prices.

Distinguishing between registered, offered, and actual generation capacity reflects the competitive dynamics of this integrated market. Different strategies and operational efficiencies are influential in terms of market share and power generation output.

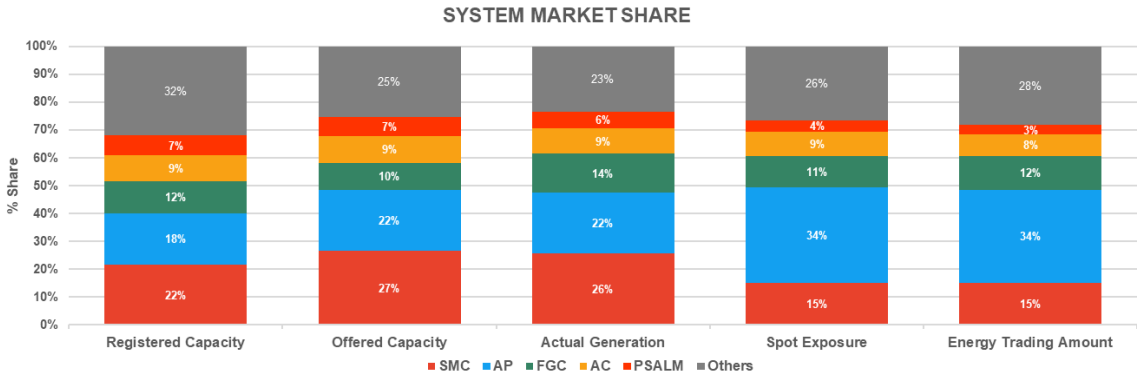

Figure 21. Market Share by Major Participant Group based on Registered Capacity, Offered Capacity, Actual Generation, 3rd Quarter of 2024

B. Herfindahl-Hirschman Index (HHI)

The Herfindahl-Hirschman Index (HHI)[10] by major participant grouping indicated a not concentrated market during the third quarter of 2024 in terms of registered capacity, offered capacity and metered quantity. Moreover, the market exhibited a concentrated market in terms of spot exposure, with AP accounting for a significant 34% portion of the market share.

It was also observed that three (3) major participant groups have consistently covered more than 50% of the Metered Quantity (MQ) shares, which was due to frequent dispatch and subsequently affected the resulting market concentration.

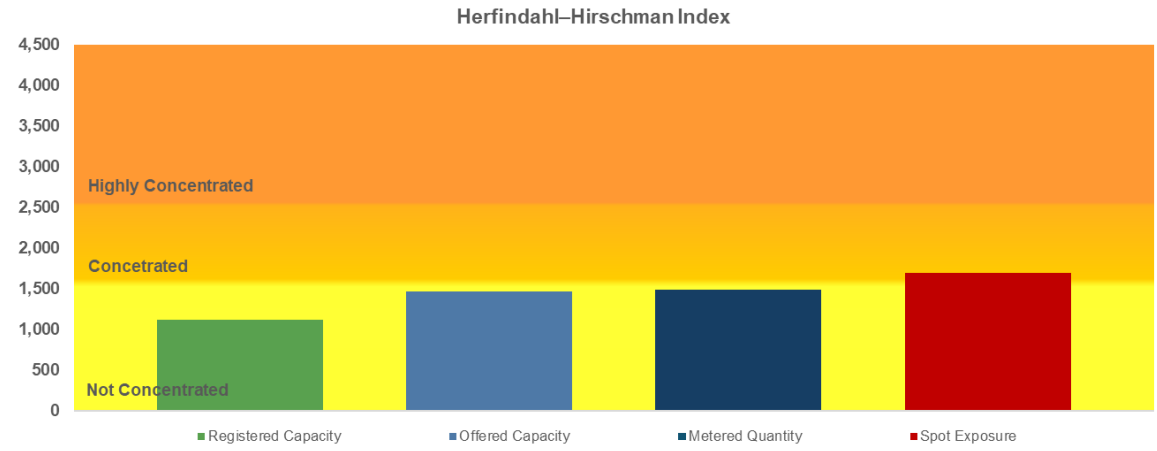

Figure 22. HHI based by Major Participant Grouping, 3rd Quarter 2024

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

XII. Spot Exposure

The load-trading participants' spot market transactions declined in the third quarter of 2024, ranging from 17 to 25%, compared to only 20 to 31% in the previous quarter. However, most of the total energy purchase was still covered by bilateral contracts. Figure 23 shows daily spot exposure for load-trading participants.

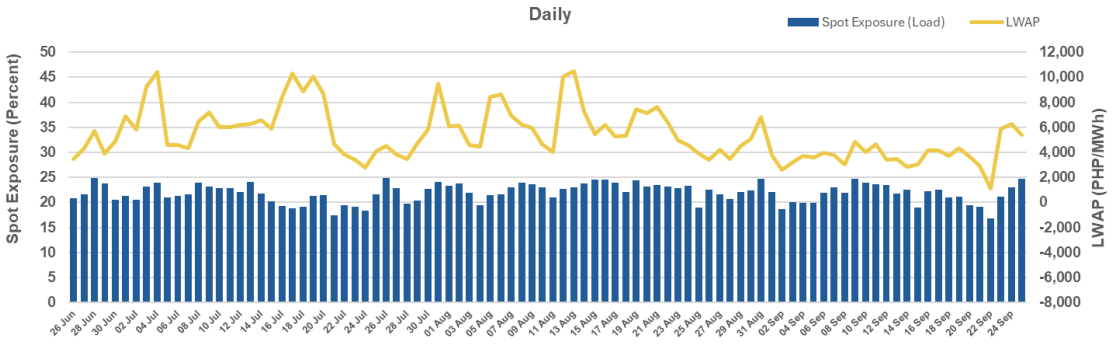

Figure 23. Daily Profile of Spot Market Exposure, 3rd Quarter 2024

Table 16 demonstrates a direct relationship between the spot exposure of load-trading participants and the load-weighted average price. It is observed that despite high spot market exposure during holidays, prices remain relatively low. On the other hand, weekdays tend to have greater spot market exposure compared to weekends, resulting in higher market prices during weekdays.

Table 16. Spot Exposure (Load) vs LWAP, Day Type, 3rd Quarter 2024

Day Type	Average Spot Exposure (Load) (% of Time)	Average (LWAP) (in PHP/MWh)
Weekday	22.12	5,886.10
Weekend	21.44	4,476.49
Holiday	22.65	4,209.66

Figure 24 provides a visual representation of the hourly fluctuations in spot exposure and the corresponding average hourly prices. It revealed that the spot exposure peak at 0700h, 1200h, and 1500h. Exposure to these prices can be addressed by an efficient contracting strategy by Distribution Utilities by availing the streamlined process of Competitive Selection Process (CSP).

The noticeable dip in prices around 1800h is likely attributable to a decrease in demand associated with people leaving their offices and schools for the day. As demand falls, prices tend to decrease as well.

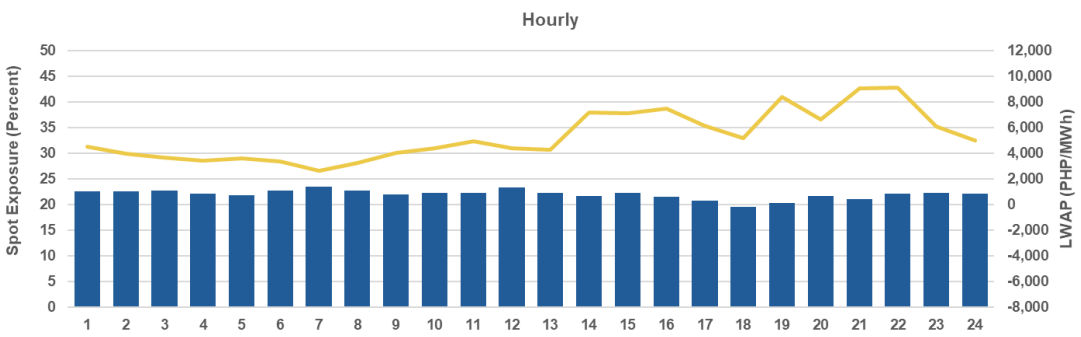

Figure 24. Hourly Profile of Spot Market Exposure, 3rd Quarter 2024

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	09/20/2024 4:01			Maintenance Outage	Annual PMS of switchyard and BESS
BAT	ALAMINOS BESS1	20	02/18/2024 9:30	08/30/2024 17:05	194	Forced Outage	Unit problem on investigation.
BIOF	GIFTC2	6	09/24/2024 0:02			Maintenance Outage	Maintenance shutdown.
BIOF	IBEC	18	09/23/2024 0:00	09/26/2024 0:00	3	Forced Outage	Extended Maintenance Outage(Non-GOMP).
BIOF	BT2020COGEN	13	09/19/2024 14:00	09/24/2024 6:01	5	Forced Outage	Suspected boiler tube leak
BIOF	VSGRIP	5.4	09/19/2024 11:31	09/20/2024 18:01	1	Forced Outage	Emergency shutdown due to trouble on travelling rate
BIOF	GIFTC2	6	09/09/2024 0:05	09/10/2024 23:56	1	Planned Outage	Planned Outage.
BIOF	IBEC	18	09/08/2024 0:04	09/22/2024 23:59	14	Maintenance Outage	Maintenance Outage until September 22 2024.
BIOF	IPOWER	10.8	09/07/2024 0:01	09/20/2024 8:00	13	Maintenance Outage	Maintenance Outage
COAL	MSLC3	335	09/24/2024 1:56			Planned Outage	Planned outage until October 23 2024.
COAL	CLC2	300	09/21/2024 16:53	09/22/2024 3:15	1	Forced Outage	Tripped due to Digital Electro Hydraulic (DEH) composite trip
COAL	PBL2	382	09/20/2024 0:35			Planned Outage	Planned Outage until November 30 2024.
COAL	CLC2	300	09/19/2024 2:20	09/21/2024 11:56	2	Forced Outage	Tripped due to activation of main transformer protection.
COAL	CLC2	300	09/17/2024 9:12	09/18/2024 16:15	1	Forced Outage	Reported Transformer protection activated.
COAL	DINGININ 2	668	09/16/2024 18:36	09/24/2024 3:22	8	Forced Outage	Emergency shutdown due to boiler tube leak.
COAL	MSLC3	335	09/14/2024 20:28	09/15/2024 5:01	1	Forced Outage	Tripped due to pulverizer trouble
COAL	SLPGC 1	150	09/14/2024 11:24	09/22/2024 5:39	8	Forced Outage	Tripped due to high bearing vibration.
COAL	SCPC 3	150	09/14/2024 4:06			Planned Outage	Planned Outage until October 29 2024.
COAL	PBL3	420	09/13/2024 0:51	09/16/2024 19:52	3	Maintenance Outage	Maintenance Outage
COAL	PBL1	382	09/08/2024 22:07	09/09/2024 17:04	1	Forced Outage	Emergency shutdown due to primary superheat drain line leak
COAL	PBL1	382	09/07/2024 22:59	09/08/2024 0:08	1	Planned Outage	Planned Outage until September 10 2024.
COAL	SLPGC 1	150	09/06/2024 0:00	09/10/2024 18:08	4	Forced Outage	Extended Outage until September 12 2024.
COAL	QPPL	460	08/31/2024 0:00	09/02/2024 2:00	2	Maintenance Outage	Maintenance Outage until Sepember 1 2024.
COAL	MPGC 4	150	08/27/2024 22:37	09/14/2024 3:20	18	Forced Outage	Tripped due to Boiler Feed Pump trouble. On Commssioning Test
COAL	SLTEC 2	124	08/23/2024 0:06	08/28/2024 10:00	5	Maintenance Outage	Emergency shutdown due to facilitate correction of SF6 gas repair purification at GIS common bus.
COAL	SCPC	150	08/17/2024 6:01	09/03/2024 22:48	17	Planned Outage	Planned Outage.until September 7 2024.
COAL	SLTEC 1	122	07/28/2024 0:02	09/01/2024 5:00	35	Planned Outage	Planned Outage July 28 - September 11 2024
COAL	SLPGC 1	150	07/27/2024 23:57	09/05/2024 23:59	40	Planned Outage	Planned Outage July 28 - September 05 2024
COAL	PBL1	382	07/01/2024 0:49	09/07/2024 5:58	68	Planned Outage	Planned outage July 1 - September 10 2024
COAL	PETRON 3	35	01/20/2024 17:26			Forced Outage	High furnace pressure and main steam piping rupture.
GEO	TIWI C BINARY	16.7	09/20/2024 7:39	09/21/2024 18:17	1	Maintenance Outage	Affected by the shutdown of Tiwi C 50MVA Transformer.
GEO	PALAYAN BINARY	31	09/17/2024 13:49			Forced Outage	Trouble in switchyard.
GEO	MGPP2	12	09/08/2024 22:18	09/09/2024 7:27	1	Forced Outage	Affected by the transmission line maintenance outage by Meralco.
GEO	MB 4	58	09/07/2024 23:57	09/08/2024 6:18	1	Forced Outage	Tripped by transformer protection.
GEO	MGPP 1	20	09/07/2024 4:34	09/09/2024 9:50	2	Forced Outage	Cause of tripping to be determined
GEO	MB 1	57	08/26/2024 21:58	08/27/2024 4:33	1	Forced Outage	Condenser vacuum low.
GEO	BACMAN2	60	08/25/2024 18:30	08/26/2024 0:28	1	Forced Outage	Tripped due to actuation of transformer differential protection
GEO	BACMAN3	20	08/25/2024 6:07	08/28/2024 12:18	3	Planned Outage	Planned outage August 25 - 28 2024
GEO	BACMAN1	60	08/25/2024 0:10	08/26/2024 10:41	1	Planned Outage	Planned shutdown to facilitate Black Start test
GEO	PALAYAN BINARY	31	07/24/2024 6:04	09/13/2024 17:28	51	Forced Outage	The unit is under test and commissioning. PCATC is valid until September 7 2024.
HYD	KAL 1	183	09/19/2024 0:00			Forced Outage	Extended Outage until October 2 2024
HYD	MARIS 2	4.3	09/16/2024 12:07	09/20/2024 11:45	4	Forced Outage	Suspended IDR due to continuous raining.
HYD	MARIS 1	4.3	09/16/2024 12:07	09/20/2024 11:12	4	Forced Outage	Suspended IDR due to continuous raining.
HYD	MARIS 1	4.3	09/07/2024 20:34	09/10/2024 11:20	3	Forced Outage	Shutdown due to heavy rain as requested by NIA.
HYD	NMHC	3.9	08/28/2024 23:16	08/29/2024 13:06	1	Forced Outage	Tripped due to unbalanced current.
HYD	BINENG 1	19.8	08/28/2024 16:19	08/29/2024 13:27	1	Forced Outage	Tripped due to transient fault.
HYD	AMPOHAW	12.5	08/28/2024 16:19	08/29/2024 13:42	1	Forced Outage	Tripped due to transient fault.
HYD	KAL 1	183	07/01/2024 0:01	09/18/2024 23:59	79	Planned Outage	Planned Outage until September 18 2024.
HYD	ANG M U1	50	06/28/2024 8:01			Maintenance Outage	Replacement of Main Unit No.1 in relation to the ongoing AHEPP Modernization and Rehabilitation Project (December 31 2024 2400H).
HYD	ANG A U2	6	11/06/2023 8:01			Planned Outage	Total Plant shutdown (Planned Outage)
HYD	ANG M U4	50	02/14/2022 0:00			Planned Outage	Planned outage.
NATG	ILIJAN A1	190	09/21/2024 22:53	09/22/2024 14:10	1	Forced Outage	Inlet guide vane repair in the roller.
NATG	ST. RITA 20	255.7	09/18/2024 17:21	09/19/2024 11:45	1	Forced Outage	Extended Outage (from GOMP).
NATG	ST. RITA 30	263	09/18/2024 0:15			Planned Outage	Planned Outage until November 1 2024.
NATG	ST. RITA 30	265.5	09/18/2024 0:15			Planned Outage	Planned Outage until November 1 2024.
NATG	ST. RITA 20	255.7	09/16/2024 21:13	09/18/2024 12:03	2	Forced Outage	Extended Outage (from GOMP).
NATG	ST. RITA 20	255.7	09/14/2024 20:24	09/16/2024 6:17	2	Forced Outage	Extended Outage (from GOMP).
NATG	AVION 2	45.8	09/14/2024 0:03	09/18/2024 3:50	4	Planned Outage	Planned Outage until September 24 2024.
NATG	ILIJAN B3	220	09/13/2024 21:13	09/14/2024 13:41	1	Forced Outage	Tripped due to fuel gas supply low pressure
NATG	ILIJAN B2	190	09/13/2024 21:13	09/14/2024 15:05	1	Forced Outage	Tripped due to fuel gas supply low pressure
NATG	ILIJAN B1	190	09/13/2024 21:12	09/14/2024 12:31	1	Forced Outage	Tripped due to fuel gas supply low pressure
NATG	ILIJAN A3	220	09/13/2024 21:12	09/14/2024 4:28	1	Forced Outage	Tripped due to fuel gas supply low pressure
NATG	ILIJAN A2	190	09/13/2024 21:12	09/14/2024 3:24	1	Forced Outage	Tripped due to fuel gas supply low pressure
NATG	ILIJAN A1	190	09/13/2024 21:12	09/14/2024 8:46	1	Forced Outage	Tripped due to fuel gas supply low pressure
NATG	AVION 1	47.2	09/13/2024 0:04	09/16/2024 2:20	3	Planned Outage	Planned Outage until September 18 2024
NATG	ST. RITA 20	255.7	09/10/2024 0:00	09/14/2024 16:56	4	Forced Outage	Extended Outage (from GOMP).
NATG	EERI1	440	09/09/2024 14:47			Maintenance Outage	Under testing and commissioning.
NATG	EERI1	440	09/04/2024 19:39	09/09/2024 13:20	5	Maintenance Outage	On commissioning.
NATG	EERI1	440	09/01/2024 13:18	09/04/2024 18:37	3	Planned Outage	On commissioning.
NATG	EERI2	440	08/10/2024 12:02			Maintenance Outage	Maintenance outage after steam blowing. The unit is under test and commissioning.
NATG	ST. RITA 20	255.7	07/26/2024 23:50	09/09/2024 23:59	45	Planned Outage	Planned Outage until September 9 2024.
OIL	LIMAY-U1	60	09/07/2024 0:01	09/13/2024 16:32	6	Planned Outage	Planned Outage
OIL	MAL 2	130	07/24/2024 21:24			Forced Outage	Tripped due to loss prime of CWP
OIL	LAFARGE1	5.5	04/04/2024 19:20	08/27/2024 14:01	145	Forced Outage	Declared unavailable due to unsual sound and smoke came out at turbocharger side
OIL	MAL 1	300	05/03/2019 18:21			Forced Outage	Declared unavailable due to motorization of unit generator caused by the non-opening of phase B of PCB 8-05CB08MAL
Visayas							
BIOF	URC U1	30	09/23/2024 20:19			Forced Outage	Shutdown end of trial run.
BIOF	URC U2	16	09/23/2024 20:12			Forced Outage	Shutdown end of trial run.
BIOF	VMC U0I U0	35	09/20/2024 16:39	09/24/2024 14:19	4	Forced Outage	Weekly maintenance.
BIOF	SCBP U0	19.5	09/13/2024 14:40			Forced Outage	Emergency offline due to poor fuel quality.
BIOF	HPC U2 U0	9.5	09/07/2024 16:19			Forced Outage	Shutdown after plant test run.
BIOF	SCBP U0	19.5	08/09/2024 12:45	09/09/2024 7:44	31	Forced Outage	shutdown due to wet fuel and to conduct boiler inspection.
BIOF	VMC U0	2.5	04/21/2024 16:20			Forced Outage	Weekly maintenance.
BIOF	HPC U1 U0	2	11/12/2023 20:00			Forced Outage	Defective auxiliary of vibration meter.
BIOF	SCBI U0	7.4	03/31/2023 10:35			Forced Outage	Plant shutdown
COAL	PCPC U1	135	09/24/2024 20:21	09/25/2024 1:15	1	Forced Outage	Loss of Turbine hydraulic pressure for control valves
COAL	KSKP U0	103	09/20/2024 17:29	09/21/2024 12:19	1	Forced Outage	Turbine lube oil pressure low low switches A & B trip signal due to wiring terminal broken that caused wiring shortage and sudden trip the unit
COAL	CEDC U2	83.4	09/01/2024 1:10	09/21/2024 21:10	20	Planned Outage	PMS PER GOMP
COAL	PCPC U1	135	08/25/2024 15:59	08/26/2024 2:02	1	Forced Outage	facilitate placing turbine on turning gear operation due to high turbine bearing vibration.
GEO	UMPP U4	27.5	09/24/2024 18:50	09/25/2024 0:12	1	Forced Outage	rectify vapor extractor and coupling
GEO	MALITBOG BCP U0	13.35	09/22/2024 16:31	09/23/2024 21:32	1	Forced Outage	Activation of condenser inlet pressure high-high indication.
GEO	MALITBOG BCP U0	14	09/22/2024 16:31			Forced Outage	Activation of condenser inlet pressure high-high indication.
GEO	MALITBOG U3	75.06	09/14/2024 0:20	09/15/2024 4:02	1	Forced Outage	Emergency shutdown for generator terminal hotspot correction
GEO	PGPP1 U3	35.5	09/12/2024 0:10			Forced Outage	emergency shutdown at 0010H to conduct inspection of the turbine rotor due to high bearing no.1 vibration.
GEO	MALITBOG U3	75.06	09/09/2024 0:36	09/11/2024 9:21	2	Forced Outage	Due to steam leak at main steam header.
GEO	NASULO U0	47.5	09/08/2024 22:47	09/09/2024 6:32	1	Forced Outage	Auto tripped due to auxiliary cooling water booster pump stop indication.
GEO	PGPP2 SOG1 U0	20	08/30/2024 0:04	09/01/2024 23:27	2	Forced Outage	Emergency shutdown due to heavy steam leak at gland sealing supply header.
GEO	MALITBOG U1	73.12	08/17/2024 22:56	09/12/2024 17:08	26	Forced Outage	Turbine Generator Vibration very high

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Visayas							
GEO	MALITBOG U2	77.5	07/08/2024 5:43			Forced Outage	Due to high vibration
HYD	SMHC U2	1.25	09/25/2024 18:47			Forced Outage	Affected by the tripping of BOHECO 1 Loay SS Feeder 14.
HYD	SMHC U1	1.25	09/25/2024 18:47			Forced Outage	Affected by the tripping of BOHECO 1 Loay SS Feeder 14.
HYD	Villasiga U3	0.9	09/19/2024 10:10	09/20/2024 3:16	1	Forced Outage	Emergency cut-out due to pressure head low at intake gate due to debris
HYD	TIMBABAN Hydro	18.9	09/13/2024 17:49	09/14/2024 13:18	1	Forced Outage	due to clogging at trash trap
HYD	Villasiga U1	3.6	09/08/2024 18:46	09/09/2024 17:28	1	Forced Outage	Affected by line fault
HYD	THC U3	5.1	09/03/2024 12:24			Forced Outage	Affected by the tripping of 69kV Taft feeder.
HYD	THC U2	5.1	09/03/2024 12:24			Forced Outage	Affected by the tripping of 69kV Taft feeder.
HYD	AHEP U1	0.45	08/30/2024 16:17	09/13/2024 6:56	14	Forced Outage	Shutdown due to isolation of 34.5KV Amlan-Ahep Line.
HYD	Villasiga U3	0.9	08/27/2024 10:24	08/28/2024 7:10	1	Forced Outage	Due to DE bearing oil flow low
HYD	Villasiga U3	0.9	08/25/2024 21:01	08/26/2024 5:01	1	Forced Outage	due to bearing oil flow low
HYD	THC U1	5	08/24/2024 19:02	09/01/2024 2:13	8	Forced Outage	Tripped due to unbalanced voltage
HYD	THC U3	5.1	08/08/2024 13:22	09/01/2024 4:30	24	Forced Outage	Due to high vibration
OIL	PB104 U3	7	09/24/2024 17:37			Forced Outage	Malfunction of turbo charger right side.
OIL	BDPP U3	4.2	09/24/2024 17:35	09/25/2024 0:59	1	Forced Outage	Over-voltage indication.
OIL	PB104 U1	7	09/22/2024 19:17	09/23/2024 6:52	1	Forced Outage	Excessive exhaust gas leak at cylinder head 1R.
OIL	BDPP U3	4.2	09/22/2024 18:24	09/23/2024 0:47	1	Forced Outage	Unable to cut-in due to defective generator excitation potentiometer.
OIL	BDPP U3	4.2	09/21/2024 22:21	09/22/2024 1:25	1	Forced Outage	Defective generator excitation potentiometer.
OIL	TPC (Carmen) U2	10	09/21/2024 0:01	09/26/2024 0:01	5	Planned Outage	GOMP
OIL	PB104 U2	7	09/20/2024 22:00	09/21/2024 8:52	1	Forced Outage	DUE TO BUSTED EXPANSION BELLOWS AT CYLINDER 7R.
OIL	PDPP3 U3	12	09/18/2024 22:35	09/19/2024 7:11	1	Forced Outage	Unable to cut-in due to excessive water leak at cylinder A6
OIL	PDPP1 U5	5	09/18/2024 12:34	09/19/2024 23:01	1	Forced Outage	Excessive water leak at cylinder B 16
OIL	PB104 U3	7	09/17/2024 14:05	09/22/2024 22:40	5	Forced Outage	DUE TO MULFUNCTION OF T C RIGHT SIDE.
OIL	PB104 U4	8	09/14/2024 18:15	09/15/2024 0:40	1	Forced Outage	Excessive exhaust gas leak at air starting valve of cylinder head 6L.
OIL	PB104 U2	7	09/12/2024 22:06	09/13/2024 0:42	1	Forced Outage	Under plant testing after 12K PMS.
OIL	PB104 U4	8	09/12/2024 18:12	09/13/2024 4:55	1	Forced Outage	Cut-off stud bolt of exhaust manifold at cylinder 1R.
OIL	PDPP3 U3	12	09/12/2024 17:42	09/13/2024 7:20	1	Forced Outage	due to observe knocking sound at camshaft of cyl. B3
OIL	PDPP3 U5	12	09/11/2024 13:11	09/12/2024 21:07	1	Forced Outage	Unable to cut-in due to abnormal sound at cylinder B1
OIL	PB104 U2	7	09/10/2024 0:01	09/12/2024 1:18	2	Forced Outage	Extended due to unfinished activities as per PB 104.
OIL	PDPP3 U5	12	09/09/2024 12:39	09/10/2024 7:13	1	Forced Outage	emergency stop due to high exhaust manifold ang high EGT on both banks
OIL	PB101 U4	6	09/07/2024 18:04	09/08/2024 9:17	1	Forced Outage	Emergency cut-out due to excessive fuel leak at cylinder 8L
OIL	TPVI U6	5.5	09/07/2024 8:15	09/08/2024 21:00	1	Forced Outage	affected by planned outage of their 38MVA Transformer
OIL	TPVI U5	5.5	09/07/2024 8:15	09/08/2024 21:00	1	Forced Outage	affected by planned outage of their 38MVA Transformer
OIL	TPVI U4	5.5	09/07/2024 8:15	09/08/2024 21:00	1	Forced Outage	affected by planned outage of their 38MVA Transformer
OIL	TPVI U3	5.5	09/07/2024 8:15	09/08/2024 21:00	1	Forced Outage	affected by planned outage of their 38MVA Transformer
OIL	TPVI U2	5.5	09/07/2024 8:15	09/08/2024 21:00	1	Forced Outage	affected by planned outage of their 38MVA Transformer
OIL	TPVI U1	5.5	09/07/2024 8:15	09/08/2024 21:00	1	Forced Outage	affected by planned outage of their 38MVA Transformer
OIL	PB104 U4	8	09/07/2024 0:01	09/10/2024 0:00	3	Planned Outage	Affected by the scheduled APMS of 42MVA transformer and associated HVES.
OIL	PB104 U3	7	09/07/2024 0:01	09/10/2024 0:00	3	Planned Outage	Affected by the scheduled APMS of 42MVA transformer and associated HVES.
OIL	PB104 U1	7	09/07/2024 0:01	09/10/2024 0:00	3	Planned Outage	Affected by the scheduled APMS of 42MVA transformer and associated HVES.
OIL	CPPC U6	6.5	09/07/2024 0:01			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	CPPC U5	6.5	09/07/2024 0:01	09/23/2024 9:14	16	Maintenance Outage	Maintenance outage (awaiting DOE Rev2 approval as GOMP) affected by Main Transformer 1 replacement ECD Oct 1 2024 2359H.
OIL	CPPC U3	6.5	09/07/2024 0:01			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	CPPC U2	6.5	09/07/2024 0:01	09/24/2024 0:03	17	Maintenance Outage	Maintenance outage (awaiting DOE Rev2 approval as GOMP) affected by Main Transformer 1 replacement to conduct 90 000 ERH - 18 000 H Type PMS. ECD Oct 1 2024 2359H.
OIL	CPPC U1	6.5	09/07/2024 0:01	09/24/2024 22:01	17	Maintenance Outage	Maintenance outage (awaiting DOE Rev2 approval as GOMP) affected by Main Transformer 1 replacement to conduct Generator Servicing 5YR and 18 000 RH. ECD Oct 1 2024 2359H.
OIL	PDPP3 U3	12	09/06/2024 18:34	09/07/2024 8:06	1	Forced Outage	Emergency cut-out due to high tortional vibration.
OIL	PDPP3 U8	13	09/05/2024 16:13	09/15/2024 17:01	10	Forced Outage	Abnormal sound at turbo charger B-bank
OIL	PB104 U3	7	09/04/2024 15:33	09/05/2024 11:10	1	Forced Outage	Cut-off stud bolt at exhaust manifold cylinder 6L & excessive gas leak along cylinder 7R & 8R.
OIL	AVON-Nabas U1	3	09/04/2024 13:00	09/09/2024 12:40	5	Forced Outage	Lube oil cooler leak
OIL	PB104 U3	7	09/03/2024 20:17	09/04/2024 2:38	1	Forced Outage	Busted expansion bellows between cylinder 7R & 8R.
OIL	PDPP3 U5	12	09/02/2024 17:23	09/05/2024 16:08	3	Forced Outage	Excessive HT water leak between engine frame and liner setting on cyl A4 and A5
OIL	PDPP3 U8	13	08/30/2024 15:36	08/31/2024 0:00	1	Forced Outage	High torsional vibration
OIL	PDPP3 U7	13	08/30/2024 15:28	08/31/2024 8:48	1	Forced Outage	Rising of liner & exhaust gas temperature of cylinder B1
OIL	PDPP3 U5	12	08/29/2024 14:20	08/30/2024 6:55	1	Forced Outage	Knocking sound at cam piece of cylinder head A8
OIL	PB104 U1	7	08/29/2024 8:49	08/30/2024 12:43	1	Forced Outage	Hard starting.
OIL	PB104 U2	7	08/26/2024 0:01	09/10/2024 0:00	15	Planned Outage	12K PMS Major Engine Overhaul and servicing of charge air cooler.
OIL	IASCO SECTOR U3	15.1	08/25/2024 22:52	08/26/2024 3:20	1	Forced Outage	Transformer out. Sector isolated
OIL	IASCO SECTOR U2	10.1	08/25/2024 22:52	08/26/2024 3:20	1	Forced Outage	Transformer out. Sector isolated
OIL	IASCO SECTOR U1	10	08/25/2024 22:52	08/26/2024 3:20	1	Forced Outage	Transformer out. Sector isolated
OIL	TPC (Carmen) U4	10	08/24/2024 0:00			Forced Outage	Detached connecting rods and crank shaft for machining
OIL	CPPC U10	6.5	08/17/2024 0:01	09/03/2024 16:08	17	Maintenance Outage	Generator Servicing [18K Hours] ECD September 3 2024
OIL	CENPRI U4	6.7	06/26/2024 12:46	08/28/2024 18:01	63	Forced Outage	Auto-tripped due to high crankcase pressure caused by cylinder no.18 piston liner seizure.
OIL	EAUC U1	11.5	05/13/2024 22:55			Forced Outage	CYLINDER NO. 7 CRANKCASE EXPLOSION
OIL	PB101 U3	6	04/01/2024 16:30	09/19/2024 13:02	171	Forced Outage	Starting failure
SOLR	SEPALCO U0	40.5	09/20/2024 18:46	09/22/2024 12:57	2	Forced Outage	Shutdown of 50MVA Transformer to continue the installation of revenue meters for Solar feeders.
SOLR	Silay Solar U0	20	09/14/2024 13:47	09/15/2024 1:28	1	Forced Outage	Isolated with 0.6MW load at 1347H due to tripping of 69kV Bacolod -Silay Line.
SOLR	ISLASOL II U0	27.2	09/14/2024 10:54	09/16/2024 13:16	2	Forced Outage	Auto -tripped due to line fault along 13.8KV Line.
SOLR	SEPALCO U0	40.5	08/30/2024 15:31	08/31/2024 14:00	1	Forced Outage	Affected by Ormoc-San Isidro 69kV line tripping.
SOLR	SACASUN U0	46.8	08/18/2024 10:48	08/27/2024 21:36	9	Forced Outage	Emergency shutdown at 1048H due to Resetting of North & South Line Power Circuit Breaker due to low insulation resistance.
Mindanao							
BIOF	LSK U1	15	09/18/2024 7:49	09/19/2024 2:31	1	Forced Outage	Emergency shutdown due to boiler problem
BIOF	BBI U0	12.4	09/10/2024 19:00			Forced Outage	Out of gas. (OMC Outage)
BIOF	BBM U0	5.7	06/29/2024 17:00			Forced Outage	Repair works along feeding system is ongoing. (Forced Outage)
BIOF	CSC U1	3.4	03/11/2024 23:59			Forced Outage	Shutdown from Testing and Commissioning Phase. (Forced Outage)
COAL	PPE U1	20	09/24/2024 9:22	09/25/2024 0:07	1	Forced Outage	Emergency shutdown to facilitate inspection of turbine rupture disk (Unplanned Outage).
COAL	DCP U1	151.4	09/23/2024 12:15			Forced Outage	Tripped due to boiler tube leak. (Forced outage)
COAL	GKP U4	151	09/23/2024 0:00			Planned Outage	PMS (GOMP). Note From Non-GOMP to GOMP. ETC October 11 2024.
COAL	GKP U4	151	09/21/2024 0:04	09/23/2024 0:00	2	Forced Outage	PMS (Non-GOMP). ETC October 11 2024.
COAL	FMP U1	135	09/17/2024 12:51	09/18/2024 1:40	1	Forced Outage	Emergency shutdown due to heavy leak of feed water pump. Gradual unloading implemented from 134.4MW starting 1041H down to 0MW. No FLV (Unplanned Outage).
COAL	DCP U1	151.4	09/09/2024 15:36	09/16/2024 9:45	7	Forced Outage	Forced outage. Indication Furnace pressure high high. ETC September 14 2024.
COAL	MCC U1	55	09/07/2024 0:03			Planned Outage	(PMS-GOMP). ETC September 26 2024
COAL	MCO U2	150	09/01/2024 17:29	09/02/2024 7:58	1	Forced Outage	Desynchronized due to coal handling trouble. (Forced Outage)
COAL	MCO U2	150	09/01/2024 17:29			Forced Outage	Desynchronized due to coal handling trouble.
COAL	GKP U3	151.3	08/28/2024 0:04			Planned Outage	(PMS-GOMP). ETC October 07 2024
COAL	GKP U3	151.3	08/28/2024 0:04			Planned Outage	PMS(GOMP). ETC October 07 2024
COAL	FMP U1	135	08/26/2024 0:11	09/09/2024 23:18	14	Planned Outage	(PMS-GOMP).
COAL	FMP U1	135	08/26/2024 0:11			Planned Outage	(PMS-GOMP). ETC September 15 2024

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Mindanao							
COAL	FMP U1	135	08/26/2024 0:11			Planned Outage	(PMS-GOMP). ETC September 15 2024.
COAL	FMP U1	135	08/26/2024 0:11			Planned Outage	PMS (GOMP). ETC September 15 2024.
COAL	PPE U1	20	08/12/2024 3:41	09/08/2024 16:13	27	Forced Outage	Emergency shutdown due to clogging of slag cooler. (Forced Outage)
COAL	PPE U1	20	08/12/2024 3:41			Forced Outage	Emergency shutdown due to clogging of slag cooler. (Unplanned Outage)
GEO	MA1 U1	51.4	09/11/2024 22:42	09/13/2024 19:26	2	Forced Outage	Auto-tripped due to activation of main T mer 87T. (Forced Outage) ETC For further notice.
GEO	MA3 U1	3.6	08/15/2024 10:49	09/03/2024 21:46	19	Forced Outage	Auto-tripped caused by feed pump pressure drop problem. (Forced Outage)
GEO	MA3 U1	3.6	08/15/2024 10:49			Forced Outage	Auto-tripped caused by feed pump pressure drop problem. (Unplanned Outage)
HYD	AG1 U1	35	09/24/2024 8:19			Forced Outage	PMS (Non-GOMP). ETC September 27 2024
HYD	MN2 U1	6.8	09/23/2024 8:01	09/24/2024 15:52	1	Planned Outage	PMS (GOMP). ETC September 26 2024.
HYD	SBL B U1	14	09/22/2024 16:30			Forced Outage	Plant on shutdown. Inspection and replacement of drive end bearing. (Forced Outage)
HYD	TU2 U2	2.5	09/21/2024 23:30	09/22/2024 0:01	1	Forced Outage	Affected by transfer of 5LI1TOR-DIG loads from Matanao SS back to Toril SS. (OMC Outage)
HYD	TU2 U1	5.5	09/21/2024 23:30	09/22/2024 0:04	1	Forced Outage	Affected by transfer of 5LI1TOR-DIG loads from Matanao SS back to Toril SS. (OMC Outage)
HYD	PG4 U1	75	09/16/2024 8:08	09/20/2024 8:11	4	Maintenance Outage	Maintenance outage due to replacement of Generator Air CoolerETC Sep. 20 2024
HYD	MHP U0	0.5	09/13/2024 13:20			Forced Outage	Emergency shutdown due to bearing temperature rising. (Forced Outage)
HYD	Talomo TL1 U2	0.5	09/12/2024 23:10	09/13/2024 1:48	1	Forced Outage	Plant shutdown due to clogged intake. (OMC Outage)
HYD	AG6 U3	50	09/09/2024 9:02	09/17/2024 20:01	8	Planned Outage	PMS-GOMP. ETC September 23 2024.
HYD	FGA U0	1.6	09/07/2024 23:36	09/08/2024 0:28	1	Forced Outage	Isolated (affected) due to tripping of Puerto-Damilag 34.5kVL. (OMC Outage)
HYD	FGA U0	1.6	09/07/2024 23:36			Forced Outage	Plant shutdown due to tripping of Puerto-Damilag 34.5kV line.
HYD	NBT U0	3	09/02/2024 10:01			Forced Outage	Plant shutdown due to weir repair. ETC December 02 2024. (Forced outage)
HYD	AG6 U4	40	09/02/2024 9:02			Planned Outage	(PMS-GOMP). ETC October 31 2024
HYD	AG6 U4	40	09/02/2024 9:02			Planned Outage	(PMS-GOMP). ETC October 31 2024.
HYD	AG6 U4	40	09/02/2024 9:02			Planned Outage	PMS (GOMP)
HYD	AG7 U1	26.1	09/02/2024 3:01	09/03/2024 13:11	1	Forced Outage	Auto-tripped due to actuator governor problem. (Forced Outage)
HYD	LPP U1	11.9	08/28/2024 15:26	08/30/2024 13:01	2	Forced Outage	Plant tripped affected by the unplanned outage of Agus6-Kauswagan 69kV line. (OMC outage)
HYD	AGC U0	24.8	08/27/2024 7:01	08/30/2024 13:05	3	Forced Outage	Synchronized from PMS(NON-GOMP).
HYD	AGC U0	24.8	08/27/2024 7:01			Forced Outage	PMS(NON-GOMP). ETC Sept 01 2024
HYD	FGA U0	1.6	08/23/2024 10:05	08/30/2024 18:34	7	Forced Outage	Plant Shutdown due technical problem at control panel.
HYD	PG4 U3	75	08/05/2024 8:03	09/03/2024 23:16	29	Planned Outage	(PMS-GOMP). ETC September 3 2024.
HYD	PG4 U3	75	08/05/2024 8:03			Planned Outage	PMS (GOMP). ETC September 3 2024.
HYD	ALP U0	2.6	07/28/2024 8:05			Forced Outage	Plant on shutdown. Generating Units 1 & 2 were totally damaged by landslide. (Forced Outage)
HYD	ALP U0	2.6	07/28/2024 8:05			Forced Outage	Plant on shutdown. Generating Units 1 & 2 were totally damaged by landslide. (Unplanned Outage)
HYD	MHP U0	0.5	06/30/2024 10:27	09/13/2024 0:00	75	Forced Outage	Plant shutdown due to SOCOTECO I Recloser Trip (OMC Outage).July 2 2024 Plant still unable to synchronize due to their Defective (ACR) Auto Circuit Recloser (Corrective Maintenance on process)
HYD	MHP U0	0.5	06/30/2024 10:27			Forced Outage	Plant shutdown due to SOCOTECO I Recloser Trip (OMC Outage).July 2 2024 Plant still unable to synchronize due to their Defective (ACR) Auto Circuit Recloser (Corrective Maintenance on process).
OIL	EEI U2	4.6	09/06/2024 14:10	09/07/2024 10:36	1	Forced Outage	Generator failure (Unable to synchronize). Declared available at 1036H.(Forced Outage)
OIL	EEI U2	4.6	09/06/2024 14:10			Forced Outage	Generator failure (Unable to synchronize). (Forced Outage)
OIL	KEG U0	10.6	04/15/2024 15:05			Forced Outage	Failed to synchronize due to low SF6 Pressure on PCB. (Forced Outage)
OIL	KEG U0	10.6	04/15/2024 15:05			Forced Outage	Failed to synchronize due to low SF6 Pressure on PCB. Forced Outage (Unplanned Outage)

Appendix B. Congested Equipment

Equipment Name	Trading Interval	Percent of Time
4MAAS_7UBA1	4,640	18%
8BARO_8DIN2	2,189	8%
8BARO_8DIN1	2,100	8%
DASMA_CORR	272	1%
12PLACE_TR2	233	1%
LEYTE_TO_CEBU	164	1%
1MEXI_1HER1	162	1%
4CLBYOG_TR1	161	1%
1MEXI_1HER2	135	1%
7UBAY_TR1	122	0.5%
1EHVSJ_TR5	99	0.4%
6KABAN_TR2	79	0.3%
1HERM_1MAL1	72	0.3%
AG2_TO_BALO	55	0.2%
3TAYAB_TR2	48	0.2%
3TAYAB_TR1	41	0.2%
4CLBYOG_TR2	31	0.1%
11VILL_11JAS1	26	0.1%
1ANGAT_TR3	22	0.1%
7CORELL_TR1	21	0.1%
1ANGAT_TR4	19	0.1%
3DASMA_TR3	15	0.1%

Equipment Name	Trading Interval	Percent of Time
5CEBU_5MAN2	13	0.05%
2DIMELD_TR2	12	0.05%
1BAKUN_TR1	11	0.04%
6KABAN_TR1	9	0.03%
1DUHAT_TR1	7	0.03%
1SNMAN_TR1	7	0.03%
6PGPP1_TR1	5	0.02%
6PGPP1_TR2	5	0.02%
5COLO_5KSP2	3	0.01%
6PGPP1_TR3	3	0.01%
11JASA_12BUT1	2	0.01%
14TACUR_TR3	2	0.01%
12BISL_13NAB1	1	0.004%
1BAUA_1BPP1	1	0.004%
1HERM_1DUH1	1	0.004%
3MKBNA_TR2	1	0.004%
3MKBNB_TR3	1	0.004%
3SNJUAN_TR2	1	0.004%
3TAYA_3MBA2	1	0.004%
4ORM138_TR1	1	0.004%
8PANITA_TR2	1	0.004%